

# Final Report

*Study aimed at supporting an impact assessment on:  
“Measures to enhance the efficiency and quality of  
port services in the EU”*

July 2013

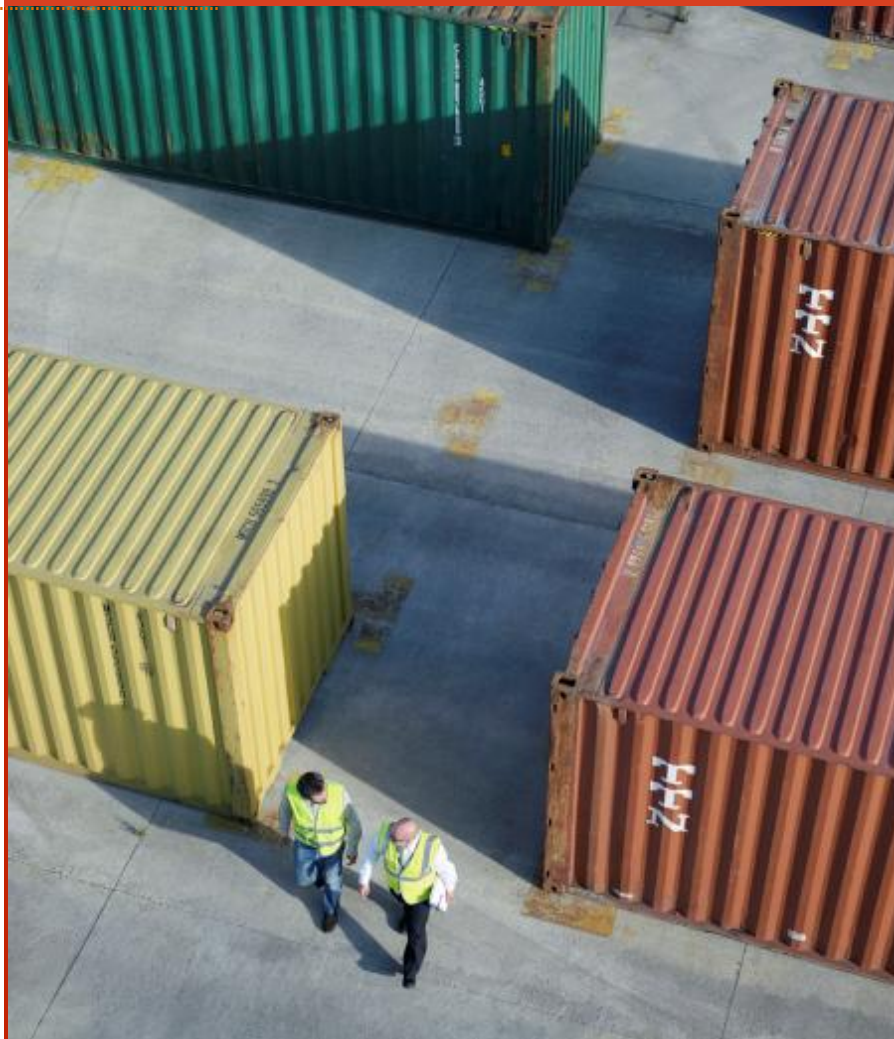
Submitted to:  
European Commission  
Directorate-General for  
Mobility and Transport  
Unit B3 Ports & Inland  
Navigation

Version: 1.3

Study carried out by PwC in  
partnership with:



**Panteia**



***Disclaimer***

This study was prepared by PwC and Panteia for the European Commission (the “Commission”) of the European Union, Directorate-General for Mobility and Transport. The European Union holds the copyright of this report. Information published in this report can be reproduced only if reference is made to this report. The views expressed herein are those of the authors and do not represent any official view of the Commission.

PwC and Panteia do not accept or assume any liability or duty of care for any other purpose or to any other party. PwC and Panteia shall not be liable in respect of any loss, damage or expense of whatsoever nature which may be caused by any use of this report.

PwC and Panteia do not accept or assume any liability or duty of care regarding the accuracy of the sources of information cited in the study.

## Executive Summary

Ports play a key role in the EU economy and development, as nearly 75% of the trade between the EU and the rest of the world is handled in ports. Thus, the importance of ensuring efficiency in ports is related to the ability of the EU to be competitive at international level. However, European ports seem to lack the ability to adapt efficiently in order to meet the ever-changing and developing needs of industry. This is particularly the case where levels of public finance are no longer forthcoming - the economic crisis has reduced the capacity of governments to finance long term infrastructure. It should also be considered that the heterogeneous nature of the port sector increases the complexity of guaranteeing consistent development of the sector as a whole.

In order to guarantee the sustainable development of the sector, private investments represent a core element; nevertheless, to attract them, more convenient conditions have to be created. In particular, it is necessary to guarantee a level playing field, and competition (many services are still provided in monopoly), as well as to foster transparency and non-discriminatory practices. Finally, port authorities are often limited in their ability to determine the level of dues, thus to impact on their resources and determine their operating income.

At the present time, according to stakeholder opinion, issues concerning the port service sector seem to be mainly focused on price, while quality is generally not such a relevant issue. Users are generally least satisfied with pilotage, cargo handling and passenger services. Shipping companies tend to be more severe in their evaluation of services than other stakeholders.

It is expected that port traffic will increase. Nevertheless, inefficiency would prevent industry players from internalizing the whole value added derived from increased demand.

With regard to intervention, this study considers a set of approaches, ranging from soft measures, such as guidelines through to well-structured measures, some of which might be regarded as imposing practices with a view to fostering competition. From an economic perspective (e.g. meeting future demand, cost and quality, development and impact on SMEs), a moderate approach is regarded as insufficient, as local interests would prevail over the overall need to improve the industry. Similarly, forced competition would be inefficient, due to increased high costs and benefits counterbalanced in case of local specificities that would not be considered. None of the considered policy options have a relevant social impact, as the increase in terms of jobs is an indirect and limited effect. The environmental concern, apart from being assessed on the basis of the presence of measures specifically aiming at reducing pollution, depends on modal shift. In this case, it is related to the economic factor, as the more the maritime sector becomes attractive to transport goods, the more it is expected to be preferred to other means. However, modal shift is in no case very relevant.

## Table of contents:

1	General context .....	7
1.1	The port service sector in Europe .....	7
1.1.1	Policy context .....	7
1.2	Purpose of the report .....	7
1.3	Structure of the report .....	8
2	Problem definition .....	9
2.1	Introduction .....	9
2.2	Problem analysis .....	9
2.2.1	Definition of terms .....	9
2.2.2	Problem symptoms .....	9
2.2.3	Problem identification: potential causes of under-performance .....	11
2.2.4	Quality of service .....	11
2.2.5	Efficiency of resource use .....	13
2.2.6	Pricing policies .....	15
2.3	Key drivers analysis .....	17
2.3.1	Absence of common minimum quality requirements for port services providers .....	17
2.3.2	Existence of restrictive regimes .....	17
2.3.3	Need for more secure and environmentally sustainable port services .....	17
2.3.4	Lack of clear rules governing market access to port services and concessions at EU level .....	20
2.3.5	Lack of financial transparency for port authorities providing port services .....	24
2.3.6	Lack of rules guaranteeing that port charges are set in a transparent and non-discriminatory way and at an appropriate level, reflecting the cost of the infrastructure and of the service provided .....	26
2.4	Cross-border nature of problem .....	29
2.5	Overview of the Problem definition .....	29
3	Objectives .....	31
3.1	General objective .....	31
3.2	Specific objectives .....	31
4	Consultation .....	33
4.1	Introduction .....	33
4.2	Phase 1 survey .....	33
4.3	Phase 2 survey .....	34
4.4	Survey findings – infrastructure and organization .....	35
4.4.1	Quality of infrastructure .....	35
4.4.2	Port organization .....	36

4.5	Survey findings – port services .....	41
4.5.1	Categorization of stakeholder responses .....	41
4.5.2	Pilotage .....	44
4.5.3	Towage .....	48
4.5.4	Mooring .....	51
4.5.5	Dredging .....	54
4.5.6	Bunkering .....	56
4.5.7	Cargo handling .....	59
4.5.8	Passenger services .....	62
4.5.9	Environmental services .....	64
4.6	Survey findings – views on potential policy measures .....	67
4.6.1	Assessment of the drivers to be affected by the policy measures .....	67
5	Policy options .....	78
5.1	Measures to modernize port services and operations .....	79
5.2	Measures to attract investments in ports .....	82
5.3	Policy packages .....	83
6	Impact Assessment Approach .....	86
6.1	Baseline Scenario .....	86
6.1.1	Current port traffic volumes .....	88
6.1.2	Demand: Port traffic forecasts .....	90
6.1.3	Comparisons with other market research studies .....	92
6.1.4	Demand/Supply Balance .....	94
6.2	Identification of impacts .....	96
7	Assessment of impacts of policy options .....	116
7.1	Quantitative assessment of policy packages .....	116
7.1.1	Model calculation 1 – growth .....	117
7.1.2	Model calculation 2 - user costs .....	117
7.1.3	Model calculation 3 - traffic shifts .....	121
7.1.4	Model calculation 4: employment – job creation .....	123
7.1.5	Policy packages – assumptions .....	124
7.1.6	Quantification of impacts – methodology .....	125
7.2	Qualitative assessment of policy measures .....	130
7.2.1	SO1: Modernize port services and operations .....	131
7.2.2	SO2: Create framework conditions which incentivise investments in ports .....	159
7.3	Analysis of impacts .....	172

---

7.3.1	Economic Impacts.....	172
7.3.2	Social Impacts .....	174
7.3.3	Environmental .....	176
7.3.4	Administrative burdens on businesses and public sector.....	176

---

8	Policy options compared.....	179
9	Monitoring and evaluation .....	184
9.1	Proposed set of core indicators .....	184

---

Annexes:

Annex I. Port Performance

Annex II. Review of existing information

Annex III. Phase 1 survey

Annex IV. Phase 2 survey

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

Annex VI. Employment impacts

Annex VII. Administrative costs

# 1 General context

## 1.1 The port service sector in Europe

Ports play a key role in the EU economy and development, as nearly 75% of the trade between the EU and the rest of the world is handled in ports. Thus, the importance of ensuring efficiency in ports is related to the ability of the EU to be competitive at international level.

Over 35% of intra-EU freight transport – in terms of tonnage – is represented by Short Sea Shipping (SSS), which represents a solution to the saturated land transport routes, with potential benefits for traffic, efficient transportation, cost-savings and environmental protection. In the case of SSS, port efficiency is particularly relevant, as port costs account for a greater share of total cost associated with the logistics chain, when compared to direct transport by road. Ports also act as gateways for rail and inland waterway networks.

Ports also hold a social role, as in some Member States they strongly contribute to the national economy and to employment. In total, around three million people are employed in ports in the 22 maritime Member States<sup>1</sup>.

### 1.1.1 Policy context

Unlike most other transport sectors, ports are not specifically regulated by the EU legislation. Following the 1997 Green Paper, in 2001 the Commission proposed to regulate the market access, but the European Parliament rejected the proposal in 2003. Again, in 2004 a second proposal was formulated, but it was turned down.

In 2007 the Commission produced a Communication on ports policy announcing soft measures to be implemented as guidelines and enhanced cooperation among stakeholders. The Communication aimed at tackling identified problem areas such as threats to port performance and hinterland connections, the need to increase the capacity of ports to meet future increased demand without compromising the environmental performance, the need for ports to be modernized – in line with the expected new requirements from the user side, the lack of clarity that prevented an increase in private investment, and issues related with work in ports. Further studies, as well as the study from PwC/Panteia hereby summarized, highlight that these issues, even if not occurring in all Member States and ports, are still present for a relevant share in the EU.

The latest EU relevant policy documents are the White Paper on Transport and the Single Market Act II in 2011 and 2012.

Several Member States have subsequently restructured their ports sector with national interventions; in particular: Germany, Finland, France and Spain. Nonetheless, some Member States have not significantly changed their national ports framework in recent years.

## 1.2 Purpose of the report

The report presents the description of the process and the results of an independent study to support the preparation of the impact assessment by the Commission services on *Measures to enhance the efficiency and quality of port services in the EU*.

The selection of measures – as further explained in the following sections – involved consultations between the Commission and PwC/Panteia, which jointly considered the support of stakeholders, both through their opinions, as expressed during two survey phases, and related workshops. Thus measures and policy packages have been constantly fine-tuned in order to best match the actual needs of the port service sector.

---

<sup>1</sup> Notteboom, Rodrigue and De Monie (2010) The organizational and geographical ramifications of the 2008-2009 financial crisis on the maritime shipping and port industries.

The impact assessment on the selected measures and policy options was undertaken in accordance with the relevant Commission guidelines, with the objective of providing evidence on the advantages and disadvantages of each measure and related policy options by assessing the potential impacts.

### ***1.3 Structure of the report***

The remainder of this report is structured as follows:

- Section 2 provides a description of the problem definition, presenting the evolution from the interim report to the final, fine-tuned definition that functioned as the basis for the assessment;
- Section 3 presents the objectives that the Commission intends to achieve. Again, the involvement of stakeholders has been crucial in the modification of these objectives in order to avoid focusing on marginal issues and thus improving the efficiency of the EC activity;
- Section 4 explains the nature of the consultations held with relevant stakeholders, describing their role and their involvement;
- Section 5 presents the policy options that have been produced by the Commission and that are assessed in the next sections;
- Sections 6 and 7 focus on the analysis of impacts, presenting the methodology followed for the assessment as well as describing the baseline scenario; within this section the assessment of impacts is presented, differentiating between quantitative and qualitative analyses;
- Section 8 describes the different impact that the policy options identified by the Commission would have on the port service sector and, in general, on the EU economy; and
- Section 9 presents the suggested monitoring and evaluation arrangements.



## 2 Problem definition

### 2.1 Introduction

The study addresses the relationship between the European TEN-T networks, in which ports play an influential role, and barriers to economic growth. Importers and exporters rely upon efficient transport networks and expect consistently high standards. It is necessary therefore to examine performance within the sector, and to test whether current institutional arrangements are sufficiently robust to ensure that market incentives are strong enough to foster best practice in all parts of the network.

### 2.2 Problem analysis

There are many different views within the industry, and amongst port users, about the scale of the problem, its causes, and the effectiveness of EU intervention. The rejection of the Commission’s proposals for market access to port services in 2002 and again in 2005 demonstrates the potential strength of opposition to measures which are not firmly grounded in the industry’s perception of needs.

The analysis began by examining the concepts of inefficiency and quality of service and how they could be measured; the potential causes of port under-performance and their impact on European supply chains; and the measures which could be used to address the problem, split between those which fall within the scope for EU intervention and those which do not. It is only the first of these – measures that can be taken by the EU to address the problems – that will be taken forward in the remainder of the study, when we look at:

- Whether intervention is justified at all;
- Whether the intervention is suitable for implementation by Member States; and
- Whether the intervention would be more effective if implemented at EU level.

#### 2.2.1 Definition of terms

The EU’s goal - in its widest context - is to improve Europe’s global competitiveness. This will only be achieved by maximizing the effectiveness of its supply chains, which for ports means three things:

- **Quality:** providing the correct mix and standard of port services;
- **Efficiency:** providing this mix and standard with the minimum use of resources; and
- **Price:** ensuring that other partners in the supply chain do not have to pay more for port services than their cost, plus a “normal” profit margin commensurate with the level of risk involved.

We recognise that these definitions are more expansive than those normally used when selecting Key Performance Indicators (KPIs) for ports. It is important, however, that the definitions used in this study reflect the EU’s wider economic objectives; otherwise the proposed interventions may fail to achieve the maximum desired impact.

#### 2.2.2 Problem symptoms

One indication of whether best practices in ports are being followed, is given by the World Economic Forum (WEF) 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 seven point scale, where one is extremely underdeveloped and seven 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.

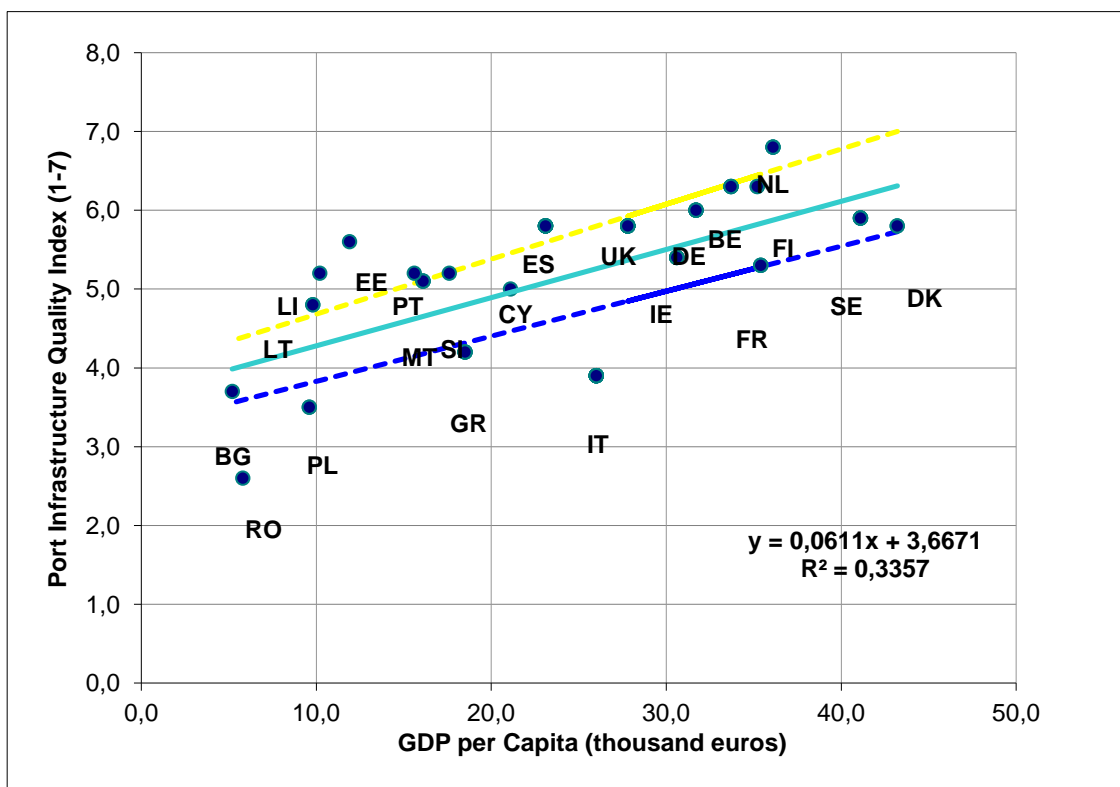
Looking at high scoring countries in Europe, Belgium and Finland score 6.3, followed closely by Germany, Sweden, UK, Denmark, Spain, Malta and Estonia. The latter all score higher than 5.5.

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.

For the purpose of the impact assessment we have made a regression analysis relating the WEF score to GDP per capita, in order to see the extent of port performance gaps that cannot be explained by income gaps.

**Figure 1 - Scatter plot (port infrastructure quality index / GDP per capita)**



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 either side of the trend line. Many European countries are clustered along these 10% boundaries. Even normalized for GDP/Capita, this distribution suggests that there is a real performance gap amongst Europe’s ports.

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.

While these results do not indicate any causes, they do indicate symptoms of underlying problems and support the notion that the objective of achieving a consistently high-performing European port network needs attention.

Annex I provides additional empirical findings on port performance indicators.

### *2.2.3 Problem identification: potential causes of under-performance*

For the purposes of this study the problems of inefficiency and quality of service in the ports sector have been grouped together under the umbrella term “supply chain under-performance in the ports sector”. This section considers briefly the reasons why some ports under-perform, using the definitions of quality, efficiency and price given above.

The analysis has been based on the literature review and the consultants’ direct observations of the port industry.

### *2.2.4 Quality of service*

Many ports are unable to provide potential customers with the right mix or standard of services because they do not have the right mix of infrastructure. Common complaints from shipping lines and other port users relate to:

- Insufficient depth of water;
- Lack of quay space, resulting in vessels having to wait for a berth;
- Lack of storage space behind the quay, often caused by the “city centre” locations of older ports;
- Insufficient (or outdated) mechanical equipment:
  - For container ships the most common problems are too few cranes (preventing the ship from working as many holds as the operator would like) or the absence of ship-to-shore gantry cranes (resulting in slower handling rates). Yard congestion caused by lack of space can also slow down crane handling rates on the berth;
  - For bulk ships the most common problem is lack of automation (ship loaders and pneumatic or screw discharge equipment linked to high speed conveyor systems to the storage area or plant); and
- Poor interface arrangements for rail and inland waterway transport.

These infrastructure and investment related issues may be seen as an inevitable consequence of the rapid growth in ship size and the long term nature of port investments. Or alternatively it may be a symptom of deeper problems concerning institutional arrangements, legal certainty for investors, or the ability of ports to recoup their investment costs.

The other main criticisms of quality of service, which are more organizational, focus on:

- Availability: range of services provided within the port area;
- Speed: time taken to service ships and cargo;
- Reliability: consistency of port performance; and
- Flexibility: ability to provide alternative solutions when things go wrong

These are discussed in turn.

**1. Availability of services** has two aspects: firstly the customer’s ability to define the cargo handling services to be provided by the port, and secondly the ability of the port to provide or facilitate value-added logistics services.

Many customers would like to exercise more control over the port services they receive, including:

- Ability to reserve berthing windows so that scheduled services are not disrupted by unforeseen delays waiting for a berth;
- Ability to negotiate service contracts with the port authority or cargo handling company giving them a guaranteed loading/discharge rate or ship turn-around time;
- Dedicated storage areas within the port; and
- Extended cargo collection and delivery times.

Some ports are too small to allow their customers this degree of control without a significant increase in their costs and/or undue disruption to other operations. And some ports are large enough to allow competition between (private) terminal operators to take care of this issue. But there are also medium sized ports where local monopolies – in either the public or private sector – are sufficiently strong to allow these types of request to be ignored, even when they are physically and financially practicable.

The range of value-added services provided in or near ports has increased substantially in recent years as a result of the outsourcing of logistics management to specialist organizations, and the use of IT to improve supply chain efficiency. But many ports are reluctant to provide such value-added services themselves, or even to facilitate private sector provision of such services at locations in or near the port, so that they can be seamlessly integrated with mainstream port operations. This can occur for various reasons:

- Legislation defining what ports can and cannot do in each Member State;
- Narrow political or management perceptions about the role of ports;
- Lack of space, investment funding or management expertise;
- Aversion to risk; and
- Inertia, lack of vision, or resistance to change.

The scale of the problem is difficult to define for both traditional and non-traditional port services, as very little has been written about it. It has also been an area where EU intervention measures have been difficult to define because of the diversity of local circumstances in ports. Partly because of this, however, it has been necessary to explore these drivers of the problem further in the present study – via questionnaire surveys – in order to assess its importance and relevance.

**2. Speed of service** is reasonably well measured in respect of ships, as ship turn-around time is one of the most common port KPIs. This is an area where it should be possible to compare port performance across a wide spectrum of ports, although even here there are technical problems to be resolved in standardizing the results for variations in ship size, type and operating pattern<sup>2</sup>.

Speed of service for cargo (usually presented as cargo dwell times) is more difficult to measure, and even harder to explain. Some ports keep this information in respect of containers, although it is rarely published, but very few ports keep similar records for bulks and general cargo, in part because of diversity in the commodity

---

<sup>2</sup> Cochrane R. 2008 The effects of market differences on the throughput of large container terminals with similar levels of efficiency, *Maritime Economics & Logistics*, 10, 32-52

composition of the cargoes and the large number of shippers/consignees involved, which makes data aggregation more difficult.

Long cargo dwell times have many causes, which are difficult to disentangle and often lie outside of the control of the port authority or terminal operator. For example slow cargo clearance procedures, documentation errors, the desire of customers to use the port as free or cheap warehousing, and uncertainty regarding inland destinations of cargo at the time of discharge. Conversely, short cargo dwell times are not necessarily an indicator of quality of service. Congested ports frequently make use of off-dock depots – these allow the cargo to be removed from the port quite quickly, but result in double handling of the cargo and additional land transport costs which are not captured in the ports’ KPIs.

**3. Reliability of service** is becoming more important with the move towards lean manufacturing and minimization of inventories. There are three main reasons why ports are often still unable to provide reliable services:

- Peaking of demand and variability of demand;
- Insufficient investment, resulting in shortages of capacity and congestion; and
- Poor integration of operations, including the deployment of labour.

The peaking of demand is largely outside of ports’ control, but they can do more to plan for it, through analysis of past demand patterns, closer links to customers, integration of IT systems to obtain better real-time information on imminent ship arrivals, and provision of larger margins of reserve capacity.

The provision of more spare capacity is a contentious issue as it costs money, which not all customers are prepared to pay. As in other industries, there is a wide variation in the preferred ratio of reliability/price. Although the Commission would like to see higher standards of reliability everywhere, this does not come cost-free. In practice the existing diversity of standards may actually improve supply chain effectiveness by allowing individual ports to identify and exploit variations in customer preferences. However this argument is only valid in port ranges where there is an adequate level of competition; in monopoly situations where customers are unable to select their preferred balance between reliability and cost, high levels of unreliability are likely to remain uncorrected.

Better operational management is linked very much to the issue of flexibility (see below) but also reflects the way in which port managers define the services they provide. Often port service obligations are seen only in physical terms – to move an item of cargo from A to B – with no timeline or other indicator of service quality attached. This, plus the emphasis in port KPIs on average performance rather than performance spreads, is one of the reasons why so little importance is still attached to reliability.

**4. Flexibility of service** is one of the issues which stands out as crucial in stakeholder interviews and yet has received very little attention in the academic literature. It is achieved by switching resources from less-important to more-important jobs in response to unexpected events. Of a port’s resources, labour is undoubtedly the most important and – in some ports – one of the least flexible.

### *2.2.5 Efficiency of resource use*

A lot has been written about the efficiency with which ports use resources such as quay length, storage area, the larger items of mechanical equipment, labour, and financial capital.

In spite of this our understanding of the causes of port inefficiency is still poor, partly because of methodological problems in the approaches used to measure port efficiency:

- Single factor productivity, which is what most port KPIs record;
- Total factor productivity, which is the focus of most academic literature; and

- Customer observation of specific wastages of resources, which are the types of inefficiency most frequently mentioned in customer satisfaction surveys.

**1. Single factor productivity.** Most port KPIs measure the productivity of single factors of production. Usually they measure the percentage of the time for which each individual resource is utilized or its productivity (tonnes or TEUs per annum per metre of quay or per employee, rate of return on capital employed etc.). However they largely ignore the interaction between different factors of production, and the extent to which they are substitutes. For example, high rates of labour productivity can be achieved through efficient organization of operations, but also by investing heavily in mechanical equipment.

Port KPIs are also difficult to compare because they ignore variations in the quality of the output, which makes benchmarking of ports very difficult. Some ports can achieve very high quay productivity for example, but only at the expense of long queues of vessels waiting to be assigned a berth.

**2. Total factor productivity.** More recently, the literature on port efficiency has focused on total factor productivity, using techniques such as Data Envelopment Analysis (DEA) or Stochastic Frontier Analysis (SFA). The aim is to identify the maximum output that can be achieved from a given set of inputs, or – alternatively – the minimum resource cost of producing a given output. The overall efficiency of individual ports can then be measured by comparing their output (normally annual cargo throughput) and resource inputs with those of the nearest point on the “production frontier”, which is itself based on the input/output ratios of the best performing ports in the sample.

The main advantage of frontier analysis is that it is able to measure simultaneously “technical efficiency” – the percentage of maximum output that can be obtained from each individual resource – and “allocative efficiency” – whether the best possible combination of different resources is being deployed. But although there have been several empirical studies of port performance using these techniques, they have a number of shortcomings which means they are not necessarily the best way of measuring the efficiency of European ports:

- It is difficult (although not impossible) for DEA and SFA models to handle more than one type of output. So they are usually applied to single-cargo terminals rather than multi-cargo ports. Most of the studies to date have concentrated on container terminals as these have a relatively homogenous output;
- Academic studies are restricted to resource inputs for which data are available for a large number of ports. This “lowest common denominator” approach means that the number of variables used to measure port efficiency is usually fairly small; in addition, they tend to be the variables for which data are available, rather than the variables which determine performance. Most of the studies completed to date have used infrastructure measurements as their main input variables – quay length, yard area, number of cranes etc. - ignoring other important input such as labour and contracted-out services for which it is more difficult to obtain information;
- The ports used for efficiency comparisons are usually at different stages in their life cycles. Ports approaching full capacity are generally recorded as “efficient”, even when they are congested and offer poor standards of service, because they are maximizing the output obtained from the available facilities. New ports, in contrast, often show up as inefficient because capacity can only be built in relatively large increments, and several years of traffic growth may be needed before it is filled up and the port is achieving its maximum output;
- Frontier analysis does not take into account differences in the quality of the output, as measured by the quality of service criteria discussed previously or even – in its crudest form – levels of customer satisfaction; and
- The resource inputs used are normally measured in physical rather than financial terms. Yet it is well-known that differences between ports in the cost of different inputs – particularly labour and land – can lead to the adoption of quite different technologies. These in turn can lead to the use of resource combinations which appear inefficient when compared with those of ports with different input prices, but which are very appropriate for the port’s own circumstances.



We, therefore, do not believe that there is currently a reliable and comprehensive way of quantifying port efficiency. So we have not attempted to estimate new rankings of European ports according to their technical efficiency, either overall or in terms of individual factors of production. Ambiguous, flawed or apparently contradictory measures of operational efficiency in seaports, based on narrow definitions, potentially undermine any proposals that are attempting to address user needs and the efficiency of the transport system as a whole.

Instead, we have adopted a more subjective approach by asking the ports’ customers about their perceptions of efficiency at individual ports, and why they feel that some ports are using more resources than is strictly necessary to produce their current level of output.

**3. Customer observations.** In the context of Phase 1 Survey, six areas of inefficiency in resource use are frequently mentioned in port users’ comments on port efficiency:

- Labour inefficiency<sup>3</sup>: over-manning, restrictive working practices, insufficient labour flexibility, and inadequate training;
- Over-investment caused by inappropriate financial objectives, excessively large cash flow, failure to return profits to stakeholders, or under-pricing of the cost of capital (for example through state aid);
- Failure to dispose of assets which are surplus to requirements;
- Inappropriate choice of technology;
- A mismatch between the capacities of different systems components in ports. Common examples are the mismatch between quay and yard capacities, and quay cranes which can handle cargo faster than the yard equipment supporting them; and
- Poor communications – and sometimes differences in working hours - between different stakeholders (including port authority departments).

The EU cannot address all of these issues. There are some causes of inefficiency which can only be dealt with through detailed interventions at the level of the individual port. This study is based on the premise that the EU’s role is that of establishing and enforcing a policy environment that is conducive to efficiency, not micro-managing European ports. For that reason some of the smaller and more technical causes of port inefficiency will not be considered any further in this report.

### *2.2.6 Pricing policies*

Supply chain inefficiencies occur when ports price their services either substantially above or substantially below the cost of producing them. In an efficient market this would not be sustainable, but unfortunately competition between supply chains running through different ports is far from perfect. The most efficient ones are in a position to charge economic rents – prices based on the cost structure of the “second best” supply chain rather than their own costs.

Rather than being passed on to the final customer, these potential rents are sometimes appropriated by the links in the supply chain for which there is the most restricted supply. These are normally ports or railways, although the commercialization of ports and the still-widespread use of administrative pricing structures in European railways mean that it is more likely to be the ports which benefit.

---

<sup>3</sup> Labour inefficiency issues are not further assessed within this report. The Commission has decided to allow employers and employees to further discuss the issues of port labour in the context of a Social Dialogue Committee and for the moment not to propose any legislation in this particular field. This should allow for a negotiated solution based on dialogue and common understanding.

**Excessive prices** for port services are those which are well above production costs plus “normal” profits. They could have a variety of causes, including:

- Lack of competition, and the downward pressure which this places on prices;
- Abuse of monopoly power. Two common –and often readily accepted - examples of this are caused by:
  - Cross-subsidization of cargoes or services for which there is strong competition by those for which the port has a monopoly;
  - Price competition for terminal concessions, which are sometimes overbid in the knowledge that high concession fees can be recovered subsequently from users;
- Imperfect knowledge of costs, which is partly due to the high proportion of port costs which are shared and indivisible; and
- Inheritance of past tariff structures, set when the port’s cost structures were significantly different from those of today. Port tariffs have rarely fallen in real terms, even when there have been large improvements in technology and/or reductions in unit costs due to higher traffic volumes and economies of scale.

**Subsidies** are rarer now than in the past, but could still have a distorting effect on competition. Their main causes could be:

- Failure of Member States – for whatever reason – to require port authorities to recover all operating costs, finance their own investments and make a commercial rate of return on capital employed;
- State aid to port authorities for strategic investments. The provision of free or concessionary finance for large items of capital expenditure can significantly reduce the costs which have to be recovered from users;
- Predatory pricing to increase port throughput, including the use of cross-subsidization between different types of cargo or port services; and
- Inappropriate use of marginal cost pricing, particularly over extended periods, for capital intensive activities whose assets will eventually require replacement.

The EU has not intervened in the past to correct market distortions caused by port pricing. This is partly because the port sector is very competitive in many parts of Europe, with port tariffs already determined by market forces. It also reflects a general lack of information about port tariffs and the costs which they are intended to recover, and the outcry which can be expected from “losers” when tariffs are changed.

However sub-optimal port pricing is one of the causes of supply chain inefficiency which the EU can do most to address. It has a range of policy measures at its disposal which will allow the issue to be tackled from several different directions at once, establishing a common set of principles which can be applied in all EU Member States. It can also build on previous, relatively successful interventions such as the Transparency Directive (Commission Directive 2006/111/EC).



## 2.3 Key drivers analysis

In this section we analyse the related factors which contribute to the problems of inefficiency and quality within the ports sector.

### 2.3.1 Absence of common minimum quality requirements for port services providers

The EU port industry is still characterized by a wide heterogeneity. The possibility for port authorities to enjoy a relevant degree of freedom when managing ports and awarding concessions increases the possibility for lack of quality to be encountered. In particular when ports are not affected by external competition and, therefore, are not forced by the market to improve their offer<sup>4</sup>. In the case of a monopolistic position, there would be no other way to enforce quality than through legislation.

Port concessions are currently awarded on the base of specific criteria, which might – and usually do – entail specific requirements to be fulfilled. Nonetheless there is no homogeneity among countries or even amongst ports on the presence of these requirements, nor on their specificities.

Although the literature on quality requirements is scarce, the degree of heterogeneity of quality requirements set by EU ports can be found in work by several authors<sup>5, 6, 7</sup>.

### 2.3.2 Existence of restrictive regimes

The presence of exclusive labour pools in ports is seen by some as a source of restrictive practice undermining port efficiency and productivity.

A study on port labour has been commissioned by the Commission and has been finalized and presented<sup>8</sup>. Its results will surely help understanding the relevance of this issue, its causes and possible interventions aiming at reducing/eliminating the inefficiency.

The Commission has decided to allow employers and employees to further discuss the issues of port labour in the context of a Social Dialogue Committee and for the moment not to propose any legislation in this particular field. This should allow for a negotiated solution based on dialogue and common understanding.

### 2.3.3 Need for more secure and environmentally sustainable port services

#### Security

From a wide perspective, the security of ports – as well as all other supply chain centres – met the challenge posed by the threat of terrorist attacks<sup>9, 10</sup> (see Figure 2).

<sup>4</sup> De Langen P. and Pallis A., 2006, Analysis of the Benefits of Intra-Port Competition, *International Journal of Transport Economics*, 33, 1-17.

<sup>5</sup> Notteboom T. and Verhoeven P. 2010 The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 83-101.

<sup>6</sup> ITMMA 2008 The award of seaport terminals in Europe – Final Draft [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf) (Accessed 09 March 2012).

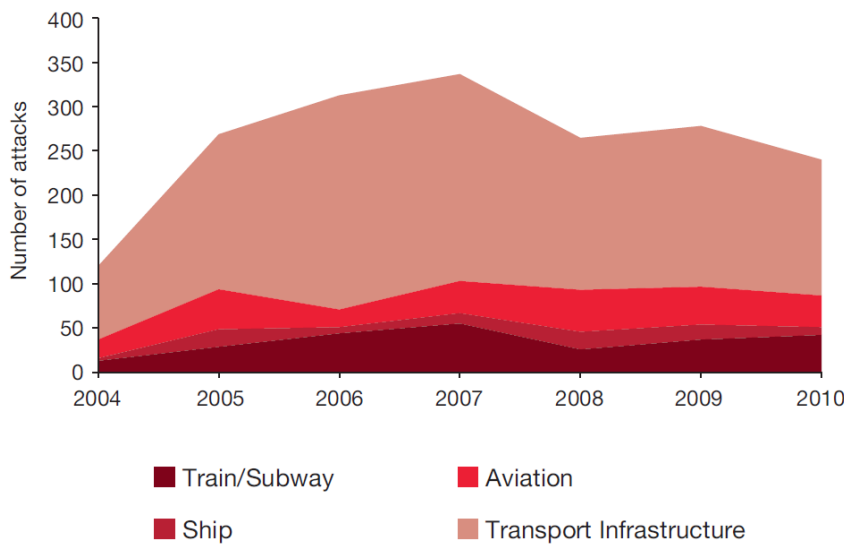
<sup>7</sup> ESPO Fact Finding 2010 European Port Governance.

<sup>8</sup> Study on port labour, health, safety and qualifications, Portius – College of Europe – Contract notice JO S 137-210127.

<sup>9</sup> PricewaterhouseCoopers 2011 Transportation & Logistics 2030 – Volume 4: Securing the supply chain [online] Available at: [http://www.pwc.com/en\\_GX/gx/transportation-logistics/pdf/TL2030\\_vol.4\\_web.pdf](http://www.pwc.com/en_GX/gx/transportation-logistics/pdf/TL2030_vol.4_web.pdf) (Accessed 13 March 2012)

<sup>10</sup> Dekker S. and Stevens H., 2007 Maritime security in the European Union – empirical findings on financial implications. for port facilities *Maritime Policy & Management*, vol. 34, n. 5, pp. 485-499.

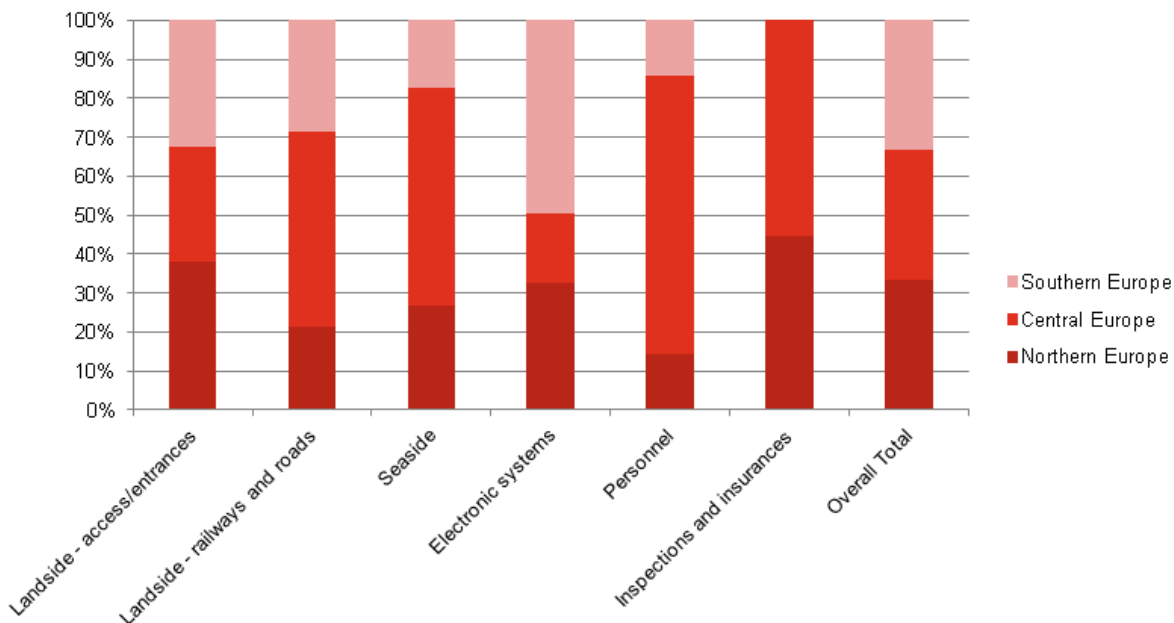
**Figure 2 Worldwide man-made number of supply chain related attacks per type**



Source: PwC 2011.

Against the challenge of terrorism, it becomes hard to determine a unit of measure for the quality of security ex-ante. Despite their intentions, Dekker and Stevens produced research that quantified the increase of security in the EU after the coming into force of Regulation (EC) No. 725/2004 on enhancing ship and port facility security in terms of financial investments (Figure 3)<sup>11</sup>. The mentioned Regulation itself forces Member States to comply with SOLAS Convention and the ISPS Code, therefore providing standards on which security can be determined<sup>12</sup>.

**Figure 3 Distribution of total investment for security category per geographical area**



Source: PwC graphical elaboration on data from Dekker and Stevens 2004.

<sup>11</sup> Ibidem.

<sup>12</sup> Regulation (EC) No. 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security, *OJ L 129, 29.4.2004*, p. 6-91.

The literature review is not conclusive to establish if there is a lack of security in European ports and whether this can affect overall port performance. This was investigated in the first phase of the consultation. Later in the process it was clarified that this is out of scope: security issues are covered by dedicated legislation.

## Environment

According to an ITMMA survey more than 70% of concession tenders require documentation comprising an environmental plan and in around 85% of award contracts an environmental clause is present<sup>13</sup>. Although these figures seem reassuring, there is no mention of what is actually intended for an “environmental clause”. It is indeed explained in another report, from ESPO/EcoPorts<sup>14</sup>, which presents evidence of the sector’s progress towards the key aims. The interest in environmental issues has increased in the last decades, and also the related priorities have evolved (Table 1).

**Table 1 - Top 10 environmental priorities of the European port sector over time**

	1996	2004	2009
1	Port development (water)	Garbage/port waste	Noise
2	Water quality	Dredging: operations	Air quality
3	Dredging disposal	Dredging disposal	Garbage/port waste
4	Dredging: operations	Dust	Dredging: operations
5	Dust	Noise	Dredging disposal
6	Port development (land)	Air quality	Relationship with local community
7	Contaminated land	Hazardous cargo	Energy consumption
8	Habitat loss/degradation	Bunkering	Dust
9	Traffic volume	Port development (land)	Port development (water)
10	Industrial effluent	Ship discharge (bilge)	Port development (land)

Source: PwC graphical elaboration on ESPO/EcoPorts 2010.

Concerning climate change and energy efficiency, 33% of ports estimate their carbon footprint, while 51% take measures to reduce it. 57% of ports developed an energy-efficient programme and 20% directly produce some energy from renewable sources<sup>15</sup>.

Despite the presence of environmental specialists (69% of ports have at least one) and that 72% of ports have an environmental policy, less than half the considered ports have a form of Environmental Management System (30% certified by ISO 14001 and 17% by EcoPorts PERS). Concerning publicity, only 36% of ports publish factual data on the environmental performance to be accessed by the public, even if 69% publishes some sort of environmental information on their websites<sup>16</sup>.

<sup>13</sup> ITMMA 2008 The award of seaport terminals in Europe – Final Draft [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf) (Accessed 09 March 2012).

<sup>14</sup> ESPO/EcoPorts 2010 Port Environmental Review 2009 [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ESPOEcoPortsPortEnvironmentalReview2009.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ESPOEcoPortsPortEnvironmentalReview2009.pdf) (Accessed 12 March 2012).

<sup>15</sup> ESPO/EcoPorts 2010 Port Environmental Review 2009 [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ESPOEcoPortsPortEnvironmentalReview2009.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ESPOEcoPortsPortEnvironmentalReview2009.pdf) (Accessed 12 March 2012).

<sup>16</sup> Ibidem.

**Table 2 Change over time in selected environmental indicators**

Environmental Management component	1996 (%)	2004 (%)	2009 (%)	% change 04-09
Port authority has an environmental policy	45	58	72	+14
Policy information available to the public	-	59	62	+3
Policy improves over legal requirements	32	49	58	+9
Publishing of annual environmental review/report	-	31	43	+12
Presence of environmental specialist(s)	55	67	69	+2
Presence of environmental management system	-	21	48	+27
Presence of environmental monitoring	53	65	77	+12
Presence of environmental indicators for trends monitoring	-	48	60	+12
Presence of procedure for consulting with the local community on port's environmental programme	-	36	37	+1

Source: ESPO / EcoPorts 2010.

Although evidence on the importance of environment aspects to the EU port sector has been presented in this section, we believe that this topic would need to be further analysed in order to identify possible relationships between the environmental sustainability of port services and port performance.

### 2.3.4 Lack of clear rules governing market access to port services and concessions at EU level

The awarding of port access to port operators is a fundamental tool for port authorities to influence the prosperity of the port community. Depending on awarding procedures and contract, port authorities can indeed either promote or demote the optimal allocation of scarce resources within the port area<sup>17, 18, 19</sup>. Again, the European scenario is characterized by a wide diversity concerning the specificities of the awarding procedures deployed. Considering their similarities, it is possible to cluster European ports depending on their size and location<sup>20, 21, 22</sup>.

Although a competitive process is the most common awarding procedure, discrepancies are encountered within different areas, with 25% of award processes not based on a competitive process (Table 3). In cases where the awarding followed a direct appointment, port authorities justify their choice mainly with strategic reasons, such as the creation of intra-port competition or the securing of further expansion possibilities for efficient incumbent firms<sup>23</sup>. If looking at Table 5, it appears how different are the practices depending on the different

<sup>17</sup> Notteboom T. and Verhoeven P. 2007 Concession agreements as port governance tools, in Brooks M. R. and Cullinane K. (eds) *Devolution, Port Governance and Performance*, Elsevier, London, pp. 449-495.

<sup>18</sup> Pallis A., Notteboom, T and De Langen, P. 2008 Concession Agreements and Market Entry in the Container Terminal Industry *Maritime Economics and Logistics*, 10, 209-228.

<sup>19</sup> Notteboom T. and Verhoeven P. 2010 The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 83-101.

<sup>20</sup> Ibidem.

<sup>21</sup> ITMMA 2008 The award of seaport terminals in Europe – Final Draft [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ITMMA\\_Survey\\_on\\_the\\_Awarding\\_of\\_Seaport\\_Terminals\\_in\\_Europe\\_2008.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ITMMA_Survey_on_the_Awarding_of_Seaport_Terminals_in_Europe_2008.pdf) (Accessed 09 March 2012).

<sup>22</sup> ESPO Fact Finding 2010 European Port Governance.

<sup>23</sup> Notteboom T. and Verhoeven P. 2010 The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 83-101.

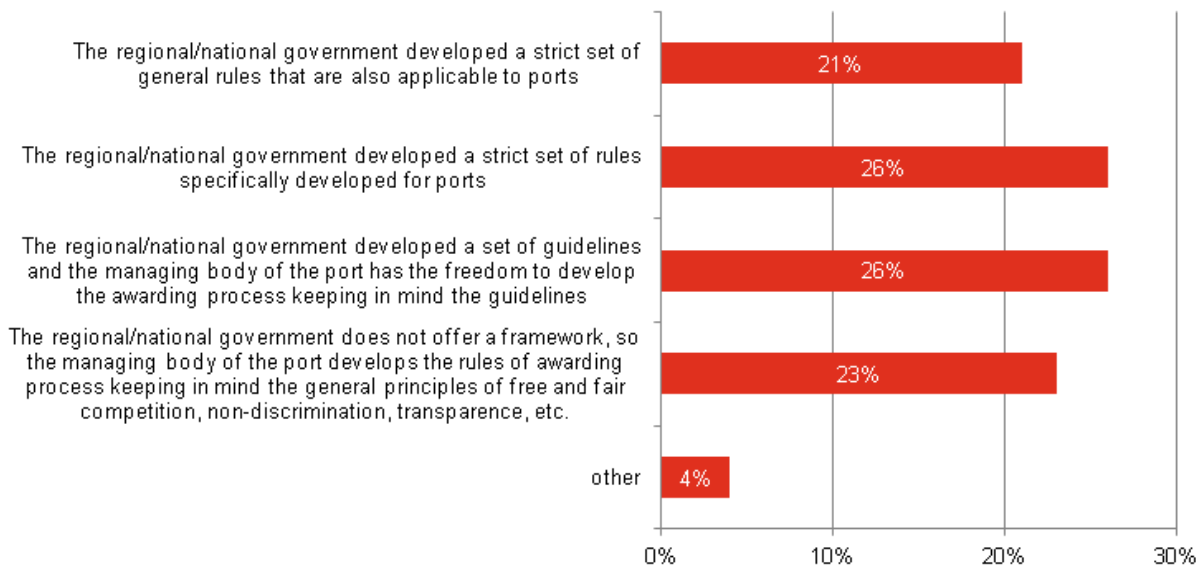
areas of Europe, as consequence of a lack of specific and common regulation on the matter. This issue was pointed out within a survey commissioned by ESPO throughout whole Europe<sup>24</sup> (Figure 4).

**Table 3 - Type of awarding process used**

Type of awarding process for the specific terminal projects	All	Size of Terminal			Region			
		<50 ha	50-100 ha	>100 ha	Baltic <sup>25</sup>	H-LH range <sup>26</sup>	Med <sup>27</sup>	Other
Awarding by direct appointment or direct adjudication	14%	5%	17%	22%	33%	15%	0%	11%
Awarding though a process of private and bilateral negotiations from a qualified pool of market players	11%	19%	0%	0%	22%	23%	0%	0%
Awarding though a competitive process (including public tendering or competitive bidding)	75%	76%	83%	78%	44%	62%	100%	89%
	100%	100%	100%	100%	100%	100%	100%	100%

Source: PwC graphical elaboration on Notteboom and Verhoeven 2010.

**Figure 4 - Development of regulation and rules on the awarding process**



Source: ITTMA 2008.

<sup>24</sup> ITTMA 2008 The award of seaport terminals in Europe – Final Draft [online] Available at: [http://www.espo.be/images/stories/Publications/studies\\_reports\\_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf](http://www.espo.be/images/stories/Publications/studies_reports_surveys/ITMMASurveyontheAwardingofSeaportTerminalsInEurope2008.pdf) (Accessed 09 March 2012).

<sup>25</sup> Baltic-Scandinavia range.

<sup>26</sup> Hamburg-Le Havre range.

<sup>27</sup> Mediterranean.

Port authorities can also be responsible for **market access discrimination**. This may take different forms, most of which are difficult to demonstrate.

Home bias practices are defined as those barriers to entry, which are raised towards foreign firms. In the port industry, these take the form of limited to local (national) publicity. On average, the publicity of the awarding process is announced on an international scale in 46% of cases, on a European one in 38% and on a national one in the remaining 17%, with larger ports showing a higher degree of internationalization (Table 4)<sup>28</sup>.

**Table 4 - Geographical scope of the awarding process**

How extensive was the awarding process publicity	All	Size of Terminal			Region			
		<50 ha	50-100 ha	>100 ha	Baltic	H-LH range	Med	Other
Announced on a national scale	17%	18%	25%	11%	33%	0%	11%	40%
Announced on an European scale	38%	64%	0%	0%	33%	33%	33%	40%
Announced on an international scale	46%	18%	75%	89%	33%	67%	56%	20%
	100%	100%	100%	100%	100%	100%	100%	100%

Source: PwC graphical elaboration on Notteboom and Verhoeven 2010.

Further than discriminatory terminal awarding procedures, access to the market for port services at port level can be restricted in different ways. In certain cases, port authorities conclude "closed-door" agreements for the provision of port services, favouring specific undertakings.

A few examples of unequal practices concerning barriers to access in port services are illustrated below (Table 5).

**Table 5 - Discriminatory practices in access to the market**

Port	Country	Market failure	Description	Source
Most Finnish ports	Finland	Monopoly or dominant market position	Competition in cargo handling services has increased, especially in the largest ports, but it is still common, in most ports, that <b>one stevedoring company</b> holds a monopoly or dominant market position (this type of market failure occurs in circa 80% of Finnish ports).	Competition Concerns in Ports and Port Services-Finland, OECD (2011)
Italian ports	Italy	Competitive constraints	Most of the decisions of the Italian Competition Authority concerning competition law infringements in ports were abuses related to denial of access to port infrastructures, which is a precondition for providing port services, both <b>cargo-handling and technical-nautical services</b> .	Competition Concerns in Ports and Port Services-Italy, OECD (2011)

<sup>28</sup> Notteboom T. and Verhoeven P. 2010 The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 83-101.

Port	Country	Market failure	Description	Source
Koper	Slovenia	<i>Abuse of dominant position in the market</i>	<p><i>The company Luka Koper, managing and operating the port of Koper, owns 50% of shares in the only company performing towing services in the port (Adria Tow d.o.o.), and 100% of the only company performing mooring of ships (Luka Koper INPO d.o.o.).</i></p> <p><i>The Company refused another company quay space in the port for performing <b>towing activities</b>.</i></p> <p><i>The Company refused to grant another company's workers access to the port in order to perform <b>mooring activities</b>.</i></p>	<i>Competition Concerns in Ports and Port Services- Slovenia, OECD (2011)</i>

In certain ports, market access can be restricted for services of public interest (i.e. pilotage, towage, and mooring). As stated in the Communication COM (2001) 35 final - Reinforcing Quality Service in Sea Ports: A Key for European Transport -, ‘restrictions and public monopolies are still prevalent in particular in port pilotage and, albeit to a lesser extent, in towing and mooring. Ports are conscious of the fact that one of the consequences of this situation has been that the supply of these services often represents a disproportionate cost factor to port users and that this, in turn, has become an important element in competition between ports.

COM (2007) 616 final – Communication on a European Ports Policy – also stressed the link existing between port safety and pilotage, towage and mooring services. This is way ‘such activities may either be provided by the public administration or constitute services of general economic interest’.

For instance, limitations above can be due to:

- Specific local considerations (i.e. limited spaces in ports); and/or
- Safety reasons and environmental protection needs.

Space and capacity constraints in a port, as well as specific maritime safety and environmental considerations, all are relevant issues to be taken in mind when analysing market access to port services. Namely, marine and nautical services require a high degree of professionalism and contribute to the safety and ease of navigation in the port. The ways in which European marine and nautical services are regulated, subsidized, or not liberalized at all, are simply very different, indicating that there is no clear consensus.

Examples of absence of competition in marine and nautical services are illustrated below (Table 6).



**Table 6 - Absence of competition in marine and nautical services**

Port	Country	Description	Source
Barcelona	Spain	<i>Law establishes that port services (i.e. pilotage, towage, mooring, handling, etc.) must be provided by competing private companies authorized by the port authority.</i>  <i>However, the number of providers of each service can be limited by the port authority due to capacity of facilities, safety or environmental reasons.</i>	<i>Marine Services, Rules and Regulations: The case of the Port of Barcelona by José Alberto Carbonell, Managing Director (Barcelona Port Authority)<sup>29</sup></i>
Rotterdam	Netherlands	<i>In the Netherlands pilots are organized in a corporation and do not compete with each other.</i>  <i>This situation will remain until 2019 and then the government will consider a model with more competition.</i>	<i>Safety as Main Aspect in Marine and Nautical Services: Case Rotterdam by Victor Schoenmakers (Port of Rotterdam Authority)<sup>19</sup></i>
Danish ports	Denmark	<i>It is not all ports that offer all the marine services due to lower port activity.</i>  <i>For pilotage, it is still a state-owned company offering services to ships and ports, where no private commercial offer is available.</i>	<i>Safety in a liberalized market for marine services. Case of Denmark by Director Tom Elmer Christensen (Danish Ports)<sup>19</sup></i>
Italian ports	Italy	<i>In general, organization of pilotage, towage and mooring services is the responsibility of the Local Maritime Authority in agreement with the port authority. These services must combine commercial purpose with the need for safety in ports.</i>  <i>Pilots are organized in corporations. Towage is undertaken by private companies under concession schemes. Mooring services are managed by a single corporation of boatmen for each port.</i>	<i>Paper 'Cenni sul quadro giuridico che regola la gestione dei porti' by Assoporti (2007)</i>
German ports	Germany	<i>Pilotage is undertaken by public sector pilot associations, although it is theoretically possible that alternatives could exist. The main criterion is safety.</i>	<i>Study on Public Financing of sea Ports (European Commission, DG COMP)</i>
Calais	France	<i>Towage service is an obligation of the concessionaire but is not compulsory for ferries, due to the fact that it is not profitable (works more like a mutual insurance). Hence the Opal Coast Chamber of Commerce and Industry covers the loss made by the private company that operates the service.</i>	<i>Study on Public Financing of sea Ports (European Commission, DG COMP)</i>

### 2.3.5 Lack of financial transparency for port authorities providing port services

Most European port authorities are not required to (and do not) provide clear and transparent documentation of their activities<sup>30</sup>. Considering the multiple role that port authorities often provide, the lack of clarity can affect the efficiency of the port in different ways.

In several Member States, publicly owned ports have no obligation to keep separate accounts for their economic/commercial activities and their public role. The way in which port authorities report varies amongst the Member States, both financially and operationally.

<sup>29</sup> International Conference Safety in a liberalized market for marine services: European cases (Venice, March 2<sup>nd</sup>, 2012).

<sup>30</sup> Notteboom T. and Verhoeven P. 2010 The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 83-101.



### *Transparency of port authority objectives*

According to the ESPO European Port Governance Report<sup>31</sup>, 81% of European port authorities have formal general objectives, which may be laid down in a legislative act or in another official document. Despite this the description of these objectives presents a wide variety of economic and non-economic objectives, which are often mixed and very broadly defined. In the end, only a small proportion of port authorities pursue genuinely corporate objectives (i.e. maximization of shareholder value).

There is no evidence to suggest that port authorities define separate objectives for the two roles that they cover (e.g. economic and non-economic activities). This can be in line with what Adler et al. pointed out (2003)<sup>32</sup> – that ports have little interest and few incentives to provide information.

An unclear definition of the objectives necessarily leads to a lack of transparency in the activities of the port authority, which, in the case of financial transparency, would be translated into the impossibility to trace the secondary consequences of the financing itself<sup>33</sup>.

### *Transparency of financial reporting*

A survey conducted by NEA/PwC as part of the study on *Public Financing of sea ports*<sup>34</sup> highlighted that the application of accounting standards varied depending on geographical location and ownership structure:

- Around half of the port authorities participating in the survey have adopted the International Financing Reporting Standard (IFRS) or International Public Sector Accounting Standard (IPSAS), while the other half used nationally accepted accounting standards or other standards based on IFRS or IPSAS; and;
- Just under 30% of port authorities did not have their financial statement publicly available nor did they provide it as part of the study.

In the Fact Finding Survey (ESPO, 2011) results indicated that just under 90% of respondents (port authorities) maintain separate accounts from the entity that owns the port authority, and that just over 60% of responding port authorities adhere to international accounting standards.

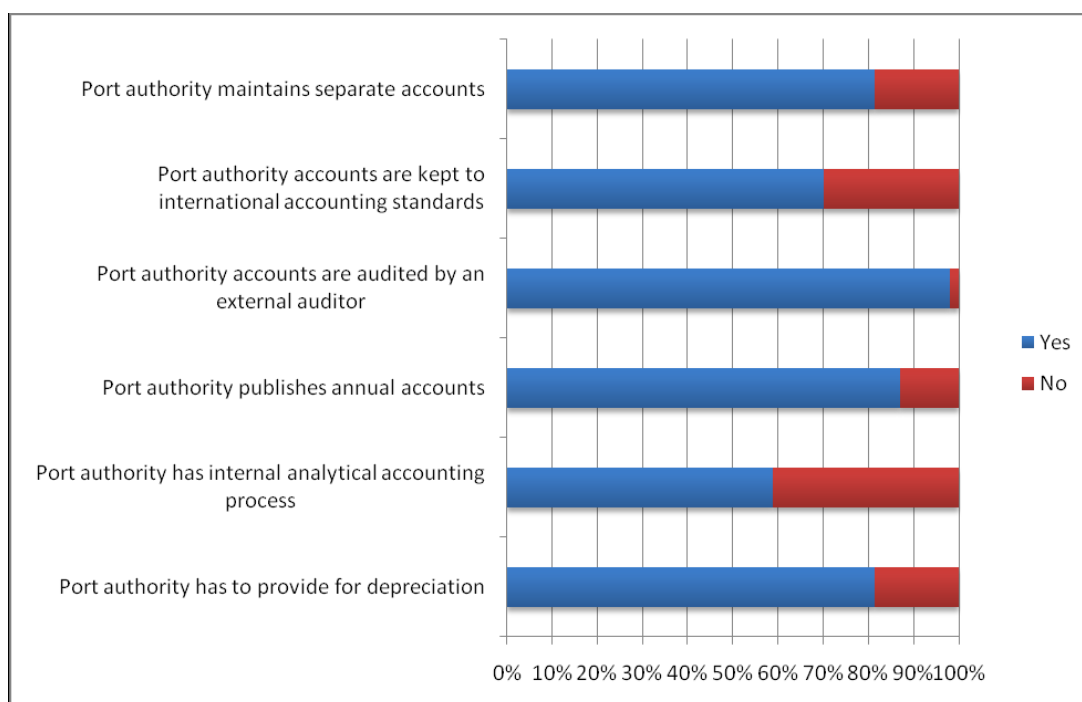
---

<sup>31</sup> European Sea Ports Organization (ESPO) 2010 European Port Governance: Report of an Enquiry into the current governance of European seaports.

<sup>32</sup> Adler N, Nash C. and Niskanen 2003 Barriers to Efficient Cost-Based Pricing of Rail, Air, and Water Infrastructure in Europe. *Fourth Seminar of the IMPRINT-EUROPE Thematic Network "Implementing Pricing Policies in Transport: Phasing and Packaging"*. Brussels.

<sup>33</sup> Farrell, S. 2001 If it ain't bust, don't fix it: the proposed EU directive on market access to port services, *Maritime Policy and Management*, vol. 28, n. 3, 307-313.

<sup>34</sup> NEA/PricewaterhouseCoopers 2012 *Public Financing of seaports*, to be published.

**Figure 5 - Financial reporting – other evidence<sup>35</sup>**

### 2.3.6 Lack of rules guaranteeing that port charges are set in a transparent and non-discriminatory way and at an appropriate level, reflecting the cost of the infrastructure and of the service provided

It is often observed that there is a lack of rules governing the way in which port charges are set, e.g. that they should be transparent, non-discriminatory and at an appropriate level reflecting the cost of the infrastructure and/or of the service provided. Non-discrimination is strongly related to the level of transparency.

The way in which concession fees and lease charges are calculated varies considerably between ports<sup>36</sup>. ESPO concluded that *‘the pricing system deployed by the managing body of the port for the use of the port land tends to vary widely among European ports’*<sup>37</sup> An additional conclusion arising from the ESPO research was that there is a variety of price bidding systems that can be used to award terminal concessions. The most common system was defined as a maximum rent paid to the managing body of the port, whereby the private operator has the freedom to set his own charges: the winner is the highest bidder for the right to provide terminal services. This contrasts with a given rent to be paid to the managing body of the port and minimal charges from the terminal operator to its customers – in this instance the bidder who offers the lowest price to be paid by terminal users wins: this reflects the variation in port authorities objectives in terms of profit maximization versus throughput maximization.

From the recent Port Financing study<sup>38</sup>, it was evident that a number of concession structures were defined on the basis that the concession fee would cover investment costs over the lifetime of the concession, although there were a variety of ways in which this was calculated – there were also many cases where the port authority

<sup>35</sup> ESPO Fact Finding Survey, 2011.

<sup>36</sup> NEA/PwC 2012 *Public Financing of seaports*, to be published.

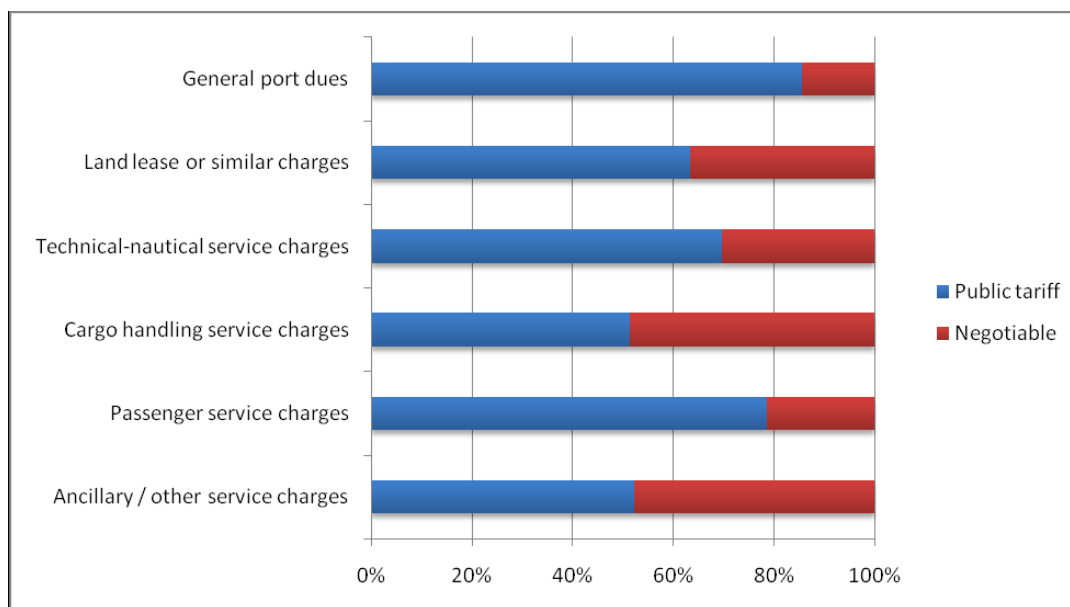
<sup>37</sup> ESPO 2008 *The Awarding of Seaport Terminals in Europe*.

<sup>38</sup> NEA/PricewaterhouseCoopers 2012 *Public Financing of seaports*, to be published.

respondent was not able to tell how the fee had been calculated, or that a lease charge, for example, was based on what ‘the market could bear’ rather than being related to a particular service or provision of infrastructure.

The ESPO Fact Finding Survey (2011)<sup>39</sup> has gathered up to date information on the way charges are calculated – whether based on a public tariff or negotiable. The survey findings concluded that most port authorities use a public tariff, particularly for general port dues, passenger service charges and technical-nautical service charges.

**Figure 6 - How port charges are calculated<sup>40</sup>**



Despite the fact that general port dues are mostly calculated on the basis of a public tariff, the survey findings also concluded that port authorities also apply rebates, penalties or exemptions (e.g. for frequency, environmental bonuses or penalties, exemptions for war vessels and so on). Promotions can also be applied on an ad hoc commercial basis, to attract new shipping lines, for example. Almost three quarters of the responding port authorities apply rebates, while more than half also apply exemptions. Penalties are applied less frequently, and almost half of the responding port authorities furthermore apply more commercially-based promotions.

Excessive pricing has been defined as “charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied”. With regard to refusing supply, in general, ports have the right to choose their trading partners. However, there are some instances where, if a dominant port refuses to supply a certain service to an applicant, this could constitute an abuse of a dominant position. This type of abuse can occur when a port has an interest in the downstream market and refuses to supply or grant access to competing downstream customers. Refusal to supply can be an abuse because it may artificially limit competition in a downstream market, and hence lead to ex post allocative inefficiency and higher prices downstream. Excessive pricing clearly leads to a consumer detriment in terms of higher prices paid, and can lead to a net detriment to social welfare due to the allocative inefficiency caused by the elevated prices. In the context of ports, prices that could theoretically be set excessively include either general port charges or charges for specific services, such as berthing, electricity, fuel or water<sup>41</sup>.

Two examples of unfair practices regarding tug services are listed below (Table 7):

<sup>39</sup> Ibidem.

<sup>40</sup> ESPO Fact Finding Survey, 2011.

<sup>41</sup> <http://www.oecd.org/dataoecd/23/21/48837794.pdf>.

**Table 7 - Unfair pricing practices**

Port	Country	Description	Source
Setubal	Portugal	<p><i>In 2007 the Portuguese competition authority fined three tug service providers for illegally acting as a cartel. The three providers were found to have fixed prices and shared clients.</i></p> <p><i>The price-fixing resulted in significantly higher price levels than prior to the cartel.</i></p>	<i>Competition Concerns in Ports and Port Services-Background paper OECD (2011)</i>
Livorno	Italy	<p><i>Regulations concerning tugboats, leads to tariffs calculated on the costs sustained by the concessionaire in the previous period and increased by a certain percentage that makes no consideration for organizational or production improvements.</i></p> <p><i>As a result of this rigid pricing system, Italian ports show a proliferation of specific and detailed sub-tariffs which, nearly always, increase the final cost of the service.</i></p>	<i>Paper by Giuliano Gallanti (President of Livorno Port Authority)<sup>19</sup></i>

## 2.4 Cross-border nature of problem

During the consultation many stakeholders raised the issue that port policy has primarily a local or national character. There is a strong tradition in Europe of independent port cities, and a general inclination against top-down regulation. Port authorities need a substantial degree of autonomy in order to balance the interests of the various service providers and users involved in the port community,

However ports typically compete across borders for traffic streams that also cross borders. Structural issues related to financing and pricing influence competition between ports in different Member States, and ultimately the ability of the sector to react to evolving demand. The successful development of hinterland corridors affects trade and economic growth in all Member States, including land-locked countries.

An analysis has been made of the traffic streams through European ports. Considering the overseas origin and destination, it is estimated that approximately 50% of port throughput is intra-EU and 50% is extra EU. Intra EU flows are by definition relevant for EU policy.

Of the remainder, the extra-EU flows, it is estimated that 79% of port throughput is related to imports and exports for the same Member State as the port, while 12% are for another EU Member State.

However, the ratio varies considerably by country. For self-evident reasons, ports in insular and peninsular regions are much less likely to handle cargo for other inland countries. Thus the UK and Spain figures show mainly ‘own trade’. In the middle of the distribution countries such as the Netherlands, Belgium, Germany and Poland have 60-70% ‘own trade’. At the other extreme, countries such as Estonia and Latvia handle a higher proportion of trade for other countries, including non-Member States, especially Russian Federation.

**Table 8 - Proportion of ‘own trade’ in EU ports**

	Own trade	Other EU	Other Non EU
EU Average	79%	12%	10%
UK	99%	1%	0%
Spain	92%	8%	0%
Netherlands	67%	29%	4%
Estonia	46%	8%	47%

Source: Panteia.

If the intra/extra ratio is applied to the figures in the table above, we can conclude that half of the ‘own trade’ category is intra-EU, therefore involving at least two Member States. On average, if all EU countries are considered, this implies that 51.5%<sup>42</sup> of all port throughput is EU cross-border. In maritime countries addressing large land-locked areas, the ratio will be higher<sup>43</sup>.

## 2.5 Overview of the Problem definition

The general problem is related to the need to adapt the supply of port services to future demand, and to ensure that the environment is conducive for the operation of market forces without distortions or barriers.

Two important areas, namely labour market reforms and concessions have been removed from the study’s scope. Rules for concessions have been excluded to avoid interference with the DG-MARKT horizontal initiative. Labour market reforms will be addressed through the Social Dialogue, and not through the measures being assessed within this study.

<sup>42</sup> 12% plus (79/2)% = 51.5%

<sup>43</sup> E.g. Netherlands, 29% plus (67/2)% = 62.5%.

This way, the main emphasis is on aspects such as market access, competition, transparency, pricing and creating incentives for inward investment. It is necessary to establish conditions where existing EU rules can be applied and where ports will have sufficient commercial autonomy to manage their own operations within a level playing field. At present there are strong indications of sub-optimality, and that problems will persist unless the barriers are diminished.

The EU's emphasis on economic growth, and on the new TEN-T initiatives to develop better European transport networks, providing alternatives to road transport, requires attention to be paid to the port sector. There is a strong EU cross-border character to the traffic flows handled in ports. Member States are not able to create a level playing field unilaterally. Greater clarity potentially encourages new investment.

# 3 Objectives

This section presents the final review of the objectives of the policy initiative as set by the Commission. Indeed, the objectives were defined and developed according to the findings of the two phases of consultation (cf. Section 4).

## 3.1 General objective

The **general objective** was to enhance the efficiency and overall quality of port services, creating the conditions for ensuring that, in 2020-2030, the ports included in the TEN-T core and comprehensive networks can cope with the expected growth in demand and for contributing to the achievement of the goals of the White Paper on Transport (contribution of ports to the Single Transport Area, competitive and efficient transport system).

## 3.2 Specific objectives

This general objective can be translated into two specific objectives which can be achieved by pursuing five specific objectives:

1. Modernize port services and operations:
  - Operational objective 1: Clarify and facilitate access to the market of port services;
  - Operational objective 2: Prevent market abuse by port service providers with exclusive or special rights;
  - Operational objective 3: Improve coordination mechanisms within ports;
2. Create framework conditions to attract investments in ports:
  - Operational objective 4: Ensure a more transparent framework for financial relations between public authorities, port authorities and providers of port services; and
  - Operational objective 5: Ensure autonomously set, efficient port infrastructure charges, allowing for the internalization of external costs.

Table 9 provides an overview of objectives and related problems and drivers.

**Table 9 - Problem-objective definition**

Problem definition	Objectives definition
<i>General problem</i>	<i>General objective</i>
The main problem is the persistent performance gaps in some TEN-T sea ports and the need to adapt the capacity of all ports to new requirements in shipping logistics at a time when there is scarce public funding. This creates risk of congestion and puts at risk the goals of an efficient, interconnected and sustainable TEN-T network and therefore the satisfactory functioning of the internal transport market.	To foster a more efficient, interconnected and sustainable functioning of the TEN-T network by improving the performance of all ports and by helping them to cope with changes in shipping logistics.
<i>Driver 1</i>	<i>Specific Objective 1</i>
<i>Sub-optimal port services and operations in some TEN-T ports.</i>	<i>Modernize port services and operations.</i>
<u>Root causes related to Driver 1</u>	<u>Operational objectives related to Specific Objective 1</u>
<u>Root cause 1:</u> Insufficient competitive pressure in the port services market arising from market access restrictions.	<u>Operational objective 1:</u> Clarify and facilitate access to the market of port services.
<u>Root cause 2:</u> Market abuses by port service providers with exclusive or special rights.	<u>Operational objective 2:</u> Prevent market abuse by port service providers with exclusive or special rights.
<u>Root cause 3:</u> Users face excessive administrative burden due to a lack of coordination within ports.	<u>Operational objective 3:</u> Improve coordination mechanisms within ports.
<i>Driver 2</i>	<i>Specific Objective 2</i>
<i>The existing port management frameworks do not in all TEN-T sea ports provide enough incentives to attract investments</i>	<i>Create framework conditions to attract investments in ports</i>
<u>Root causes related to Driver 2</u>	<u>Operational objectives related to Specific Objective 2</u>
<u>Root cause 4:</u> Unclear financial relations between public authorities, ports and providers of port services.	<u>Operational objective 4:</u> Ensure a more transparent framework for financial relations between public authorities, port authorities and providers of port services.
<u>Root cause 5:</u> Weak autonomy of ports to define infrastructure charges and non-transparent link with costs.	<u>Operational objective 5:</u> Ensure autonomously set efficient port infrastructure charges, allowing for the internalization of external costs.



# 4 Consultation

## 4.1 Introduction

Two separate surveys were conducted, one related to the definition of the problem and the assessment of the baseline scenario and the other to collect opinions on the envisaged impacts of regulatory interventions by the Commission. Both surveys consisted of on-line questionnaires. At the end of each phase of consultation, a workshop was held.

## 4.2 Phase 1 survey

The first phase of the survey was originally intended to run from the end of June 2012 until 26 August 2012. After several stakeholders requested an extension, the deadline was postponed to early September. Overall, 512 completed questionnaires were submitted. This first phase of the survey was focused on gathering relevant information for the understanding of the baseline scenario and, thus, expected evolutions of the port service market in case of non-intervention. As a result, information from the survey – phase 1 has been extensively used within the impact assessment.

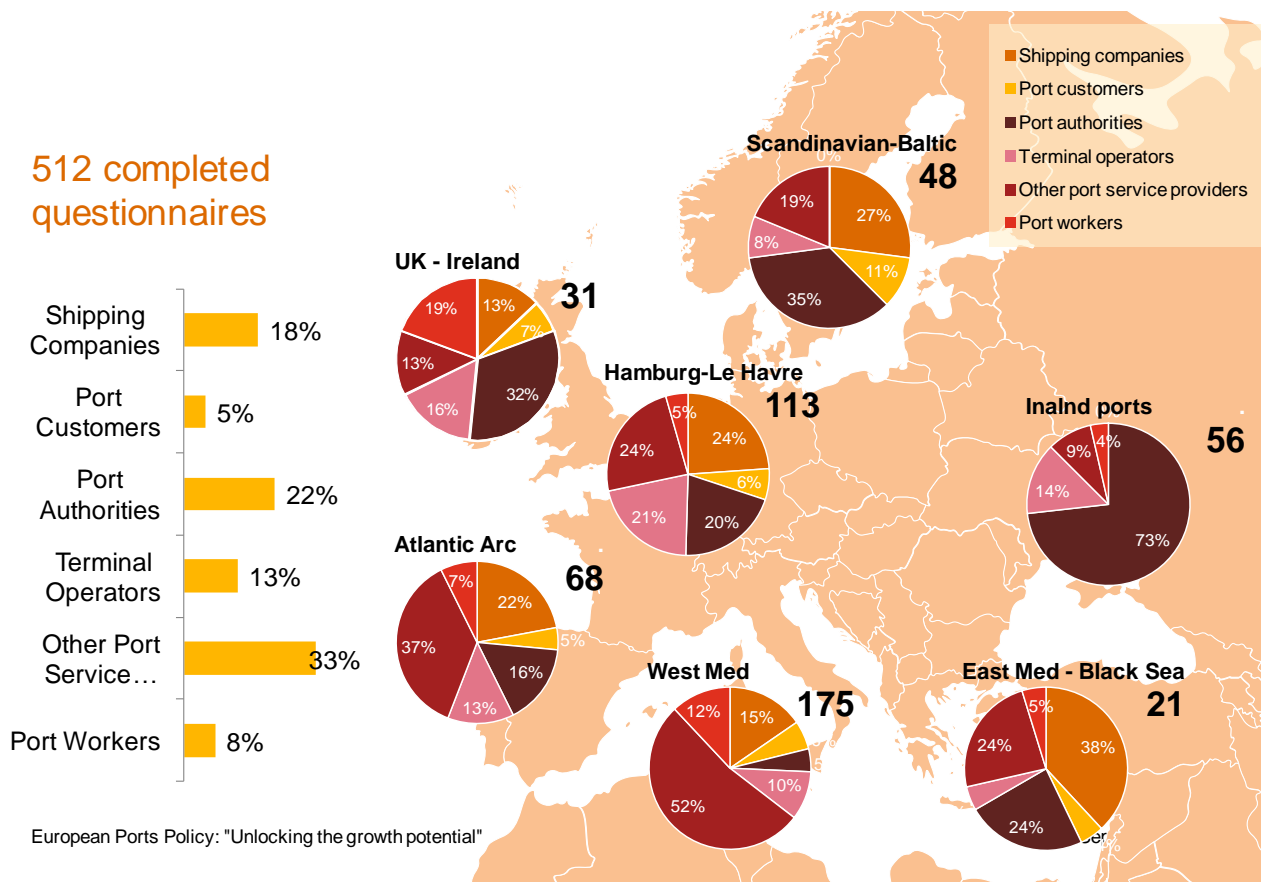
The first survey investigated the relationships between structural aspects, such as competition and market access, with outcomes such as service quality and pricing.

An overview of the survey response rate is shown below. It covered six main categories of stakeholders:

- Port authorities;
- Port customers (shore based);
- Port workers;
- Service providers – mainly technical nautical services;
- Shipping companies; and
- Terminal operators.

A strong effort was made to cover all geographical regions of Europe since the literature showed important differences in the governance traditions by region. It was not intended to conduct a benchmarking study but rather to gather opinions and to compare responses between stakeholders.

**Figure 7 - Geographical distribution of respondents to Phase 1 survey**



Soon after the closure of the first phase of the survey, a two-day conference was held in Brussels (25-26 September 2012), where survey results have been presented and discussed together with the Commission.

### 4.3 Phase 2 survey

The second phase of the survey was open from late October 2012 until mid-December 2012. During this phase stakeholders were asked to comment upon a range of possible policy directions. The number of respondents for the second survey was lower than for the first phase: 260 responses were obtained. The lower response rate is explained by the shorter amount of time for stakeholders to participate and higher complexity of the survey.

Respondents were distributed as reported in table below:

Stakeholder type	Number of collected responses
Member States and public authorities	6
Port authorities/port managers	39
Shipping companies	36
Port customers	8
Port service providers	128
Port terminal operators	30
Port workers	13
<b>TOTAL</b>	<b>260</b>

While the first phase provided information on the baseline scenario, the second survey was designed in order to provide the Consultants with suggestions and opinions for the assessment of the impact related to the various possible policies the Commission might intend to implement.

The consultation process was closed with a targeted public hearing, which was held in Brussels on 18 January 2013. The public hearing was attended by Member States representatives, and major industry associations. Preliminary outcomes of the phase 2 survey have been presented and discussed. Based on this information, measures have been extensively debated, focusing on their potential impact.

The phase 2 survey was of undoubted importance for the qualitative assessment of the impact of a provisional set of policy measures. In general it was not possible for many stakeholders to provide quantified indications of possible impacts, but most have provided detailed comments, allowing the measures to be assessed.

The phase 2 questionnaire was structured to cover both the general problem to be addressed and to seek views upon the root causes where the Commission might intervene. The first part of the questionnaire was designed to provide stakeholder opinion on the general objectives to be achieved.

Together with questions on opinions on strategic objectives to be considered, measures were also considered, for each strategic objective. Both the relative appropriateness of the proposed measure to tackle the related problem, and the impact on several aspects on the port service sector and related to EU general objectives were evaluated.

The analytical approach has been to consider different aspects of port operation in turn, e.g. infrastructure, organization, and specific port services, and to indicate whether or they consider that challenges are being satisfactorily addressed, and if not to indicate what, in their opinion, is the type of problem occurring, and what is the likely cause.

In the next two sections, details are provided concerning the survey findings in two main areas:

- Port infrastructure and organization; and
- Port services.

## 4.4 Survey findings – infrastructure and organization

During the first stakeholder survey, organizations were openly invited to provide assessments of problems they identify in European ports. Many companies, such as port authorities and certain service providers are operating in a single port, so they were asked to indicate problems in their port. Others, including shipping lines, cargo interests and inland transport companies may use several ports, so they were been asked to respond for some or all of the ports they use.

### 4.4.1 Quality of infrastructure

For infrastructure questions, 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, for example, with the WEF analysis used elsewhere in this study (see 2.2.2), in which opinions were stated by businesses from all sectors in the respective countries, and not necessarily by incumbent managers and direct users. A list of possible issues was posed in the survey.

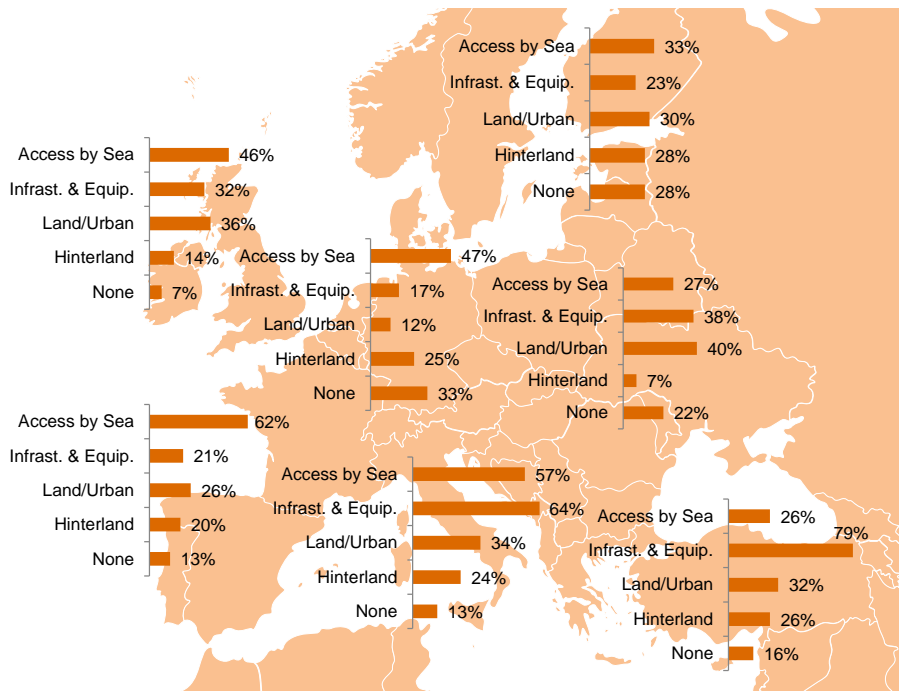
**Table 10 - Definition issues with regards to quality of infrastructure**

Issue	Full description
Access by sea	Difficult access, disadvantageous location or insufficient depth of water.
Infrastructure / Equipment	Inadequate or insufficient infrastructure / Insufficient our outdated equipment
Land / Urban	Urban development or land availability constraints
Hinterland	Insufficient hinterland connections

5 None 6 No issue

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, the Netherlands and Germany have low problem counts (around 20%). The UK and the Nordic area are slightly higher.

**Figure 8 - Port performance concerning physical attributes: stakeholder ratings by port range**



Source: PwC/Panteia phase 1 survey 2012.

### 6.1.1 Port organization

The PwC/Panteia survey phase 1 also considered organizational factors concerning the activities carried out by the port managing bodies. A set of possible issues were posed in the survey.

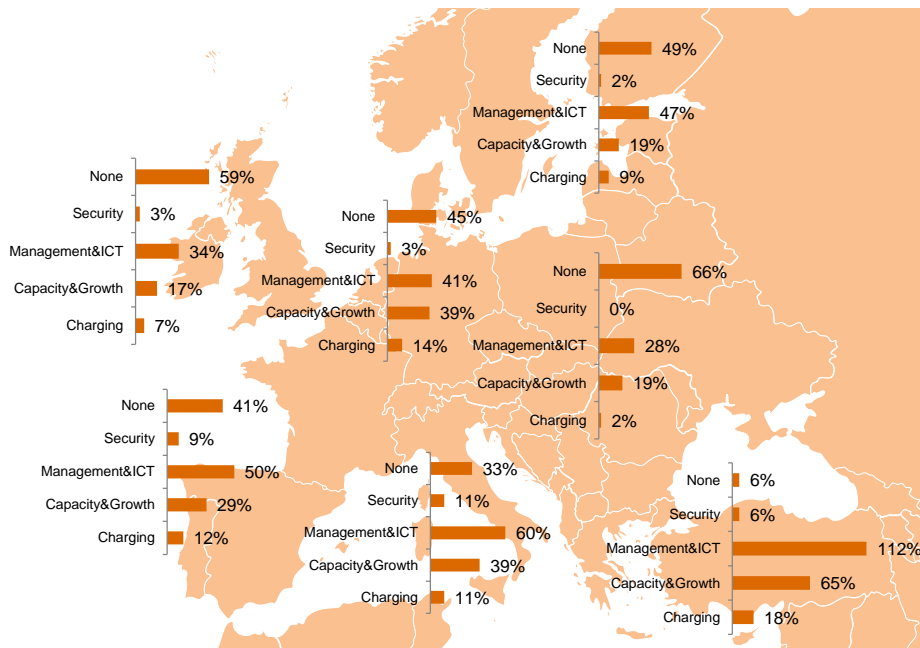
**Table 11 - Definition issues**

Heading	Definition
Security	Insufficient level of security: for goods / passengers / workers / seafarers
Management & IT	Insufficient: integrated information services (single window for information) / synchronisation of information systems with other ports / coordination of the different port services / control and monitoring on the overall quality of the port services provided within the port area
Capacity & Growth	Insufficient: capacity / autonomy of the Port Authority to deal with unexpected events (either natural or man-made) / capacity to absorb traffic growth (congestion)
Charging	The fact that port charges are set in a non-transparent or discriminatory way and don't reflect the cost of the infrastructures and/or of the service provided (lack of financial autonomy)
None	No Issue

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%<sup>44</sup>), again followed by the Central Mediterranean area (60%). It is the case, however, that most regions have scores higher than 40%, so the gap is not as evident.

**Figure 9 - Port performance concerning port organization: Stakeholder ratings by port range**



Source: PwC/Panteia phase 1 survey 2012.

Hereafter we summarize the analyses of stakeholder satisfaction regarding activities under the responsibility of port authorities or managers and identification of the main issues. Responses from 225 stakeholders have been considered, of which: 69 port authorities, 53 terminal operators; and 82 shipping companies and 21 port customers. Responses mainly refer to TEN-T core ports. Table 12 presents an overview of responses by TEN-T port category: ‘Response’ indicates the number of responses collected for a specific TEN-T category of ports by specific type of stakeholders.

<sup>44</sup> 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.

**Table 12 – Port authority service provision: responses by stakeholder and port category<sup>45</sup>**

Stakeholder	TEN-T Category	Response	Problem Identified
<b>Port authorities</b>	Core	37	49%
	Comprehensive	13	46%
	Other	19	42%
<b>Terminals</b>	Core	41	24%
	Comprehensive	6	50%
	Other	6	50%
<b>Shipping lines</b>	Core	71	42%
	Comprehensive	4	25%
	Other	7	57%
<b>Port customers (seaports)</b>	Core	20	45%
	Comprehensive	0	-
	Other	1	100%
<b>Port service providers</b>	Core	51	16%
	Comprehensive	24	46%
	Other	24	13%
	TOTAL	324	35%

Key findings from the stakeholder Phase 1 survey include the following:

- 35% of all considered respondents indicate the presence of at least one problem concerning information systems, coordination, monitoring activities or the way port charges are set at the port the respondent considered in his or her response (cf. Figure 10). Up to 26% of stakeholders indicated that more than one of the above mentioned problems coexist in the European ports;
- The main issue concerns the fact that port charges are set in a non-transparent or discriminatory way and that they do not reflect the true cost of the infrastructure and/or the service provided (cf. Figure 11). 13 out of 91 port users (i.e. shipping companies and port customers) reported this being an issue in core ports. By contrast terminals and port authorities tend not to regard this as an issue;
- The second main issue is the fact that information services are insufficiently integrated. This issue is indicated as being relevant by all stakeholder groups; and
- Insufficient coordination of the different port services was frequently mentioned as being an issue.

As explained above, the main observed issue in services provided by port authorities concerns the way port charges are set. It was reported that this issue has arisen due to a lack of financial autonomy on the part of the port authority. In this context, it is advisable to implement measures to promote transparency, thus lowering costs for users. This would indirectly promote the usage of maritime transport.

Figure 10 presents a summary of stakeholder responses which identify challenges/issues concerning activities carried out by port managing bodies. Respondents were able to indicate more than one issue or challenge: where this is the case, it is reported as a “combination”. 65% of respondents identified other challenges or issues which were not among these proposed by the questionnaire.

<sup>45</sup> ‘Response’ indicates the number of responses collected for a specific TEN-T category of port by a specific type of stakeholder. ‘Problem identified’ indicates the percentage of stakeholders which have identified at least one challenge.

**Figure 10 - Port authority service provision: issues identified by stakeholders<sup>46</sup>**

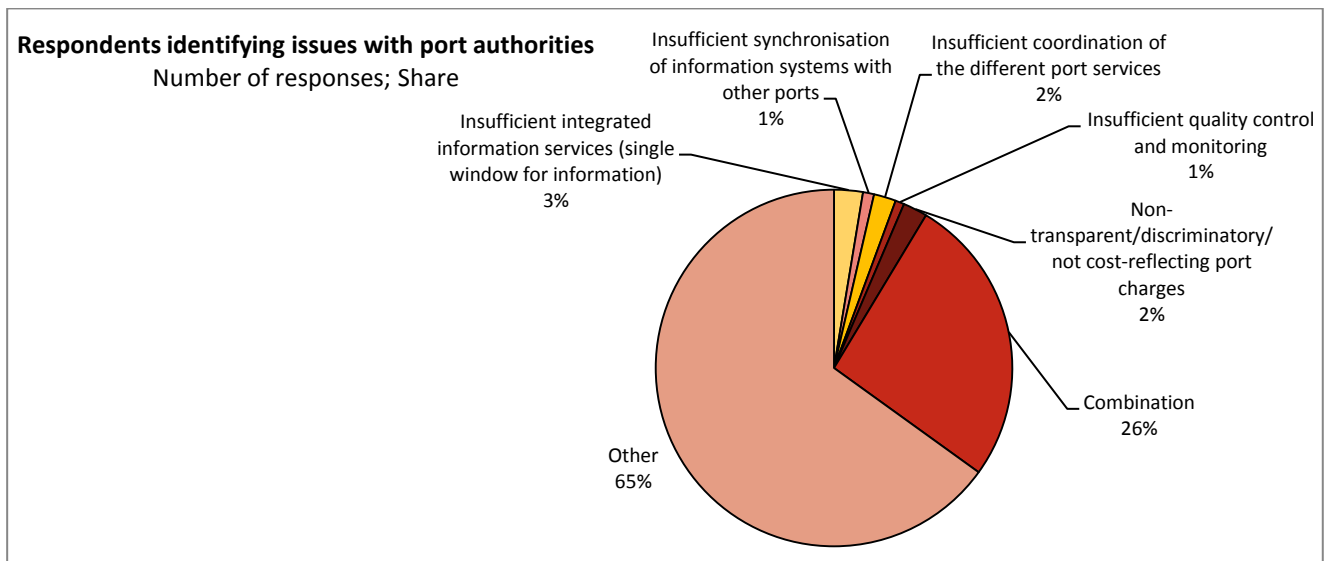
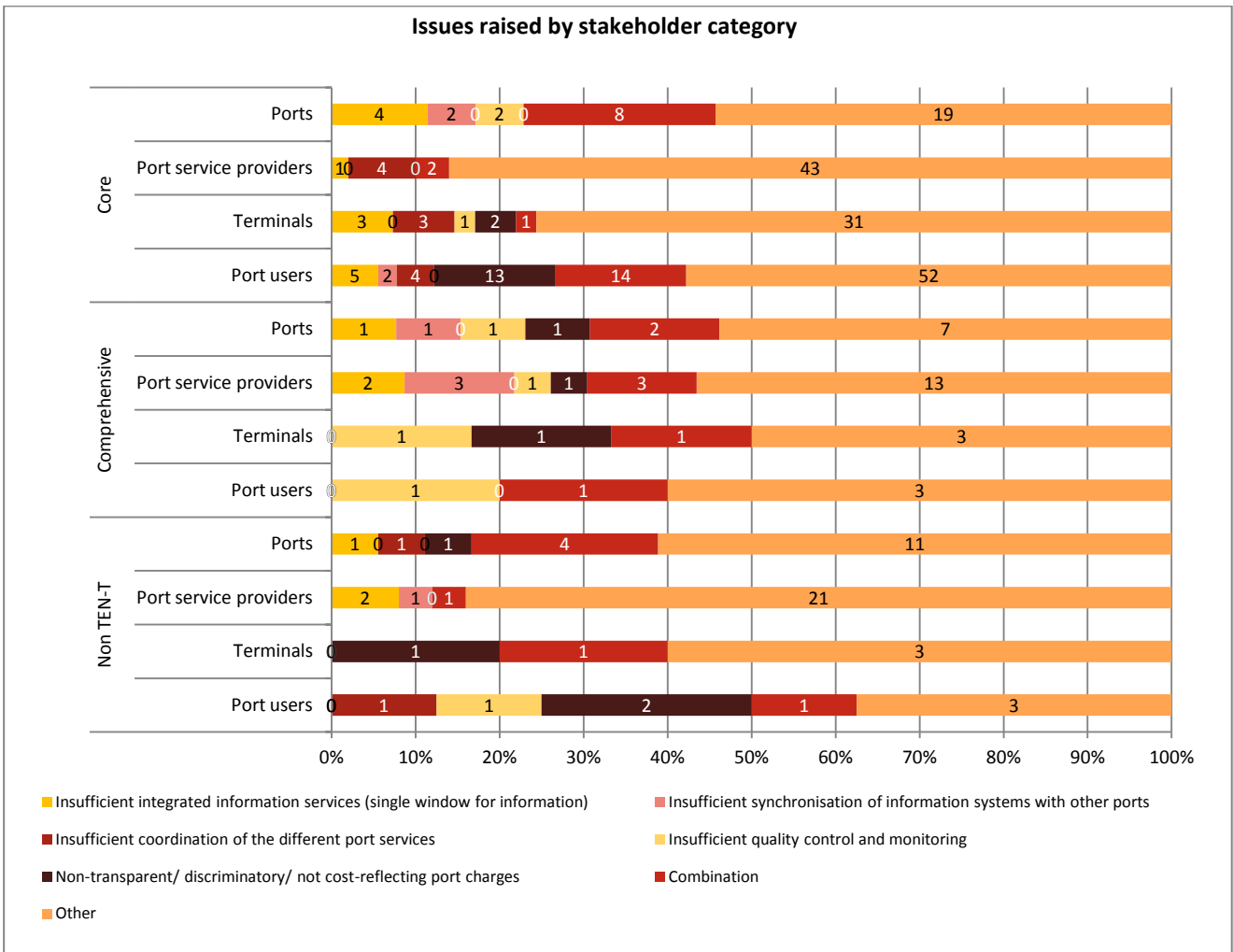


Figure 11 presents the number of respondents that identified a challenge/issue, by stakeholder category, type of port and type of issue, if any.

<sup>46</sup> Analysis of responses from shipping lines, port customers, port authorities and terminal operators.

**Figure 11 - Port authority service provision: who identifies which issues, and where?**





## 6.2 Survey findings – port services

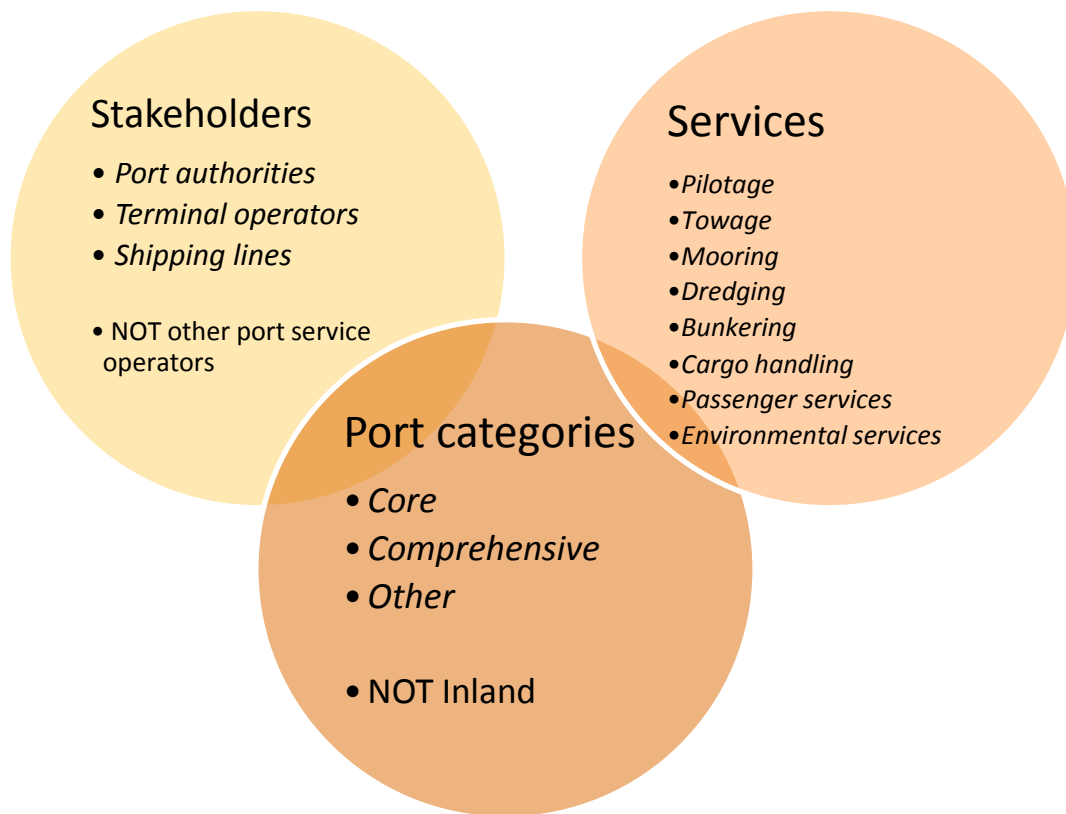
This section elaborates on the responses to phase 1 of the stakeholder consultation, namely an assessment of stakeholder satisfaction regarding port services.

### 6.2.1 Categorization of stakeholder responses

The analysis takes into account the opinions of stakeholders that are not expected to have a conflict of interest in answering these questions, thus it focuses on responses from port authorities, terminal operators and shipping companies. Since terminal operators are classified as suppliers of cargo handling or passenger services, their views are not considered when assessing the satisfaction with regards to such services.

Figure 12 indicates how stakeholder responses have been categorized in the analysis.

**Figure 12 – Categorization of stakeholder responses – regarding port services**



Different from other port services, dredging is not directly provided to shipping companies or other port users. Nevertheless, dredging has been included in the survey because in a relevant number of European ports (see Figure 47) such service is directly provided by the port managing body, thus preventing other providers from entering the market.

Figure 13 presents a summary of stakeholder responses which identify issues concerning port services. The columns in the Figure indicate the share of respondents who identified at least one issue from a list of potential problems that included quality and price.

Between 17% and 45% of respondents to phase 1 survey indicate at least one problem for any given port service. Typically, price is most frequently mentioned as a challenge for port services: this is the case for pilotage (25%

of responses), towage (21%), mooring (10%), cargo handling (15%) and environmental services (7%). On the contrary, quality is not frequently mentioned as an issue.

Pilotage and towage have the lowest scores for satisfaction as measured from the survey responses – 45% and 42% of respondents respectively identified issues with these port services. The share of respondents that are not satisfied with cargo handling and passenger services is also quite relevant: 35% and 28% respectively.

**Figure 13 - Percentage of respondents identifying issues concerning port services**

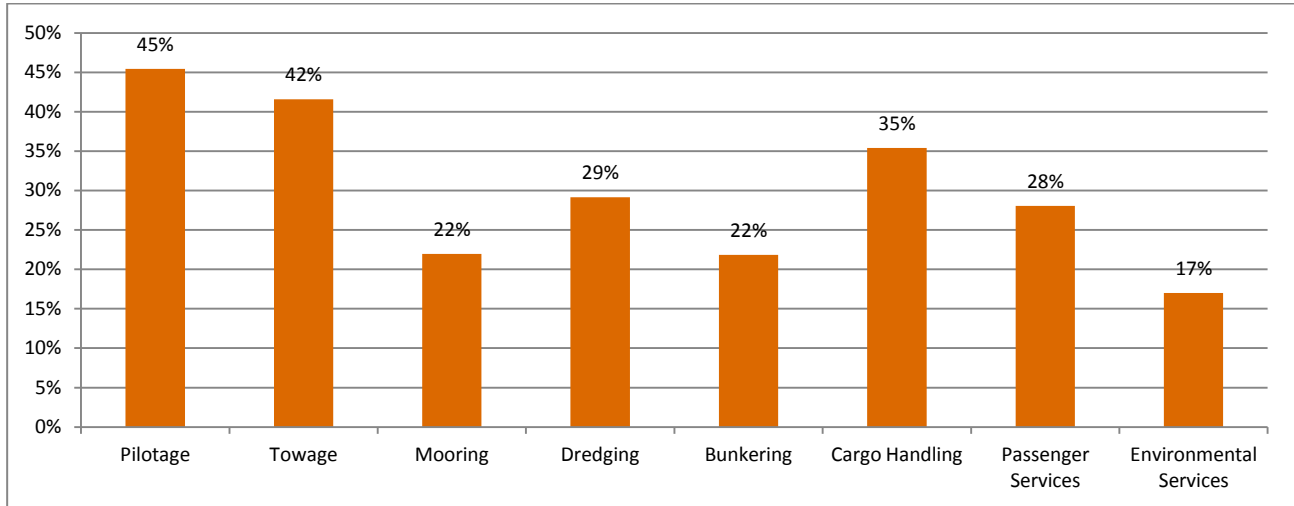
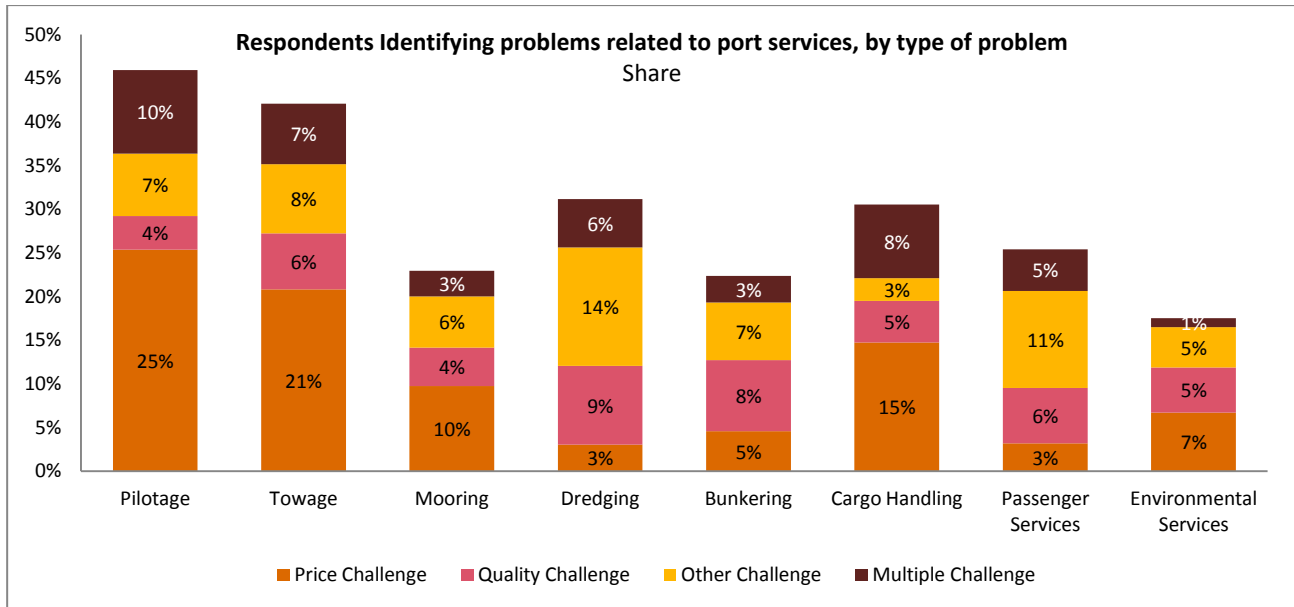


Figure 14 presents the challenges identified per each port service in terms of the share of respondents. Where more than one challenge was identified in a given port, this is shown as a “multiple challenge”.

**Figure 14 – Identified issues by type of port service**



Typically, price is most frequently mentioned as a challenge for port services: this is the case for pilotage (25% of responses), towage (21%), mooring (10%), cargo handling (15%) and environmental services (7%).

For dredging the most frequent issue is neither price nor quality, rather the difficulty in arranging consent for dredging from public authorities.

Approximately one quarter of respondents identify an issue concerning passenger services. These were mostly described as “other”. Stakeholder comments indicate that issues relate to cases where passenger facilities are not prioritized.

Overall, quality is not frequently mentioned as an issue with regards to port services.

Figure 15 presents the share of respondents that identified an issue or challenge, by stakeholder category and port service category.

Shipping lines are generally less satisfied with port services compared with port authorities and terminal operators in particular.

Shipping lines identify issues most frequently concerning pilotage, towage, cargo handling and passenger services: for these services around 50% of shipping lines are not completely satisfied.

Port authorities frequently recognize problems in pilotage (41%) and towage (32%) but also in dredging (34%): it is the case that port authorities typically pay for dredging activity.

Terminal operators report few issues regarding port services. Exceptions are for pilotage, towage and dredging where the level of dis-satisfaction is still lower when compared to the views expressed by other stakeholder groups.

**Figure 15 - Share of respondents identifying a problem related to port services, by category of respondent and port services**

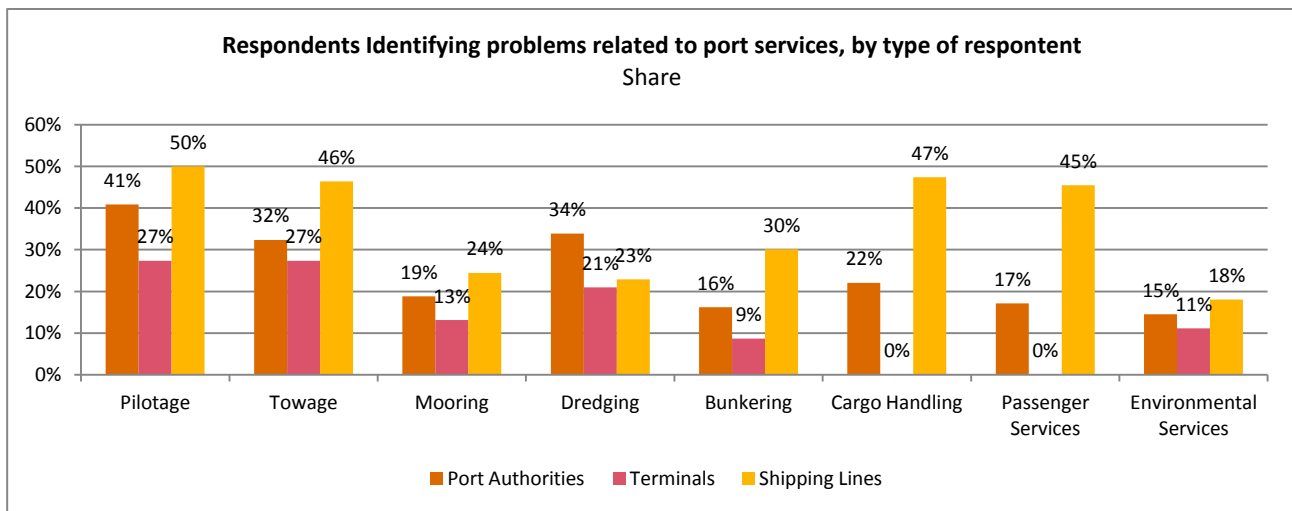
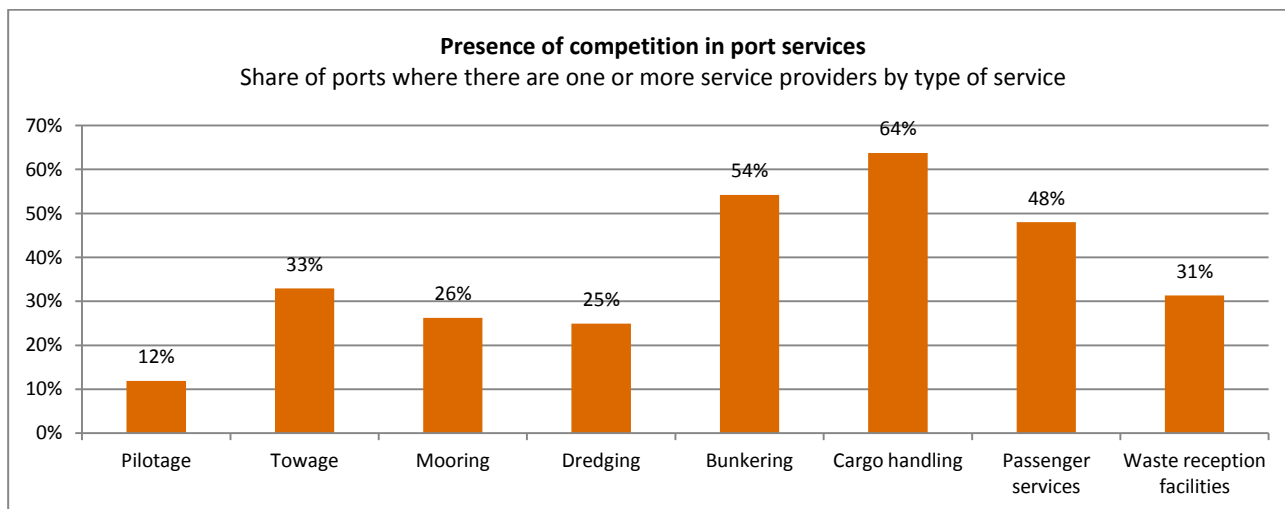


Figure 16 presents the share of ports where more than one operator provides a particular service in a specific port. Figures are broken down by type of port and service.

**Figure 16 - Presence of intra-port competition in port services: presence of more than operator per type of service (share of responding ports) <sup>47</sup>**



Competition is unusual in pilotage (only 12%) and not frequent within other technical-nautical services. Cargo handling services are typically provided in a competitive environment (64% of responding ports) as for bunkering (54%) and passenger services (48%). Indeed the presence of competition in these service areas tends to be much higher in core TEN-T ports.

For pilotage, towage and mooring the main issue seems to be the price (see Figure 14), which is mainly linked to aspects of competition (Figure 16). In this context, it is advisable to use measures to promote competition, thus lowering costs for users.

In cargo handling, although different circumstances apply, results are similar to nautical services. More than half of cases find no problem (see Figure 14), but where there is an issue, it is price, linked to underlying lack of competition and labour practices and lack of flexibility.

Lack of transparency with regards to port service contracts is also mentioned as a possible cause of price issues in technical nautical services and cargo handling.

Lack of financial transparency where port authorities provide port services is indicated as a possible cause of overpricing in pilotage and cargo handling.

Problems in passenger services typically relate to cases where passenger facilities are not prioritized. Better coordination of actors within the port could partially solve these issues.

Unlike technical nautical services, price is not the main concern with regard to dredging. The main issue identified is the difficulty in arranging consent for dredging from public authorities. This could be solved with master planning in order to set priority dredging programmes, taking into account non-user costs (environmental impact).

The share of respondents identifying issues in bunkering, passenger services and environmental services is rather low.

### 6.2.2 Pilotage

This section considers responses from 209 stakeholders, of which: 71 port authorities, 52 terminal operators; and 86 shipping companies. Responses were mainly concerned with core ports.

<sup>47</sup> Statistics refers, on average, to about 70 different ports for which the port managing body responded.

**Table 13 - Pilotage: responses by stakeholder and port category plus % identifying problems**

Stakeholder	Core	Comprehensive	Other	Total	Problems identified
<b>Port authority</b>	38	14	19	71	41%
<b>Terminal operator</b>	42	6	4	52	45%
<b>Shipping line</b>	74	4	8	86	50%
<b>Total</b>	154	24	31	209	46%

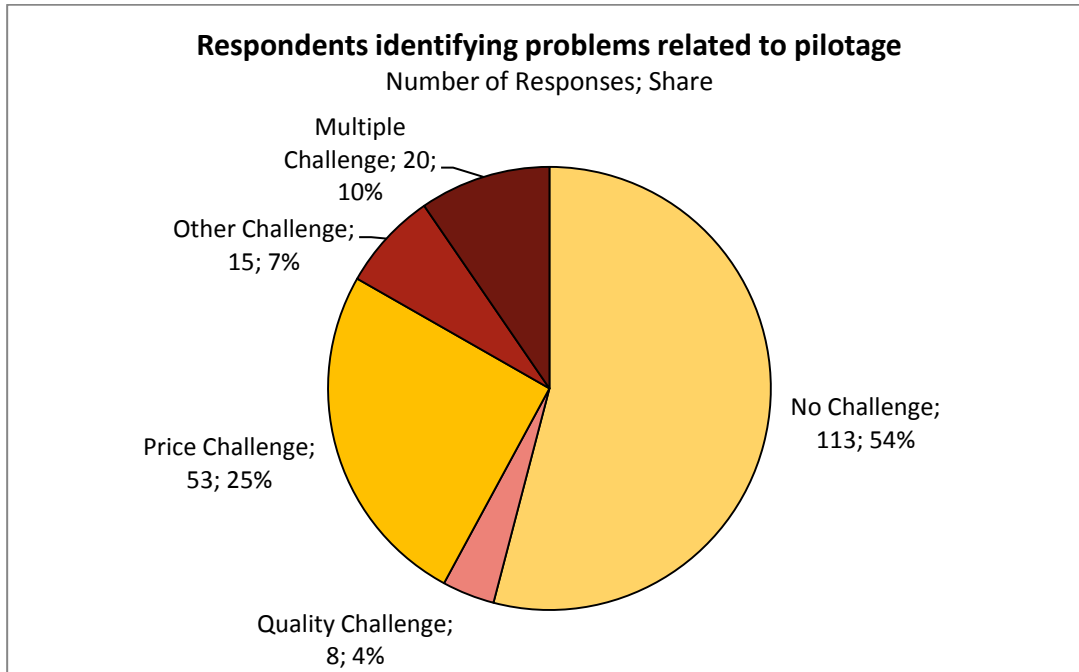
## Key findings:

- 46% of all considered respondents indicate the presence of at least one problem concerning pilotage in the port the respondent considered in his or her response (cf. Table 13);
- The main issue is price rather than quality;
- Around 50% of respondents within each stakeholder group consider there to be problems associated with pilotage;
- Mainly shipping lines identify price issue in core ports, but there is broad consensus amongst stakeholders;
- According to the considered stakeholder group the most likely causes of challenges concerning price relate to market access and competition. Primarily market opportunity – the inability of the market to support many concurrent providers (cf. Figure 17); and
- Only about 5% (pilotage inside port area, other ports) to 19% (pilotage outside port area, core ports) of ports have open competition for pilotage services (cf. Figure 18). Competition in core ports is slightly higher but still quite limited.

As explained above, the main observed issue in pilotage services is price, which has been reported to be mainly linked to aspects of competition. In this context, it is advisable to use measures to promote competition, thus lowering costs for users. This would indirectly promote the maritime transport mode.

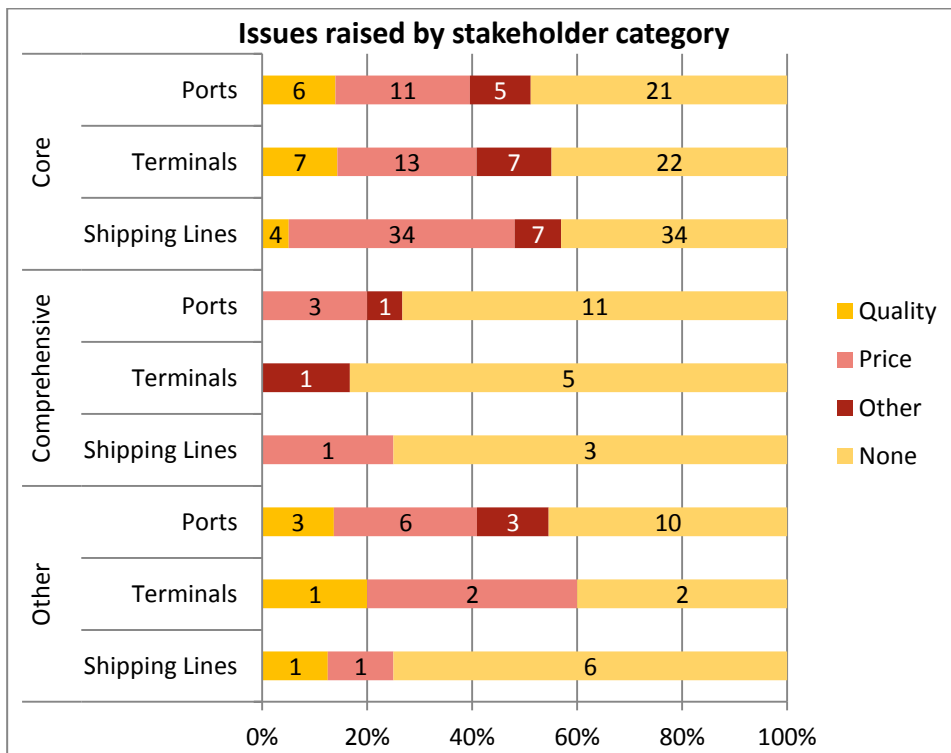
Figure 17 presents the number of stakeholders which identifies a challenge with regards to pilotage services. Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

**Figure 17 - Challenges concerning pilotage services: shipping lines, port authorities and terminal operators**



The following chart presents the number of respondents identifying a challenge, by stakeholder group, type of port and type of challenge if any.

**Figure 18 - Pilotage services: who identifies which challenges, and where?**



Respondents claiming there are issues concerning price or quality have been asked to indicate one or more particular underlying causes. Results are presented below; indicating numbers of stakeholders claiming there are issues concerning qualities and/or price broken down by cause.

**Figure 19 - Market access issues affecting price of pilotage services. Breakdown by type of challenge**

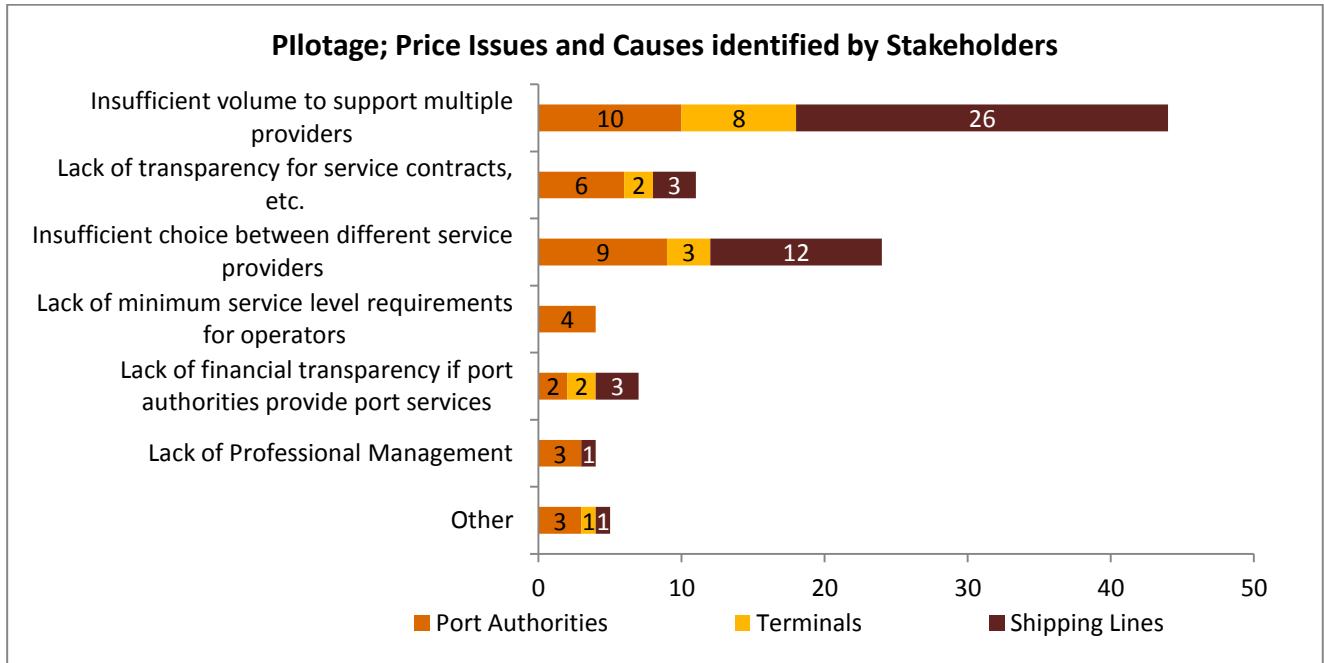
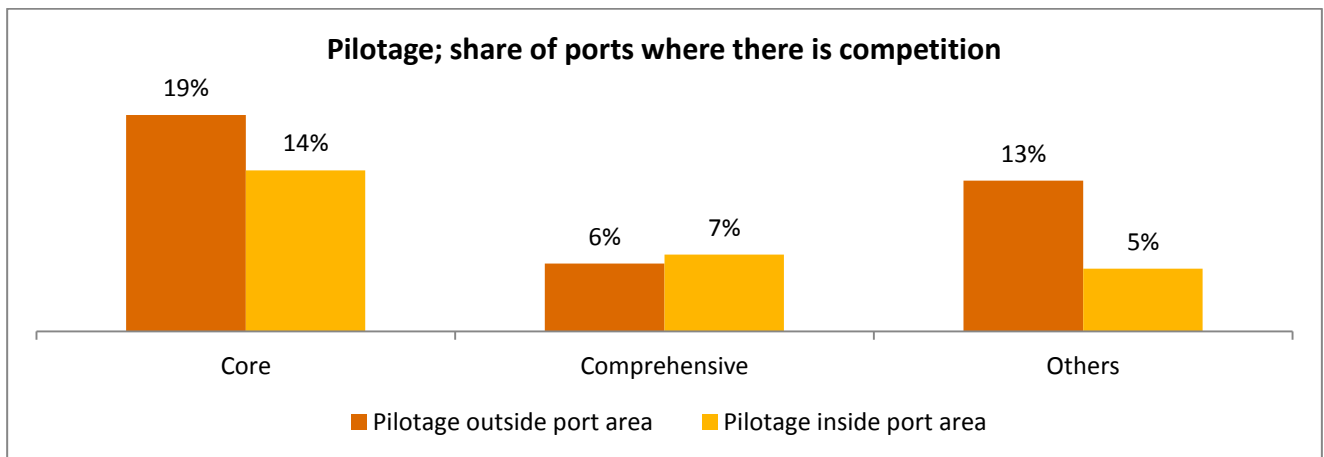


Figure 20 shows the share of ports where more than one operator provides pilotage services. Figures are broken down by type of port and type of pilotage service.

**Figure 20 - Presence of competition in pilotage services. Is the service provided by more than one operator?**



### 6.2.3 Towage

This section considers the responses from 202 stakeholders, of which: 68 port authorities, 50 terminal operators; and 84 shipping companies. Responses mainly regard core ports.

**Table 14 - Towage: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T Category	Response	Problem identified
<b>Port authorities</b>	Core	37	35%
	Comprehensive	13	31%
	Other	18	28%
<b>Terminals</b>	Core	40	43%
	Comprehensive	6	67%
	Other	4	50%
<b>Shipping lines</b>	Core	74	49%
	Comprehensive	4	0%
	Other	6	50%
	TOTAL	202	42%

#### Key findings:

- 42% of all considered responses indicate the presence of at least one problem concerning towage in the port he/she evaluates (cf. Table above);
- If there is a problem, this is mainly price: 42 responses, or 21% of the survey, indicate a price challenge;
- All three stakeholder groups find about 50% incidence of challenges with towage;
- Mainly shipping lines identify price issue in core ports. Other stakeholders are less likely to cite issues (cf. Figure 22);
- As for pilotage services price issues in towage are mainly linked to aspects of competition. Primarily market opportunity – the inability of the market to support many concurrent providers; and
- Level of competition in towage is higher in core ports: only about 12% (towage inside port area, others port) against 51% (towage outside port area, core ports) of ports have open competition for towage services (cf. Figure 24). Evidently the market volume is not sufficient for multiple service providers in large part of comprehensive and other ports.

Towage results similar to pilotage. Main issue is price, which is mainly linked to aspects of competition. In this context, it is advisable to use measures to promote competition, thus lowering costs for users. This would indirectly promote the maritime transport mode.



Figure 21 presents the number of stakeholders identifying a challenge with regard to towage services. Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown as a “multiple challenge”.

**Figure 21 - Challenges concerning towage services: shipping lines, port authorities and terminal operators**

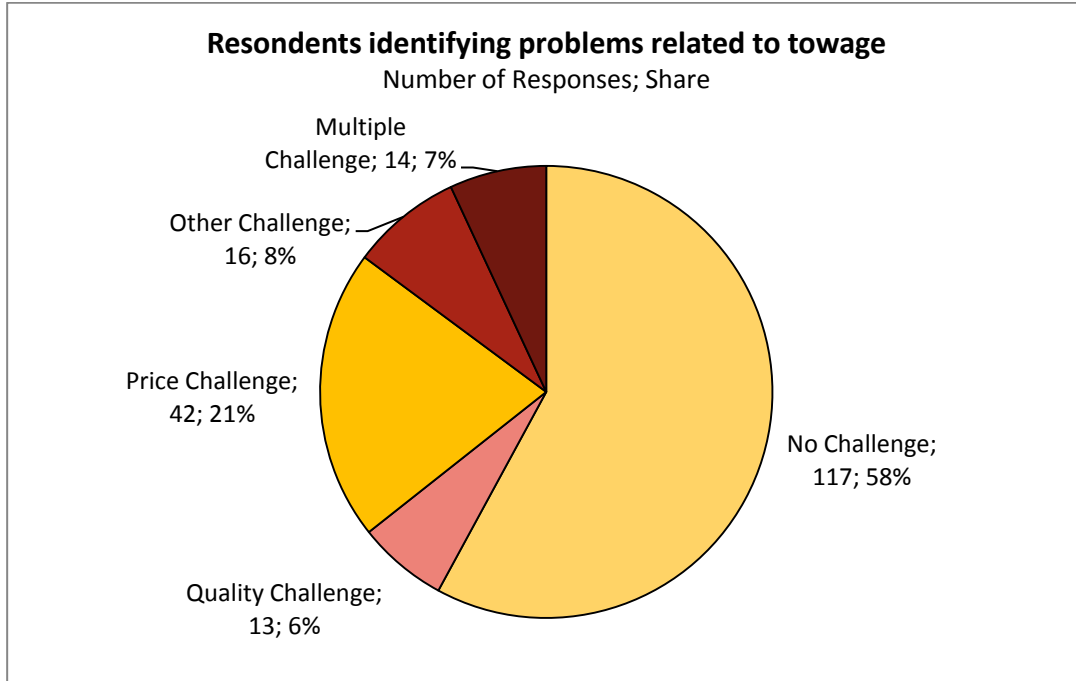
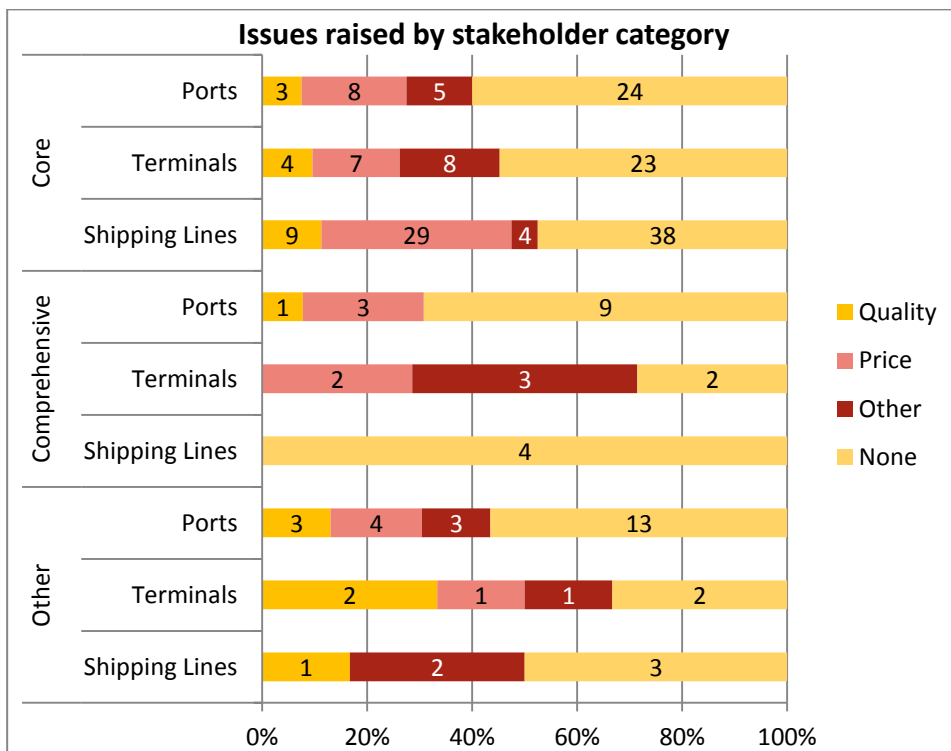


Figure 22 presents the number of respondent which identifies a challenge, by group of stakeholders, type of port and type of challenge if any.

**Figure 22 - Towage services: who identifies which challenges, and where?**



Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. Results are presented below indicating numbers of stakeholders claiming there are issues concerning qualities and/or price broken down by cause.

**Figure 23 - Market access issues affecting price of towage services by type of challenge**

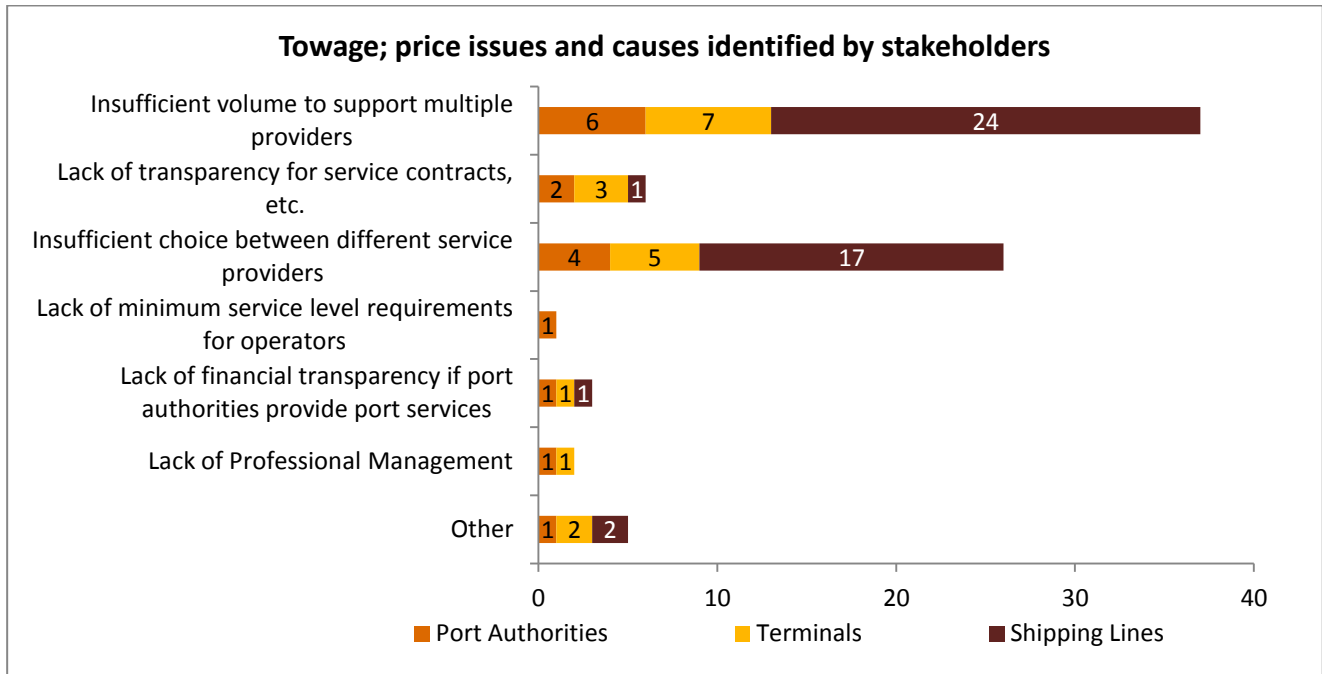
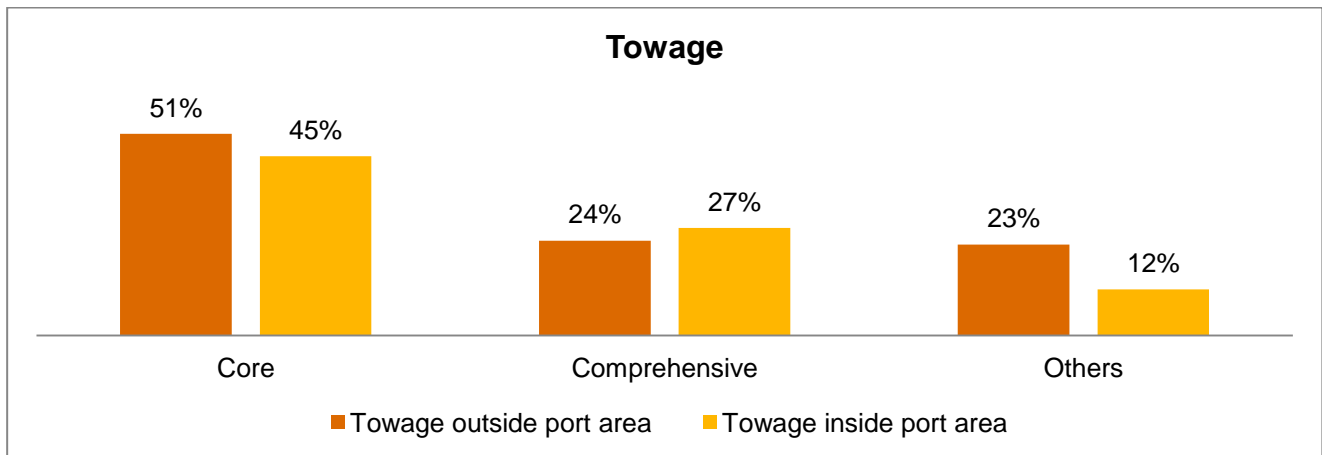


Figure 24 shows the share of ports where more than one operator provides towage services. Figures are breakdown by type of port and type of towage service.

**Figure 24 - Presence of competition in towage services. Is the service provided by more than one operator?**



### 6.2.4 Mooring

This section considers the responses from 205 stakeholders, of which: 69 port authorities, 50 terminal operators; and 86 shipping companies. Responses mainly regard TEN-T core ports.

**Table 15 - Mooring: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	36	19%
	Comprehensive	14	21%
	Other	19	16%
<b>Terminals</b>	Core	40	23%
	Comprehensive	6	17%
	Other	4	25%
<b>Shipping lines</b>	Core	74	27%
	Comprehensive	4	0%
	Other	8	13%
	TOTAL	205	22%

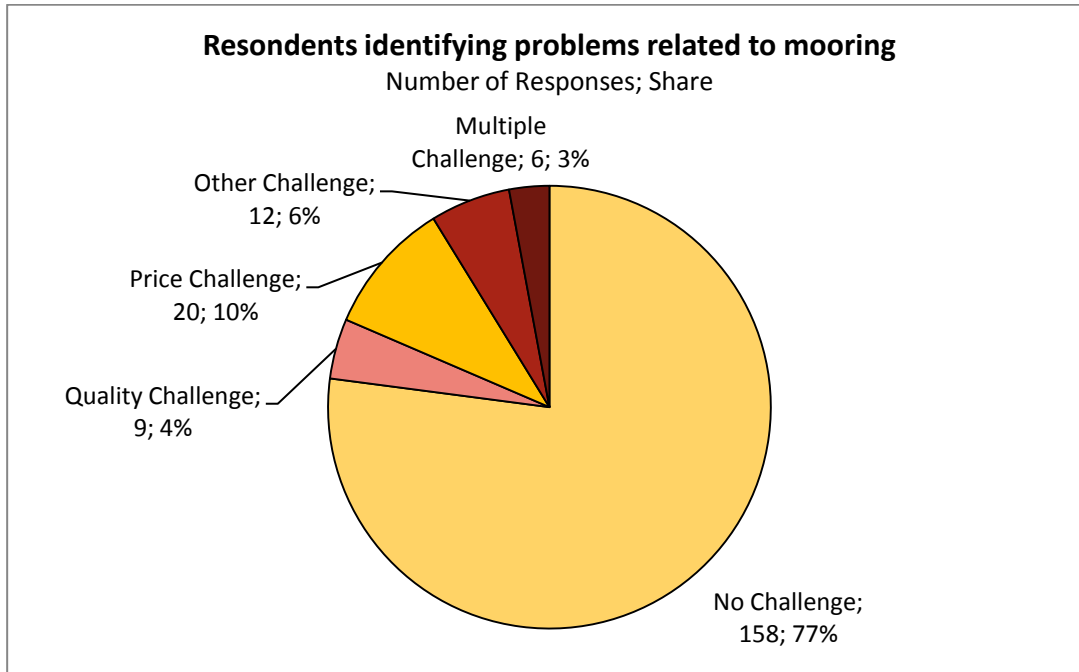
#### Key findings:

- More than three quarters of respondents indicate no problem. For the rest, the problems range from price (10%), other (6%) to quality (4%);
- Shipping lines have highest rate of problem identification for the largest sample groups (core ports). 27% of shipping lines identify a problem in core ports;
- Overall, shipping lines and terminals find about 25% incidence of challenges with mooring;
- As for other technical nautical services price issues in mooring are mainly linked to aspects of competition. Primarily market opportunity – the inability of the market to support many concurrent providers; and
- Level of competition in mooring is quite low both in small and large ports: between 12% (comprehensive ports) and 31% (core ports) of ports have open competition for mooring services (cf. Figure 28).

Mooring results are similar to those for pilotage and towage, although the share of respondents identifying issues is rather lower in this case. The main issue is price, which is mainly linked to aspects of competition. In this context, it is advisable to use measures to promote competition, thus lowering costs for users. This would indirectly promote the maritime transport mode.

Figure 25 presents the number of stakeholders identifying a challenge with regard to mooring services. Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

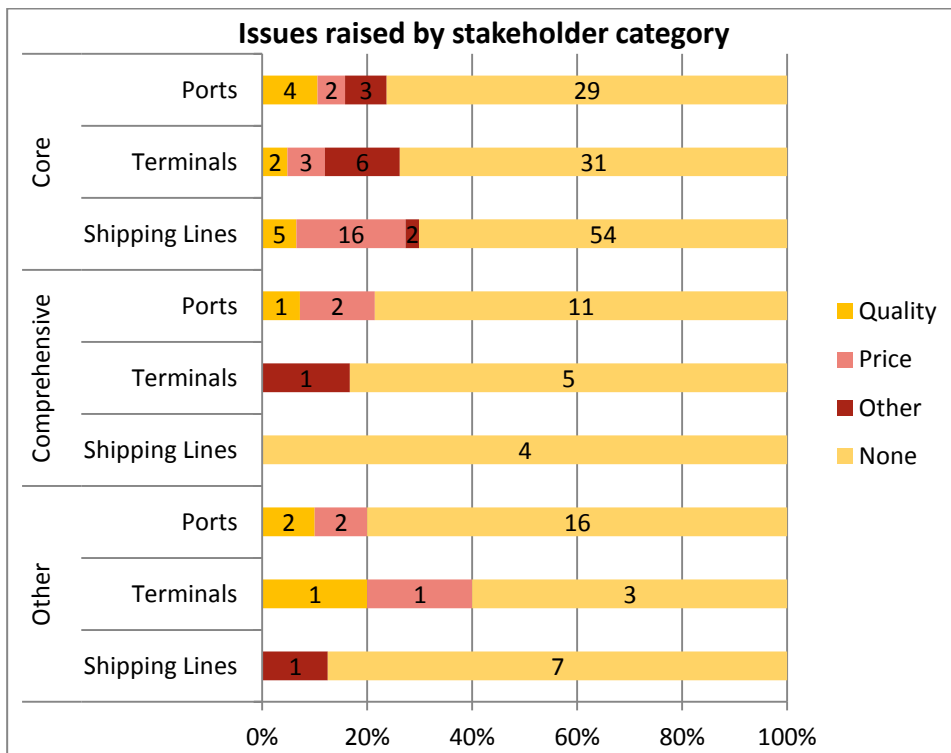
**Figure 25 - Challenges concerning mooring services: shipping lines, port authorities and terminal operators**



More than three quarters of respondents indicate no problem. For the rest, the problems range from price (10%), other (6%) to quality (4%). 20 Responses, or 10% of the survey, indicate a price challenge.

Figure 26 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

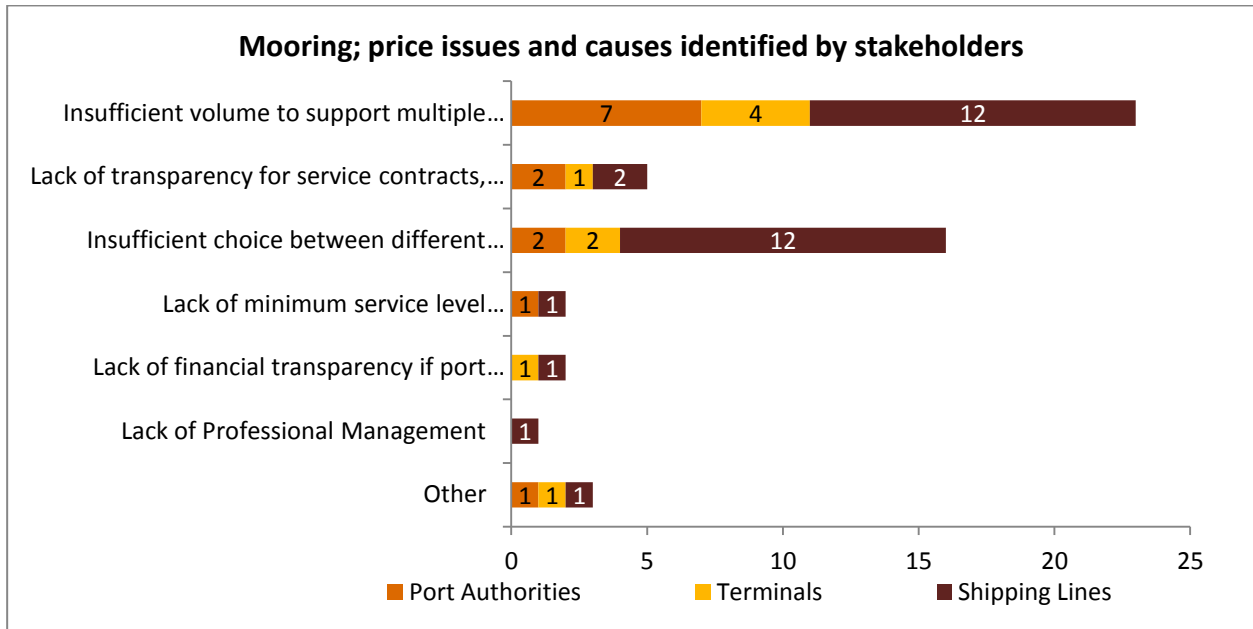
**Figure 26 - Mooring services: who identifies which challenges, and where?**



Mainly shipping lines identify price challenges in core ports; other stakeholders less likely to cite issues.

Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. Results are presented below; indicating numbers of stakeholders claiming there are issues concerning qualities and/or price broken down by cause.

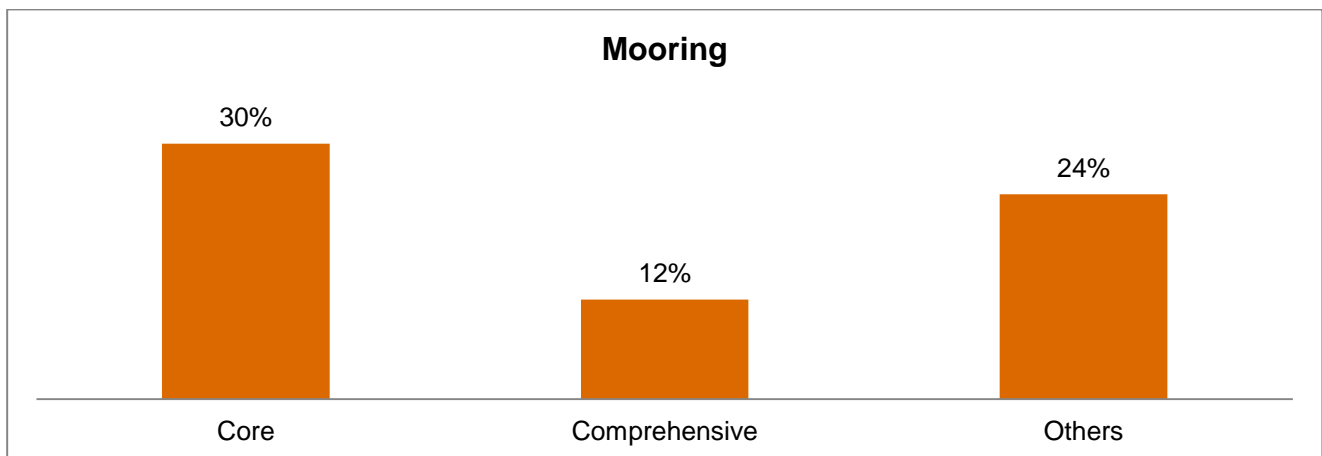
**Figure 27 - Market Access issues affecting price of mooring services by type of challenge**



Price issues in mooring are mainly linked to aspects of competition. Primarily market opportunity – the inability of the market to support many concurrent providers.

Figure 28 shows the share of ports where more than one operator provides mooring services. Figures are breakdown by type of port.

**Figure 28 - Presence of competition in mooring services. Is the service provided by more than one operator?**



In about 30% of core ports there is competition on towage services, but the share of comprehensive ports presenting competition is only 12%.

### 6.2.5 Dredging

This section considers the responses from 199 stakeholders, of which: 65 port authorities, 51 terminal operators; and 83 shipping companies. Responses mainly regard TEN-T Core ports.

**Table 16 - Dredging: detailed survey sample sizes Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	34	29%
	Comprehensive	12	33%
	Other	19	42%
<b>Terminals</b>	Core	41	29%
	Comprehensive	6	33%
	Other	4	75%
<b>Shipping lines</b>	Core	71	24%
	Comprehensive	4	0%
	Other	8	25%
	TOTAL	199	29%

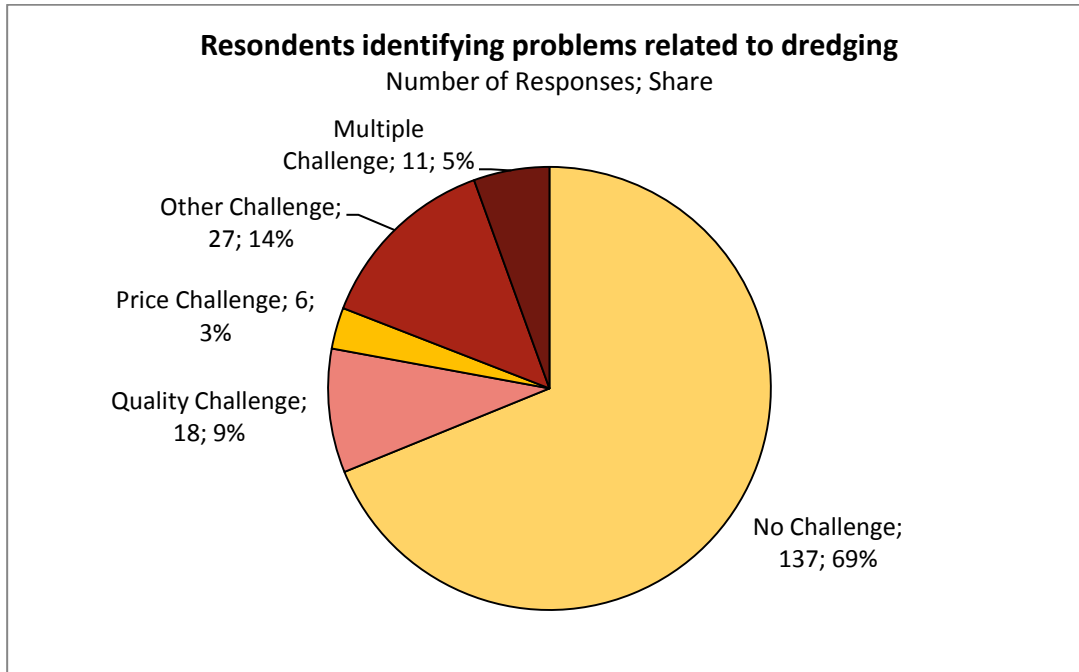
#### Key findings:

- Overall, stakeholders find about 29% incidence of challenges with dredging. Problems range from other (14%), quality (9%) to price (3%);
- In some cases “other” is ticked because it is not a regular service consumed by users, so they cannot comment on price or quality. Problem cases relate to difficulty in arranging consent for dredging from public authorities;
- Port authorities have highest rate of problem identification (29% to 42%);
- Mainly shipping lines and ports identify other challenges in core ports; and
- Level of competition in dredging is quite low both in small and large ports: with between 20% (other ports) and 33% (core ports) of ports having open competition for dredging services (cf. Figure 31).

Dredging results different from technical nautical services where price is the main concern. The main problem identified is the difficulty in arranging consent for dredging from public authorities. This could be solved with master planning in order to set priority dredging programmes, taking into account non-user costs (environmental impact).

Figure 29 presents the number of stakeholders identifying a challenge with regard to dredging services. Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “combination”.

**Figure 29 - Challenges concerning dredging services: shipping lines, port authorities and terminal operators**



More than half respondents indicate no problem. For the rest, the problems range from other (14%), quality (9%) to price (3%). In some cases “other” is ticked because it is not a regular service consumed by users, so they cannot comment on price or quality. Problem cases relate to difficulty in arranging consent for dredging from public authorities.

Figure 30 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

**Figure 30 - Dredging services: who identifies which challenges, and where?**

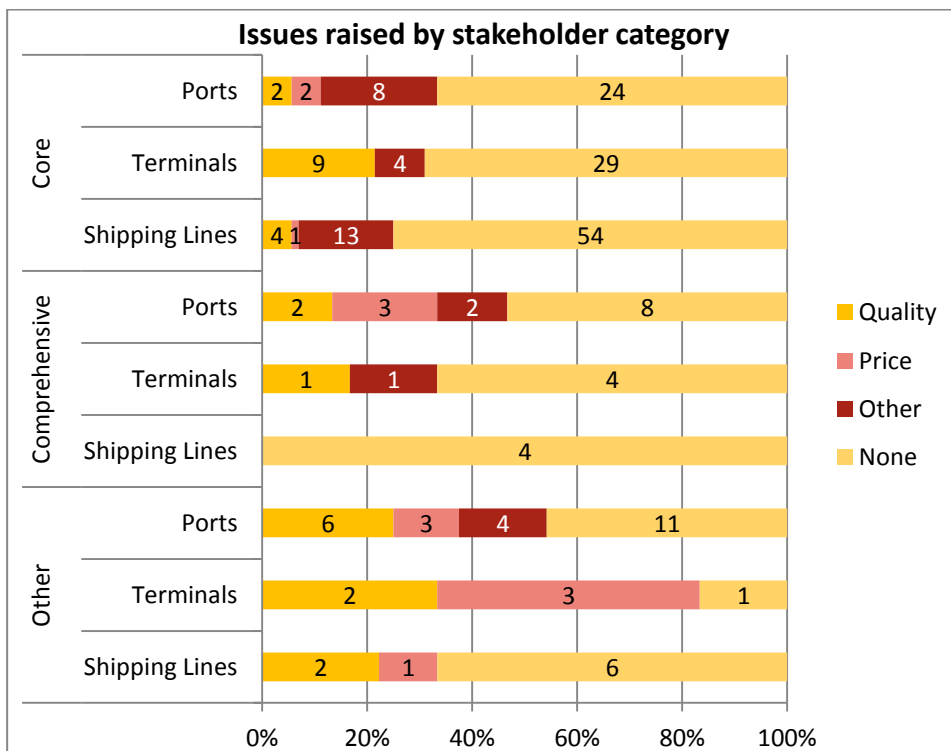
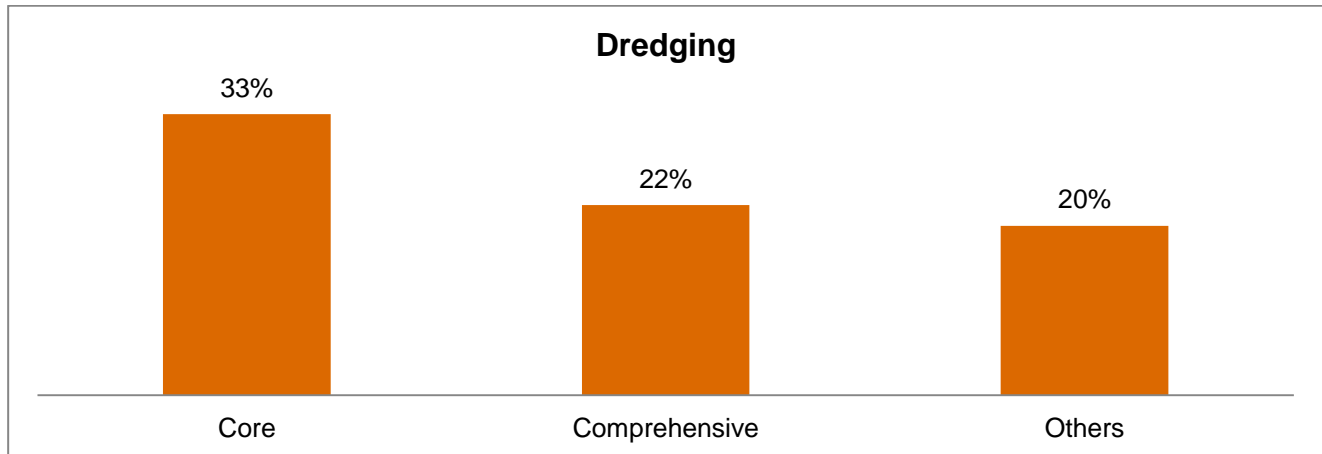


Figure 31 shows the share of ports where more than one operator provides dredging services. Figures are breakdown by type of port and type of dredging service.

**Figure 31 - Presence of competition in dredging services. Is the service provided by more than one operator?**



In about a third of core ports there is competition on dredging services. The share of comprehensive ports presenting competition is slightly lower (22%).

### 6.2.6 Bunkering

This section considers the responses from 197 stakeholders, of which: 68 port authorities, 46 terminal operators; and 83 shipping companies. Responses mainly regard TEN-T core ports.

**Table 17 - Bunkering: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	36	14%
	Comprehensive	12	25%
	Other	20	15%
<b>Terminals</b>	Core	36	17%
	Comprehensive	6	17%
	Other	4	0%
<b>Shipping lines</b>	Core	71	28%
	Comprehensive	4	25%
	Other	8	50%
	<b>TOTAL</b>	<b>197</b>	<b>22%</b>

Key findings:

- Stakeholders find about 15-30% incidence of challenges with bunkering, but more than three quarters indicate no problem. For the rest, the main problems are quality (8%) and other (7%);
- Mainly shipping lines identify challenges in core ports, however, there is only limited evidence to suggest problems. Overall there is not a clear pattern emerging from results;

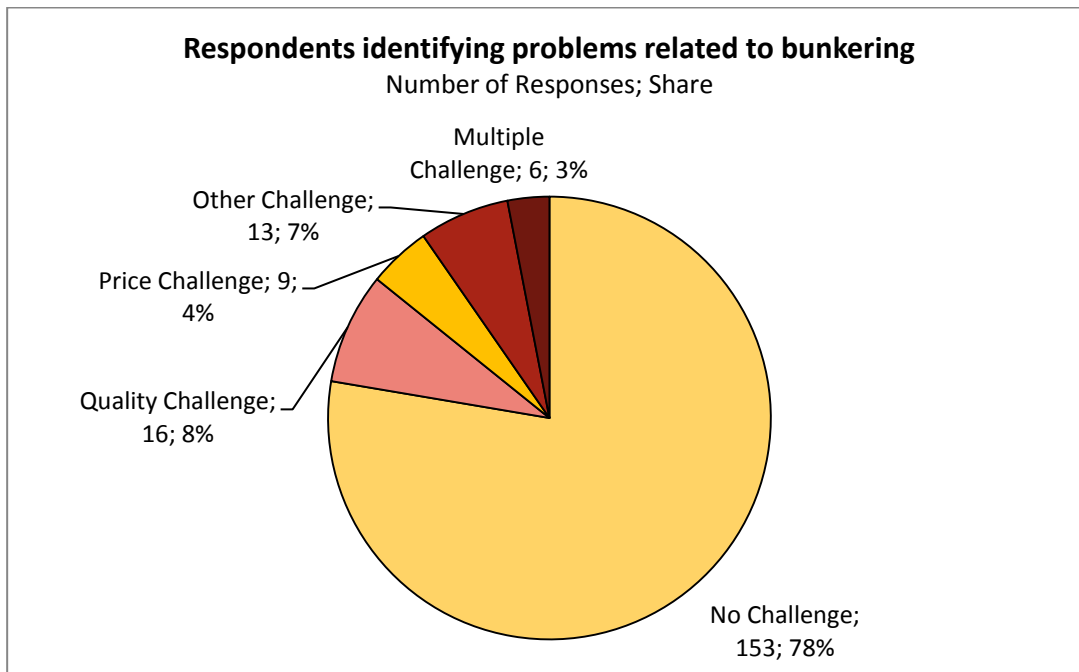


- Very few respondents indicate causes to any issues they have raised; and
- Level of competition in bunkering services is relatively high when compared to other port services: from 59% (comprehensive ports) to 86% (core ports) of ports have open competition for bunkering services (cf. Figure 34).

The share of respondents identifying issues in bunkering services is rather low. A clear suggestion on measures to be promoted is not possible.

Figure 32 presents the number of stakeholders which identifies a challenge with regards to bunkering services. Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

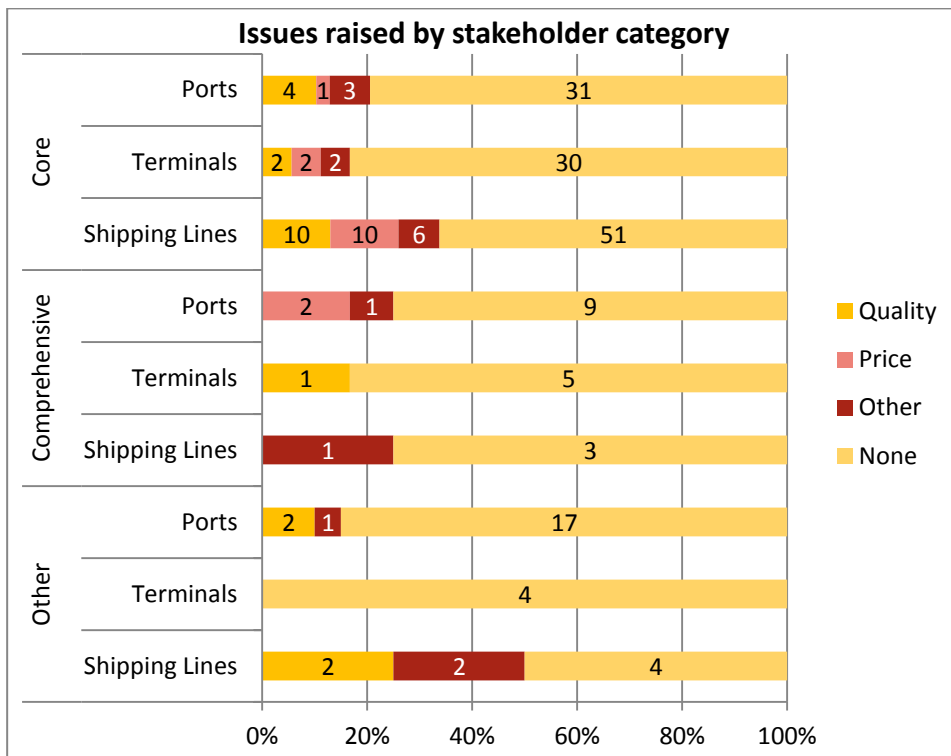
**Figure 32 - Challenges concerning bunkering services: shipping lines, port authorities and terminal operators**



More than three quarters of respondents indicate no problem. For the rest, the main problems are quality (8%) and other (7%).

Figure 33 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

**Figure 33 - Bunkering services: who identifies which challenges, and where?**

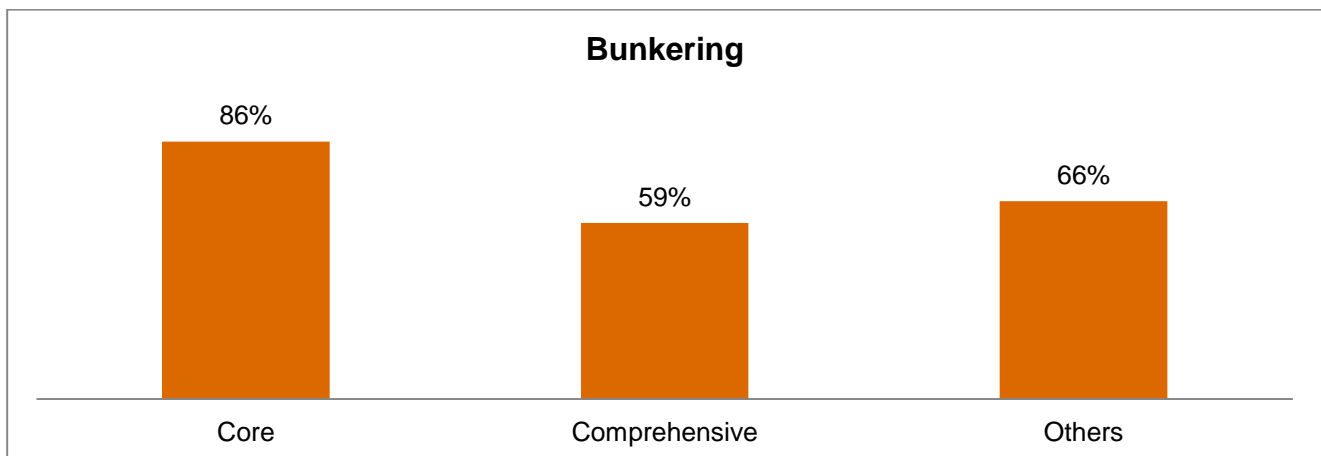


Mainly shipping lines identify challenges in core ports, but there is only limited evidence to suggest problems. There is no clear pattern emerging from the results.

Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. However, very few respondents indicate causes to any issues they have raised.

Figure 34 shows the share of ports where more than one operator provides bunkering services. Figures are breakdown by type of port.

**Figure 34 - Presence of competition in bunkering services. Is the service provided by more than one operator?**



The large majority of core ports (86%) present more than one operators providing bunkering services. This share is lower in the case of comprehensive ports, but still relevant (59%).

### 6.2.7 Cargo handling

This section considers the responses from cargo handling stakeholders, of which: 68 are port authorities, 46 are terminal operators; and 76 are shipping companies. Responses mainly regard TEN-T core ports.

**Table 18 - Cargo handling: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	35	20%
	Comprehensive	13	46%
	Other	20	10%
<b>Terminals</b>	Core	39	8%
	Comprehensive	3	33%
	Other	4	25%
<b>Shipping lines</b>	Core	67	48%
	Comprehensive	3	33%
	Other	6	50%
	TOTAL	190	29%

#### Key findings:

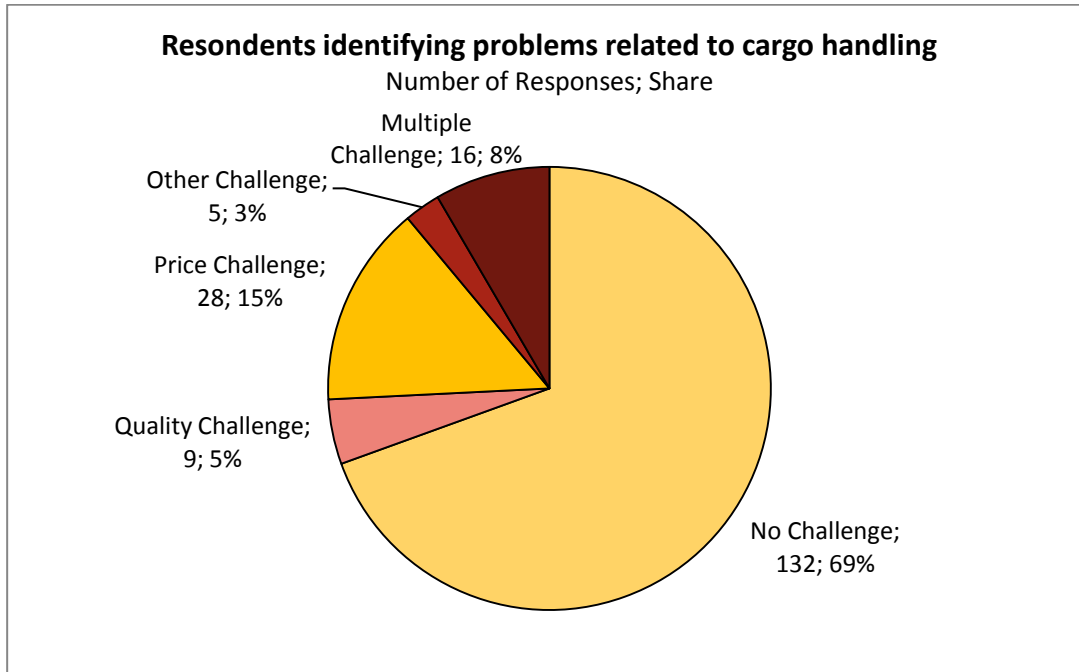
- Unlike previous services under consideration, terminal operators are classified as suppliers of cargo handling, so their views are considered differently in this section;
- Shipping lines (users) find about 50% incidence of challenges with cargo handling. Port authorities (landlords for terminal operators) find a lower incidence of problems;
- Overall 37% of respondents (views of terminal operators are excluded here) identify a challenge. The problems are primarily related to price (19%), quality (5%) and multiple (10%). 12 out of 14 respondents citing multiple problems, found both price and quality problems;
- Mainly shipping lines identify challenges in core ports. Price issues are most frequently cited, but quality issues matter too;
- Respondents, especially shipping lines indicate price issues caused by monopolistic circumstances. Comments often relate to labour practices and lack of flexibility; and
- Level of competition in ship/shore and shore/inland handling is roughly the same. In three out of four core ports there is more than one operator inside the port providing cargo handling services. In comprehensive ports the share is lower (41%-44%).

Although different circumstances apply, results are similar to nautical services. More than half of cases find no problem, but in problem cases, main issue is price, linked to underlying lack of competition and labour practices and lack of flexibility.

Figure 35 presents the number of stakeholders identifying a challenge with regard to cargo handling services.

Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

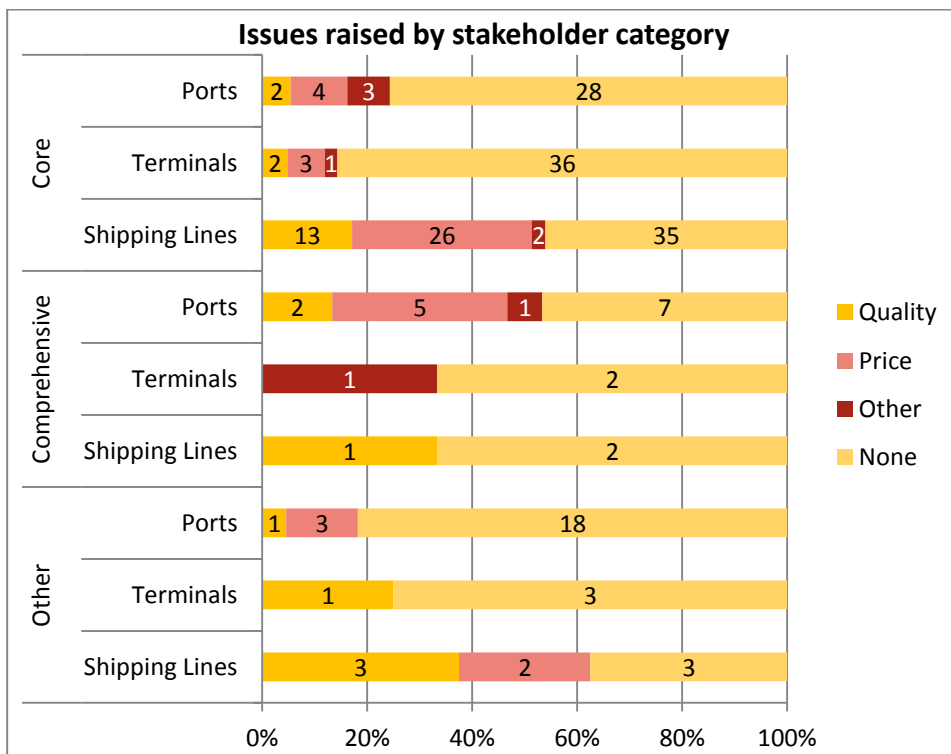
**Figure 35 - Challenges concerning cargo handling services: shipping companies, port authorities and terminal operators**



More than half of stakeholders indicate no problem (views of terminal operators are excluded here); for the rest, the problems are primarily related to price (19%), quality (5%) and multiple (10%). 12 out of 14 respondents citing multiple problems, found both price and quality problems.

Figure 36 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

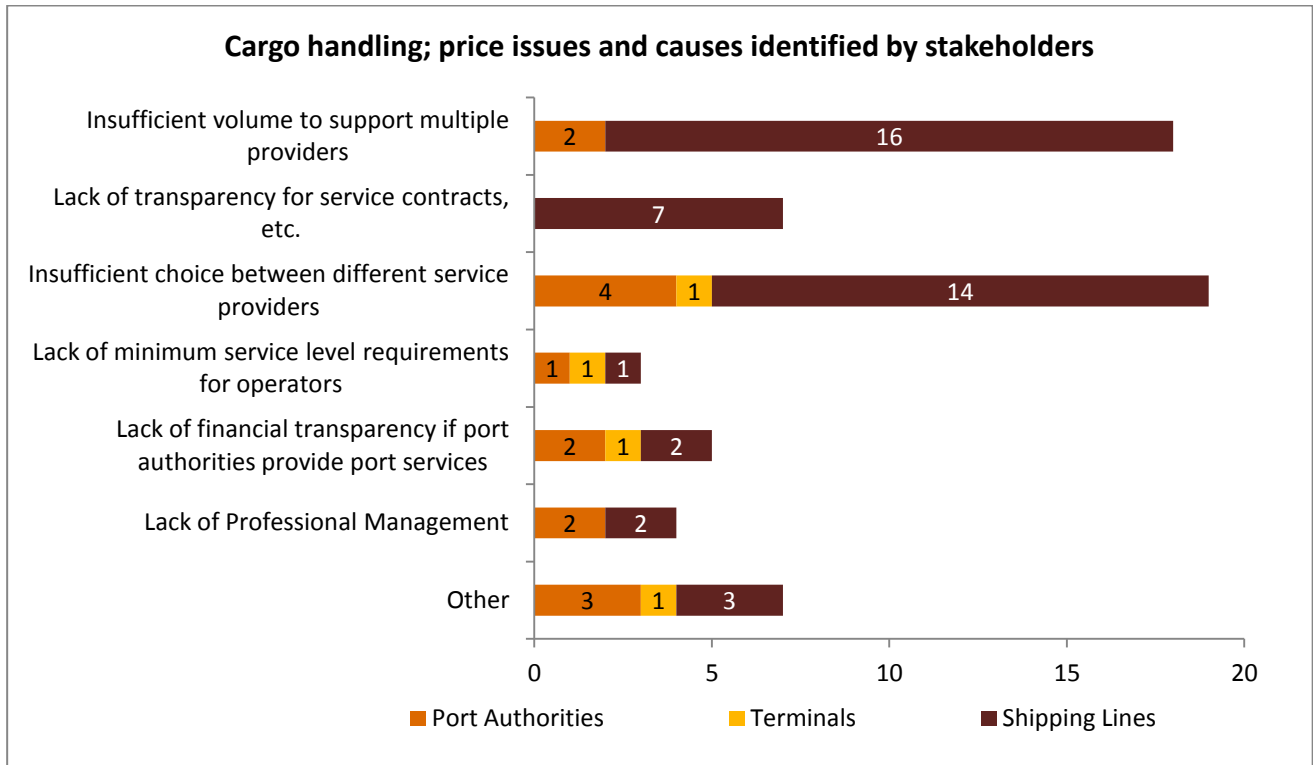
**Figure 36 – Cargo handling services: who identifies which challenges, and where?**



Mainly shipping lines identify challenges in core ports. Price issues are most frequent, but quality issues matter too.

Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. Results are presented below; indicating numbers of stakeholders claiming there are issues concerning qualities and/or price broken down by cause.

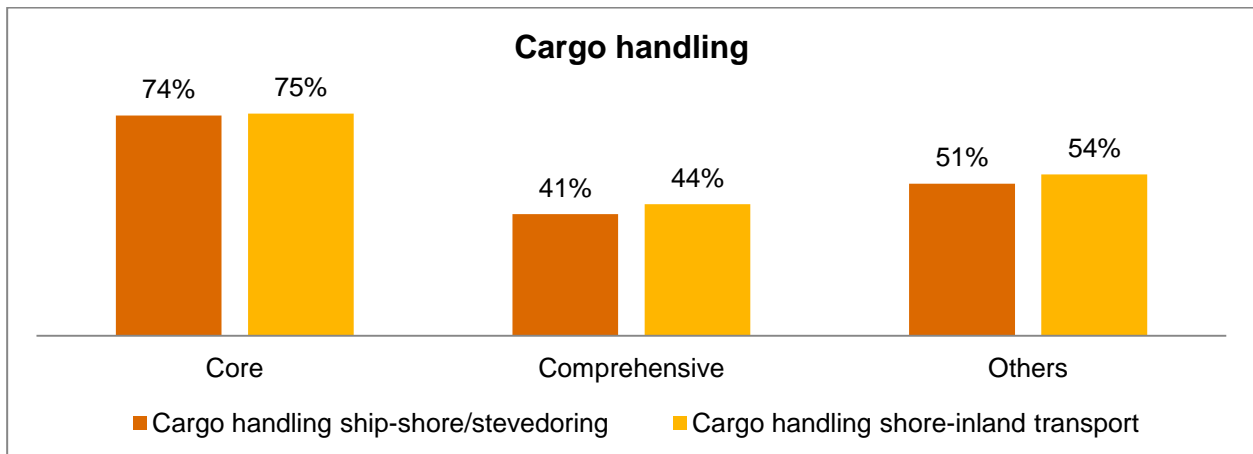
**Figure 37 - Market access issues affecting price of cargo handling services by type of challenge**



Respondents, especially shipping lines indicate price issues caused by monopolistic circumstances. Comments often relate to labour practices and lack of flexibility.

Figure 38 shows the share of ports where more than one operator provides cargo handling services. Figures are broken down by type of port, and whether the responses relate to ship-to-shore or shore-to-inland handling.

**Figure 38 - Presence of competition in cargo handling services. Is the service provided by more than one operator?**



Level of competition in ship/shore and shore/inland handling is roughly the same. In three out of four core ports there is more than one operator inside the port providing cargo handling services. In comprehensive ports the share is lower (41%-44%).

### 6.2.8 Passenger services

This section considers the responses from 63 stakeholders, of which: 35 port authorities, six terminal operators; and 22 shipping companies. Responses mainly regard TEN-T core ports.

The term, passenger services, in the current context, refers to services provided inside ports for handling passenger embarkation and disembarkation. It does not refer to transport services provided by shipping lines.

**Table 19 - Passenger services: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	19	16%
	Comprehensive	6	17%
	Other	10	20%
<b>Terminals</b>	Core	5	0%
	Comprehensive	1	0%
	Other		
<b>Shipping lines</b>	Core	16	38%
	Comprehensive	3	67%
	Other	3	67%
	TOTAL	63	25%

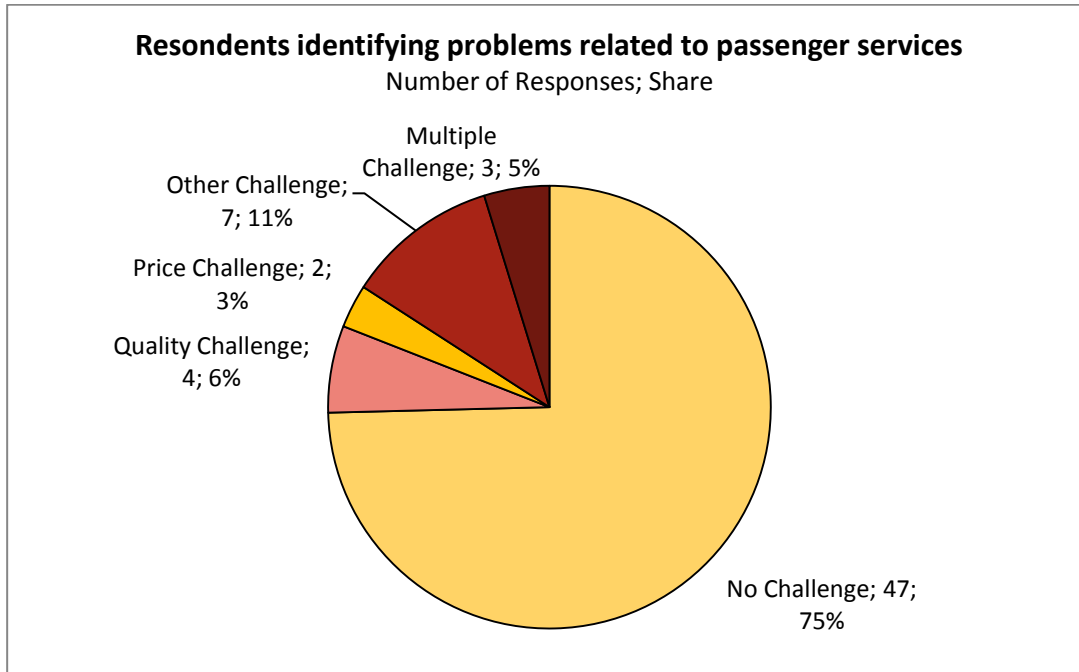
#### Key findings:

- Sample size (response rate on passenger services) is smaller than freight/general services, because these services are not relevant for many stakeholders taking part in the survey;
- The problem identification rate is quite low in segments where there is a higher sample size – approximately 20%;
- Approximately one quarter of respondents identify a problem in passenger services. The problems are primarily in the category “other”. Comments indicate that problems relate to cases where passenger facilities are not prioritized;
- There are no clear pattern emerging on the causes of the problems; and
- There is competition in passenger services in 68% of core ports (cf. Figure 41). By contrast only in 18% of comprehensive ports is competition present in passenger services: evidently the size of the market in many small ports is not sufficient for multiple service providers.

Figure 39 presents the number of stakeholders identifying a challenge with regards to passenger services.

Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

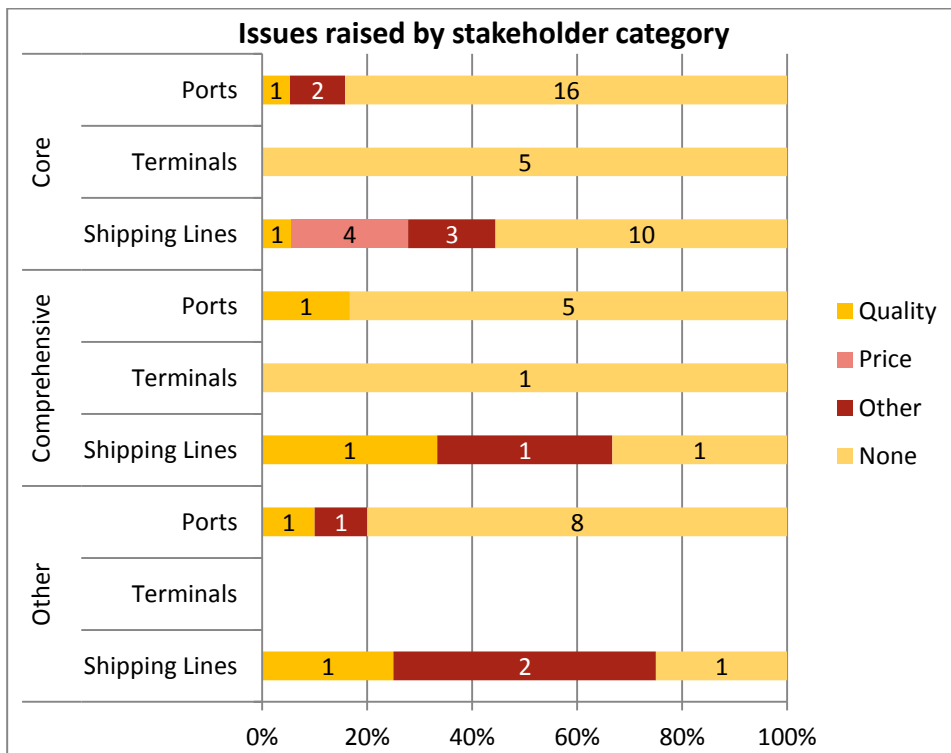
**Figure 39 - Challenges concerning passenger services: shipping lines, port authorities and terminal operators**



Exactly three quarters indicate no problem; for the rest, the problems are primarily in the category “other”. Comments indicate that problems relate to cases where passenger facilities are not prioritized.

Figure 40 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

**Figure 40 - Passenger services: who identifies which challenges, and where?**

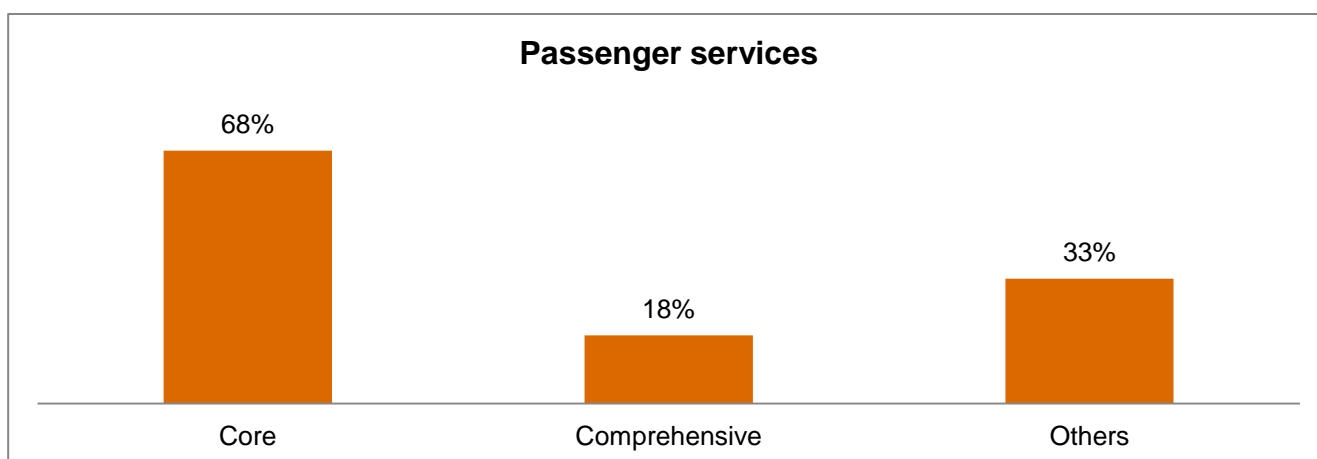


There are no clear pattern emerging due to low frequency of response in all categories.

Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. However, for passenger services there is insufficient information to identify patterns of causality.

Figure 41 shows the share of ports where more than one operator provides passenger services. Figures are broken down by type of port. Again, these passenger services relate to port-based activity and not to transport activities (e.g. ferries).

**Figure 41 - Presence of competition in passenger services. Is the service provided by more than one operator?**



In two out of three core ports more than one operator provides passenger services. By contrast only on 18% of comprehensive ports present competition in passenger services: evidently the size of the market in many small ports is not sufficient for multiple service providers.

### 6.2.9 Environmental services

This section considers the responses from 194 stakeholders, of which: 62 port authorities, 49 terminal operators; and 83 shipping companies. Responses mainly regard TEN-T Core ports.

**Table 20 - Environmental services: detailed survey sample sizes. Share of responses where a challenge is identified**

Stakeholder	TEN-T category	Response	Problem identified
<b>Port authorities</b>	Core	34	18%
	Comprehensive	11	9%
	Other	17	12%
<b>Terminals</b>	Core	39	18%
	Comprehensive	6	17%
	Other	4	25%
<b>Shipping lines</b>	Core	71	15%
	Comprehensive	4	25%
	Other	8	38%
	<b>TOTAL</b>	<b>194</b>	<b>17%</b>

Key findings:

- The rate of problem identification is generally low: almost 20% of respondents indicate a problem;

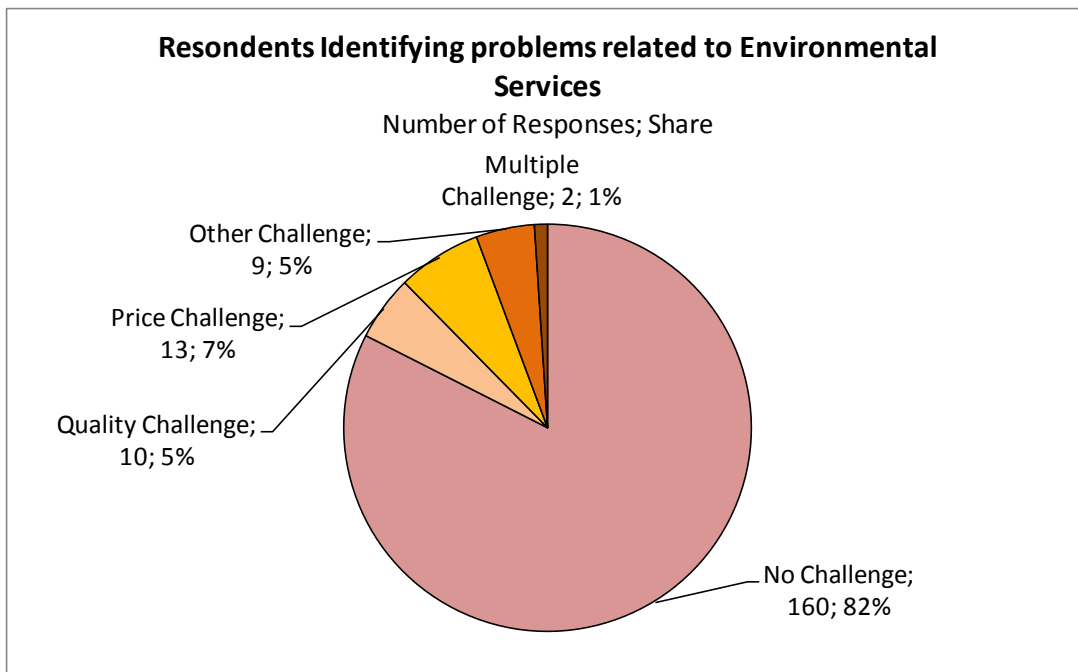


- Cited problems are spread quite equally between quality, price and other; however there are no clear pattern on the causes of the problems; and
- Share of core ports where there is more than one operator providing waste reception facilities is rather low (37%). Not surprisingly, competition levels are slightly lower in smaller ports: only 29% of comprehensive ports have multiple providers of such service.

Figure 42 presents the number of stakeholders identifying a challenge with regard to environmental services.

Respondents can indicate more than one challenge. If they indicate more than one kind of challenge in a given port, this is shown above as a “multiple challenge”.

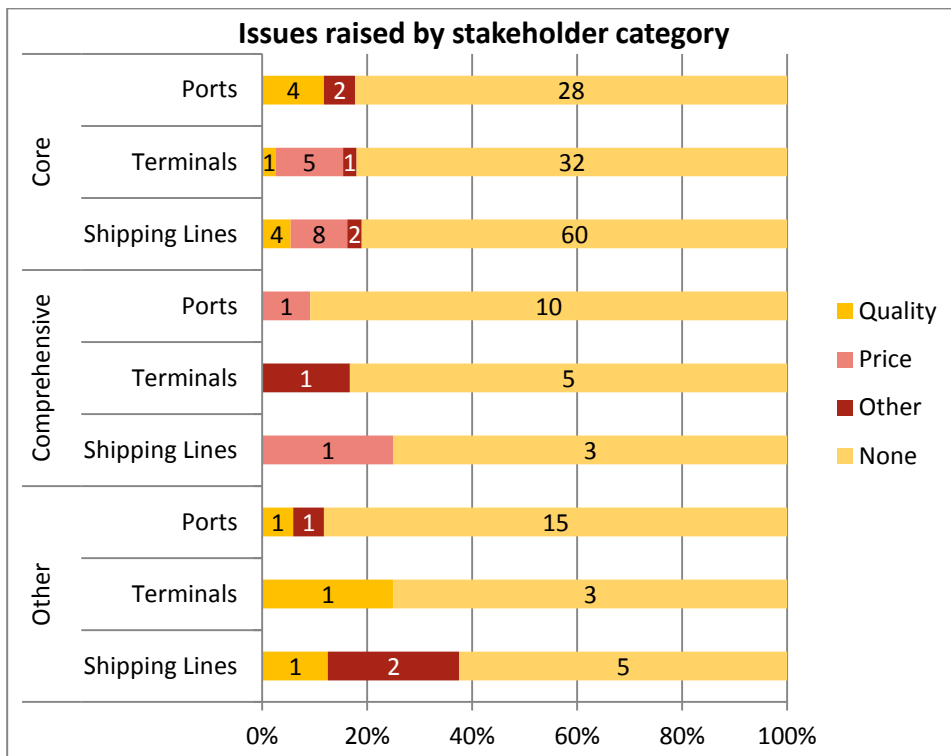
**Figure 42 - Challenges concerning environmental services: shipping lines, port authorities and terminal operators**



More than 80% indicate no problem; for the rest, the problems are spread quite equally between quality, price and other.

Figure 43 presents the number of respondents identifying a challenge, by stakeholder category, type of port and type of challenge if any.

**Figure 43 - Environmental services: who identifies which challenges, and where?**

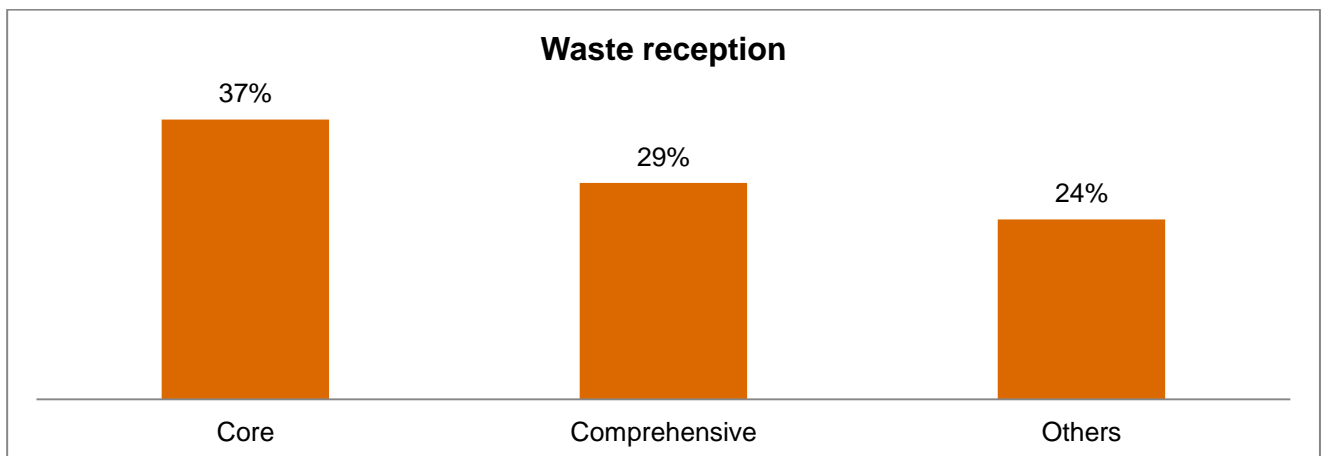


Problem identification is at a low level; hence there are no clear patterns.

Respondents claiming there are issues concerning price or quality were asked to indicate one or more specific underlying causes. However, sample sizes related to identification of problem causes are too small to be meaningful.

Figure 44 shows the share of ports where more than one operator provides environmental services. Figures are broken down by type of port.

**Figure 44 - Presence of competition in environmental services. Is the service provided by more than one operator?**



In 37% of core ports there is more than one operator providing waste reception facilities. Competition levels are slightly lower in smaller ports: only 29% of comprehensive ports have multiple providers of waste reception facilities services.

## 6.3 Survey findings – views on potential policy measures

### 6.3.1 Assessment of the drivers to be affected by the policy measures

#### *Specific Objective 1: Modernize port services and operations*

##### *Operative Objective 1.1: Clarify and facilitate the access to the port service market*

The following measures have been considered in order to "Clarify and facilitate the access to the port service market":

1. Freedom to provide services (no restrictions on market access) for "normal services", i.e. services other than those linked to public service obligations or space constraints;
2. Obligation of public tendering for new contracts in the case of public service obligations or space constraints (except for small contracts or urgencies);
3. Explain in a Communication from the Commission how existing Treaty rules apply in the case of port services public service obligations or with space constraints;
4. Impose the obligation to have at least two operators for services linked to space constraints to be selected after a public tender for new contracts (except for small contracts or urgencies); and
5. Obligation of public tendering in the event of substantial changes of existing contracts linked to public service obligations or space constraints.

In many ports limitations to market entry are experienced with regard to pilotage services, towage and mooring, as well as for other services. As a consequence there is a noticeable absence of competition in many ports. Figure 45 considers the presence of limitations alongside the absence (or presence) of competition across European sea ports.

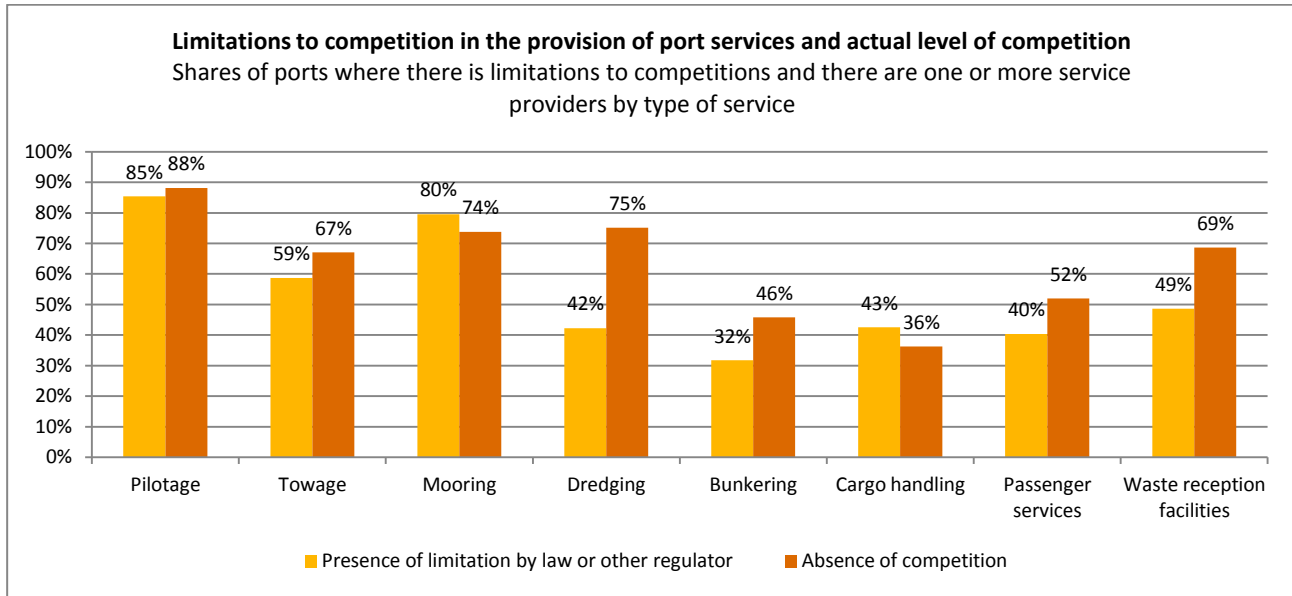
According to findings of phase 1 survey, the presence of limitation by law or other regulator as presented in the chart comprises a sum of all cases indicating a limitation other than 'lack of commercial interest'. Absence of competition is defined as where there is only one service provider or where there are more than two service providers, none of which are private.

Ports experiencing limitations on cargo handling services do not appear to suffer from a lack of competition – which may be due to the fact that in some of these ports there is the opportunity for more than one cargo handler to operate even if there is actually a limitation to further market entry.

In the range of 30% to 50% of ports present limitations to competition on port services such as dredging, bunkering, passenger services and waste reception facilities. For all these services the share of ports where there is not competition is actually higher than the share of ports where there is a limitation to competition.

Hence, even if barriers to competition will be removed, it can be expected that in some ports for some port services the level of competition will not increase.

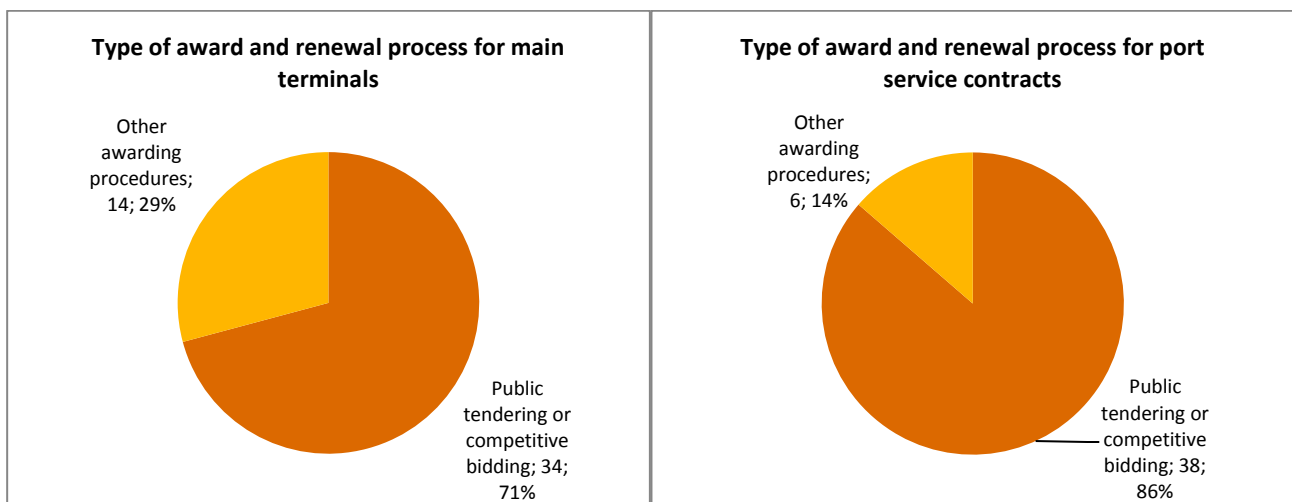
**Figure 45 - Limitations to competition in the provision of port services and actual level of competition<sup>48</sup>**



Port authorities were asked to describe the awarding process for the operation of main terminals and for port services: it has been reported that one port can have several different procedures in place with regard to the award of contract (e.g. for different terminals, operational areas, port services).

Figure 46 presents information regarding the nature of the terminal and port service contract award or renewal according to such practice. Indeed, it has been reported that public tendering or competitive bidding is widely used in ports. More precisely it can be used for awarding or renewing a contract in the large majority of ports (86%) when a port service contract is awarded and in almost three out of four ports (71%) when a terminal contract is awarded.

**Figure 46 - Type of awarding or renewal process for main terminals and port service contracts**



These ports that make use of public tendering reported that also other awarding practice are used, hence it is expected that a future EU policy which will promote the use of public tendering under specific circumstances will actually affect not just the minority of ports that do not make use of public tendering and competitive bidding.

<sup>48</sup> Statistics refers, on average, to about 70 different ports for which the port managing body responded.

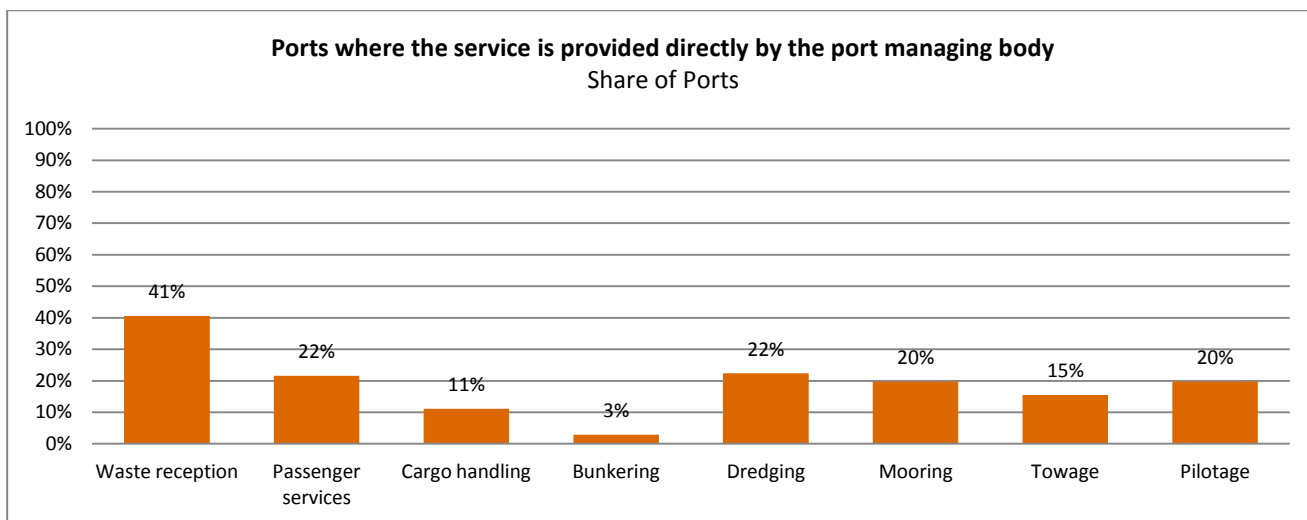
**Operative Objective 1.2: Prevent market abuses by service providers with exclusive/special rights**

In order to “Prevent market abuse by port service providers with exclusive or special rights”, the following measures have been considered:

6. Confinement of internal (public) providers of port services;
7. Rules on the price of port services if provided by operators with exclusive/special rights; and
8. Rules on the price of port services if provided by operators with exclusive/special rights and for which no public tender applies.

Port managing bodies were asked to indicate whether they directly provide any port service: according to collected responses, just under half of ports are responsible for the provision of waste reception (41%). Between 15% and 22% of ports are directly involved in the provision of technical nautical services, dredging and passenger services. Cargo handling is internally provided by the port managing body in 11% of ports, while bunkering is rarely provided (3%) under the responsibility of the port managing body.

**Figure 47 – Percentage of ports where service is provided by the port managing body<sup>49</sup>**



Port authorities/port managers were asked to say whether they have the authority to determine the type and amount of charges, tariffs or fees for various port services. Respondents were offered the chance to select ‘none’, ‘some’ and ‘determinant’.

In particular, Figure 48 shows the proportion of port authorities/port managers that have the power to fully or partially determine the level and type of charges and fees; the analysis focuses only on these port services that are provided under a monopolistic regime or in-house.

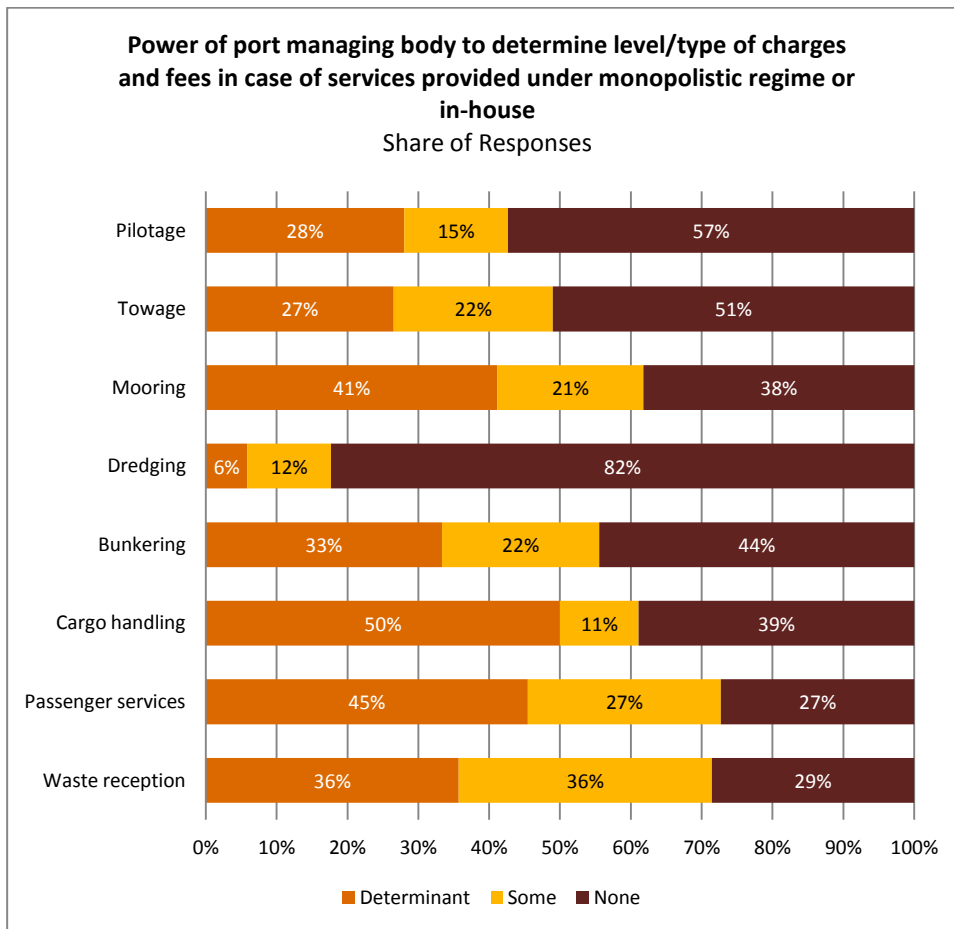
For most of the port services provided in-house or under monopoly, ports are equally divided between those that have the power to determine charges and fees and those that do not have any power.

Port managers and port authorities (more than 70%) mostly determine charges and fees with regard to passenger services and waste reception.

The port managing body usually does not have power in determining dredging fees – only 18% of respondents reported having full or partial responsibility in this area.

<sup>49</sup> Statistics refers, on average, to about 70 different ports for which the port managing body responded.

**Figure 48 - Power of port managing body to determine level/type of charges and fees of services provided under monopolistic regime or in-house<sup>50</sup>**

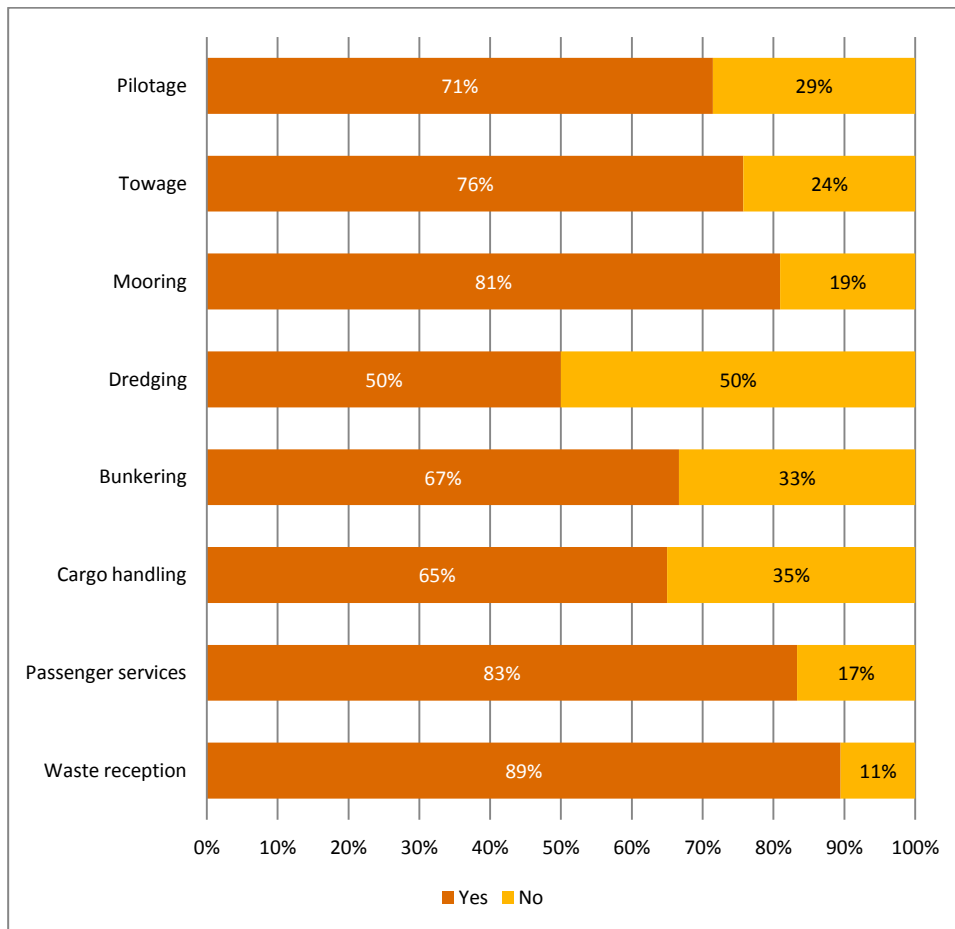


As part of the phase 1 survey port managing bodies were asked whether the charges for in-house services or for services provided under monopolistic regime are cost-reflective – with a price that reflects the underlying cost in a transparent and fair way.

According to the respondent ports these charges are commonly set according to the cost recovery principle: this is the case of pilotage, towage, mooring, passenger services and waste reception where in more than 70% of ports the relative charges are cost based.

<sup>50</sup> Statistics refers, on average, to about 70 different ports for which the port managing body responded.

**Figure 49 – Share of ports where charges and fees for services provided under monopolistic regimes or in-house are based on the principle of cost recovery<sup>51</sup>**



Based on the information provided above, it can be assumed that a new policy on the confinement for internal operators of port services will affect a small share of ports: for instance pilotage and towage is provided in-house in 20% and 15% of ports respectively. Nevertheless only an even smaller proportion of ports are believed to control in-house operators which provide similar services in other ports.

Rules on the price of port services in monopolistic positions will actually affect a larger number of ports. As shown in Figure 45 the number of ports where port services are provided in absence of competition are in the region of 70% or more for all technical nautical services, dredging and waste reception facilities.

It should also be considered that, according to surveyed port managing bodies, in a relevant share of ports the charges of port services provided under monopolistic regime are set in compliance with cost recovery principles. In addition, port managing bodies reported that often they are involved in the price setting process of such services.

**Operative Objective 1.3: Simplify procedures and improve coordination within ports**

Possible measures:

- 9. Central Port Coordination; and
- 10. Port user committee.

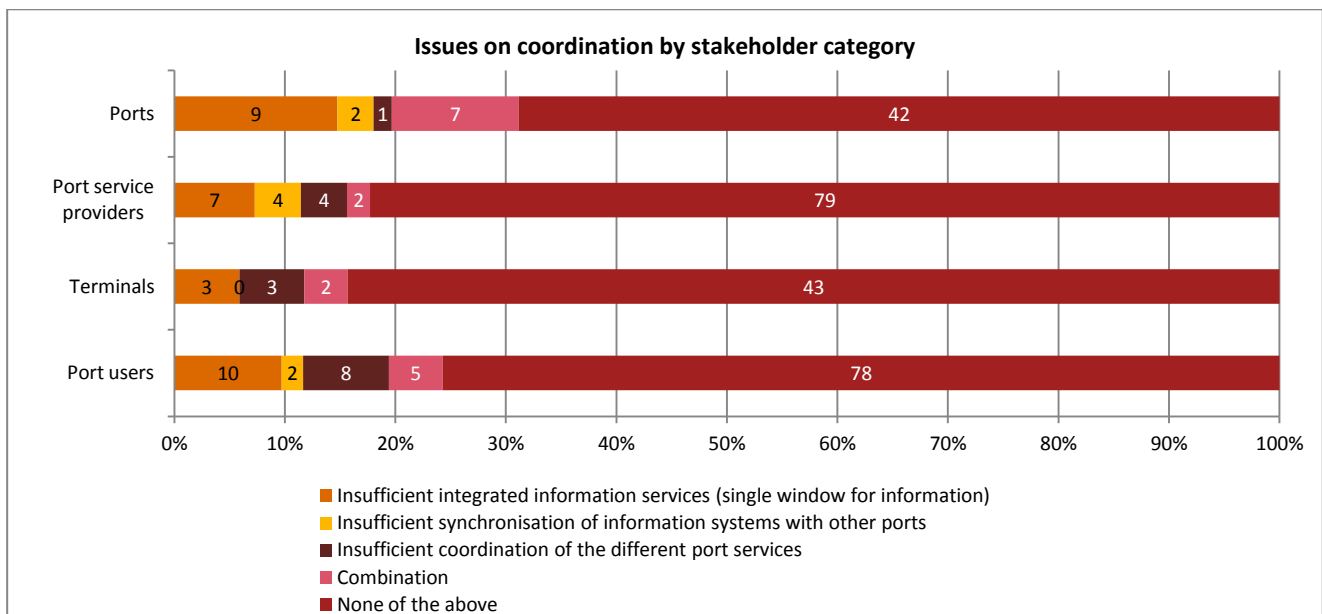
<sup>51</sup> Statistics refers, on average, to about 45 different ports for which the port managing body responded.

Phase 1 survey included questions on challenges around port organization. Among others, stakeholders were required to express their view on the presence of factors, related to coordination, hindrance of port performance and/or efficiency. A total of 363 responses were collected, mainly from core TEN-T ports and port users operating in core TEN-T ports.

Most respondents did not raise any complaints on the matter, nonetheless the portion of those suggesting coordination can be improved and simplification achieved, is relevant. Around 29% of stakeholders find challenges of this type to occur in EU ports. Shipping lines tended to respond for core ports, while showing less concern for other ports. Ports are clearly those more concerned, with almost 40% of respondents identifying challenges in core ports and 25% in comprehensive ports.

Lack of coordination is translated as lack of common practices, shared information and, therefore, lack of synchronism that results in inefficiencies and lower quality of services (as pointed out by stakeholders).

**Figure 50 - Issues regarding coordination by stakeholder category<sup>52</sup>**



Although there is no shared consensus on the importance of reforming port coordination, all stakeholder groups seem to agree – with different emphasis – on the necessity to improve it in specific ports.

All sizes of ports seem to be homogeneously impacted by the issue. Nonetheless, in smaller ports (*comprehensive* list and *other* ports) port users are less concerned, probably because smaller ports have lower need for coordination to operate efficiently.

A measure reforming coordination activities would impact all stakeholders, directly and/or indirectly. Depending on the way coordination would be ensured, stakeholders might be differently impacted, nonetheless, port authorities and port service providers are likely to be the categories affected most by the regulation.

No evidence has been obtained to determine whether there is already a trend towards closer cooperation between stakeholders, though it is considered that it is not widespread in significant magnitude. Without any change, cooperation is likely to remain confined to individual initiatives. With increased demand for capacity in the future, the coordination challenge might become a problem seriously hindering port performance, overall.

<sup>52</sup> Responses have been collected from stakeholders reporting their opinions with regards to approximately 60 different European ports.



## Specific Objective 2: Create framework conditions which incentivizes investments in ports

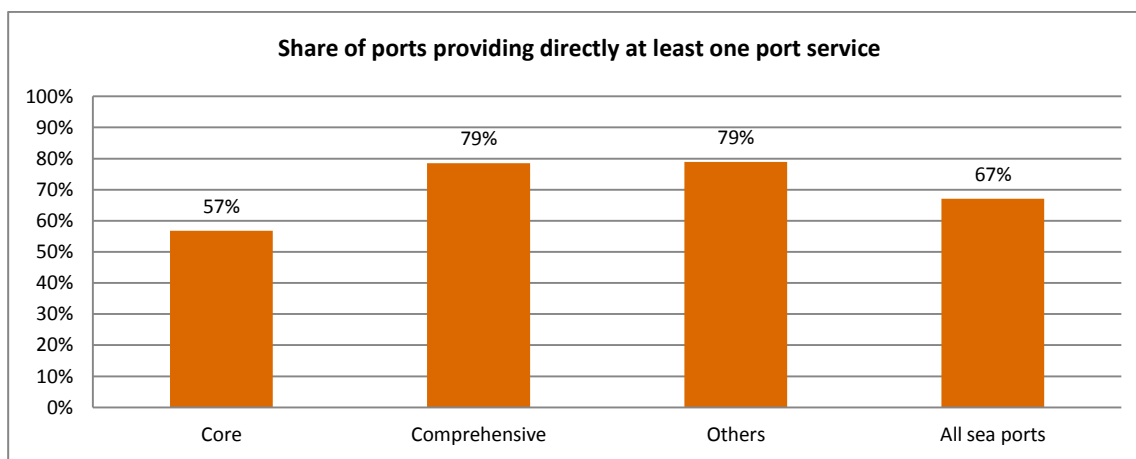
### Operative Objective 2.1: Ensure a level playing field by more transparent financial relations between public authorities, port authorities and port service providers

Possible measures:

11. Functional separation;
12. Separation of accounts; and
13. Financial transparency between public and port authorities.

As shown in Figure 47 the share of managing bodies providing directly a specific port service can be between 3% and 41% of all ports, depending on the type of service. However, as shown in Figure 51, the share of ports providing directly at least one port service is 79% among comprehensive and small ports and 57% when considering only core TEN-T ports. On average the number of in-house services provided by ports is 2.4.

**Figure 51 - Share of managing bodies providing directly at least one port service<sup>53</sup>**



Most European port authorities are not required to (and do not) provide clear and transparent documentation of their activities<sup>54</sup>. In several Member States, publicly owned ports have no obligation to keep separate account of their economic activities, subject to inter and even intra-port competition, and their regulatory public role within the port.

Directive 2006/111/EC<sup>55</sup> "Transparency Directive" disposes that separate accounts must be kept by public and private undertakings which have been granted special or exclusive rights by an EU country or which are responsible for operating a service of general economic interest and *which receive public service compensation in any form whatsoever* in relation to such service and at the same time perform other activities. Transparency Directive applies to the port industry as to any other industry.

These separate accounts must reflect the different activities performed by the undertaking, showing the costs and revenues associated with each activity and the methods of cost and revenue assignment and allocation. It can be assumed that this requirement would not apply if no public service requirement was involved. While the "Transparency Directive" only applies to ports with total annual net turnover no less than €40m, the

<sup>53</sup> Statistics refers, on average, to about 70 different ports for which the port managing body responded.

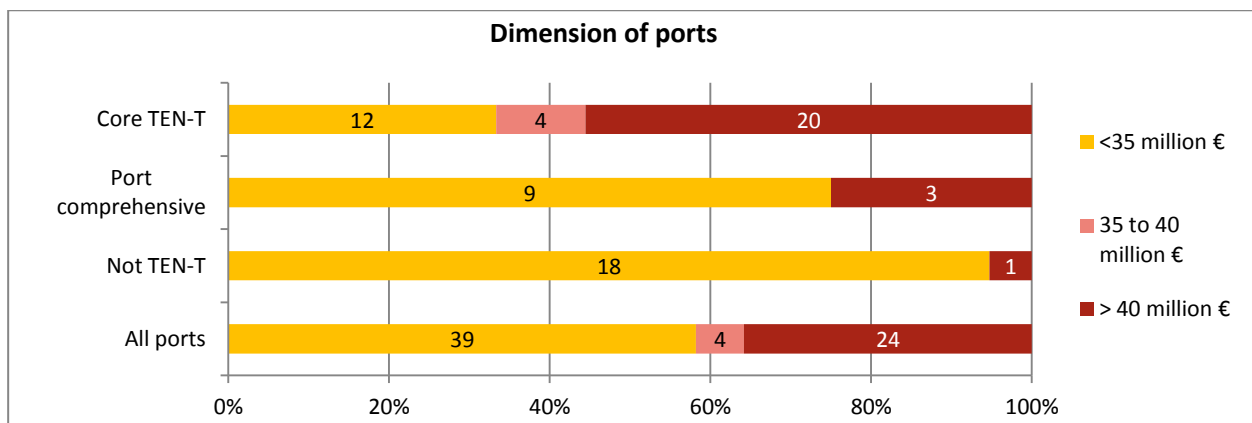
<sup>54</sup> Notteboom T. and Verhoeven P., The awarding of seaport terminals to private operators: European Practices and policy implications *European Transport*, n. 45, 2010, pp. 83-101.

<sup>55</sup> Commission Directive 2006/111/EC of 16 November 2006 transparency of financial relations between Member States and public undertakings as well as on financial transparency within certain undertakings, Official Journal L 318, 17.11.2006, pp. 17 – 25.

Commission has already proposed in the 2007 port policy communication to extend the provisions of this Directive to all ports regardless of the threshold.

Phase 1 survey asked port authorities to indicate the dimension of their ports in terms of annual turnover. As expected, bigger ports are mostly core TEN-T ports, while other categories only have marginal share of ports with annual turnover higher than €40 million. Overall, around 36% of ports analysed in the survey exceed the €40 million threshold. Although the survey did not consider the *net* turnover, for the purpose of our research, there is little difference. Indeed, if the annual turnover does not exceed the €40 million limit, neither will net turnover. On the other hand, it should be considered that a share of ports with annual turnover higher than €40 million will have a net turnover which is lower than the limit. Therefore, any regulations on financial transparency would produce effects on at least 64% of EU ports (43 out of 67, in our survey), but most likely on an even higher portion of them.

**Figure 52 - Annual turnover of ports by type of port**



If the number of ports with annual net turnover below €40 million is considered, a new policy on separation and transparency of accounts would produce impacts on a relevant share of ports, which is around half if only core TEN-T ports are considered. In some Member States, publicly owned ports already have the obligation to keep separate accounts, thus lowering the share of ports affected by an eventual EU-level measure. It should also be considered that only ports receiving state aids are forced by law to keep separate accounts, and therefore, not all those exceeding the €40 million limit are included.

It should nonetheless be considered that the maritime industry constitutes a peculiarity. Indeed, the aviation industry is specifically regulated. Council Directive 96/67/EC<sup>56</sup> explicitly demands the separation of accounts for the bodies managing airports when these also supply ground-handling services.

Without Communitarian intervention forcing transparency of financial relations, Member States would probably move towards its implementation themselves, but at different speeds, leading to non-harmonized effects throughout the EU, favouring discrepancies in investments towards more transparent ports. On the other hand, it should be also taken into consideration that an increase in traffic would most likely lead to an increase in overall port net turnover, therefore those ports that are close to the €40 million limit would most likely exceed it in the next future.

### Operative Objective 2.2: Encourage more efficient port infrastructure charging policies

Possible measures:

14. Freedom for individual ports to set dues;
15. Cost-based and differentiated dues;

<sup>56</sup> Council Directive 96/67/EC of 15 October 1996 on access to the ground-handling market at Community airports, Official Journal of the European Communities OJ L 272, 25.10.1996, pp. 36-45.

16. Enabling variations based on environmental performance; and
17. Transparency of port due calculation.

These topics were not covered by the phase 2 survey. As a result, there are no detailed stakeholder opinions on the necessity to set these measures, nor views on whether their implementation would lead to positive or negative impacts.

Drawing upon the results of the phase 1 survey and also upon the findings from the Port Financing study, it is possible to consider the current situation and how it might change should the measures be implemented.

With regards to “Freedom for individual ports to set dues” the survey which was conducted as part of the Port Financing study sought information on the entities responsible for setting and approving a spectrum of port related charges.

Analysis of responses concludes that the port authority is generally responsible for setting ship and port/harbour dues: e.g. those charges that represent payments by shipping lines for the use of marine infrastructure - 29 out of 44 responding ports stated this, 66% of the sample). At the same time, around a third of ports reported that the state retains this responsibility.

While a high number of port authorities have the freedom to set ship and port/harbour dues, it is the case that in many ports the charges must nonetheless be approved by the state (in 52% of ports responding it was reported that this was the case). Only 45% of port authorities set and approve the charges, potentially suggesting a lower level of freedom across ports than might be initially anticipated. Another key factor is the actual level of influence that the state might exert – for example, in some instances the approval process is more administrative in nature, with a ‘hands-off’ approach adopted by state representatives, while in other cases, there might be significant input from the state, or clear specifications in terms of how the charges should be calculated.

The ESPO Fact-Finding Study concluded that *‘while most port authorities have considerable financial responsibilities regarding investment and personnel, they do not always have full control over their income – e.g. they do not have financial autonomy or they have to operate within a charging regime set by the national or regional government.’*

Thus it is the case that while many port authorities currently have the freedom to set and approve charges as they see fit, there is also a large number of ports where the national or regional Government have either responsibility for setting charges or influence how those charges are set by port authorities, which is understandable in that many regions and Member States view their ports as key economic and social drivers within their territories.

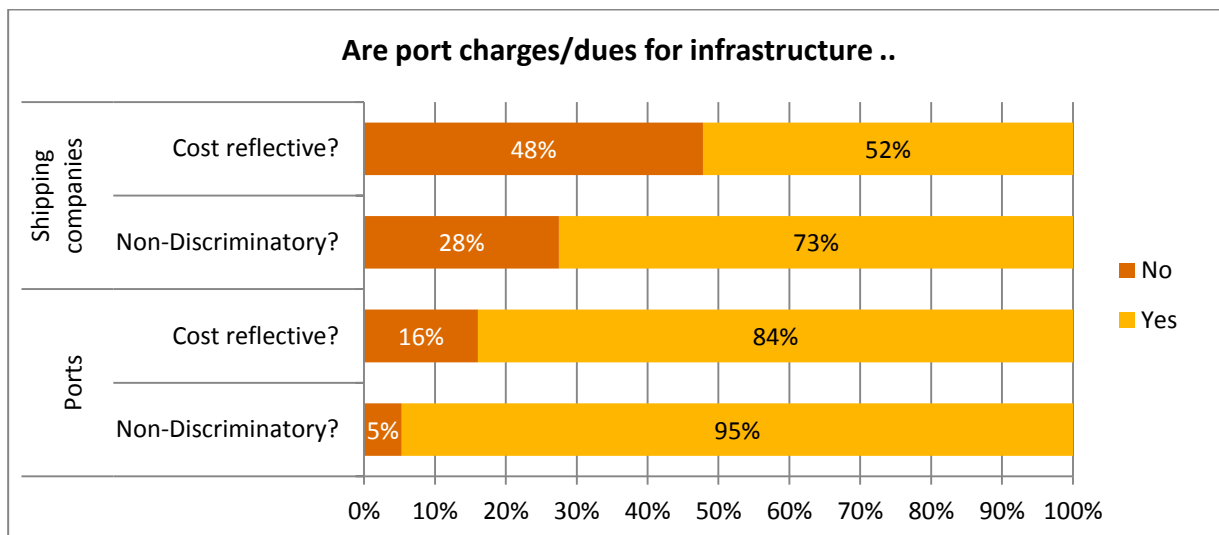
In the context of measures concerning “Cost-based and differentiated port dues”, one of the key issues identified by stakeholders in the survey undertaken to support this Impact Assessment was that port charges are set in a non-transparent or discriminatory way and that they do not reflect the true cost of infrastructure and/or the service provided – 23 out of 71 shipping lines reported this as being an issue in core ports. By contrast terminals and port authorities do not see this as an issue.

It was reported that this issue has arisen due to a lack of financial autonomy on the part of the port authority, which mirrors the points above regarding responsibility for setting and approving of charges.

With regard to setting financial objectives, this does tend to be the port authority, either alone or alongside state or municipal representatives, according to the Port Financing study: of the 26 ports responding to this question, only two ports indicated that a government department or agency was wholly responsible for setting the financial objectives. It is often the case that there are government representatives within the port authority Board and therefore may have some form of indirect influence in either the definition or approval of financial objectives.

Some groups of stakeholders, namely shipping lines and ports, were asked to comment on whether they felt that charges set by port authorities were cost-reflective and non-discriminatory. Shipping companies are more negative in their views than ports, in that only half of those responding felt that port authority charges were based on cost recovery principles. Almost 30% of shipping companies are of the view that charges are discriminating in the ports that they call at. Interestingly, 16% of ports recognize that charges are not always based on cost-reflective principles.

**Figure 53 – Are port authority charges cost-reflective and non-discriminatory?**



The principle of cost recovery can be complex:

- Port investments are often grouped together and it is often not possible to separate out how different elements will be paid for or over what time period;
- Rents are often set according to what the market will bear at a given time, rather than being specifically linked to investment costs; or
- The entity responsible for investment – e.g. port authority – may not have financial autonomy with regard to the setting of prices – or may not receive the income – or pricing policy may be used to attract new business rather than recoup costs directly.

Information was obtained on the approach to cost-recovery during the Port Financing study. From this it is clear that many different sources of funds are obtained, though mainly internal or public funding, loans or a combination of such funds. The assumed repayment horizons vary considerably and that there are several approaches to cost recovery.

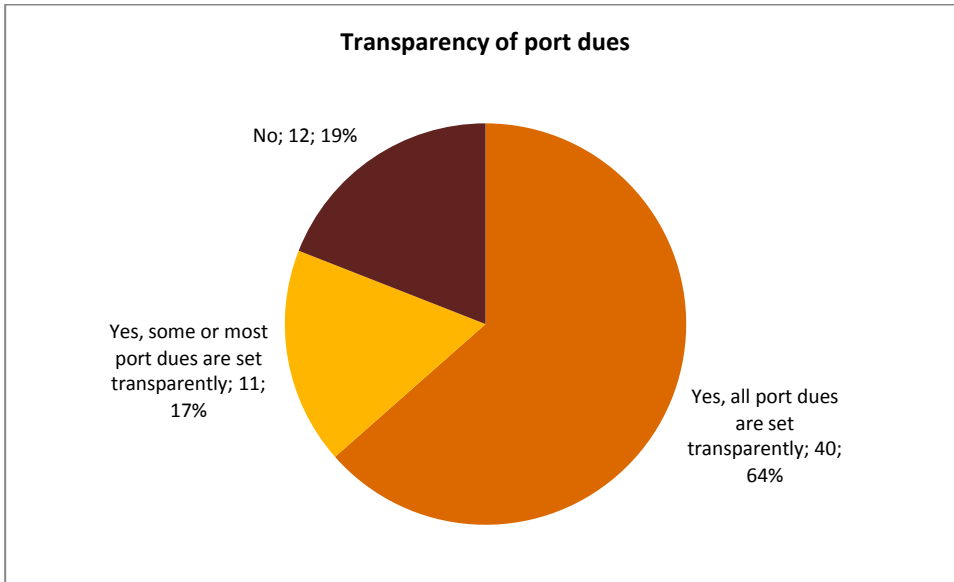
- For major projects, such as container terminals, the cost recovery approach was mostly reported as being a concession fee; and
- For investments such as dredging, but also terminal investments, using internal funding sources, the main cost recovery method was reported to be user charges.

In many cases, information was not provided on how investments costs were/would be recovered, particularly for publicly owned ports – it is possible that in many instances, a concise and robust approach to cost recovery is not applied.

Given the complexities described above the requirement to calculate charges in a more cost-reflective way will affect many ports.

Finally with reference to the measure on “Transparency of port due calculation”, port managing bodies were asked in the phase 1 survey to indicate whether they have a transparent procedure in place for setting port charges. The majority of responding port authorities (64%) reported that all port dues are set in a transparent manner, while 17% stated that some or most port dues are set transparently. Just under a fifth (19%) reported that port dues were not set transparently.

**Figure 54 – Transparency of port dues**



The majority of ports are already calculating dues in a transparent manner, thus this measure should not have an impact on many ports.

## 7 *Policy options*

With the objective of developing a modern European transport system capable of facilitating trade with the most dynamic world economies, it is necessary to consider the European transport system as a whole, and to develop policy around this “transport planning” concept, in which market forces are allowed to function.

The essential planning structure here is the European TEN-T core network. Within the wider network strategy, there are two important guidelines related to maritime transport:

- Management of inland freight traffic growth requires full use to be made of maritime links, which have the lowest unit costs, the lowest environmental costs, and in effect unlimited capacity; and
- Encouragement of multi-modal inland transport is considerably aided by the planning of multi-modal interchanges at or near ports.

From this it follows that ports may be one of the key deciding factors in the success of the network strategy. Whereas maritime capacity (shipping) can be brought into operation at short notice and deployed flexibly, port capacity needs to be planned for the long term, and co-ordinated with an inland strategy.

By adding a network of ports into the TEN-T core network, the foundations now exist to implement a European strategy that recognizes these fundamentals.

However, at the European scale, planning a network of ports within the core network is also a radical concept. Ports are traditionally seen as regional assets, generating trade opportunities and jobs. As such, many ports have attracted substantial public investment, and many large port authorities still retain a largely public sector character as municipal, regional or state owned organizations. At a regional level, some degree, and maybe a high degree of monopoly is both expected and accepted. For a single region, it is logical to cluster activity around a single main port. While this approach has certainly led to clusters of modern port infrastructure in Europe, it has not necessarily been conducive towards the establishment of a modern, market-oriented, transport network.

By changing the context from regional development to European development, hinterland issues become more prominent as well as issues of competition between and within ports, financial autonomy, transparency and market access. Hinterland development is, and is likely to remain a public responsibility, but ports have the potential to evolve further as commercially autonomous or even private sector organizations. If they do, it becomes more realistic to expect that private sector capital can gradually replace public sector financing inside ports, allowing the public sector to focus upon the development of the hinterland links rather than the nodes or windows of the core network.

At the moment it is difficult to realize this outcome because of institutional and structural issues within the port sector. There needs to be a level playing field, and greater transparency, potentially backed up by stronger legal safeguards, in order to make this transition.

In reality, ports are not unitary organizations. Within ports, responsibilities are shared between service providers. Therefore any structural reform needs to be shared.

Economic strategy, transport and environmental objectives all point to a compelling need to unlock the full potential of the port sector. This implies that there should be clear rules of engagement for the ports and port service providers, allowing the market to function, and thereby allowing the public sector to concentrate upon the construction of the inland core network. This is the macro view. The micro view is that core ports and port service providers need to evolve structurally, and without this step, the achievement of the wider vision may be blocked.

Policy options have been defined by the Commission and presented to PwC/Panteia for the assessment of their impact on the port services sector.

The Commission produced a series of measures specifically designed to reach the objectives presented in the previous section. For this reason, each set of measures is expected to overcome one specific root cause of problems.

Measures are logically designed to match each single root cause of the identified problem, providing different solutions. The combinations of different measures then forms the different policy packages.

## 7.1 Measures to modernize port services and operations

### *Insufficient competitive pressure in the port services market resulting from market access restrictions*

Measures aiming at increasing market access, through the elimination of barriers to entry are various. The Commission decided to take into consideration different possibilities, starting from the simple explanation in a Communication of how the Treaty rules apply to port services<sup>57</sup>. On the other side, a more invasive approach is designed to keep separated those cases that are considered “normal”, from those where public service obligations (PSOs) or space constraints apply, i.e. where there would either be a lack of suppliers coming forward, or where it is either impractical or not commercially beneficial to open the market locally for more than one supplier in any given port.

In a softer policy approach new market access might only be offered in the “normal” cases. For the cases with space constraints or PSOs it would then be necessary to impose public tendering procedures. In the stronger policy packages competition would be imposed also in those cases where space constraints and PSOs currently apply.

Table 21 presents the measures considered.

**Table 21 - Measures impacting on root cause 1: insufficient competitive pressure on port services**

Measures	Description
<b>1. Freedom to provide services (no restrictions on market access) for "normal services", i.e. services other than those linked to public service obligations or space constraints</b>	The freedom to provide service applies and relates to the free entry of any service provider established in the EU. Operators would be authorized on the basis of transparent and non-discriminatory criteria. These criteria would be determined, published and made accessible to all by the Member States.

<sup>57</sup> In the following discussion, the term “port services” covers: e.g. technical nautical services, cargo handling, bunkering, etc.



Measures	Description
<p><b>2. Obligation of public tendering for new contracts in the case of public service obligations or space constraints (except for small contracts<sup>58</sup> or urgencies)</b></p>	<p>Member States and port authorities would be allowed to impose restrictions on the freedom to provide services on the grounds of objective reason of space constraint<sup>***</sup> or public service obligations<sup>**</sup>. But in such cases, the Member State or the port authority would need to enter into a contractual arrangement with a port service provider to be selected by means of a transparent public tendering procedure (except for small contracts and/or urgencies)*.</p> <p>* The maximum duration of the contracts would have to be linked to the expected economic lifetime of investments.</p> <p>** Public Service Obligations would be accepted only for reasons related to safety, security, accessibility and/or availability.</p> <p>*** The lack of space refers to the fact that ports are confined to a limited geographical area and the fact that for certain services it is physically impossible or otherwise disadvantageous to users to entrust more than a limited number of operators. In such a case, the market must be subject to access regulation.</p>
<p><b>3. Explain in a Commission's Communication how existing Treaty rules apply to port services</b></p>	<p>In contrast with other measures relying on binding provisions for Member States, this measure would entail a Commission's Communication to explain how the principles of non-discrimination and free establishment result in an obligation of transparency and equal treatment (Court of Justice Teleustria ruling) and how they can be applied in practice to arrangements/contracts awarded to port service operators.</p>
<p><b>4. In addition to measure 2, impose the obligation to have at least two operators for services linked to space constraints to be selected after a public tender for new contracts (except for small contracts or urgencies)<sup>59</sup></b></p>	<p>In addition to measure 2, in the case of port services subject to space constraints the port authority or the Member State needs to ensure that there are at least two competing and independent operators. A public tendering obligation is imposed.</p>
<p><b>5. Obligation of public tendering in case of substantial changes of existing contracts linked to public service obligations or space constraints</b></p>	<p>This measure is the same as measure 2 but in addition the obligation of public tendering will also apply in case of substantial modification of existing contracts/arrangements. A substantial modification would entail a modification of a significant value of the value of the contract/arrangement and/or a change of the nature of activity.</p>

### **Market abuses by operators with exclusive/special rights**

Measures aiming at preventing the occurrence of market abuses consider both the inter-port level, in order to prevent cross-subsidies, and the intra-port level, for transparency to be guaranteed.

<sup>58</sup> The threshold chosen will be the one of the EU legislation and international agreements in the field of public procurement and concessions. Given the international nature of the shipping and port business this is considered the appropriate approach.

<sup>59</sup> As per 75



**Table 22 - Measures impacting on root cause 2: risk of abuse by operators with exclusive power/special rights**

Measures	Description
<b>6. Confinement for internal operators of port services</b>	In the event that a port or public authority is performing (commercial) port services in-house [as a derogation to the freedom to provide service and the application of a public tendering procedure (cf measures 1,2,3 and 5)], the operation of the service shall be confined to the dedicated port, or group of ports, serviced by the port managing body or the authority, and consequently the internal provider cannot offer the service outside the port or group of ports. This will avoid cases where operators can benefit from potential cross-subsidies or enjoy unfair competitive advantages.
<b>7. Principles of transparency, non-discrimination and proportionality for the price of port services provided by operators in monopolistic position</b>	Derogating from the general rule of freedom to provide service (cf measure 1) could leave the service provided by internal operators or operators with exclusive/special rights with insufficient or non existing competitive pressure. To avoid price abuses, this measure would impose basic principles on pricing, namely proportionality (cost based), transparency and non-discrimination (with possibilities to apply commercial rebates if accessible to all users). The Member State will need to designate a regulatory authority (eg an existing competition authority) to deal with complaints by port service users.
<b>8. Principles of transparency, non-discrimination and proportionality for the price of port services provided by operators in monopolistic position for which no public tender is organized</b>	The measure will be the same as measure 7 except that it would apply only to services for which no public tender applies and therefore for which the market can not be contested at the end of the contract. If the market can not be contested at the end of the contract by means of a public tender, the competitive pressure is indeed weaker. The scope is therefore more limited than measure 7 and focuses on cases where the likelihood of absence of competitive pressure is higher.

### **Users face excessive administrative burden due to a lack of coordination within ports**

**Table 23 - Measures impacting on root cause 3: users facing excessive administrative burden due to lack of coordination within ports**

Measures	Description
<b>9. Central Port Coordination</b>	In a free market situation, there is a possible proliferation of port service providers. This will lead to potential conflicts between the different service providers. Therefore, the Member State will be obliged to ensure a central port coordination in every port to ensure safe and efficient operations.
<b>10. Port users' committee</b>	<p>A port users' committee would be set up in each port. The committee would facilitate the dialogue between all port actors (users, service providers, authorities, workers) in order to ensure a seamless logistical flow of freight (and passengers) in the port and to and from the hinterland. It would be organized by, but independent from, the port authority. Its precise competences and composition of the committee would be left over to the discretion of the Member State or port authority and could include the following:</p> <ul style="list-style-type: none"> <li>• Regular consultative role on the structure and level of port dues;</li> </ul> <p>Ad-hoc consultative role (at the request of the regulatory authority of measures 7</p>

Measures	Description
	<p>and 8) on possible (price) abuses of port services; and</p> <ul style="list-style-type: none"> <li>Consultative role in the set-up of an administrative simplification plan.: the plan could include performance targets (e.g. maximum duration of administrative procedure) and issue recommendations on how to organize and better coordinate administrative procedures for port users. This plan should be based on existing EU legal requirements and recommendations.</li> </ul>

## 7.2 Measures to attract investments in ports

### *Unclear financial relations between public authorities, port authorities and providers of port services*

The presence of unclear financial relationships between ports and public authorities in different Member States tends to act as a barrier towards inward private investment. More transparency is therefore a pre-condition for enabling rules concerning state aid to be applied, and therefore for building confidence amongst potential investors. Without a clear presentation of port activities and financing, it cannot be guaranteed to investors that competition is fair and that the port is performing its activity efficiently.

#### **Table 24 - Measures impacting on root cause 4: unclear financial relations between public authorities, port authorities and providers of port services**

Measures	Description
<b>11. Functional/legal separation</b>	Ports would have to define and separate public functions from commercial functions linked to the provision of port services and attribute them to separate legal entities. Obviously, this entails also a full separation of accounts as presented in measure 12, as each of the presented activities would be subject of a different legal entity.
<b>12. Separation of accounts</b>	<p>The measure would impose two requirements:</p> <ol style="list-style-type: none"> <li>Port authorities which receive public funds (irrespective of their ownership structure -cf Art 345 TFEU) would keep an accounting system that allows the identification of any financial flow (grants, loans guarantees, equity share etc.) from public authorities to the port authority; and</li> <li>The accounting system would have to differentiate between the different types of activities carried out by the port authorities (1) port (public) functions and (2) (commercial) service activities and to differentiate between the different (commercial) services provided in order to reveal possible cross-subsidies*.</li> </ol> <p>The accounts will have to be kept at the disposal of the national authorities and the Commission in order to help them to ensure transparency as well as to prevent possible state aids and distortion of competition between ports and between port service providers.</p> <p>*Cross-subsidies between various services provided by a port would not be unauthorized but making them identifiable would make it easier to monitor whether they lead to market distortions.</p>
<b>13. Financial transparency</b>	This measure would impose only the first requirement of measure 12, namely that

Measures	Description
<b><i>between public authorities and port authorities</i></b>	port authorities which receive public funds keep an accounting system that allows to identify any financial flow from public authorities to the port authority (similarly to Directive 2006/111/EC on the transparency of the financial relationship between public authorities and public undertakings). The accounts would have to be kept at the disposal of the national authorities and the Commission.

### ***Weak autonomy of port authorities to define infrastructure charges and non-transparent link with costs***

Measures concerning port authorities autonomy and, in general, on setting port dues entail different needs, from the environmental protection, to transparency, to guarantee port autonomy.

**Table 25 - Measures impacting on root cause 5: weak autonomy of port authorities to define infrastructure charges and non-transparent link with causes**

Measures	Description
<b><i>14. Autonomy of the individual ports to set and collect dues</i></b>	Each port managing body would be free to set the structure and level of the port dues (related to the use of the port infrastructure) as it feels appropriate, according to its own commercial and investment strategy. It should be free to collect the revenues arising from port dues.
<b><i>15. Transparent, cost-based and differentiated port dues</i></b>	Binding rules would be introduced to ensure that infrastructure charges respect in a transparent way the principle of proportionality to cost (long term marginal cost-based),. Environmental differentiation of charges will be introduced according to objective criteria left to each Member State.
<b><i>16. Encouraging discounts on port dues based on environmental performance criteria</i></b>	Ports would be required to offer price incentives to cleaner transport (cleaner ships/propulsion/fuels, certain short sea shipping). The Commission would also establish non binding guidelines on how to apply such a variation (e.g. classification to be used).
<b><i>17. Transparency of port due calculation</i></b>	The prices and calculation methods for port infrastructure access charges related to the public access facility to a port would be made accessible to the port users and the designated authorities. The method would have to indicate the overall cost components and how the total port dues contribute to recover it.

## ***7.3 Policy packages***

The above mentioned measures have been aggregated to form four different Policy Packages (PPs), which are further presented.

***Policy Package 1 (PP1)*** is characterized by soft measures to overcome inefficiencies. It nonetheless includes measures increasing transparency, as no strong measures guaranteeing competition are present. In particular, it does not specifically include measures to enhance market access to the port service market other than a communication on Treaty rules applied to port services. Higher effort is focused on transparency, which is considered both when considering service charges to be set, port authorities' activities and the price of port services in case of monopolies. The inclusion of a port users committee should then guarantee a positive dialogue between players, further enhancing efficiency.

**Policy Package 2 (PP2)** includes measures to free the provision of services, leaving Member States to decide at their own discretion whether to restrict this freedom for objective and transparent reasons related to the lack of space or reasons of public interest (safety, security, accessibility and/or environment). In this latter case, public tendering procedures must be set. Specific cases are exempted (i.e. urgencies, small tenders, etc.). Port authorities are required to keep separate accounts, thus increasing transparency and track distortive state aid and cross-subsidies. Transparency is also guaranteed when considering port dues, which are calculated on the basis of their relative cost.

**Policy Package 2a (PP2a)** is very similar to PP2, with increased measures to guarantee market access, in particular in case of substantial modifications of existing contracts, a more limited oversight on service providers in monopolistic position and greater autonomy granted to ports. PP2a also considers the need to protect the environment, enabling variations of port dues on the basis of the environmental performance of port users.

**Policy Package 3 (PP3)** aims at deregulating the market, similarly to the aviation sector. Compared to the other packages, it further increases competition, obliging at least two competing and independent operators in case of space constraints. The separation of port authorities is further increased through functional/legal separation, and autonomy of ports is further increased. Briefly, PP3 strongly relies on the ability of the market to freely balance powers and interests.

**Table 26 - Relation between Policy Packages and measures**

	PP1	PP2	PP 2a	PP3
<b>SO1: Modernise port services and operations</b>				
<i>OO1.1: Clarify and facilitate the access to the port services market</i>				
1. Freedom to provide services: no restrictions on market access for "normal services" i.e. services other than those linked to public service obligations or space constraints:		X	X	X
2. Obligation of public tendering for new contracts, except for small contracts or urgencies for services with public service obligations or linked to space constraints:		X	X	X
3. Explain in a Communication how existing Treaty rules apply to port services:	X			
4. In addition to measure 2, impose the obligation to have at least two operators selected after public tendering for services linked to space constraints (except for small contracts)				X
5. Obligation of public tendering for the substantial changes to the existing contracts linked to public service obligations or space constraints			X	X
<i>OO1.2: Prevent market abuses by service providers with exclusive/special rights</i>				
6. Confinement of internal (public) providers of port services		X	X	X
7. Principles of transparency, non-discrimination and proportionality for the price of port services if provided by operators in monopolistic position	X	X		
8. Principles of transparency, non-discrimination and proportionality for the price of port services if provided by operators in monopolistic position and for which no public tender applies			X	X
<i>OO1.3: Simplify procedures and improve coordination within ports</i>				
9. Central Port Coordination				X
10. Port user committee	X	X	X	
<b>SO2: Create framework conditions which attracts investments in ports</b>				
<i>OO2.1: Ensure a level playing field by more transparent financial relations</i>				

	<i>PP1</i>	<i>PP2</i>	<i>PP 2a</i>	<i>PP3</i>
<i>between public authorities, port authorities and port service providers</i>				
<i>11. Functional/legal separation</i>				<i>X</i>
<i>12. Separation of accounts</i>		<i>X</i>	<i>X</i>	
<i>13. Financial transparency between public and port authorities</i>	<i>X</i>			
<i>OO2.2: Encourage more efficient port infrastructure charging policies</i>				
<i>14. Freedom for individual ports to set dues</i>			<i>X</i>	<i>X</i>
<i>15. Transparent, cost-based and differentiated dues</i>		<i>X</i>		
<i>16. Enabling variations based on environmental performance</i>			<i>X</i>	
<i>17. Transparency of port due calculation</i>	<i>X</i>		<i>X</i>	

# 8 Impact Assessment Approach

In this section we set out the structure used within the impact assessment. It consists of a baseline scenario and the selection of relevant impacts to assess. Selected impacts will be related to the baseline scenario.

## 8.1 Baseline Scenario

In this section we set out a baseline forecast for European port traffic.

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<sup>60</sup> trade model methodology applied to a WORLDNET<sup>61</sup> freight-chain matrix derived from ETISplus<sup>62</sup> freight statistics. It has been updated during 2012 as a task of the Trans-Scenario<sup>63</sup> project, to integrate the methodology into the newest (v2.6) TRANS-TOOLS<sup>64</sup> model.

### Structure of NEAC Trade Model

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

Where,

T <sub>ijg</sub>	trade of commodity group g between country/region i and j in tonnes;
P <sub>ig</sub>	added value of the sector that supplies commodity g in country/region i;
A <sub>jg</sub>	added value of the sector that consumes commodity g in country /region j;
D <sub>ij</sub>	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 position of (a group of) countries/regions;
α1 ... α5	the model parameters;

Source: Panteia/NEA.

<sup>60</sup> See for example: NEA, 1999, Final Report, European Transport Forecast 2020, Freight Transport.

<sup>61</sup> WORLDNET Project, 2009, DG-MOVE, FP6, NEA, KIT, MKmetric, OSC, DEMIS, TINA.

<sup>62</sup> ETISplus project, 2012, DG-MOVE, Panteia/NEA(NL) et al.

<sup>63</sup> TransScenario, 2012, DG-MOVE, Tetraplan(DK) et al.

<sup>64</sup> TRANS-TOOLS, DG-MOVE reference transport model, JRC-IPTS, Spain.

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<sup>65</sup>/TREMOVE<sup>66</sup>.

### **Model structure:**

#### **ETISplus Database**

- Trade Data
- Port Data
- Inland Transport Data

#### **WORLDNET**

- Mode Chain estimation
- Origin -> Port1*
- Port1 -> Port2*
- Port2 -> Destination*

#### **NEAC Trade Model**

- Forecasting
- Per product
- Per origin/destination

### 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;
- 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.

Table 27 shows expected growth rates for European trade routes. These figures indicate average annual year-on-year growth rates for the period 2005-2050. Each trade route includes import and export traffic, and is based on tonnes traded.

**Table 27 - Trade forecasts by continental regions: average annual growth rates up to 2050**

Region	Container	Dry Bulk	Liquid Bulk	RoRo	Other General Cargo	TOTAL
EU/Accession Europe <sup>67</sup>	2.4%	1.2%	0.4%	1.4%	2.2%	1.0%
Russia/Central Asia <sup>68</sup>	2.5%	3.2%	0.8%	2.5%	4.7%	2.5%
North Africa/Middle East	2.3%	2.0%	0.1%	2.9%	3.6%	0.9%
Other Africa	1.8%	0.4%	0.1%	2.2%	2.2%	0.8%
South Asia	3.6%	2.3%	1.9%	3.7%	2.8%	3.1%

<sup>65</sup> PRIMES model, NTUA, Greece.

<sup>66</sup> TREMOVE model, TM-Leuven, Belgium.

<sup>67</sup> Short sea maritime traffic within the EU/Accession area.

<sup>68</sup> European maritime trade flows with the Russian Federation and Central Asia.

Pacific <sup>69</sup>	3.1%	1.1%	2.1%	3.2%	2.3%	2.6%
North America	1.5%	0.9%	0.3%	1.5%	2.4%	0.9%
Central & South America	2.4%	1.1%	1.0%	2.6%	2.4%	1.6%
TOTAL	2.5%	1.3%	0.4%	2.0%	2.9%	1.3%

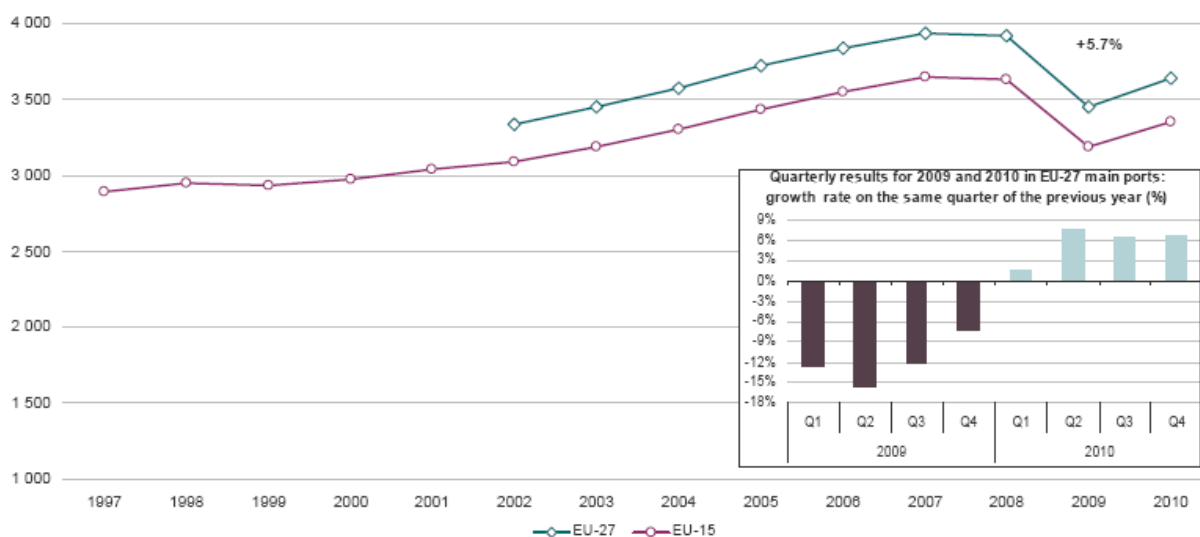
The trade model indicates that growth will be greatest in the non-bulk sectors, with growth of 2.5% per annum in the containerized sector, including continued growth in the inter-continental markets. Neighbouring regions, including Russia and North Africa are also expected to generate increased short-sea traffic for EU ports.

### 8.1.1 Current port traffic volumes

European ports handle close to four billion tonnes of cargo per annum. This is a considerable sum, greater than total road tonnes lifted in a large European country such as Germany<sup>70</sup>. In recent decades there has been steady growth, reflecting Europe's globalization.

Since 2010, the economic downturn has had a marked effect.

**Figure 55 - Gross weight of seaborne goods handled in all ports (million tonnes) 1997-2010**



Source: Eurostat

During the first economic crisis of 2008 there was a sharp downturn with volumes falling from almost four billion tonnes to 3.5 billion tonnes. Since 2009 volumes have recovered slowly overall, and many large European ports show higher volumes in 2011 than in 2008. In the container market, ESPO data<sup>71</sup> shows that for example Rotterdam handled 10.1% more traffic in 2011 than in 2008. Bremerhaven, Valencia, Algeciras and Felixstowe also show strong positive trends through the crisis period.

During consultation for this impact assessment, 45% of stakeholders indicated that they expect steady traffic development over the next 10-15 years, and 50% expect growth.

In the following tables, port traffic volumes for 2005 and 2010 are shown for all of the European coastline ranges, sub-divided into cargo types.

<sup>69</sup> ASEAN, China Sea, Australasia.

<sup>70</sup> German road tonnes lifted in 2011 were 2.986 billion (Eurostat, road\_go\_ta\_tot).

<sup>71</sup> ESPO Annual Report, 2011-2012

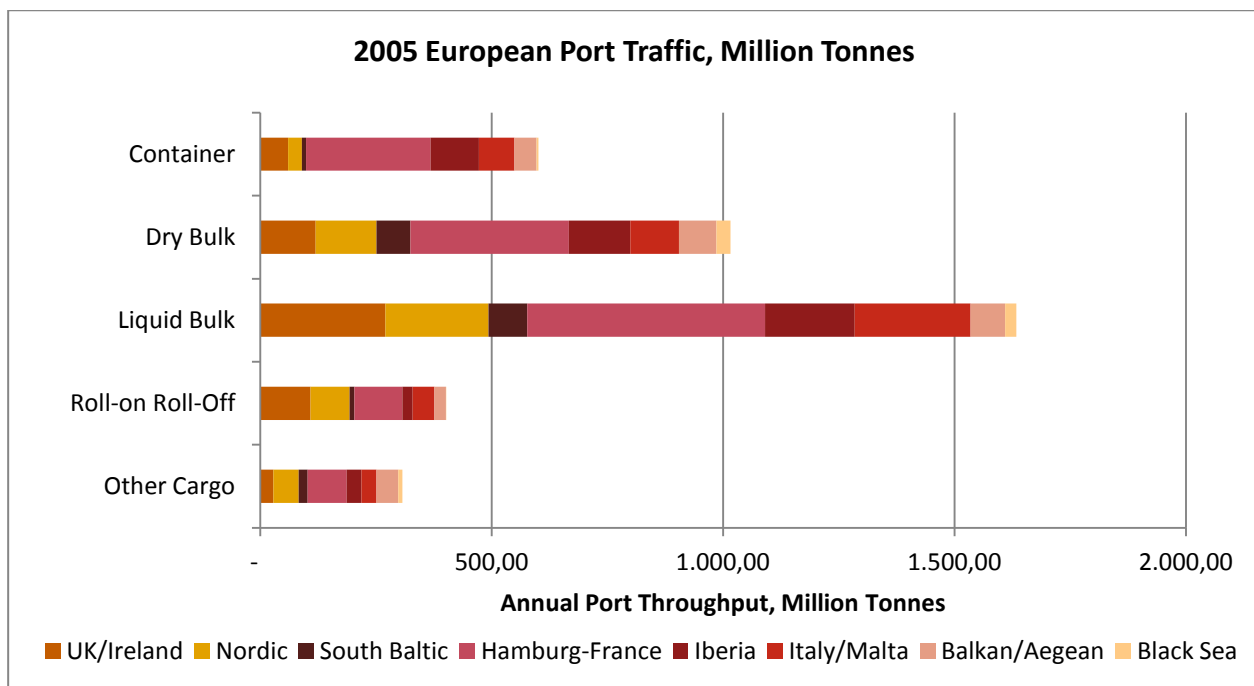


**Table 28 - 2005 (Base Year) port traffic by region of loading/unloading**

Region	Container	Dry Bulk	Liquid Bulk	RoRo	Other Cargo	Total
UK/Ireland	59.87	119.66	270.15	108.69	28.38	586.75
Nordic	29.84	131.06	222.80	83.92	54.60	522.22
South Baltic	8.82	73.67	84.07	10.78	19.38	196.72
Hamburg-France	269.39	342.24	513.30	103.60	84.31	1,312.84
Iberia	104.44	133.11	193.93	22.05	31.87	485.40
Italy/Malta	76.78	105.08	250.40	47.01	32.39	511.66
Balkan/Aegean	47.92	80.76	74.49	24.77	47.05	274.98
Black Sea	3.52	30.68	24.69	0.76	9.24	68.88
Total	600.57	1,016.26	1,633.82	401.58	307.23	3,959.45

Source: Eurostat/ETISplus.

**Figure 56 – 2005: European port traffic (million tonnes)**



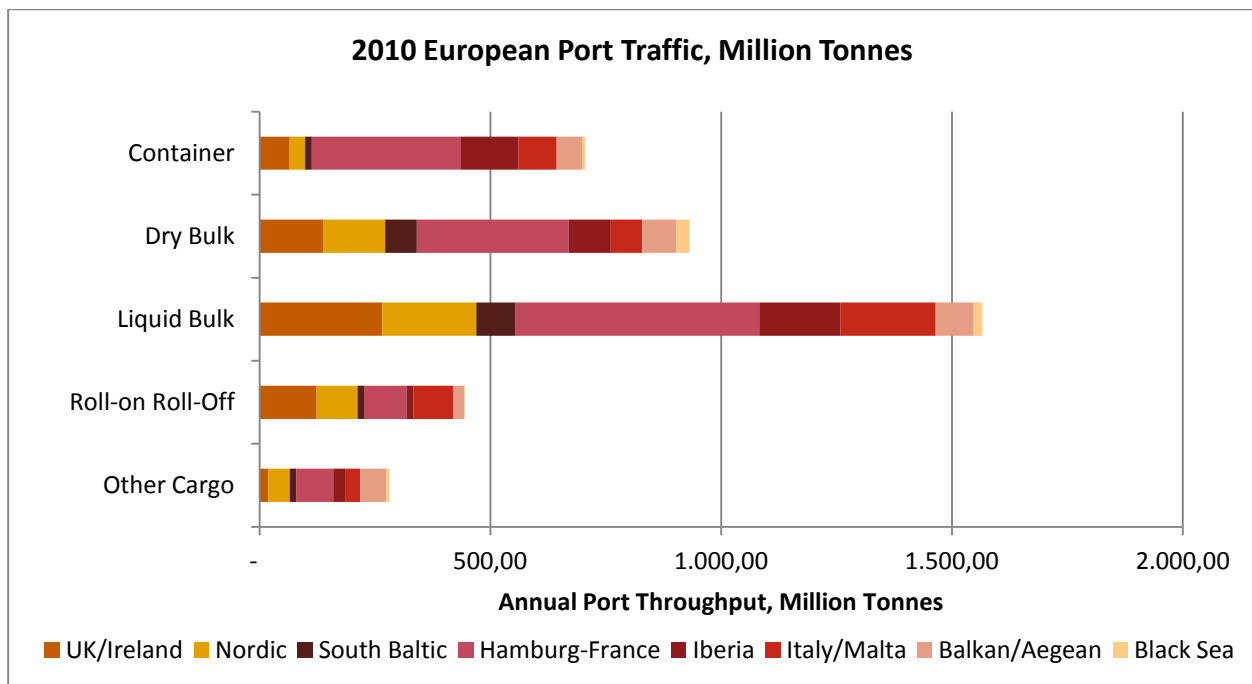
Between 2005 and 2010 the pattern has been that container and other non-bulk sectors have grown, but dry and liquid bulk traffics were either static or falling.

**Table 29 - 2010 port traffic by region of loading/unloading**

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

Source: Eurostat/ETISplus.

**Figure 57 – 2010 European port traffic (million tonnes)**



### 8.1.2 Demand: Port traffic forecasts

It is forecast, based on current economic projections, that the market will increase from 3.9 billion tonnes in 2010 to 5.8 billion tonnes by 2030 and 6.7 billion tonnes by 2050.

The most important growth sector is expected to be container traffic, increasing from 704 million tonnes in 2010 to 1,317 million tonnes in 2030 and 1,577 million tonnes in 2050.

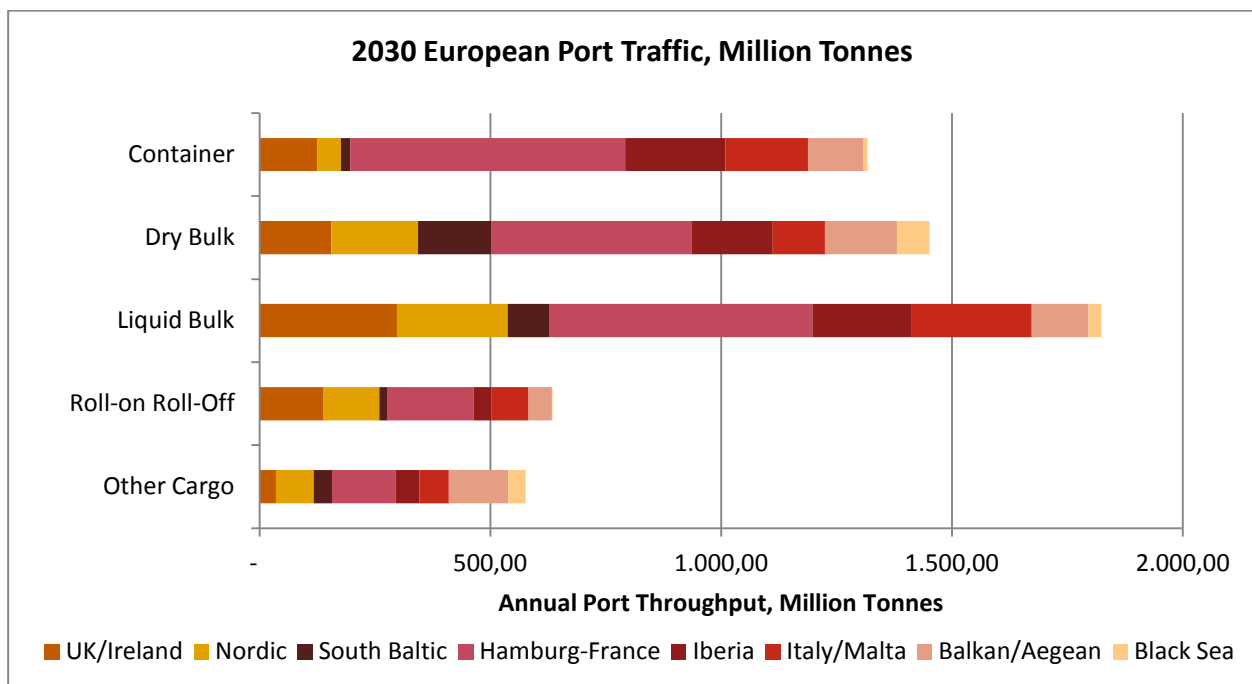
Bulk sectors remain closer to their current levels, influenced by expected changes in the energy market, higher oil prices and the impacts of de-carbonization.

**Table 30 - 2030 port traffic by region of loading/unloading**

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

Source: Study authors.

**Figure 58 - 2030 European port traffic (million tonnes)**

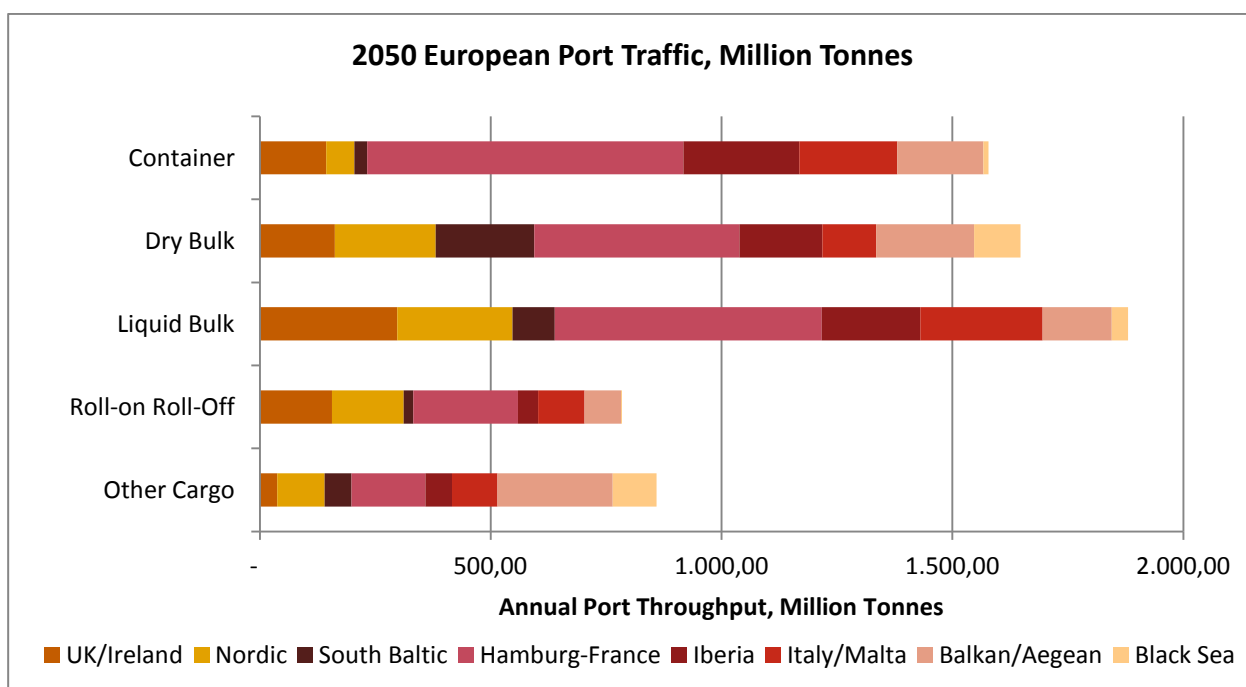


**Table 31 - 2050 port traffic by region of loading/unloading**

Region	Container	Dry Bulk	Liquid Bulk	RoRo	Other Cargo	Total
UK/Ireland	143.78	162.75	298.01	156.15	38.07	798.77
Nordic	60.81	218.32	249.03	155.18	102.34	785.68
South Baltic	27.93	213.52	92.09	21.23	58.47	413.24
Hamburg-France	685.12	444.30	577.97	226.22	159.69	2,093.29
Iberia	250.54	179.67	213.52	44.05	57.89	745.67
Italy/Malta	212.32	116.53	264.37	100.34	98.13	791.69
Balkan/Aegean	186.33	211.94	150.10	79.29	249.85	877.51
Black Sea	11.15	100.41	35.31	2.17	94.50	243.54
Total	1,577.98	1,647.44	1,880.41	784.65	858.93	6,749.40

Source: Study authors.

**Figure 59 - 2030 European port traffic (million tonnes)**



Tables above show the sum of port traffic in all EU ports (broken down per range), including import, export, domestic and transshipment traffic.

### 8.1.3 Comparisons with other market research studies

#### ISL Port Traffic Forecasts up to 2025

In the 2010 study by ISL, “Prognose des Umschlagpotenzials des Hamburger Hafens für 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 organization of these traffic flows, and with cost and fuel savings offered by scale economies the port expects that there will be greater specialization 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 32 - Port of Rotterdam, Port Vision 2030**

Scenario	2030 prediction (tonnes)	Annual growth rate 2010-2030
Low Growth	475 million	0.5% per annum
High Oil Price	575 million	1.5% per annum
European Trend	650 million	2.1% per annum
Global Economy	750 million	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, 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 feeding 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.

### 8.1.4 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.

**Table 33 North European Deep Sea Ports Utilization 2004**

Port	Capacity Utilization
Le Havre	89.6%
Antwerp	92.9%
Rotterdam	92.5%
Bremerhaven	95.5%
Hamburg	93.2%

Source Drewry Shipping Consultants & European Association for forwarding, transport, logistics and custom services (CLECAT)

#### 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, utilization rates would reach in excess of 80%, the point at which congestion would start to be felt by users.

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

In the update study in 2012 (post crisis) OSC show that capacity utilization 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.

The time-series shows how the capacity utilization has stabilized 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, utilization rates will start to reach 70% again by 2020.

These market research studies (as shown in Annex V) indicate that the demand/supply 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 will be restored steadily, and shipping capacity can be added at short notice, but adding port capacity is more difficult. A.A. Pallis<sup>72</sup> 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 realized, and many others have failed to win approval. Maasvlakte II has taken over twenty years from initial plans to realization.

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<sup>73</sup>. 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 utilization rates at around 70%. By 2020 the market is predicted to be experiencing growth in demand, but the foreseeable investment projects will have been realized.

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 utilization 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 utilization rate will reach the congestion threshold of 80% before 2030, and by 2030 the utilization rate will exceed 95% in some regions.

Consultation with the industry, during 2012, has shown that with further trade and volume growth forecast, there is a compelling need for a more widespread and uniform realization of best practice in order to prevent latent structural problems and distortions becoming real bottlenecks. Many stakeholders have drawn attention to structural legacies in the sector which result in disparities in modernization, responsiveness and performance. It is argued therefore that some safeguards are necessary to remove the barriers that prevent ports and port operators moving quickly towards a situation where such disparities are overcome.

In the phase 1 survey it was found that for any given service in any given port there was a 60% likelihood of finding at least one problem with at least one service. Furthermore, it was found that many users still identify problems concerning European port infrastructure, maritime access, hinterland access and organizational issues.

---

<sup>72</sup> 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

<sup>73</sup> De Spiegel, December 2012

## ***8.2 Identification of impacts***

The three tables overleaf identify and outline the main economic, social and environmental impacts of the policy initiative.



**Table 34 Economic impacts**

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Functioning of the internal market and competition</b>						
What impact (positive or negative) does the option have on the free movement of goods, services, capital and workers?	Low positive	All players in port	The initiative on concessions (DG MARKET), etc. should favour market freedom.	Medium positive	All players in port	Open market access and competition guarantee the opportunity for everyone to invest in ports, even outsiders. Measures 1, 2, 3, 4 and 5 are focused on this issue.
Will it lead to a reduction in consumer choice, higher prices due to less competition, the creation of barriers for new suppliers and service providers, the facilitation of anti-competitive behaviour or emergence of monopolies, market segmentation, etc.?	Not relevant			High positive	Port operators	Prices should be lowered by increased competition. Barriers to entry should be removed and monopolies are limited to very peculiar cases of natural monopolies.  Measures: 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 15, 17.
<b>Competitiveness, trade and investment flows</b>						
What impact does the option have on the global competitive position of EU firms? Does it impact productivity?	Negative	Port operators	According to the survey, limited competitiveness on specific segments might direct EU players to neighbour countries, where conditions are more convenient.	Medium positive	Port operators	Increased competition would increase private investments and efficiency, which are needed to compete with extra-EU ports in responding to the increase in traffic that is expected for years to come.  Measures: 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 15, 17.
What impact does the option have on trade barriers?	None			None		
Does it provoke cross-border investment flows (including relocation of economic activity)?	Not relevant			Medium relevant	Investors	The implementation of a level playing field is likely to increase investment flows, which are also cross-border.  Measures: 1, 2, 3, 4, 6, 7, 8, 11, 12.
<b>Operating costs and conduct of business/Small and Medium Enterprises</b>						
Will it impose additional adjustment, compliance or transaction costs on	Not relevant			Low positive	Port authorities	The instauration of a committee or bodies for the coordination of port activities would

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
businesses?					Port operators	result in a marginal increase in costs and activities to be carried out. Measures: 9, 10.
How does the option affect the cost or availability of essential inputs (raw materials, machinery, labour, energy, etc.)?	Low negative	Port operators Shipping companies	Current inefficiencies in the availability in particular of space (access to space) would remain and become more and more relevant as traffic increases. This creates a shift between the optimal allocation of resources and the actual one.	Low positive	Port operators	An open market would likely provide better access to inputs at lower cost and increased quality, following the requirements of the market. Coordination would further efficiently allocate inputs. Measures: 1, 2, 3, 4, 5, 9, 10.
Does it affect access to finance?	Not relevant			Not relevant		
Does it impact on the investment cycle?	Not relevant			Medium positive	Public entities (port authorities); port operators	Coordination within the port should impact the definition of investments phase. Measures: 9, 10.
Will it entail the withdrawal of certain products from the market? Is the marketing of products limited or prohibited?	Not relevant			Not relevant		
Will it entail stricter regulation of the conduct of a particular business?	Low positive	Public authorities	DG MARKT proposal on concessions would likely demand for stricter regulation on concessions.	Low positive	Public authorities	Public authorities would be forced to keep separate accounts when acting as service providers and provide financial records. Measures: 11, 12, 13.
Will it lead to new or the closing down of businesses?	Not relevant			Medium positive	Port operators	Increased competition and level playing field would foster new business opportunities for entrants. Measures: 1, 2, 3, 4, 5, 11, 12.
Are some products or businesses treated differently from others in a comparable situation?	Low positive	Various players	Although some actions have been taken for the increase of homogeneity (see previous impacts), strong differences between MS would remain in port	Medium positive	Various players	A stronger action aiming at increase homogeneity would sweep away differences between businesses in different areas of the European Union.

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
			service market. Moreover, services characterized by monopolistic and oligopolistic markets would likely remain out of competition for longer than the market requires.			The effort to open the market would reduce the number of uncompetitive business to natural monopolies, balancing the roles of all players in the port service market. Measures: 1, 2, 3, 4, 11, 12.
<b>Administrative burdens on businesses</b>						
Does it affect the nature of information obligations placed on businesses (for example, the type of data required, reporting frequency, the complexity of submission process)?	Not relevant			Low negative	Public authorities;  Port operators	Public authorities would be forced by the initiative to keep clear and transparent track of their activity as port service providers, as well as to publish awarding criteria, which leads to an increase in administrative costs. Coordination would raise similar requirements and costs. Measures: 6, 7, 8, 9, 15, 17.
What is the impact of these burdens on SMEs in particular?	Not relevant			Not relevant		
<b>Public authorities</b>						
Does the option have budgetary consequences for public authorities at different levels of government (national, regional, local), both immediately and in the long run? Does it bring additional governmental administrative burden? Does the option require the creation of new or restructuring of existing public authorities?	Not relevant			Low negative	Public authorities  Port operators	Committees would require additional administrative burdens. In particular, coordination inter-ports requires new or restructured public authorities for its functioning. Measures: 9, 10.

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Property rights</b>						
Are property rights affected (land, movable property, tangible/intangible assets)? Is acquisition, sale or use of property rights limited?	Low positive	Port operators	DG MARKT proposes a restructuring of concessions regulation.	Not relevant		
Or will there be a complete loss of property?	Not relevant			Not relevant		
<b>Innovation and research</b>						
Does the option stimulate or hinder research and development?	Low positive	All players	As in any market, development would be brought by market needs	Low positive	All players	With higher share of activities in open competition, investments would be boosted to increase efficiency in order to win public tendering as well as improve profitability of investments.
Does it promote greater productivity/resource efficiency?						Measures: 1, 2, 3, 4, 5, 11, 12.
Does it facilitate the introduction and dissemination of new production methods, technologies and products?	Not relevant			Not relevant		
Does it affect intellectual property rights (patents, trademarks, copyright, other know-how rights)?	Not relevant			Not relevant		
Does it promote or limit academic or industrial research?	Not relevant			Not relevant		
<b>Consumers and households</b>						
Does the option affect the prices consumers pay? Does it impact on consumers' ability to benefit from the internal market? Does it have an impact on the quality and availability of the goods/services they buy, on consumer choice and confidence? (cf. in particular non-existing and incomplete markets –	Not relevant			Not relevant		

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
see Annex 8) Does it affect consumer information and protection? Does it have significant consequences for the financial situation of individuals / households, both immediately and in the long run? Does it affect the economic protection of the family and of children?						
<b>Specific regions or sectors</b>						
Does the option have significant effects on certain sectors?	Not relevant			High positive	All stakeholders	All measures have a high impact on the shipping and port sectors.
Will it have a specific impact on certain regions, for instance in terms of jobs created or lost?	Low positive		On one side, the Commission is working for homogeneity to increase among MS, on the other, local interests and differences are likely to – at least partially – overturn the effort.	High positive		All measures have a high impact on coastal regions of the European Union.
Is there a single Member State, region or sector which is disproportionately affected (so-called “outlier” impact)?	Not relevant			Not relevant		
<b>Third countries and international relations</b>						
How does the option affect trade or investment flows between the EU and third countries? How does it affect EU trade policy and its international obligations, including in the WTO?	Not relevant			Low positive	All stakeholders	The reduction of port costs should positively impact the overall cost of transport, even if marginally, thus fostering trade activities. All measures, with the exception of: 14, 17.
Does the option affect specific groups (foreign and domestic businesses and consumers) and if so in what way?	Low negative	Private operators	Keeping competition limited affects the freedom of the market and raises entry barriers for private operators.	Low positive	Private operators	Free market would boost competition and eliminate entry barriers for all type of operators/investors. Measures: 1, 2, 3, 4, 5, 11

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
Does the option concern an area in which international standards, common regulatory approaches or international regulatory dialogues exist?	Not relevant			Not relevant		
Does it affect EU foreign policy and EU/EC development policy?	Not relevant			Not relevant		
What are the impacts on third countries with which the EU has preferential trade arrangements?	Not relevant			Not relevant		
Does it affect developing countries at different stages of development (least developed and other low-income and middle income countries) in a different manner?	Not relevant			Not relevant		
Does the option impose adjustment costs on developing countries?	Not relevant			Not relevant		
Does the option affect goods or services that are produced or consumed by developing countries?	Not relevant			Not relevant		
<b>Macroeconomic environment</b>						
Does it have overall consequences of the option for economic growth and employment?	Low positive	All stakeholders	The capacity of ports in terms of service quality and efficiency would increase at a slower rate than the increase of traffic volumes.	Medium positive	All stakeholders	The opening to the market would most likely create balance between expected growth of demand and supply of services. Measures: 1, 2, 4, 5, 6.
How does the option contribute to improving the conditions for investment and the proper functioning of markets?	Low positive	Private investors	The presence of restrictions to competition hinders investments. Nonetheless some interest have been shown to regulate the market	Positive	Private investors	The elimination of entry barriers, as well as the opening of the market and the implementation of easier and single EU authorization procedures would attract more investors and also cross-country ones.

Economic impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
						Increased competition and level playing field would foster new business opportunities for entrants. Measures: 1, 2, 3, 4, 5, 11, 12, 13.
Does the option have direct impacts on macro-economic stabilization?	Not relevant			Not relevant		

**Table 35 - Social impact of policy options**

Social impact	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Employment and labour markets</b>						
Does the option facilitate new job creation?	Low positive	Port workers	As a consequence of increased volumes of traffic, employment is likely to increase.	Medium positive	Port workers	As a consequence of increased volumes of traffic, employment is likely to increase. A free market is moreover able to attract more businesses and increase port capacity, with higher positive impact on job creation. Measures: 1, 2, 4, 5, 9, 10.
Does it lead directly or indirectly to a loss of jobs?	Not relevant			Low negative / medium positive	Port workers	The elimination of monopolies would most likely reduce employment in a first time, but as ports become more efficient, operators will increase, with consequent positive impact on job creation. Measures: 1, 2, 4, 5, 8, 11, 12.
Does it have specific negative consequences for particular professions, groups of workers, or self-employed persons?	Not relevant			Not relevant		
Does it affect particular age groups?	Not relevant			Not relevant		
Does it affect the demand for labour?	Low positive	Port workers	See question "Does the option facilitate new job creation?"	Medium positive	Port workers	See question "Does the option facilitate new job creation?"
Does it have an impact on the functioning of the labour market?	Not relevant			Not relevant		
Does it have an impact on the reconciliation between private, family and professional life?	Not relevant			Not relevant		



Social impact	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Standards and rights related to job quality</b>						
Does the option impact on job quality?	Not relevant			Not relevant		
Does the option affect the access of workers or job-seekers to vocational or continuous training?	Not relevant			Not relevant		
Will it affect workers' health, safety and dignity?	Not relevant			Low positive	Port workers	Committees and information sharing would indirectly improve safety, through sharing of best practices. Measures: 9, 10.
Does the option directly or indirectly affect workers' existing rights and obligations, in particular as regards information and consultation within their undertaking and protection against dismissal?	Not relevant			Not relevant		
Does it affect the protection of young people at work?	Not relevant			Not relevant		
Does it directly or indirectly affect employers' existing rights and obligations?	Not relevant			Not relevant		
Does it bring about minimum employment standards across the EU?	Not relevant			Not relevant		
Does the option facilitate or restrict restructuring, adaptation to change and the use of technological innovations in the workplace?	Not relevant			Not relevant		
<b>Social inclusion and protection of particular groups</b>						
Does the option affect access to the labour market or transitions into/out of the labour market?	Not relevant			Not relevant		
Does it lead directly or indirectly to greater equality or inequality?	Not relevant			Not relevant		
Does it affect equal access to services and goods?	Not relevant			Not relevant		
Does it affect access to placement services or to services of general economic interest?	Not relevant			Not relevant		
Does the option make the public better informed about a particular issue?	Not relevant			Not relevant		

Social impact	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
Does the option affect specific groups of individuals (for example the most vulnerable or the most at risk of poverty, children, women, elderly, the disabled, unemployed or ethnic, linguistic and religious minorities, asylum seekers), firms or other organizations (for example churches) or localities more than others? , firms, localities more than others?	Not relevant			Not relevant		
Does the option significantly affect third country nationals?	Not relevant			Not relevant		
<b>Gender equality, equality treatment and opportunities, non –discrimination.</b>						
Does the option affect the principle of non-discrimination, equal treatment and equal opportunities for all?	Not relevant			Not relevant		
Does the option have a different impact on women and men?	Not relevant			Not relevant		
Does the option promote equality between women and men?	Not relevant			Not relevant		
Does the option entail any different treatment of groups or individuals directly on grounds of sex, racial or ethnic origin, religion or belief, disability, age, and sexual orientation? Or could it lead to indirect discrimination?	Not relevant			Not relevant		
<b>Individuals, private and family life, personal data</b>						
Does the option impose additional administrative requirements on individuals or increase administrative complexity?	Not relevant			Not relevant		
Does the option affect the privacy, of individuals (including their home and communications)?	Not relevant			Not relevant		
Does it affect the right to liberty of individuals?	Not relevant			Not relevant		
Does it affect their right to move freely within the EU?	Not relevant			Not relevant		
Does it affect family life or the legal, economic or social protection of the family?	Not relevant			Not relevant		
Does it affect the rights of the child?	Not relevant			Not relevant		
Does the option involve the processing of personal data or the concerned individual's right of access to personal data?	Not relevant			Not relevant		

Social impact	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Governance, participation, good administration, access to justice, media and ethics</b>						
Does the option affect the involvement of stakeholders in issues of governance as provided for in the Treaty and the new governance approach?	Not relevant			Not relevant		
Are all actors and stakeholders treated on an equal footing, with due respect for their diversity? Does the option impact on cultural and linguistic diversity?	Not relevant			Not relevant		
Does it affect the autonomy of the social partners in the areas for which they are competent? Does it, for example, affect the right of collective bargaining at any level or the right to take collective action?	Not relevant			Not relevant		
Does the implementation of the proposed measures affect public institutions and administrations, for example in regard to their responsibilities?	Not relevant			Not relevant		
Will the option affect the individual's rights and relations with the public administration?	Not relevant			Not relevant		
Does it affect the individual's access to justice?	Not relevant			Not relevant		
Does it foresee the right to an effective remedy before a tribunal?	Not relevant			Not relevant		
Does the option make the public better informed about a particular issue? Does it affect the public's access to information?	Not relevant			Not relevant		
Does the option affect political parties or civic organizations?	Not relevant			Not relevant		
Does the option affect the media, media pluralism and freedom of expression?	Not relevant			Not relevant		
Does the option raise (bio) ethical issues (cloning, use of human body or its parts for financial gain, genetic research/testing, use of genetic information)?	Not relevant			Not relevant		

Social impact	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>Public health and safety</b>						
Does the option affect the health and safety of individuals/populations, including life expectancy, mortality and morbidity, through impacts on the socio-economic environment (working environment, income, education, occupation, nutrition)?	Not relevant			Not relevant		
Does the option increase or decrease the likelihood of health risks due to substances harmful to the natural environment?	Not relevant			Not relevant		
Does it affect health due to changes in the amount of noise, air, water or soil quality?	Low negative	Employees in the port and nearby community	The increase in traffic would lead in increased externalities.	Low negative	Employees in the port and nearby community	The increase in traffic would lead in increased externalities. Nonetheless a better allocation of traffic demand can be guaranteed by incentives to reduce negative impacts on the environment. Measures: 16
Will it affect health due to changes energy use and/or waste disposal?	Not relevant			Not relevant		
Does the option affect lifestyle-related determinants of health such as diet, physical activity or use of tobacco, alcohol, or drugs?	Not relevant			Not relevant		
Are there specific effects on particular risk groups (determined by age, gender, disability, social group, mobility, region, etc.)?	Not relevant			Not relevant		
<b>Crime, Terrorism and Security</b>						
Does the option improve or hinder security, crime or terrorism?	Not relevant			Not relevant		
Does the option affect the criminal’s chances of detection or his/her potential gain from the crime?	Not relevant			Not relevant		
Is the option likely to increase the number of criminal acts?	Not relevant			Not relevant		
Does it affect law enforcement capacity?	Not relevant			Not relevant		
Will it have an impact on security interests?	Not relevant			Not relevant		

Social impact	Baseline scenario		Description	Intervention scenario		
	Expected impact	Stakeholders affected		Expected impact	Stakeholders affected	Description
Will it have an impact on the right to liberty and security, right to fair trial and the right of defence?	Not relevant			Not relevant		
Does it affect the rights of victims of crime and witnesses?	Not relevant			Not relevant		
<b>Access to and effects on social protection, health and educational systems</b>						
Does the option have an impact on services in terms of quality/access for all?	Not relevant			Not relevant		
Does it have an effect on the education and mobility of workers (health, education, etc.)?	Not relevant			Not relevant		
Does the option affect the access of individuals to public/private education or vocational and continuing training?	Not relevant			Not relevant		
Does it affect the cross-border provision of services, referrals across borders and co-operation in border regions?	Not relevant			Not relevant		
Does the option affect the financing/organization/access to social, health and care services?	Not relevant			Not relevant		
Does it affect universities and academic freedom/self-governance?	Not relevant			Not relevant		
<b>Culture</b>						
Does the proposal have an impact on the preservation of cultural heritage?	Not relevant			Not relevant		
Does the proposal have an impact on cultural diversity?	Not relevant			Not relevant		
Does the proposal have an impact on citizens' participation in cultural manifestations, or their access to cultural resources?	Not relevant			Not relevant		
<b>Social impacts in third countries</b>						
Does the option have a social impact on third countries that would be relevant for overarching EU policies, such as development policy?	Not relevant			Not relevant		
Does it affect international obligations and commitments of the EU arising from e.g. the ACP-EC Partnership Agreement or the Millennium Development Goals?	Not relevant			Not relevant		
Does it increase poverty in developing countries or have an impact on income of the poorest populations?	Not relevant			Not relevant		



**Table 36 Environmental impacts**

Environmental impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>The climate</b>						
Does the option affect the emission of greenhouse gases (e.g. carbon dioxide, methane etc.) into the atmosphere?	Low negative	Whole society	The increase in traffic leads to an increase of related negative externalities.	Low negative / low positive	Whole society	The increase in traffic leads to an increase of related negative externalities. Nonetheless, increased efficiency in the port sector encourage modal shift from more polluting means of transport to maritime transport means.  All measures aim at increasing port efficiency.
Does the option affect the emission of ozone-depleting substances (CFCs, HCFCs etc.)?	Not relevant			Not relevant		
Does the option affect our ability to adapt to climate change?	Not relevant			Not relevant		
<b>Transport and the use of energy</b>						
Does the option affect the energy intensity of the economy?	Not relevant			Not relevant		
Does the option affect the fuel mix (between coal, gas, nuclear, renewables etc.) used in energy production?	Not relevant			Not relevant		
Will it increase or decrease the demand for transport (passenger or freight), or influence its modal split?	Not relevant			Low positive	Whole transport sector	The increase in traffic leads to an increase of related negative externalities. Nonetheless, increased efficiency in the port sector encourage modal shift from more polluting means of transport to maritime transport means.  All measures aim at increasing port

Environmental impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
						efficiency.
Does it increase or decrease vehicle emissions?	Not relevant			Not relevant		
Will the option increase/decrease energy and fuel needs/consumption?	Not relevant			Not relevant		
<b>Air quality</b>						
Does the option have an effect on emissions of acidifying, eutrophying, photochemical or harmful air pollutants that might affect human health, damage crops or buildings or lead to deterioration in the environment (soil or rivers etc.)?	Not relevant			Not relevant		
<b>Biodiversity, flora, fauna and landscapes</b>						
Does the option reduce the number of species/varieties/races in any area (i.e. reduce biological diversity) or increase the range of species (e.g. by promoting conservation)?	Not relevant			Not relevant		
Does it affect protected or endangered species or their habitats or ecologically sensitive areas?	Not relevant			Not relevant		
Does it split the landscape into smaller areas or in other ways affect migration routes, ecological corridors or buffer zones?	Not relevant			Not relevant		
Does the option affect the scenic value of protected landscape?	Not relevant			Not relevant		
<b>Water quality and resources</b>						
Does the option decrease or increase the quality or quantity	Not relevant			Not relevant		



Environmental impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
of freshwater and groundwater?						
Does it raise or lower the quality of waters in coastal and marine areas (e.g. through discharges of sewage, nutrients, oil, heavy metals, and other pollutants)?	Not relevant			Not relevant		
Does it affect drinking water resources?	Not relevant			Not relevant		
<b>Soil quality or resources</b>						
Does the option affect the acidification, contamination or salinity of soil, and soil erosion rates?	Not relevant			Not relevant		
Does it lead to loss of available soil (e.g. through building or construction works) or increase the amount of usable soil (e.g. through land decontamination)?	Not relevant			Not relevant		
<b>Land use</b>						
Does the option have the effect of bringing new areas of land ('greenfields') into use for the first time?	Not relevant			Not relevant		
Does it affect land designated as sensitive for ecological reasons? Does it lead to a change in land use (for example, the divide between rural and urban, or change in type of agriculture)?	Not relevant			Not relevant		
<b>Renewable or non-renewable resources</b>						
Does the option affect the use of renewable resources (fish etc.) and lead to their use being faster than they can regenerate?	Not relevant			Not relevant		
Does it reduce or increase use of non-renewable resources (groundwater, minerals etc)?	Not relevant			Not relevant		

Environmental impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
<b>The environmental consequences of firms and consumers</b>						
Does the option lead to more sustainable production and consumption?	Not relevant			Not relevant		
Does the option change the relative prices of environmental friendly and unfriendly products?	Not relevant			Not relevant		
Does the option promote or restrict environmentally un/friendly goods and services through changes in the rules on capital investments, loans, insurance services etc?	Not relevant			Not relevant		
Will it lead to businesses becoming more or less polluting through changes in the way in which they operate?	Not relevant			Not relevant		
<b>Waste production / generation / recycling</b>						
Does the option affect waste production (solid, urban, agricultural, industrial, mining, radioactive or toxic waste) or how waste is treated, disposed of or recycled?	Not relevant			Not relevant		
<b>The likelihood or scale of environmental risks</b>						
Does the option affect the likelihood or prevention of fire, explosions, breakdowns, accidents and accidental emissions?	Not relevant			Not relevant		
Does it affect the risk of unauthorized or unintentional dissemination of environmentally alien or genetically modified organisms?	Not relevant			Not relevant		
Does the option have an impact on health of animals?	Not relevant			Not relevant		

Environmental impacts	Baseline scenario			Intervention scenario		
	Expected impact	Stakeholders affected	Description	Expected impact	Stakeholders affected	Description
Does the option affect animal welfare (i.e. humane treatment of animals)?	Not relevant			Not relevant		
Does the option affect the safety of food and feed?	Not relevant			Not relevant		
<b>International environmental impacts</b>						
Does the option have an impact on the environment in third countries that would be relevant for overarching EU policies, such as development policy?	Not relevant			Not relevant		

# 9 Assessment of impacts of policy options

While the previous section concerned the assessment of the baseline scenario, we now considered the impact that measures and policy packages described in Section 5 might have on the port service market.

The impact assessment phase was conducted through the joint analysis of a quantitative analysis, conducted starting from the same models used for the baseline scenario and a quantitative analysis based on the results of the phase 2 survey.

## 9.1 Quantitative assessment of policy packages

This section of the impact assessment attempts to relate the given policy packages to certain aggregate measures of performance within the transport network. However, the relationship between the packages, the measures they contain, and their impacts is not straightforward. As seen from the stakeholder consultation, many aspects of the maritime transport sector are considered to be performing well. The nature of the policy packages is therefore constructive, i.e. attempting to support the industry by allowing free market principles to be applied as widely as possible.

The port sector is currently operating in a period of transition. Historically, there has been strong growth, resulting in periods where capacity has not kept pace with demand. Since the financial downturn, the demand/supply balance has recovered, helped by the release of capacity from investments started in the 2000s, many of which have benefited from direct investment by the public sector. Today, performance bottlenecks are more likely to be found on the hinterland side, or resulting from technical changes related to the use of larger ships. It is however necessary to consider the implications over the coming decades.

The baseline forecast suggests that even with modest growth, the absolute increase in tonnage for European ports will be considerable. Growth of 1.3% per annum will add over 2.5 billion tonnes of throughput amongst European ports by 2050. Technical change in the shipping sector (larger vessels) will also make some of the existing capacity obsolete.

In recent decades, capacity growth has been achieved through a combination of long term investments in port infrastructure, often financed by the public sector, accompanied by largely private sector investments in terminals.

There are reasons, however, to suggest that this pattern of growth may no longer be sustainable. Investigations such as the 2012 report by the European Court of Auditors show that public sector led investment may be wasteful. In future, there will be a lower availability of public funds, and authorities will seek to recoup their investments, rather than extending their debts.

Investment therefore needs to be market led, and situations such as the UK port sector indicate that it is possible to create conditions where public sector investment and government intervention are minimal. Essentially, there are many financially autonomous ports competing for the same hinterland, with a consistent institutional framework.

In many other parts of Europe, uncertainty for potential investors arises from the tendency for the public sector to place regional development goals above the need for promoting equal competition across borders. In this way it has become difficult for port authorities to compete if they do not follow the public investment route, and it is beyond the scope of a single port authority or Member State to harmonize rules for port financing. Amongst continental ports, cross-border competition for the hinterland is inevitable.

Therefore, if public funds become scarcer, there is a risk that without institutional reform to foster a level playing field, future investments will not be forthcoming. Removing the need for public financing of port

infrastructure, allows for example, greater investment in supporting areas, such as the removal of hinterland bottlenecks and the development of inland corridors.

Four separate model calculations have been attempted for the analysis of the baseline scenario:

1. Growth – a forecast of maritime (port) traffic up to 2030 and 2050 has been estimated using Trans-Tools v2.6 for the baseline scenario. This is considered exogenous with respect to the policy packages because it depends on economic growth. The ability of the industry to match potential demand growth with capacity is however relevant for the comparison of options;
2. User costs – aggregate user costs have been estimated, allowing potential savings to be estimated within the forecast year;
3. Traffic shifts – with lower port costs, there is a potential for some land to sea traffic shifts, principally from short-sea intra-European flows for which there is a land-based alternative; and
4. Employment – an increase in traffic is considered for the forecast of employment demand in the future.

### *9.1.1 Model calculation 1 – growth*

See 8.1.2.

### *9.1.2 Model calculation 2 - user costs*

In this section we attempt to estimate the total level of cost incurred in relation to European maritime transport.

2010 maritime transport volumes have been estimated from Eurostat data, split by the main cargo types:

- Dry bulk;
- Liquid bulk;
- Container;
- RoRo; and
- Other.

Port-to-port flows have been grouped according to standard coastal ranges into O/D<sup>74</sup> matrices. From this it is possible to estimate for each cargo flow:

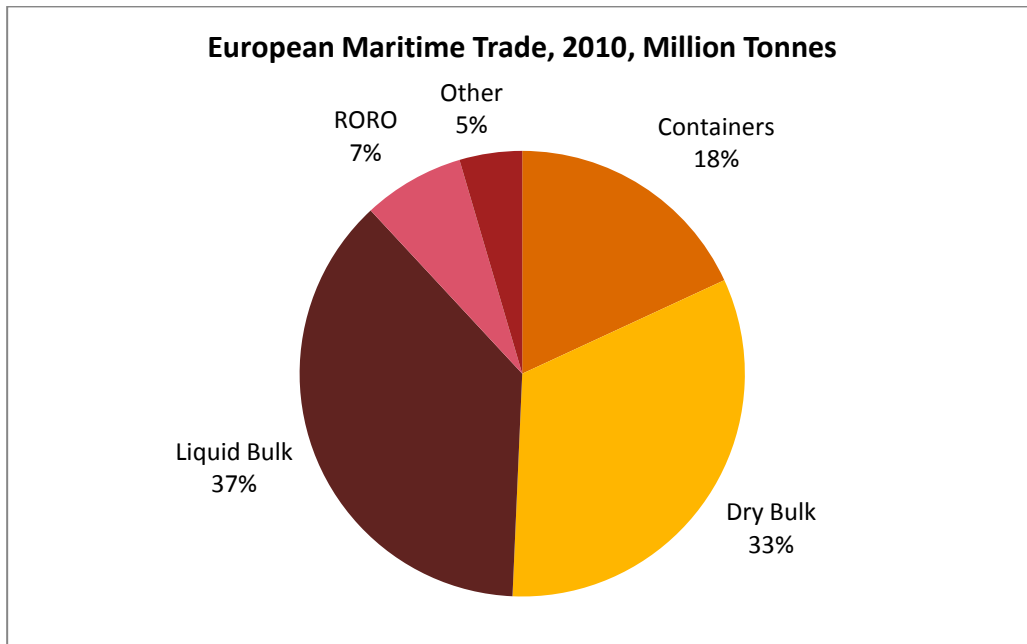
- Maritime costs; and
- Port costs at the port of loading and unloading respectively.

In total we estimate that there are just over two billion tonnes to, from and between European countries. This two billion tonnes may involve more than one European port call, either because both port of loading and unloading are in Europe, or because there is one or more transshipment stage. Domestic traffic is not counted in this figure. Traffic is split approximately equally between liquid bulk, dry bulk and non-bulk. Non-bulk cargo is mainly container transport.

---

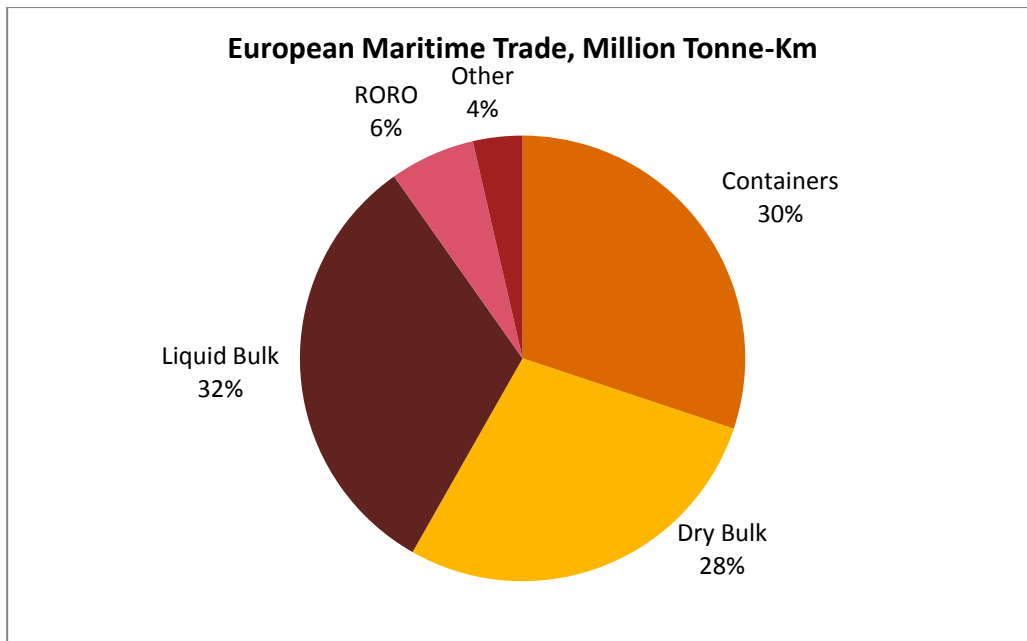
<sup>74</sup> Origin-Destination.

**Figure 60 - European maritime trade by cargo type (million tonnes) 2010**



Using this traffic set it is possible to convert from tonnages into tonne-kms by multiplying by sea distances.

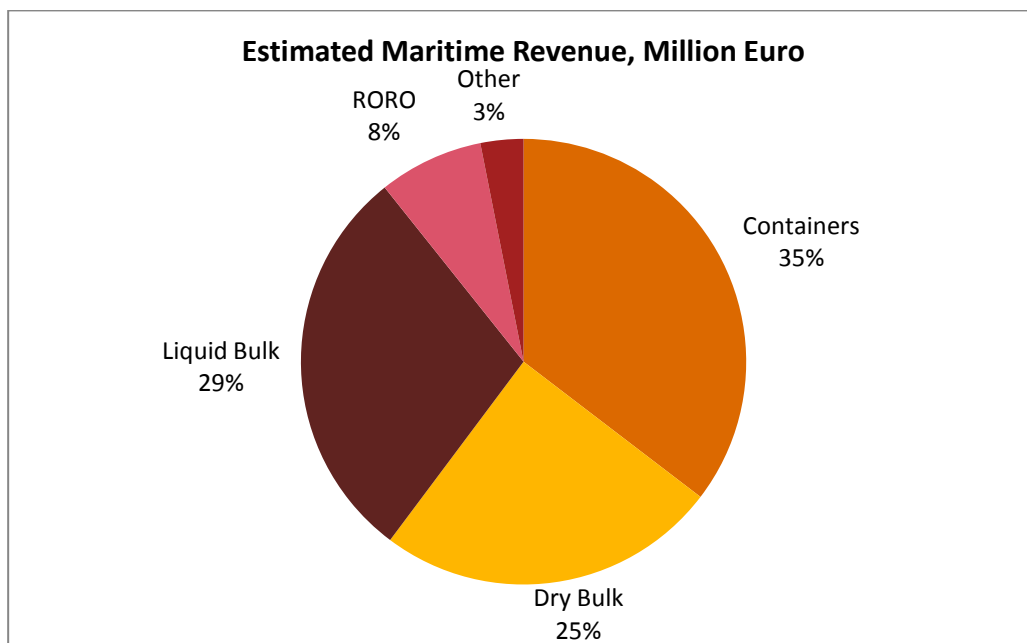
**Figure 61 - European maritime trade by cargo type (million tonne-km) 2010**



By estimating ship costs it is possible to consider how maritime trade revenue is generated by cargo type. Total revenue of 104,580 million Euros per annum for all sea traffic related to European trade is estimated.

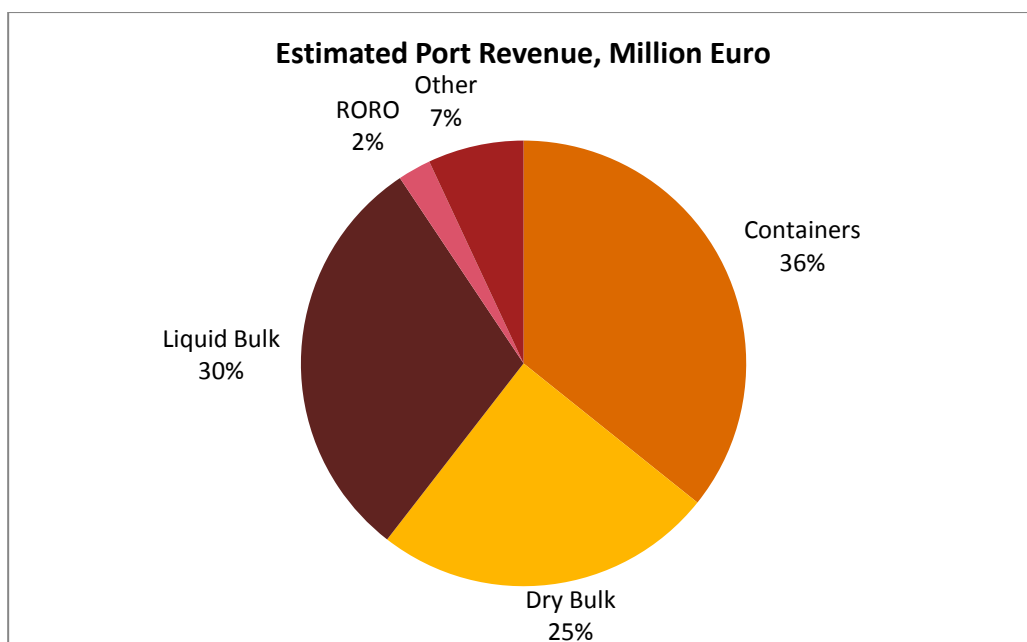
Because of the relatively long sea journeys and the higher freight rates per tonne, container traffic accounts for 35% of the market by revenue compared to only 18% by tonnage and 30% by transport performance (tonne-km). Container trade is closely followed by liquid bulk as a major generator of revenue (29%) and dry bulk (25%).

**Figure 62 - European maritime revenue by cargo type (million euro) 2010**



The same traffic matrix has been used to estimate port costs, also split by cargo type.

**Figure 63 - European port costs by cargo type (million euro) 2010**

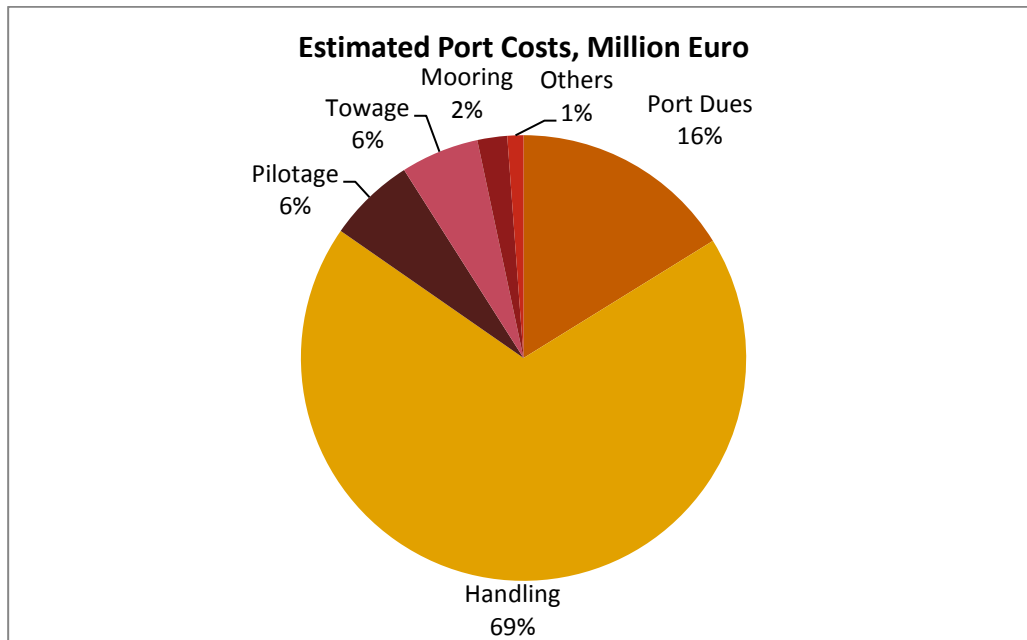


Port costs are further broken down into:

- Port dues;
- Handling charges;
- Pilotage;
- Towage;

- Mooring; and
- Other costs.

**Figure 64 - European port costs by service category (million euro) 2010**



Port costs have been estimated from port tariffs. In the model, rates are specified for different port services; port dues, cargo handling, pilotage, towage, mooring and other costs, and for different cargo types: container, dry bulk, liquid bulk, RORO and other cargo.

**Table 37 - Assumed port costs, euros per tonne, 2012**

	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, we therefore estimate 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 38 - 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
<b>TOTAL</b>	<b>2,601.57</b>	<b>15,837.23</b>

It is evident that port costs represent a small fraction of door to door costs. If a shipper pays €6 per tonne of cargo to cover all port services, as implied by the tables above, this is roughly equivalent to only 50-80 kilometres of road haulage. However due to the size of aggregate port volumes, small fractions saved through greater efficiency translate into large overall benefits.

### 9.1.3 Model calculation 3 - traffic shifts

The third element of the quantified impact assessment relates to the economic and environmental benefits arising from shifting traffic from land to sea. This arises from the direct savings in port costs (quantified above), and to wider benefits (not quantified) arising from network effects. Since these quantities can only be estimated from simulations, we have used a band-width to indicate the sensitivity of traffic shifts to changes in costs.

The *lower bound* is taken from the argument set out above, in which there is a 5% decrease in port costs per EU port.

The *upper bound* takes into consideration that port costs are only a small percentage of door to door costs, so hinterland and supply-chain co-ordination impacts could multiply the benefits. In this case a 15% decrease in port costs is assumed, per port.

If, for example, a container load of 15 tonnes is charged €126.75 (following the assumptions above: 15t x €8.45/t = €126.75 per container) in port costs, a 5% decrease would be a saving of €6.33 per container, and a 15% decrease would be €19.00. Thus the upper bound implies that a further €12.00-13.00 is found elsewhere in the supply chain, as a consequence of measures to improve inland planning related to maritime streams.

The modelling has been carried out by using the multimodal chain-estimation approach developed for Trans-Tools v2.6. Estimates are calculated against base year (2010) volumes, using ETISplus (DG-MOVE, FP7) data.

**Table 39 - Land freight tonne kms (millions)**

	Rail	Road	Waterway	Total inland
<b>Reference</b>	634,163	1,897,420	179,042	2,710,625
EU12	83,904	455,716	15,645	555,266
EU15	550,259	1,441,704	163,397	2,155,360
<b>Scenario 1</b>	630,736	1,895,819	179,248	2,705,802
EU12	83,852	455,616	15,936	555,404
EU15	546,884	1,440,202	163,312	2,150,398
<b>Scenario 2</b>	627,344	1,892,922	179,017	2,699,284
EU12	83,709	455,105	15,962	554,776
EU15	543,635	1,437,817	163,055	2,144,508

In the table above, a reference case is compared against two scenarios. Scenario 1 includes a 5% reduction in port costs, and scenario 2 a 15% reduction in port costs. These changes only impact upon traffic which has the option to shift from inland modes of transport to sea. The figures include all freight flows, and hence the relative shifts are small.

**Table 40 - Estimated inland traffic shifts**

	Rail	Road	Waterway	Total
<b>Scenario1-Ref</b>	-3,427	-1,602	206	-4,823
EU12	-52	-100	291	139
EU15	-3,375	-1,502	-85	-4,962
<b>Scenario2-Ref</b>	-6,819	-4,498	-25	-11,342
EU12	-195	-612	317	-490
EU15	-6,624	-3,887	-341	-10,852

Under the first scenario, inland transport is reduced by 4,823 million tonne kilometres per annum in base year terms. The shift is primarily from rail and road, and occurs within EU15 countries. In the second scenario there is a decrease of 11,342 million tonne kilometres per annum.

Sea volumes increase. Under the first scenario it is estimated that sea tonne kilometres increase by 9,007 million overall. This is greater than the inland decrease because distances are longer on average for the shifted traffic. In the second scenario, sea tonne kilometres increase by 23,915 million.

**Table 41 - Estimated traffic shifts (2010 to 2030 levels)**

	Rail	Road	Waterway	Sea	Total
Scenario1-Reference	-3,427	-1,602	206	9,007	
Scenario2-Reference	-6,819	-4,498	-25	23,915	
Tonnes/Unit load	15	15	15	15	
Externalities € per Unit/Km	0.161	0.3893	0.1984	0.0311	
SC1: Net benefits €/pa	36.79	41.57	-2.72	-18.67	<b>56.96</b>
SC2: Net benefits €/pa	73.19	116.74	0.33	-49.58	<b>140.67</b>

Using standard rates of externality differentiated only by mode, the net impact is estimated at €56.96 million per annum for scenario 1, and €140.67 million for scenario 2.

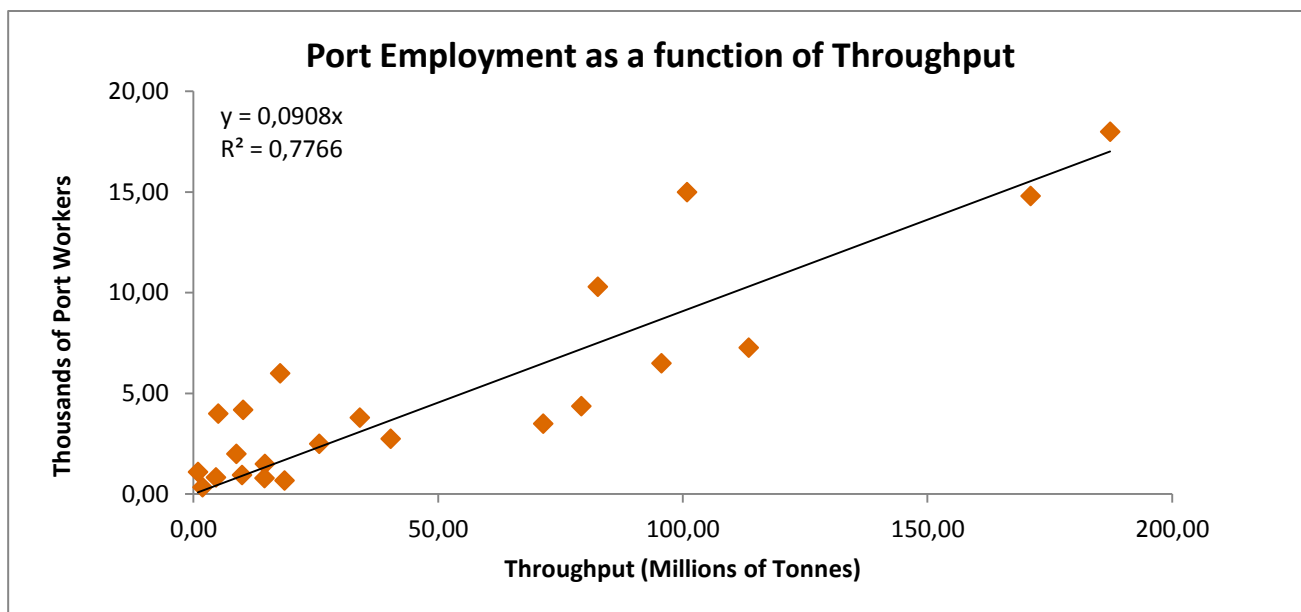
Taking these two points as the boundaries of the range of expectations, and applying a growth factor of 1.32 for 2030 equivalents, the net saving would become €130 million per annum.

#### 9.1.4 Model calculation 4: employment – job creation

The surveys conducted by Van Hooydonk<sup>75</sup> (2013), which cover a narrower definition of port labour, provide the basis for the assessment of the wide European picture on port employment.

Figure 65 shows a scatter plot relating converted throughput (in millions) against the number of port workers (in thousands).

**Figure 65 - 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.

Our analysis (see Annex VI – Administrative costs) shows that 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 arrive at the following estimation:

<sup>75</sup> Dr Eric Van Hooydonk, 2013, “Port Labour in the EU”, a study commissioned by the European Commission.

**Table 42 - Estimated employment levels, 2010 to 2030, reference scenario**

	2010	2030	Growth 30/10	Gr% YoY
<b>Throughput</b>				
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%
<b>Employment</b>				
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 Commission 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.

### 9.1.5 Policy packages – assumptions

Measures such as improved transparency or clearer rules for market access or market regulation do not in themselves create capacity or reduce transport costs. These are somewhat abstract measures that depend upon the state of existing best practices, and the commercial autonomy of port authorities and other stakeholders. The central assumption is therefore that in a functioning market structure, competition will lead to a more efficient allocation of resources. The impact of the policy therefore depends upon the gap between the current situation and what might be considered as a properly functioning market for port services, as well as the effectiveness of the measures in addressing the underlying issues.

The approach set out here is therefore to attempt a quantification of a future scenario. 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; and
- The impact of alternative freight traffic patterns on externalities of transport.

The assumed causality is that as a result of market reforms, port authorities gain greater financial autonomy, resulting in a better matching of investment to market need. Competition between ports, fairer rules across national borders, and stronger regulation of exclusive rights within ports help to foster efficiency and best practice.

Growth in trade is assumed to occur exogenously as a result of economic policy, but the ability of the port sector to match capacity to market needs depends upon the climate for investors. Policy measures included under the second strategic objective, (SO2), aim to improve such incentives. Reducing low-return public investments might also contribute to the funding of hinterland investment.

Lower user costs are assumed to arise from the systematic approach being set out in the policy packages. Facilitation of competition and market access are assumed to contribute to innovation. Growth and investment are assumed to contribute via economies of scale. Hinterland investments are assumed to save transport time and allow the use of lower cost multi-modal options. Co-ordination of different port services and the related information systems reduce costs within the supply chain.

Traffic shifts from land to sea occur as a result of lower port-related costs and through the greater ability to co-ordinate information within the supply chain for maritime chains.

It is therefore plausible to consider a scenario incorporating these three elements. The relation between the specific policy packages and the realization of this outcome is more uncertain. Therefore we set out the future scenario first, estimate the benefits and then assess the adequacy of the measures to create the pre-conditions.

All the elements of the port services policy as set out in the objectives, and those related to maritime and hinterland EU initiatives, need to be in place. For this reason the impacts are assessed against a forecast year of 2030.

### 9.1.6 Quantification of impacts – methodology

The methodology for the quantification of impacts is structured in five steps:



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.

#### Assumptions

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 and so on.

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 a measure aimed at port infrastructure is not deemed to have an impact on a technical nautical service for example.

Where linkages are deemed to exist, it is necessary then to assess what kind of impact is likely, either negative, positive or neutral impact on efficiency. It is not known which ports have the potential to improve their performance in a specific area, nor the level of improvement, so 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.

Information obtained from the user surveys has been analysed in order to derive assumptions about the scope for cost decreases.

**Table 43 - Assumed cost decrease per policy package**

	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

### Port costs

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. UK to the Iberian Peninsula. 17 coastline areas have been used, of which 13 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%.

**Table 44 - Estimated cost savings against reference scenario**

	Change (%) in total port related costs	Annual savings (€ million)
<b>PP1</b>	-2.0%	-318.15
<b>PP2</b>	-3.0%	-481.47
<b>PP2a</b>	-6.8%	-1,071.37
<b>PP3</b>	-7.9%	-1,245.21

### Modal shift

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.

**Table 45 - Estimated modal shift against reference scenario**

	Inland tonne-kms(m)	Maritime tonne-kms(m)	Maritime tonnes	Change in Short Sea Shipping (%)	Change in road transport over 300Km
<b>PP1</b>	-1,929	3,603	4,951,830	0.49%	-833
<b>PP2</b>	-2,894	5,404	7,427,745	0.73%	-1,249
<b>PP2a</b>	-5,996	13,311	16,550,502	1.63%	-2,634
<b>PP3</b>	-6,713	15,942	19,099,402	1.88%	-2,972

Model results show that inland traffic volumes fall by between 1.9 and 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. The impact on short sea shipping volumes ranges from an 0.49% increase in PP1 to a 1.88% increase in PP3.

For inland transport, the shift creates a decrease in road and rail transport, relative to the baseline. 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.

### Employment creation

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

**PP1** will have very small impact on traffic volume increase; hence, additional port volume would help to generate just around 700 additional jobs in 2030 (+0,1% against the baseline scenario).

**Table 46 - Estimated employment impacts, 2010 to 2030, PP1**

	2010	2030	Growth 30/10	Gr% YoY
<b>Throughput</b>				
EU port throughput (T.mln)	3.622,43	5.216,63	44%	1,8%
Adjusted throughput (T.mln)	1.107,94	1.805,65	63%	2,5%
<b>Employment</b>				
Port workers (000s)	111,18	163,95	47%	2,0%
Other maritime port FTE (000s)	101,19	117,54	16%	0,8%
Non maritime direct FTE (000s)	256,45	256,45	0%	0,0%
Total direct employment (000s)	468,83	537,95	15%	0,7%

Under **PP2** additional port volume would help to generate around 1,000 additional jobs in 2030 (+0,2% against the baseline scenario).

**Table 47 - Estimated employment impacts, 2010 to 2030, PP2**

	2010	2030	Growth 30/10	Gr% YoY
<b>Throughput</b>				
EU port throughput (T.mln)	3.622,43	5.222,73	44%	1,8%
Adjusted throughput (T.mln)	1.107,94	1.807,76	63%	2,5%
<b>Employment</b>				
Port workers (000s)	111,18	164,14	48%	2,0%
Other maritime port FTE (000s)	101,19	117,68	16%	0,8%
Non maritime direct FTE (000s)	256,45	256,45	0%	0,0%
Total direct employment (000s)	468,83	538,28	15%	0,7%

Under **PP2a** additional port volume would help to generate around 2,200 additional jobs in 2030 (+0,4% against the baseline scenario).

**Table 48 - Estimated employment impacts, 2010 to 2030, PP2a**

	2010	2030	Growth 30/10	Gr% YoY
<b>Throughput</b>				
EU port throughput (T.mln)	3.622,43	5.245,19	45%	1,9%
Adjusted throughput (T.mln)	1.107,94	1.815,54	64%	2,5%
<b>Employment</b>				
Port workers (000s)	111,18	164,85	48%	2,0%
Other maritime port FTE (000s)	101,19	118,19	17%	0,8%
Non maritime direct FTE (000s)	256,45	256,45	0%	0,0%
Total direct employment (000s)	468,83	539,49	15%	0,7%

In the policy scenario (high case **PP3**), additional port volume would help to generate around 2,500 additional jobs (+0,5% against the baseline scenario).

**Table 49 - Estimated employment impacts, 2010 to 2030, PP3**

	2010	2030	Growth 30/10	Gr% YoY
<b>Throughput</b>				
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%
<b>Employment</b>				
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%

The major employment impact comes from the exogenous effect of traffic growth. As shown in Table 49 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 50 summarizes the number (unit) of additional jobs against the reference scenario expected in 2030 under different PPs.

**Table 50 - Estimated employment impacts by PPs, 2030**

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

## Externalities

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.

**Table 51 - Externality rates**

	Rail	Road	Waterway	Sea
<b>Externalities € per Unit/Km</b>	0.161	0.3893	0.1984	0.0311

Valuations are based on a number of studies including:

- 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);
- Vergelijkingskader Modaliteiten 1.4b, NEA in association with STERC, TransCare, 2001 to 2004. A study for the Ministerie van Verkeer en Waterstaat (DGG/AVV); and
- 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 arrive at the following estimates:

**Table 52 - Estimated externalities by PPs, 2030**

	External costs (€m/pa)
<b>PP1</b>	-23
<b>PP2</b>	-34
<b>PP2a</b>	-69
<b>PP3</b>	-76

## 9.2 Qualitative assessment of policy measures

The qualitative assessment of measures draws upon the results from phase 1 and 2 of the survey conducted by PwC and Panteia. In these surveys stakeholders from across the EU were asked to participate and provide their opinions on the objectives and measures aimed at enhancing the port service market.

It should be considered that the survey questions were not perfectly aligned with the measures proposed by the Commission – although the objectives of both questions and measures are the same. Nonetheless, since the survey questions were constructed to cover all relevant aspects of the market, their analysis, both separate and combined, provides sufficient data to cover the impact of measures as well.

In addition, relevant literature has been used to support the analysis where relevant.

In the following paragraphs, the 20 measures reported below will be assessed:

**Table 53 - Overview of proposed measures**

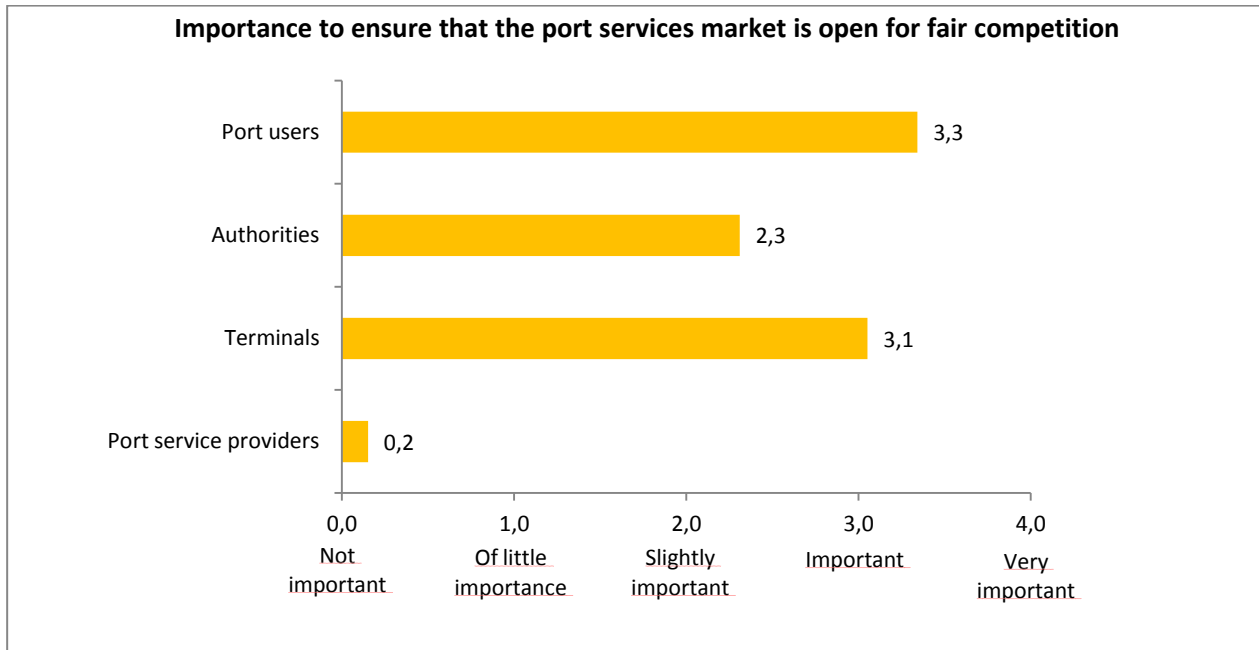
Objective	Measure
<b>SO1: Modernize port services and operations</b>	OO1.1: Clarify and facilitate the access to the port services market <ol style="list-style-type: none"> <li>1. Freedom to provide services (no restrictions on market access) for "normal services", i.e. services other than those linked to public service obligations or space constraints;</li> <li>2. Obligation of public tendering for new contracts in the case of public service obligations or space constraints (except for small contract or urgencies);</li> <li>3. Explain in a Commission's Communication how existing Treaty rules apply to port services;</li> <li>4. In addition to measure 2, impose the obligation to have at least two operators for services linked to space constraints to be selected after a public tender for new contracts (except for small contracts or urgencies); and</li> <li>5. Obligation of public tendering in case of substantial changes of existing contracts linked to public service obligations or space constraints.</li> </ol>
	OO1.2: Prevent market abuse by port service providers with exclusive or special rights <ol style="list-style-type: none"> <li>6. Confinement for internal operators of port services;</li> <li>7. Principles of transparency, non-discrimination and proportionality for the price of port services provided by operators in monopolistic position; and</li> <li>8. Principles of transparency, non-discrimination and proportionality for the price of port services provided by operators in monopolistic position for which no public tender is organized.</li> </ol>
	OO1.3: Simplify procedures and improve coordination mechanisms within ports <ol style="list-style-type: none"> <li>9. Central Port Coordination; and</li> <li>10. Port users' committee.</li> </ol>
<b>SO2: Create framework conditions which incentivise investments in ports</b>	OO2.1: Ensure a level playing field by more transparent financial relations between public authorities, ports and providers of port services <ol style="list-style-type: none"> <li>11. Functional/legal separation;</li> <li>12. Separation of accounts; and</li> <li>13. Financial transparency between public authorities and port authorities.</li> </ol>
	OO2.2: Ensure efficient port infrastructure charging policies <ol style="list-style-type: none"> <li>14. Autonomy of the individual ports to set and collect dues;</li> <li>15. Transparent, cost-based and differentiated port dues;</li> <li>16. Encouraging discounts on port dues based on environmental performance criteria; and</li> <li>17. Transparency of port due calculation.</li> </ol>

## 9.2.1 SO1: Modernize port services and operations

### OO1.1: Clarify and facilitate the access to the port services market

When it comes to analysing the need for more competition in ports, stakeholders were asked to express their position on the possibility for the port service market to be open for fair competition through EU intervention in all Member States. Apart from the net position of port service providers, which is strongly adverse, stakeholders' responses denote a shared approval towards the possibility of opening the market up for greater competition.

**Figure 66 - importance to ensure that the port services market is open for fair competition**



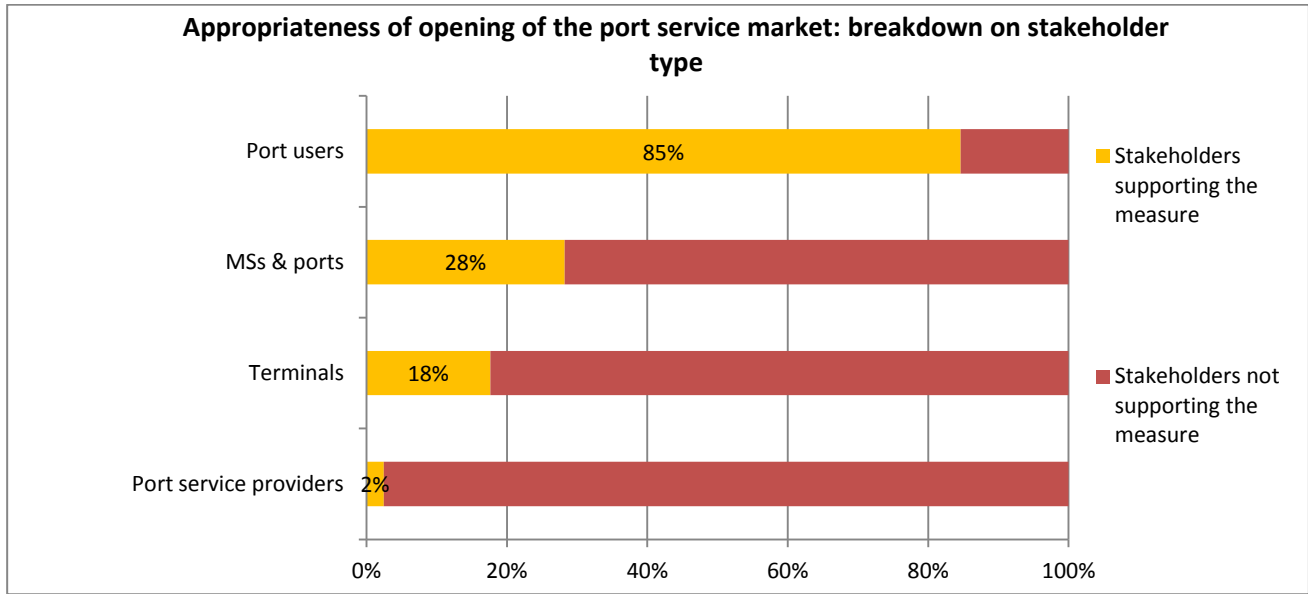
Greater competition can be achieved through various means. This section considers the views of stakeholders on the following hypothetical situations:

- Opening of the port service market without limitations, derogations, etc.;
- Opening of the port service market with limitations and derogations, etc; and
- Requirement of public tendering procedures for the awarding of contracts.

The aversion of port service providers to an increase in the level of competition is reflected in the aggregate response they provide when asked whether the market should be opened or not in EU ports with no mention of limitations to the market opening. Accordingly, port users seem very keen to support this measure, while Member States, ports and terminals are of the view that opening the market will increase competitive pressure but compromise efficiency of the system at the same time.

With regard to support for the measure of opening up the port services market without limitation, port users are clearly the most supportive group with 85% of respondents in this category giving a positive response. This compares with only 2% of port service providers. Terminals and ports fall between these two with 18% and 28% reporting support for the measure respectively.

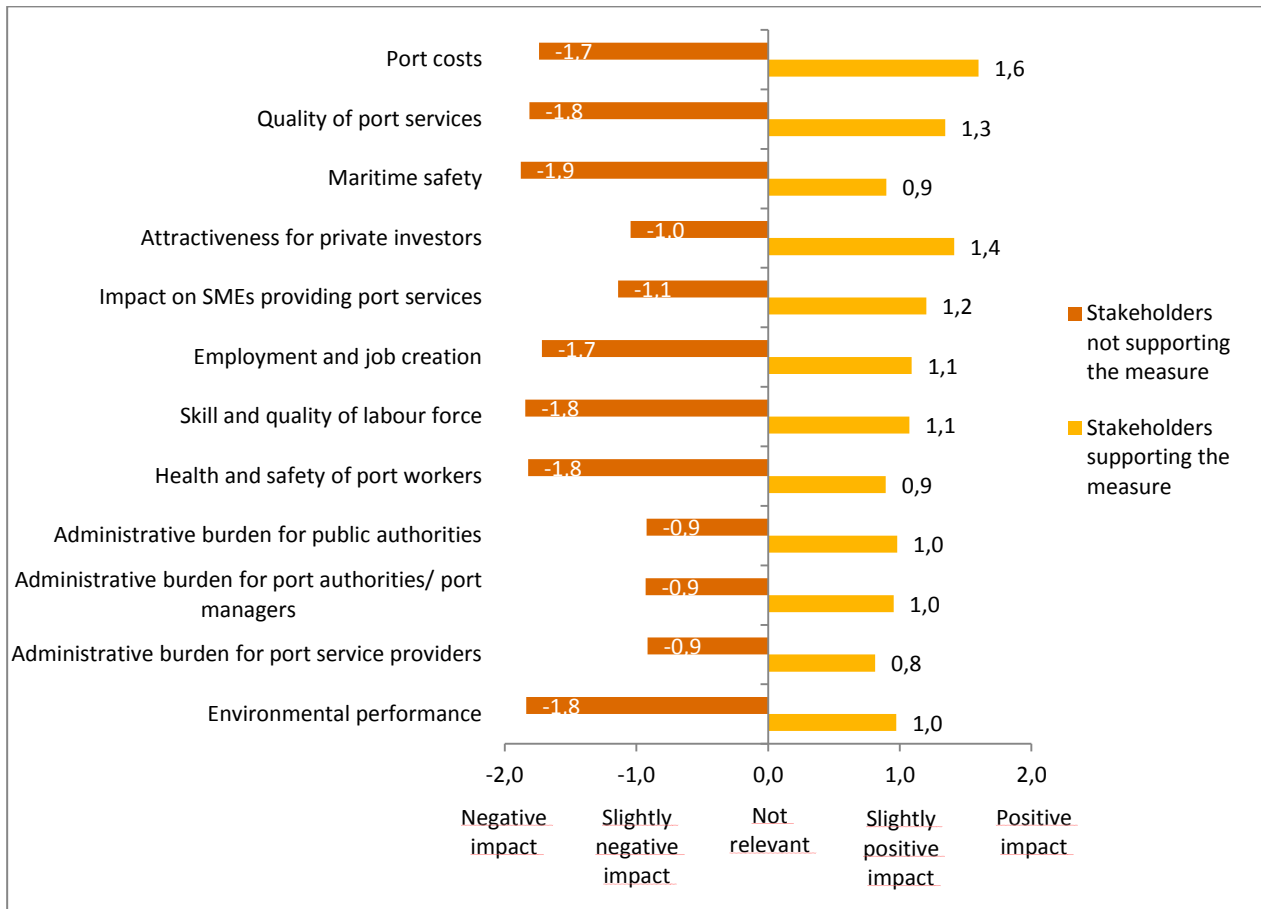
**Figure 67 - appropriateness of opening the port service market without limitation, by stakeholder category**



In order to analyse the relative opinion of stakeholders on the need to ensure competition and to achieve it through market opening, a five point scale was used, ranging from *negative impact* (-2) to *positive impact* (+2) for specific elements on which the effect of the above mentioned measure would produce effects. As expected, those opposed to the measure report negative impacts rather than positive ones, while the opposite is observed for those supporting the measure.

Positive impact is expected to occur mainly in economic aspects: port costs, quality of port services and attractiveness to private investors. The results are thus in line with the expected outcome of the measure, as increased competition would be achieved in order to actually produce a positive economic impact. On the contrary, most relevant concern is present regarding workforce-related issues, safety, and environmental performance. Analysis of the impact on employment is twofold. Indeed, concerns are shown by those stakeholders fearing that market opening would lead to a non-regulated market which would most likely affect the position of workers. Stakeholders supporting the measure, nonetheless, consider that the measure would increase market growth, therefore leading to job creation. Simplifying the results, it seems that negative impacts mainly concern social aspects of the port service market, while positive ones are mainly expected on economic aspects.

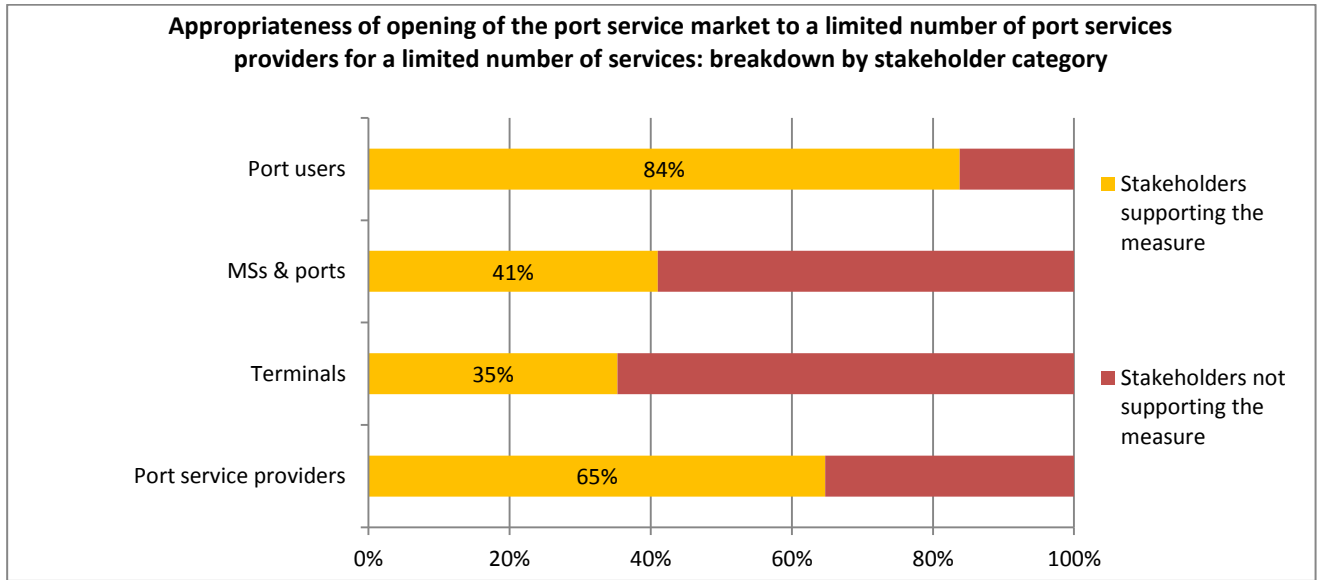
**Figure 68 - Impacts of the opening the port service market without limitation**



Stakeholders were asked to express their views on this measure whereby the port services market would be opened but with limitations. The possibility for the EU intervention to be narrowed down is not strongly welcomed by any stakeholders, nor is it regarded as significantly negative by any. Port users are still keen to have the market opened, but show much less appreciation than for full opening of the market. Member States and ports and terminal operators have similar positions, while port service providers might accept the measure with less concern than opening with no limitation, even without considering it particularly appropriate.

When analysing the number of stakeholders adverse to the measure, results are positive. Although port users shown some concern, the share of them opposing is as little as for the complete opening measure. All the other three categories, nonetheless, show much higher appreciation, with a particular increase in the number of port service providers not opposing the measure (65% compared with 2% in opposition to complete opening of the market without limitation).

**Figure 69 - appropriateness of opening of the port service market to a limited number of port services providers for a limited number of services, by stakeholder category**

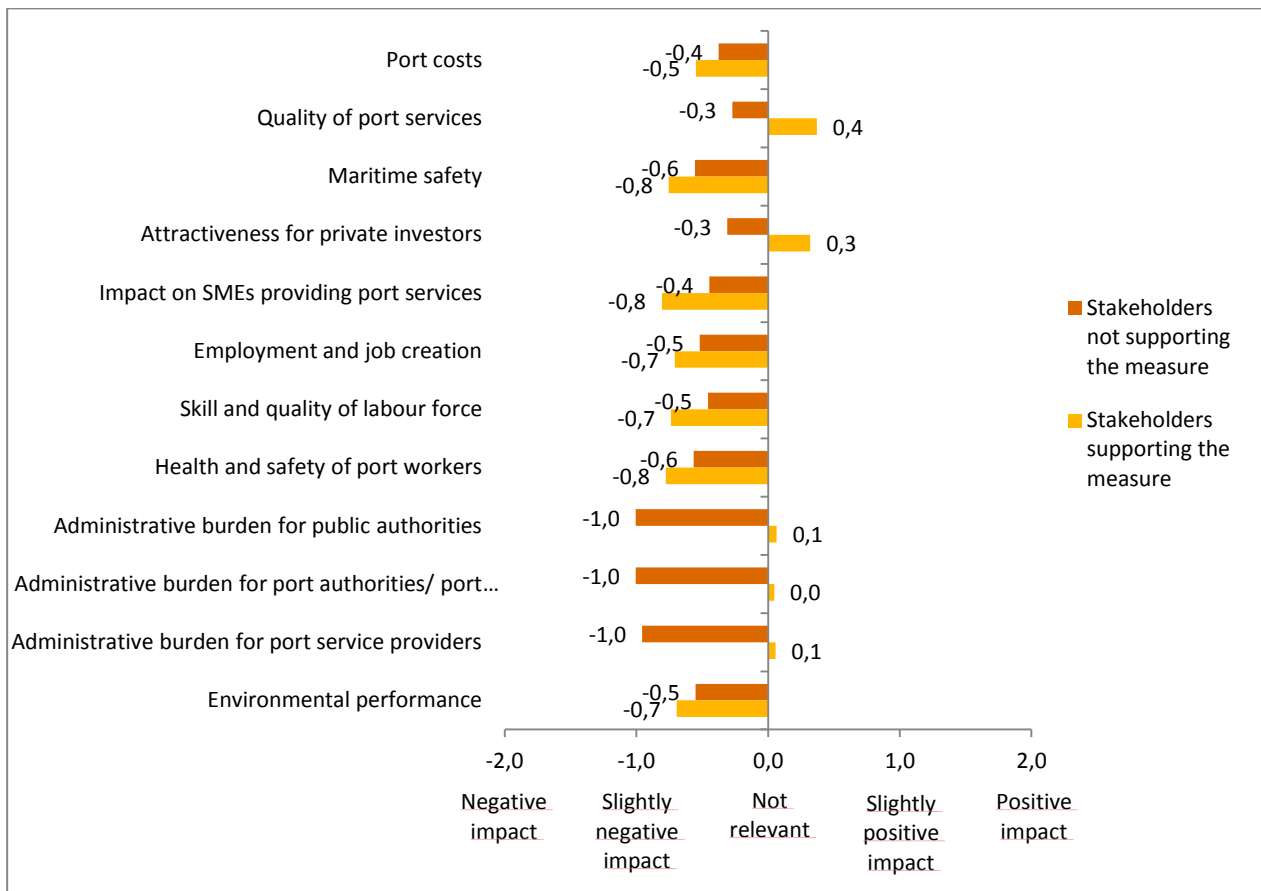


Surprisingly, there is a degree of consensus on the extent of positive impacts of this measure between stakeholders who support and oppose this measure – in that minimal positive impacts are reported.

Nonetheless, the distribution of opinion is close to the centre of the graph, showing that if supporters of the measure do not find it a valid solution, those opposing to it do not find it particularly negative either. It seems that the first category of stakeholders (those not considering the limited opening inappropriate) consider it to be a soft intervention, which might be mildly positive in terms of quality and attractiveness – again economic impacts – but not really advisable. Opposed to them, those against its implementation find it to lead to negative outcomes, but do not feel so strongly as to oppose it, as if it might represent the best they can get amongst undesired interventions.

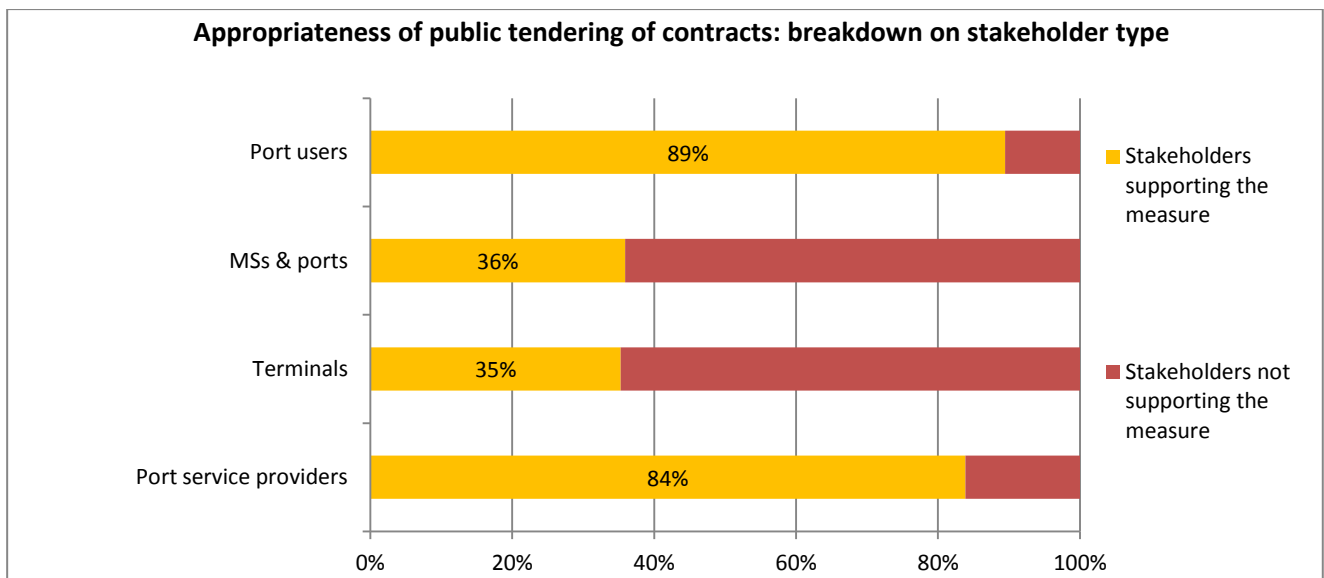
It should also be pointed out that in general port service providers tend to be more sensitive to the negative impact of measures. Since the number of service providers finding the limited opening measure appropriate is much higher when compared with complete opening, more are included in the impact analysis as *stakeholders supporting the measure*, necessarily shifting the median to the left side. It is therefore to be considered that the negative results of the yellow bars in Figure 70 are partially due to a different sample than that used for the previous measure.

**Figure 70 - Impacts of the opening the port service market with limitations**



With regard to the appropriateness of public tendering, port users and port service providers are of the view that this is an appropriate measure (89% and 84% of respondents respectively) compared with Member States and ports and terminal operators (36% and 35% of respondents respectively).

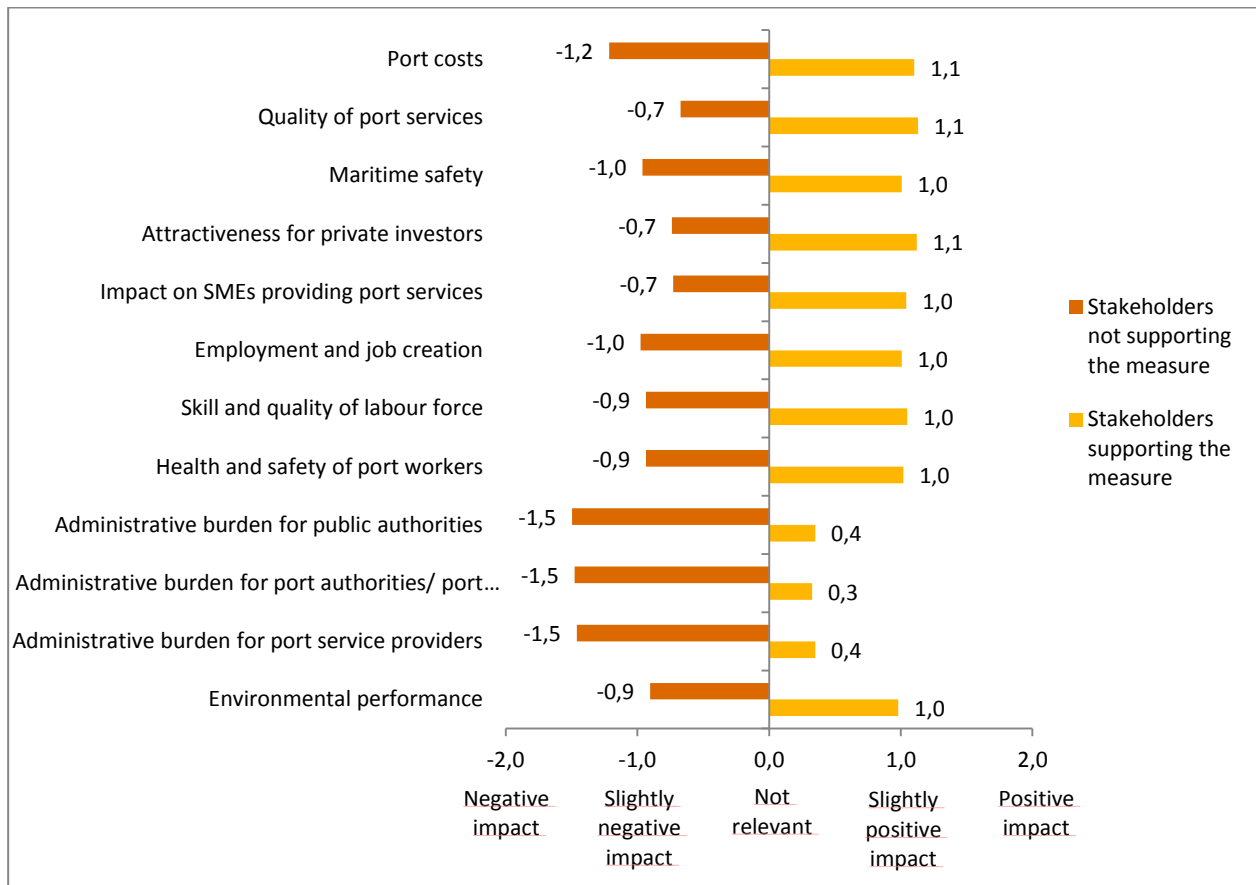
**Figure 71 - appropriateness of public tendering of contracts, by stakeholder category**



Overall, the opinion of stakeholders on impacts deriving from the implementation of public tendering processes is positive, with a very well-balanced distribution in the responses of those supporting it – except when administrative burden is considered – and a mild concern from those finding it inappropriate.

As expected, it is possible to observe a negative impact on administrative burden, while all other impacts are actually positive.

**Figure 72 - impacts of public tendering of contracts**



Drawing on the analysis above, it appears that Member States and ports and terminal operators are neither keen nor particularly adverse to any proposed measure. However, port users and port service providers are generally of opposing opinions. Port users demand interventions for the market to be opened up to competition and they desire measures leading to it to be clear, to the point and without caveat. They ask for the market to be open and public tendering to be guaranteed. In opposition to this view, port service providers are much more conservative on the matter, not willing to have greater levels of competition, first of all. Nonetheless, among measures leading to increased competition, they tend to prefer those including some form of derogation, exception, specificities, etc. Although it is not specifically considered the space-constraint, it might be supposed that this is mainly considered by port service providers, since it is not usually a port user’s concern. Both categories agree on the importance to have public tendering processes for the awarding of contracts.

The analysis of statistics shows more than a mere opinion on measures to be implemented and objectives to be achieved. It clearly indicates three stakeholder positions: port users, perpetrating the need for as much liberalization of the market as possible; port service providers, showing lower support; and Member States and ports and terminal operators with opinions between. The opposing views of these three parties is clearly understandable considering their specific interests, which are indeed in line with the answers provided to the phase 2 survey.



Open-ended questions were presented to stakeholders in order to let them better delineate their positions and express their opinions in detail. Table 54 presents the main comments expressed by stakeholders, divided by category.

**Table 54 - Stakeholders' comments on “making the rules on market access clearer and access easier”**

<b>Port authorities/ managers and other public authorities</b>	<b>Port users</b>
<p>Each port authority/port manager should be able to decide whether to directly provide or outsource services. It is in ports' interest to ensure competition, when possible.</p> <p>The application of existing EU and national law are sufficient to ensure fair competition in all EU Member States.</p> <p>Further regulations might have a negative effect on quality, prices and attractiveness for investments.</p> <p>Member States or local authorities should approach eventual problems. Regulating at EU level has little sense.</p> <p>It is not relevant to distinguish between TEN-T ports and other ports.</p> <p>The Commission is wrong to focus on competition within a port since individual ports are not a distinct market.</p> <p>Competition between terminals already exists.</p> <p>An inland port authority should maintain the possibility to provide certain ports services itself.</p> <p>Administrative burdens will translate into additional costs that could have a negative impact.</p> <p>The shipping industry is bedevilled by a drive for the lowest cost solutions. The result is poor standards overall with the better operators driven to lower standards in order to remain competitive.</p>	<p>Ports are very different; nonetheless there is need for shared minimum standards.</p> <p>In principle, all port services should be open to competition. For specific cases, considerations can be made.</p> <p>In case of limitations, public tendering should be assured.</p> <p>It is not relevant to distinguish between TEN-T ports and other ports.</p> <p>Some ports are too small for more than one provider.</p> <p>Enabling more than one provider of port services to exist within an existing port is fair and often practical.</p> <p>Difficulties for new entrants are present and progress is slow.</p> <p>Transparent conditions and open access to shunting yards and related operations are not yet ensured.</p> <p>The opening of port services would generate positive results for prices and service variety, without diminishing social and labour conditions.</p> <p>Full and fair intra and inter-port competition would provide the best level of transparency for port tariffs.</p> <p>State aid, whilst supporting development, can impact on competition to the detriment of those private enterprises not in receipt of such aid.</p> <p>It is unfair that an incumbent operator/owner should be entitled indefinitely to maintain that position.</p> <p>Certain groups are growing their market power in the ownership and operation of container trade. This dominance is a threat to competition.</p> <p>Transparent conditions and open access to shunting yards and related operations are not yet ensured.</p> <p>Need for an intervention from the Commission.</p>
<b>Port service providers</b>	<b>Terminal operators</b>
<p>It is complicated to answer without a specific framework to refer to.</p> <p>Regulations on the matter should be left at Member State level.</p> <p>Should consider the size of the considered markets on which the regulation would impact.</p> <p>Services are very different one another: cannot regulate them as a whole.</p> <p>Pilots strongly opposed to intra-port competition.</p> <p>Services related to security, environment, etc. cannot be opened to competition.</p> <p>Opening of the port service market is against the</p>	<p>The Commission should not focus on competition within a port since individual ports are not a distinct market.</p> <p>The number of service providers should be such to grant a sustainable basis for service providers to develop their business and contribute to the port improvement.</p> <p>Current regulation is sufficient.</p> <p>Support open market competition, which is in most cases already existing.</p> <p>Should consider the effect of the measure on already efficient ports (which are the majority).</p> <p>Isolated cases of inefficient ports should be treated</p>

<p>safety and quality.          Competition would result in lower training (for pilots) and negatively impacts safety.          Non-liberalized port services are those where competition would contrast with the need to guarantee the general interest to which the services are in charge.          In small ports competition would not bring benefits as scale economies are lost.          Cannot open market to competition for non-commercial services.</p>	<p>individually.</p>
---	----------------------

While no specific questions on the survey are perfectly aligned with the measures proposed by the Commission, the impact of policy packages can be assessed through the joint analysis of the answers to questions presented above. Indeed, through the cross-analysis of the answers to the survey it should be possible to cover the issues related with the implementation of the measures proposed by the Commission.

### **Policy Package 1**

*Measures included:*

3. Explain in a Commission's Communication how existing Treaty rules apply to port services.

*Impact:*

Policy Package 1 consists of a soft approach, which would most certainly lead to an explication of principles to be applied in the case of port services, but with limited detail and even more limited impact on the current scenario. Therefore only a minority of ports is expected to put these principles into effect through modifications of their current practices.

#### **ECONOMIC**

The soft approach will lead to small increase of market opening and competition.

#### **SOCIAL**

No relevant impact is expected.

#### **ENVIRONMENTAL**

No relevant impact is expected.

### **Policy Package 2**

*Measures included:*

1. Freedom to provide services: no restrictions on market access for "normal services" i.e. services other than those linked to public service obligations or space constraints.
2. Obligation of public tendering for new contracts, except for small contracts or urgencies for services with public service obligations or linked to space constraints.

*Impact:*

PP2 leads to an increase of market opening and competition through two measures: on one side, public tendering is required in cases of natural monopolies or public service obligation contracts; on the other, all commercial services not related with space constraints can be freely provided.

The imposition of public tendering for PSOs or due to space constraints would most certainly improve transparency and competition, contributing to the opening of the market. It seems a valid principle that tendering procedures are public and regulated, in order to avoid market distortion. No stakeholder is opposed to the public tendering for the awarding of contracts. On the contrary, if there is any shared opinion amongst stakeholders, it might be found on this matter, and on this matter only. More than 80% of port users and port service providers are of this opinion; whereas the share of terminal operators, port managing bodies and other public authorities in favour of public tendering is lower (about one out of three respondents).

This measure will bring some additional administrative burden to both the public and private sector in order to comply with the tendering procedures for the award of the contracts. In order to limit this burden and to avoid the bureaucracy to overturn the positive effect from efficiency achieved through competition, the introduction of a threshold seems a valid expedient.

The overall cost of the tendering procedures are small if compared to the values of the contracts and the possible efficiencies that can be created, in particular considering that small contracts would not require public tendering. Other costs of implementation are not expected.

The application of market opening principles is generally regarded as positive. In cases of lack of factors requiring other than economic interests to be pursued, an open market is expected to produce the best possible results in terms of cost containment and quality improvement. Stakeholders seem to agree on this point. Respondents showing concerns raise their complaints when competition is enforced for PSOs (e.g. pilotage), when safety or public utility must be ensured against efficiency. On the other hand, port users consider market access to be essential for the development of the port market and the increase of efficiency.

A study carried out by the Commission on *procurement by entities operating in the water, energy, transport and postal sectors*<sup>76</sup> found that, although public tendering is associated with administrative costs that are absent in direct awarding procedures, an average 5% saving in procurement was calculated. In the case hereby analysed, considering savings has no meaning. On the other hand, the figure helps to demonstrate that the use of public tendering procedures can lead to an increase in benefits (better conditions in terms of lower prices charged/higher quality), overturning the cost increase due to administrative costs.

As market opening increases competition and limits the role of port and public authorities, administrative costs are expected to be reduced, together with an increase in efficiency due to private operators rivalling for market share. No specific negative impact is expected.

**ECONOMIC***Port costs*

PP2 leads to market opening and competition, which are likely to decrease port costs. Stakeholders tend to agree with this opinion, claiming a certain decrease in costs is expected to occur, especially when the rule is not forcing all ports, but limitations and derogations (i.e. small ports) are considered. Some stakeholders show concern when considering the possibility to implement public tendering procedures for services with a PSO, mainly from port authorities/port managers. Nonetheless, on average, a positive impact on port costs is expected.

<sup>76</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:1585:FIN:EN:PDF>.

### *Quality of port services*

Considerations regarding quality of port services follow those already made for port costs, as, in an open market and competitive scenario, an increase in quality occurs together with cost reductions. If there was some concern on the decrease of port costs due to public tendering obligation, it is worth noting that this is much less relevant when considering an increase in quality of port services.

### *Attractiveness for private investors*

Increased competition and market opening would necessarily attract new investors, which would seize the opportunity to invest in an open market for which access is regulated by transparent procedures.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

A certain increase in quality of labour force is expected, as increased competition would bring companies competing over quality levels. As more workers are trained, the more they are able to provide high-quality outcomes, companies are expected to invest in training. Nonetheless, the impact is not expected to be particularly relevant.

### *Maritime safety, health and safety of port workers, employment job creation*

Most stakeholders (usually non-port users) raised concern over the possibility to combine public interests such as safety, health, workers' conditions with the cost-cutting typical of competitive environments. The current scenario is indeed considered the most efficient in terms of public interests as competition might compromise their levels.

The effect of PP2 on employment is not univocal. The implementation of public tendering procedures might result in the short term in a decrease of demand of labour currently employed in in-house services or hired by non-efficient companies, where – being inefficient – the number of employees is higher than optimal. In this case, efficiency would require a contraction in the number of workers. Oppositely, in the medium to long term, increased efficiency of the system is expected to increase traffic and, accordingly, business opportunities that require labour force. The two positions see port users and other stakeholders facing each other, the first believing the increment in employment would overcome the initial negative effect, while the others show more concerns.

## ENVIRONMENTAL

### *Environmental performance*

No relevant impact on environmental performance. It is worth noting the concern of some stakeholders fearing that open competition would lead companies to compete on cost-cutting practices that might affect environmental performances; nonetheless, regulations on the matter should be sufficient to prevent this eventuality to occur.

## **Policy Package 2a**

### *Measures included:*

1. Freedom to provide services: no restrictions on market access for "normal services" i.e. services other than those linked to public service obligations or space constraints;

2. Obligation of public tendering for new contracts, except for small contracts or urgencies for services with public service obligations or linked to space constraints; and

5. Obligation of public tendering for the substantial changes to the existing contracts linked to public service obligations or space constraints.

### **Impact:**

The impact of PP2a is not expected to be substantially different from that considered for PP2. The main innovation is on the obligation of public tendering when existing contracts are substantially modified. Accordingly, a more transparent and clear scenario is presented, avoiding the possibility to overcome regulations through modification of contracts *in itinere*.

### **ECONOMIC**

#### *Port costs*

As for PP2.

#### *Quality of port services*

Besides the impacts considered for PP2, the obligation of public tendering for the substantial changes to the existing contracts linked to public service obligations or space constraints should ensure that the best quality is provided. Indeed, a company might be able to perform one service at lower costs and higher quality than all other bidders following certain conditions. If these change, it might be possible that some other company is more efficient. Eventually, the measure would also prevent unfair competition in case the bid is prepared to let certain companies prevail on others and then have the terms of the contract changed. All these aspects contribute to an increase in quality levels.

#### *Attractiveness for private investors*

According to the survey, the more the market is open and competition is guaranteed, the more private investors should be attracted. In this case, the impact follows that of PP2, with one more guarantee for private investors that competition is kept on a level playing field.

#### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

### **SOCIAL**

#### *Skill and quality of labour force*

No different impacts expected than those explained for PP2

#### *Maritime safety, health and safety of port workers, employment job creation*

No different impacts expected than those explained for PP2

### **ENVIRONMENTAL**

#### *Environmental performance*

No different impacts expected than those explained for PP2

### **Policy Package 3**

*Measures included:*

1. Freedom to provide services: no restrictions on market access for "normal services" i.e. services other than those linked to public service obligations or space constraints;
2. Obligation of public tendering for new contracts, except for small contracts or urgencies for services with public service obligations or linked to space constraints;
4. In addition to measure 2, impose the obligation to have at least two operators selected after public tendering for services linked to space constraints (except for small contracts); and
5. Obligation of public tendering for the substantial changes to the existing contracts linked to public service obligations or space constraints.

*Impact:*

PP3 is quite similar to PP2a on access to port service market, with the inclusion of the obligation to have at least two operators also when services are linked to space constraints.

The measure considers the imposition of competition, which can be explained through analysis of stakeholder opinion on the opening of the port service market without limitations. The implementation of this measure would most certainly lead to an improvement in terms of efficiency and quality of port services, as a consequence of liberalization: nonetheless the impact on other aspects might counter this benefit. As presented before, port users are the most supportive towards this measure, while all other stakeholders would find it excessive and doubt it might lead to overall improvements.

In synthesis, the proposed measure would positively impact economic aspects, but the trade-off is represented by an eventually disproportionate cost in terms of non-economic aspects, as underlined by stakeholders.

**ECONOMIC***Port costs*

The effect on port costs of this measure is ambiguous. Increased competition might be opposed to an exaggerated market opening. Indeed in cases of natural monopolies – as markets with space constraints are likely to be – one firm is better off without competitors in bringing the market what it needs at lower costs.

*Quality of port services*

Eventual increase/decrease in the quality of port services is hard to be determined. It can be expected not to be much different from what stated for PP2a. Indeed over-competition might more likely affect costs rather than quality.

*Attractiveness for private investors*

Private investors would surely appreciate competition, as it is related to business opportunities. Nonetheless, competition in a space-constrained context might have the opposite effect, as investors would find little possibilities to earn profits from a situation where one firm would perform better than competition.

*Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

**SOCIAL***Skill and quality of labour force*

No different impacts expected than those explained for PP2a

*Maritime safety, health and safety of port workers, employment job creation*

No different impacts expected than those explained for PP2a

## ENVIRONMENTAL

*Environmental performance*

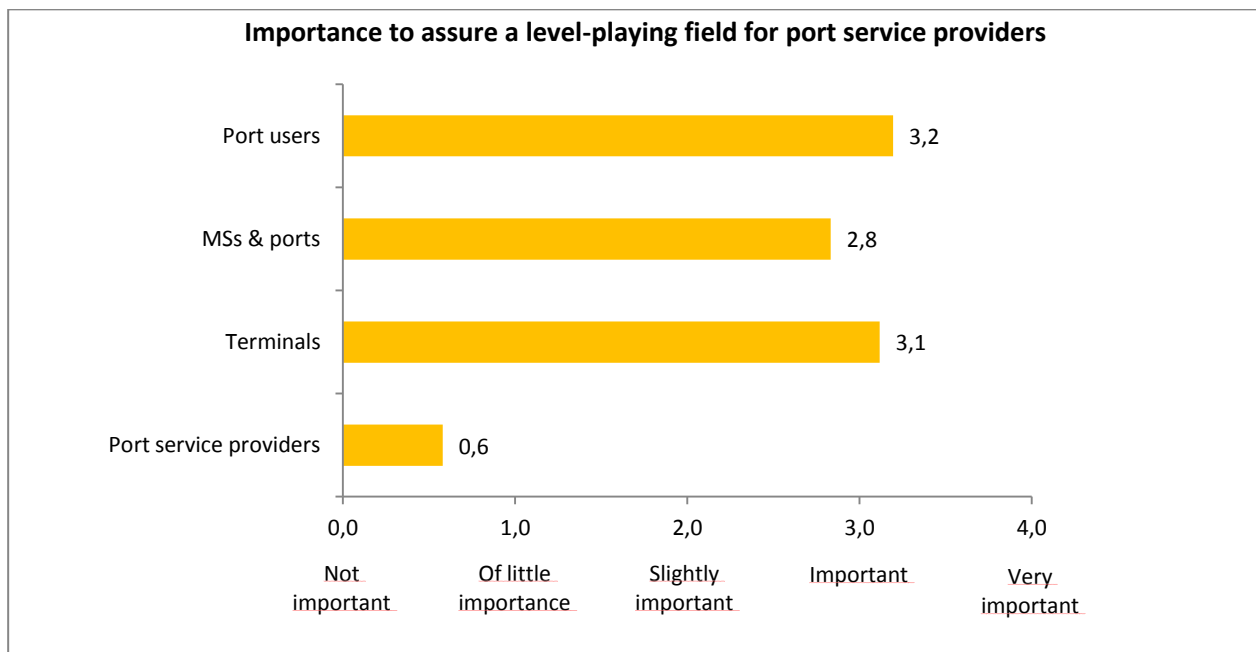
No different impacts expected than those explained for PP2a

### OO1.2: Prevent market abuse by port service providers with exclusive or special rights

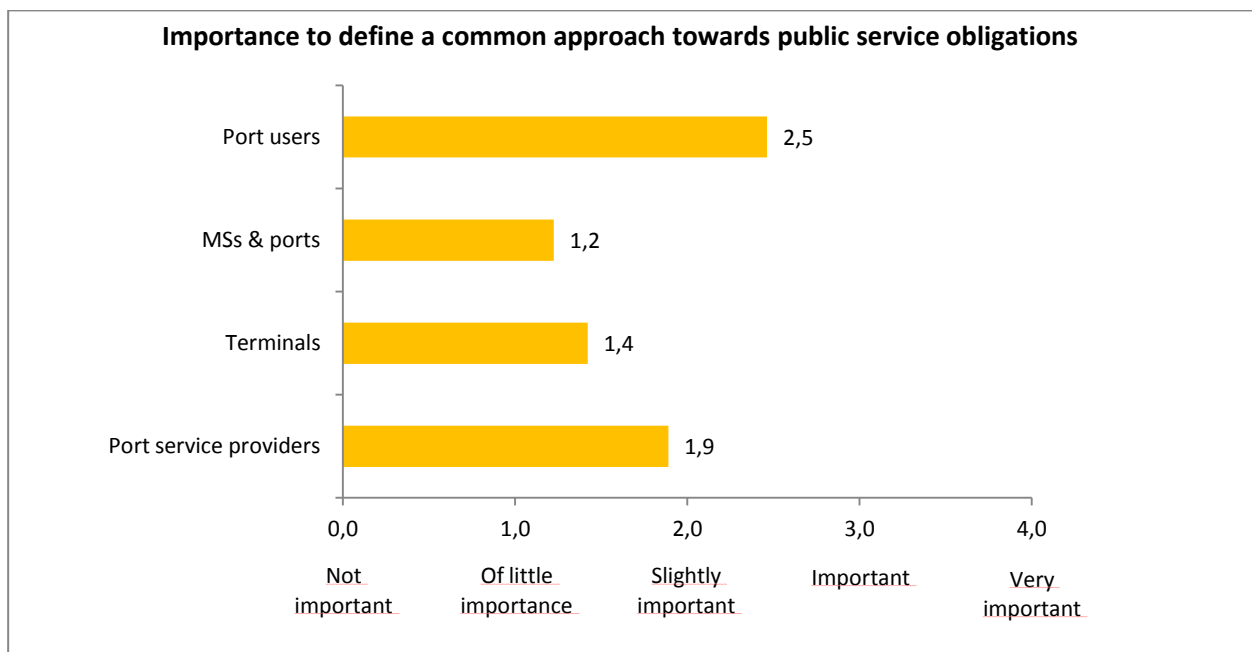
The functioning of the port service market – as any other market – relies on balance of powers. In case a monopoly is set – as well as in any other case when one party has higher power than others for non-market reasons (e.g. lack of space for new entrant, etc.) – a set of measures and weights becomes necessary. In the case of the port service market, market distortions can occur when port authorities provide services themselves or when – for whatever reason – competitive pressure is limited.

Competitive pressure can be hindered in the case of derogation from public tendering. Stakeholders seem to agree on the necessity to have a level playing field for port service provision, with the exception of port service providers, who clearly claim to be against any measure modifying the current status.

**Figure 73 - importance to assure a level-playing field for port service providers**



Stakeholders demonstrated their appreciation for the eventuality to have common approaches towards public service obligations. Member States and ports and terminals agree less, but overall all respondents provided positive responses on the importance of this objective.

**Figure 74 - importance to define a common approach towards public service obligations**

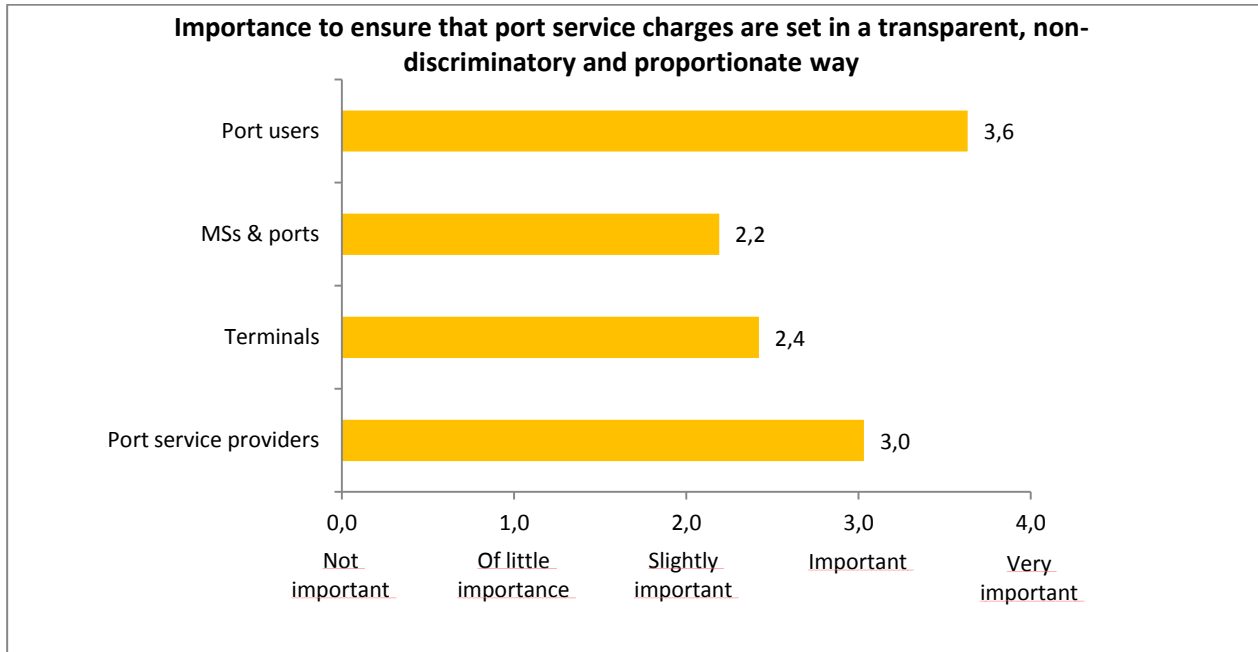
Wider consensus is found with regard to the need for port authorities to set transparent, non-discriminatory and proportionate charges, when acting as service providers. The issue is raised when port authorities hold a stronger position than other players, being at the same time authorities and service providers or when they award operators without public tendering. In these cases, stakeholders recognise the need for a more transparent way to set charges that might increase the competitive pressure or, in the case of in-house operations, prevents market distortions.

Member States and ports are less interested in further regulation of this area. Nonetheless, they understand themselves the need for assuring that their operations are transparent and in line with the need for port services to be provided efficiently and effectively.

Transparency seems therefore to bring benefits to all stakeholders. On one side, those fearing that port authorities might not follow non-discriminatory, proportionality and transparency principles would be guaranteed that this would not be the case. On the other, port authorities would be able to demonstrate that they actually do follow those principles.

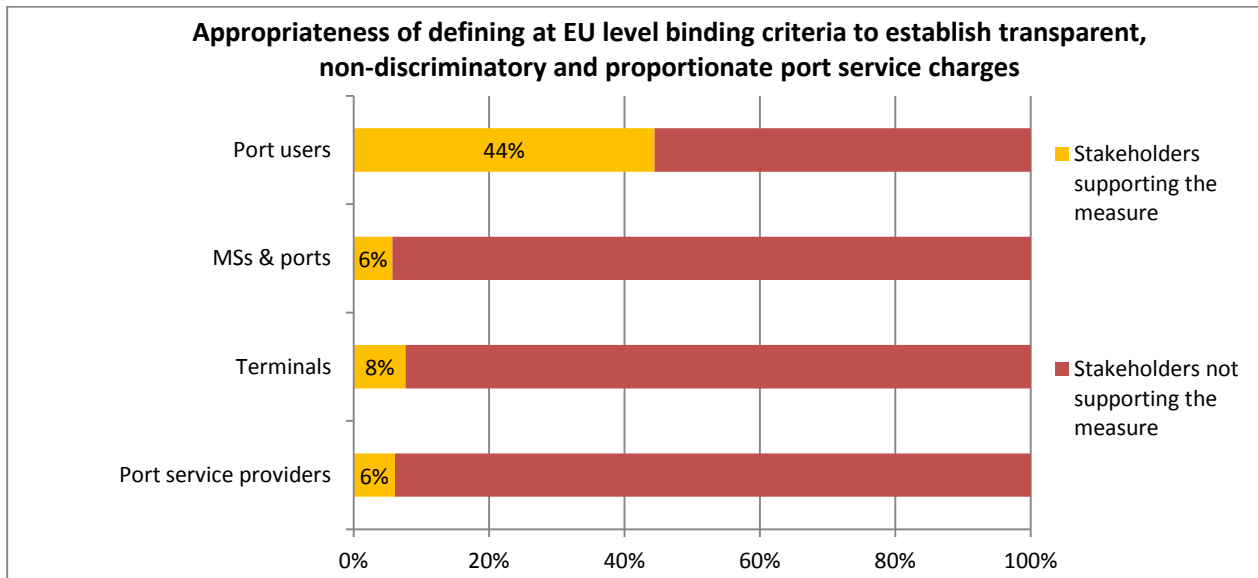


**Figure 75 - importance to ensure that port service charges are set in a transparent, non-discriminatory and proportionate way**



In contrast, stakeholders strongly disagree with the possibility of having binding criteria defined at EU level. The relevant shift in support is linked to the willingness to have criteria defined at a level lower than at EU Communitarian level, whereby Member States or even local authorities are in control of the regulation.

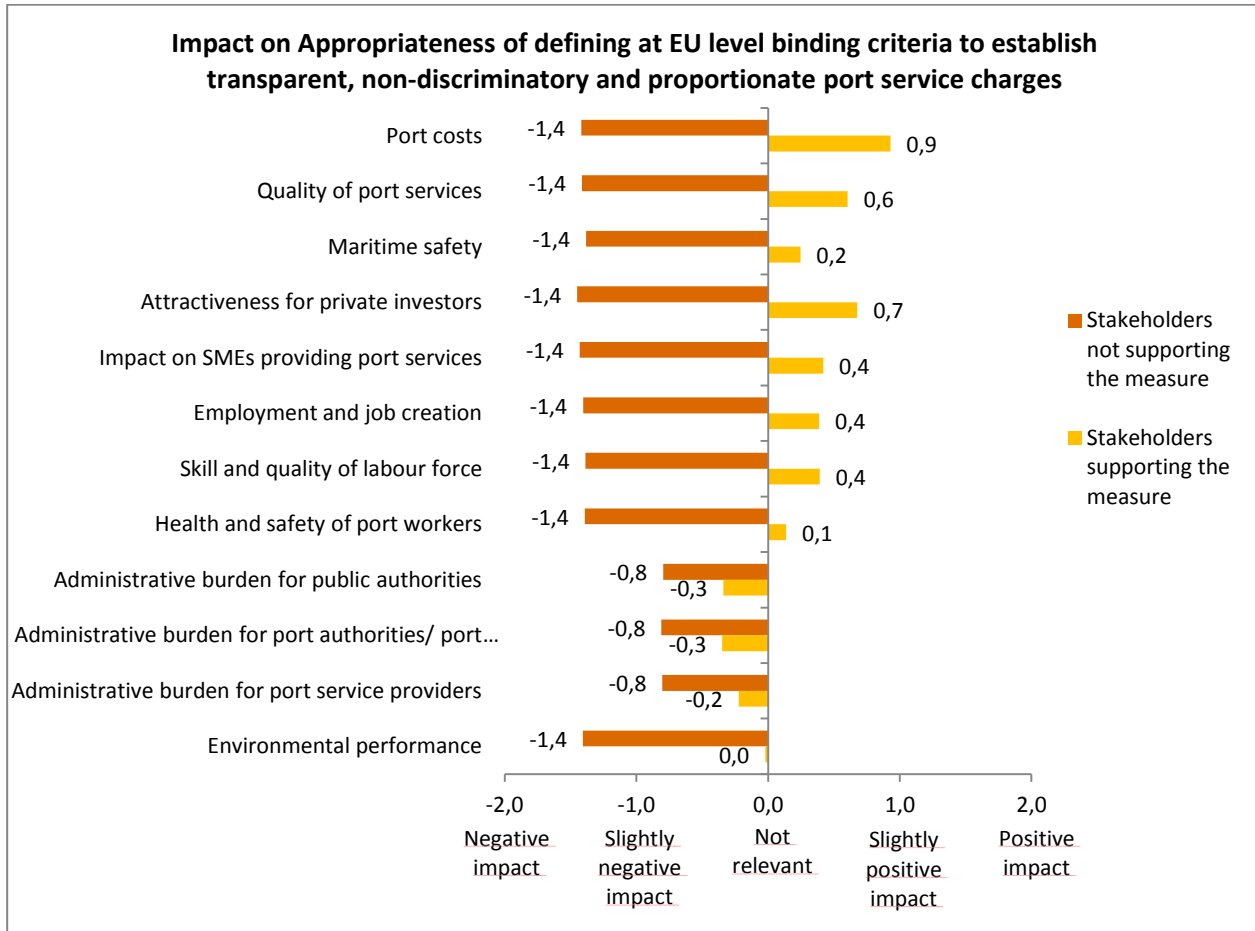
**Figure 76 - appropriateness of defining binding criteria at EU level to establish transparent, non-discriminatory and proportionate port service charges**



Indeed, the impact is widely recognized as leading to negative effects, both considering economic factors – port costs, quality and attractiveness for private investors, which nonetheless remain as the only ones where some positive impact is expected by at least some stakeholders – and social ones.

Stakeholders expect also the administrative costs to be impacted negatively, probably as a consequence of the formal process that would need to be set up and followed by all parties in order to define the services charges.

**Figure 77 - impact on appropriateness of EU level defined binding criteria to establish transparent, non-discriminatory and proportionate port service charges**

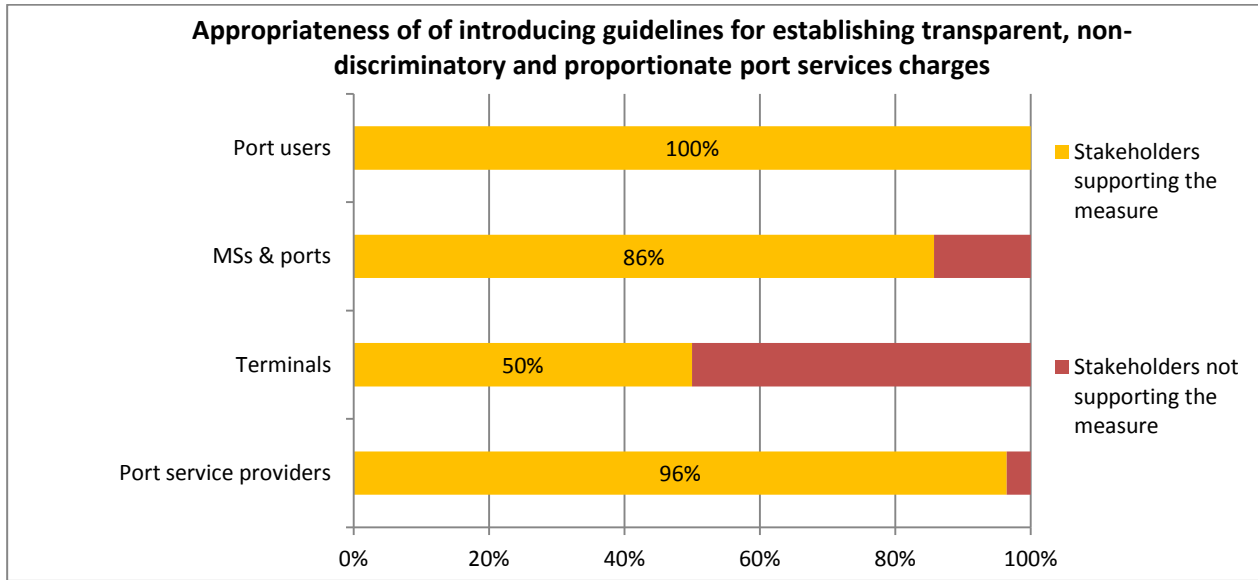


The possibility for port service charges to be defined through EU level binding criteria clearly seems too strict to embody the peculiarities of geographically and culturally different countries and ports. Large numbers of stakeholders underlined this issue showing relevant concern on the implementation of this measure.

An alternative to EU level binding criteria for port charges is an opportunity for the EU to define guidelines for establishing transparent, non-discriminatory and proportionate port charges. This softer approach leaves to Member States the possibility to regulate the matter considering internal specificities and focusing on those elements that represent core issues in ports under their administrative responsibility, without compromising those already sufficiently regulated.

It comes with no surprise that stakeholders welcome this measure with higher approval. Apart from port terminal operators, who are equally divided between supporting and opposing it, all stakeholders consider the measure to be appropriate for ensuring transparency, non-discrimination and proportionality of port service charges. In particular, port users and port service providers judge it to be an ideal solution.

**Figure 78 - appropriateness of introducing guidelines for establishing transparent, non-discriminatory and proportionate port services charges**



The lower level of appreciation of the measure based on “binding criteria” compared with the measure proposing “guidelines” is reflected by stakeholders’ judgement on the expected impacts which are generally expected to be slighter more positive for the latter.

However, the adoption of guidelines for pricing port services charges is still expected to have a negative impact on the cost of port services which is therefore assumed to increase. Indeed, where service charges are fully cost-reflective, it might be possible to have a shift from costs being covered by overall charges to specifically defined charges covering the entire cost of a service. This way, the cost that was previously distributed on more cost elements, would fall on a single service charge, eventually increasing it.

Negative impact is expected on administrative burdens for port authorities and port service providers, as higher regulation entails a higher attention and number of activities on the definition of port charges, which leads to an increase in overall cost.

All other elements present a very positive impact, in particular if compared with the expected output of the previous measure. Quality of port services is expected to increase the most, thus making it appropriate to consider this measure efficient and effective for the objective the EU wishes to achieve.

**Figure 79 - impact on appropriateness of introducing guidelines for establishing transparent, non-discriminatory and proportionate port services charges**

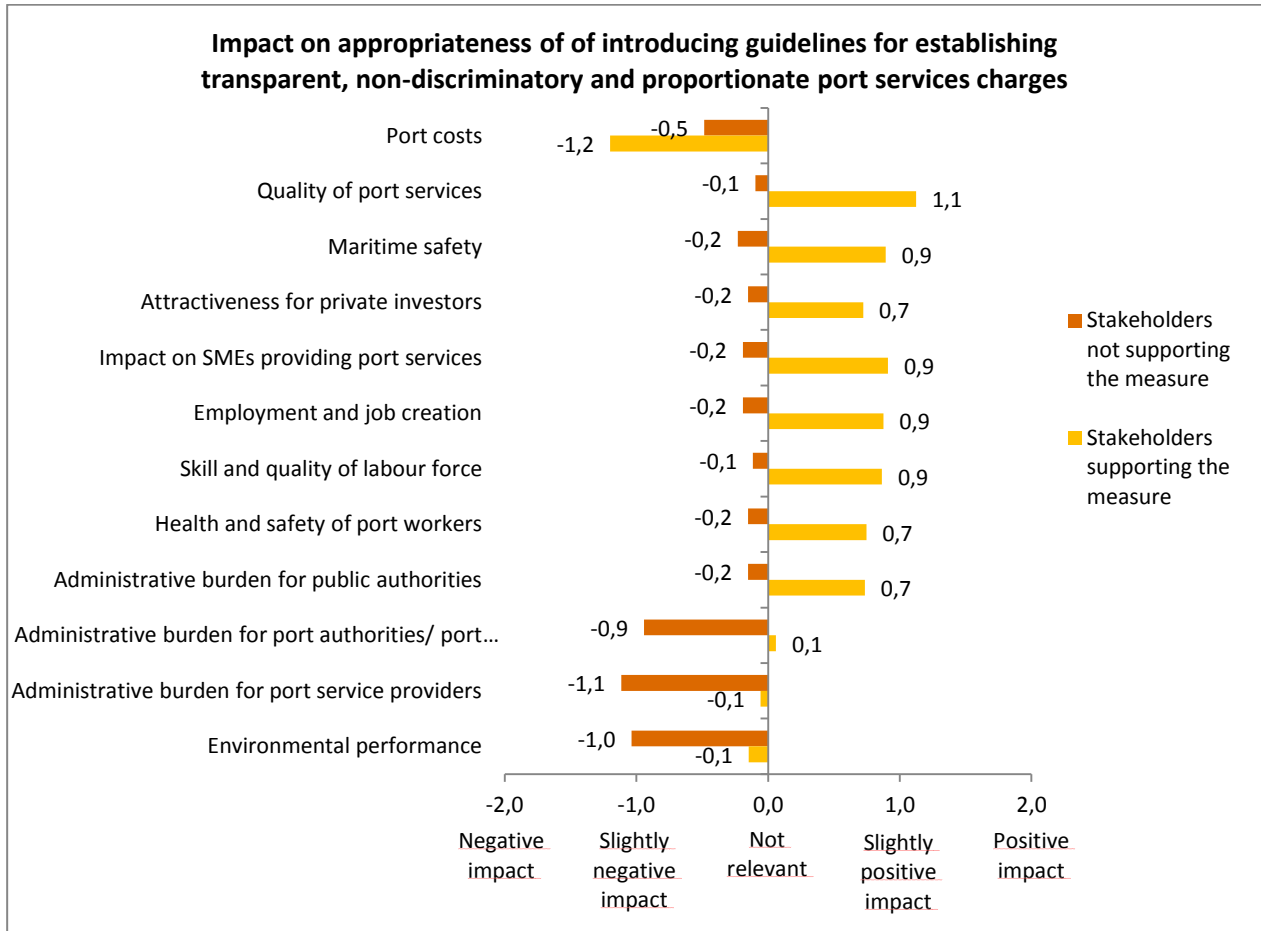


Table 55 presents main stakeholders’ opinions expressed in summary.

**Table 55 - Stakeholders' comments on “preventing market abuse by port service providers with exclusive or special rights”**

<b>Port authorities/managers and other public authorities</b>	<b>Port users</b>
<p>Excessive state or EU intervention could easily frustrate the achievement of objectives in the most efficient way.</p> <p>Specific problems need to be addressed on a case-by-case basis, rather than being “overregulated” by disproportionate means.</p> <p>The very best guarantee for sustainable conditions for employees and employers in ports is competitiveness on a European level playing field.</p> <p>All service charges should be ruled by the market forces.</p> <p>Additional guidelines for establishing transparent charges are not necessary.</p> <p>Port authorities should have the capability to safeguard transparency, non-discrimination and proportionality of service port charges even if they do not provide the service themselves.</p> <p>Clearer guidance on state aids and more rigorous enforcement of the same may help.</p> <p>Privatization is the key to the optimization of the port service delivery market.</p> <p>The market works fine. No need to further regulate.</p>	<p>Setting of tariffs and port dues should be treated as a commercial issue and left to individual ports.</p> <p>The charge for a service should be based on the demonstrated cost of providing it.</p> <p>Need to ensure that a constructive and effective dialogue with port users takes place.</p> <p>Transparency can and has to be improved.</p>
<b>Port service providers</b>	<b>Terminal operators</b>
<p>One-size-fits-all is the wrong approach.</p> <p>Tariffs for pilotage services all over Europe are already fixed locally or nationally by competent pilotage authorities, after consultation of other interested parties and competition authority, in a proportionate, transparent and non-discriminatory way.</p> <p>Need for minimum common criteria for EU port service charges. Other related dues must also become in common in small ports, where there is less or no competition.</p> <p>Differences between ports guarantee the best cost-efficiency ratio for that port and its customers.</p> <p>Concerning mooring, it would be difficult to implement binding criteria valid for all EU ports, as service providers are differently organized between Member States. Much better to define guidelines.</p> <p>Technical nautical services should be investigated at national level.</p>	<p>Port authorities should set up public port charges in a transparent way in order to avoid cross subsidies. However, additional guidelines are not necessary.</p> <p>Need for common state aid guidelines for ports.</p> <p>Port services charges should be left to the competitive market.</p> <p>When going beyond transparency, guidelines would not contribute to companies that should anyway carefully follow up their cost-competition-cash flow-profit position. Mandatory rules would reduce competition.</p>

## Policy Package 1

### *Measures included:*

7. Principles of transparency, non-discrimination and proportionality for the price of port services if provided by operators in monopolistic position.

### *Impact:*

Stakeholders express relevant concern 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 recognized by all stakeholder groups as a core element for the port service market to be enhanced. Nonetheless, all stakeholders (except a small portion of port users) do not find it a sound solution to regulate the matter through binding criteria at EU level, raising the need for a more local-oriented approach. A softer approach is much preferred, as it is considered essential to adapt the measure to local specificities and contexts.

It is generally accepted that this measure will not have a positive effect on port costs. Indeed it is expected that the adoption of the principles of proportionality (marginal cost based), transparency and non-discrimination will result in increasing the costs for certain services of public utility which are currently under-priced or subsidized by other port activities.

However, even if not indicated by a relevant number of stakeholders, this measure can result in decreasing the cost of services that currently are provided without competition. Monopolistic service providers will be required to set the charge of their service according to the transparency principle, this will result in creating pressure on them to reduce their inefficiencies thus their costs, which will be finally be reflected by a reduction of the service charges.

Other impacts apart from administrative burden do not seem to be relevant. Administrative burden will clearly increase for all parties involved in the definition and implementation of the new process for setting charges of port services provided in monopolistic regime. However, since many Member States and ports already have formalized charge setting processes (see Figure 49 under the Baseline Scenario) this impact will be of little relevance to the majority of them.

## ECONOMIC

### *Port costs*

There is no consensus amongst stakeholders on the effect of port costs. On one hand, public utility services, carried out by port authorities, are sometimes under-priced or subsidized by other port activities. On the other hand, monopolistic service providers will be required to set the charge of their service according to the transparency principle, pressure would be put on them to reduce their inefficiencies thus their costs, which will be finally be reflected by a reduction of the service charges. The overall effect should of this measure result in a reduction of port costs.

### *Quality of port services*

Quality of port services should not be affected.

### *Attractiveness for private investors*

Stakeholders seem to agree that where there is lack of transparency, investments are not keen to increase.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the Policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

No relevant impact.

### *Maritime safety, health and safety of port workers, employment job creation*

No relevant impact.

## ENVIRONMENTAL

### *Environmental performance*

No relevant impact.

## **Policy Package 2**

### *Measures included:*

6. Confinement of internal (public) providers of port services; and
7. Principles of transparency, non-discrimination and proportionality for the price of port services if provided by operators in monopolistic position.

### *Impact:*

More to that stated above, the inclusion of confinement for internal operators of port services should avoid market distortion on the basis of exclusive rights where there is a potential cross-subsidy involved. As a consequence, private investors should be encouraged to invest in the provision of port services.

## ECONOMIC

### *Port costs*

As seen for PP1. Moreover, limiting the possibility for (public) service providers to unevenly compete in other ports than those they are set in would favour competition, avoiding possible dumping practice.

### *Quality of port services*

Quality of port services should not be affected.

### *Attractiveness for private investors*

The elimination of market distortions would most likely increase the interest of private investors, which are not threatened by unfair practice.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

No relevant impact.

*Maritime safety, health and safety of port workers, employment job creation*

No relevant impact.

ENVIRONMENTAL

*Environmental performance*

No relevant impact.

**Policy Package 2a, 3**

*Measures included:*

6. Confinement of internal (public) providers of port services; and

8. Principles of transparency, non-discrimination and proportionality for the price of port services if provided by operators in monopolistic position and for which no public tender applies.

*Impact:*

Policy Packages 2a and 3, limit the rules on the price of port services provided with exclusive rights only to those cases where public tender does not apply. The impact is expected to be similar to the previous (see PP2), but with limited range, as all services awarded through competitive awarding practices are excluded. Considering that these two Policy Packages are those mostly focused on market opening and implementation of competition, the number of cases is expected to be very limited. This is not necessarily negative, as excessive regulation generally leads to overturn the positive effects of liberalizations.

ECONOMIC

*Port costs*

Port costs are expected to be marginally affected, if compared to port costs under PP1. Competition and market opening is ensured by the measures seen in OO 1.1. Nonetheless, in those few cases where no public tender applies, the guarantee that the price of port services is regulated should further limit cases in which port costs are above the optimum – market – level.

*Quality of port services*

Quality of port services should not be affected.

*Attractiveness for private investors*

The elimination of market distortions would most likely increase the interest of private investors, which are not threatened by unfair practices. Moreover, the decision to have measures specifically designed to regulate only those cases where it seems appropriate – rather than regulating at wider scope – should improve the sense of security investors would have that all measures are taken to ensure a level playing field.

*Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

SOCIAL

*Skill and quality of labour force*



No relevant impact

*Maritime safety, health and safety of port workers, employment job creation*

No relevant impact.

ENVIRONMENTAL

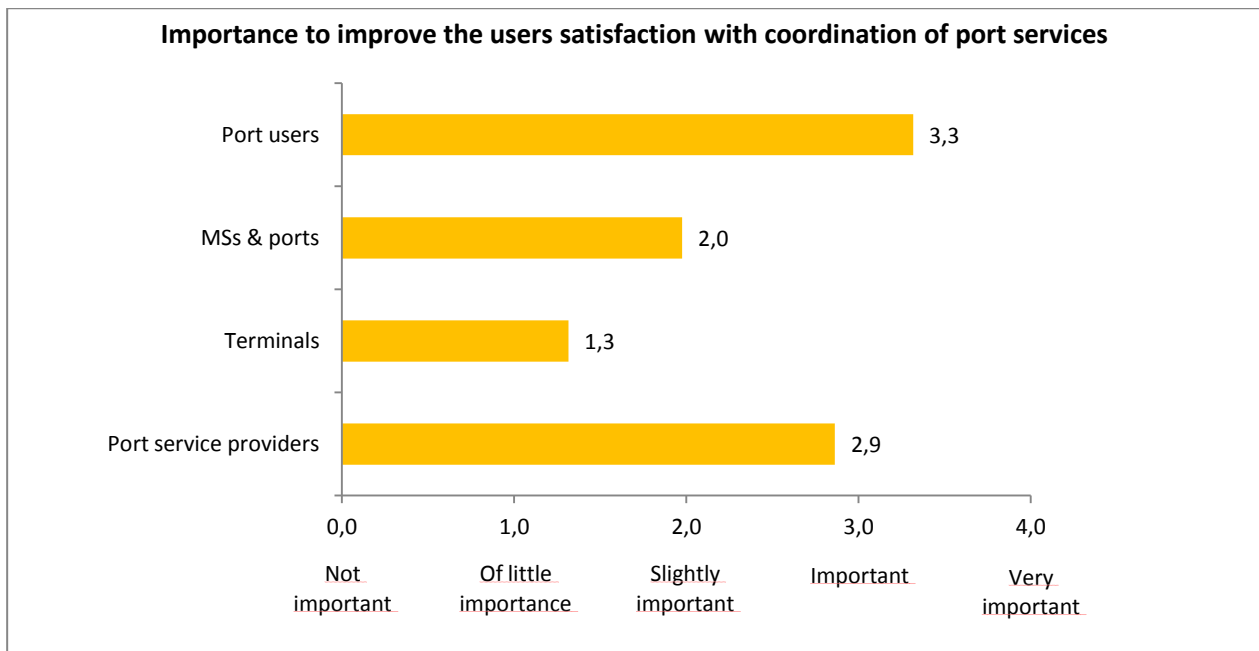
*Environmental performance*

No relevant impact.

### OO1.3: Simplify procedures and improve coordination mechanisms within ports

Coordination mechanisms could be regarded as a weakness across EU ports, as stakeholders in general 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 stakeholders, with the exception of terminal operators, who show little interest.

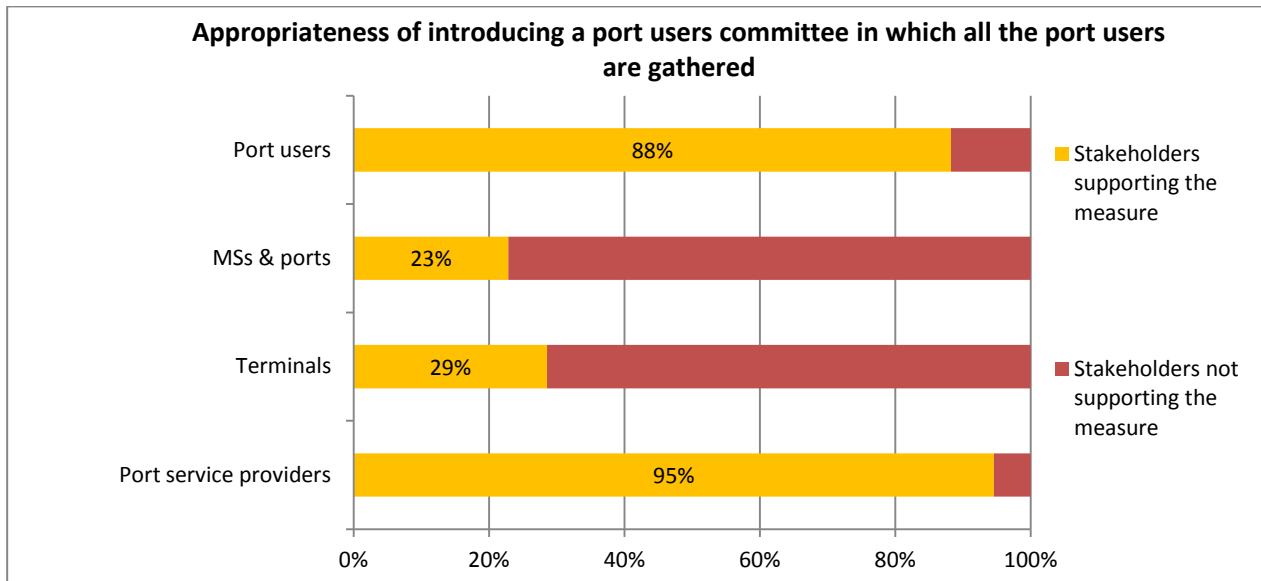
**Figure 80 - importance to improve user satisfaction with coordination of port services**



When deciding which category of stakeholder should carry the burden of coordinating port service providers, opinions are discordant. Port users have no direct interest on who may coordinate, and therefore consider it positive anyway. Similarly, terminal operators do not feel the need for coordination to be improved.

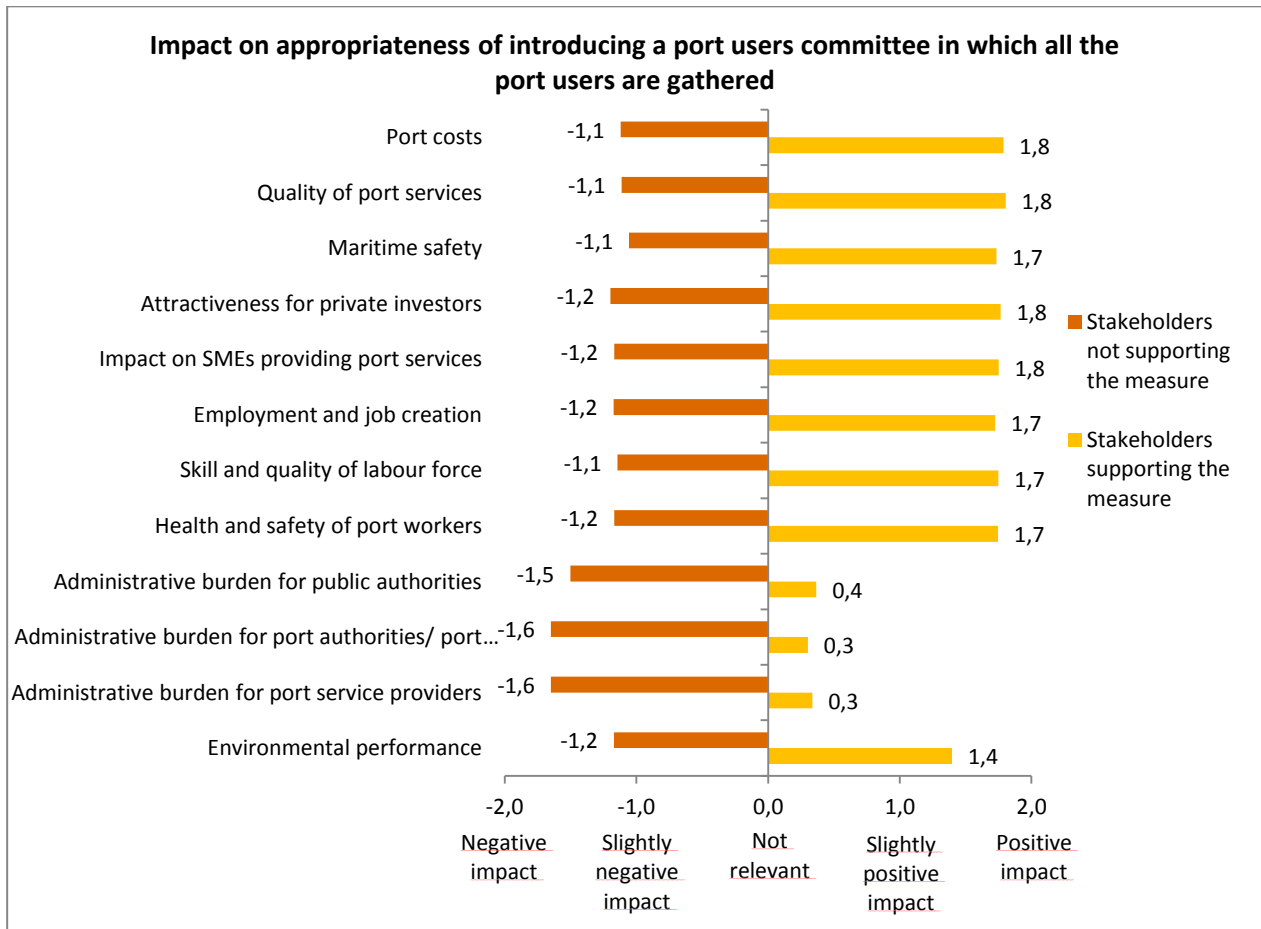
When considering the possibility to introduce a port users' committee, port service providers are very supportive, while Member States and ports are less supportive. It seems that port service providers would like to have a role in coordinating activities – together with authorities, while others (mainly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

**Figure 81 - appropriateness of introducing a port users' committee**



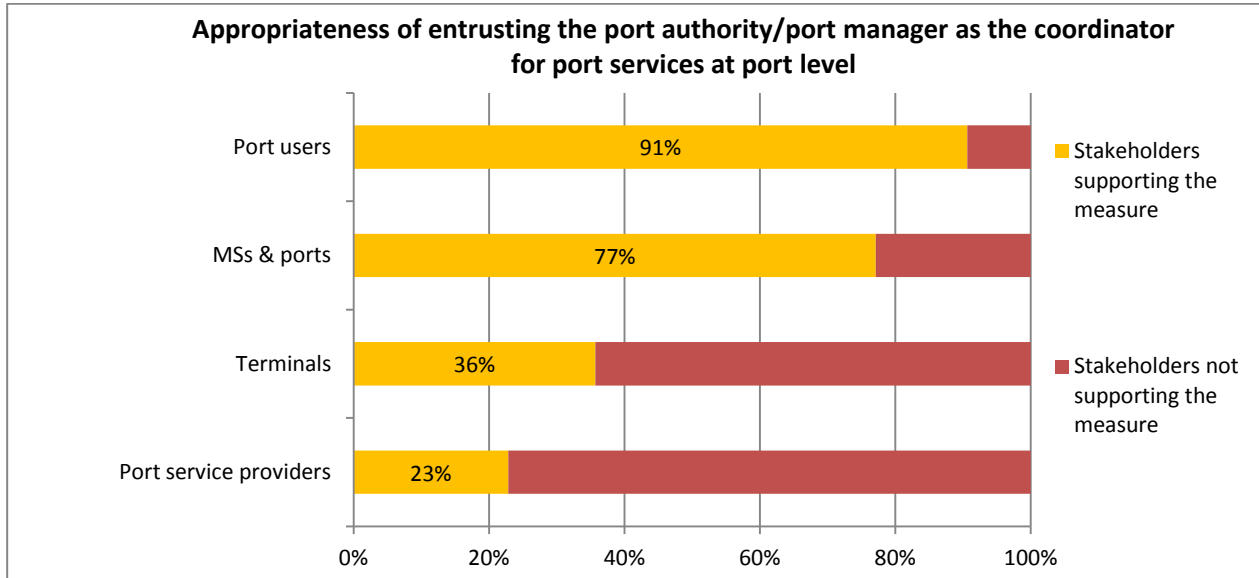
A net positive impact is recognized by stakeholders on all aspects, apart from on administrative burden, which is the only element where the impact is distinctly perceived to be negative. Coordination requires a set of activities that increases administrative burden and therefore the negative impact is justified.

**Figure 82 - impact on appropriateness of introducing a port users committee in which all the port users are gathered**



In contrast, when stakeholders were presented with the possibility to have coordination activities performed by the port authority/port manager, Member States and ports indicated support for the measure, while port service providers showed relevant concern. Again, port users and terminals are not involved and seem to respond more on a general basis than showing a sincere interest on who should have the responsibility for coordinating.

**Figure 83 - appropriateness of entrusting the port authority/port manager as the coordinator for port services at port level**



The impacts contrast with those seen for the previous measure. Negative aspects are homogeneous throughout the various elements identified – with the exception of administrative burden, probably due to the fact that port authorities/port managers are believed to already have all the necessary organization and personnel resources to perform coordination activities without a substantial increase in administrative burden. Positive impacts tend to be more differentiated across elements considered, even if these differences are not substantial.

Both this and the previous analysis of impacts (impact on appropriateness of introducing a port users committee in which all the port users are gathered) should be read considering the weight of port service providers, which is overwhelming over the other stakeholder categories. Therefore where they consider the measure to be positive, the average of impacts is inherently shifted towards the right end of the graph and *vice versa*.

**Figure 84 - impact on appropriateness of entrusting the port authority/port manager as the coordinator for port services at port level**

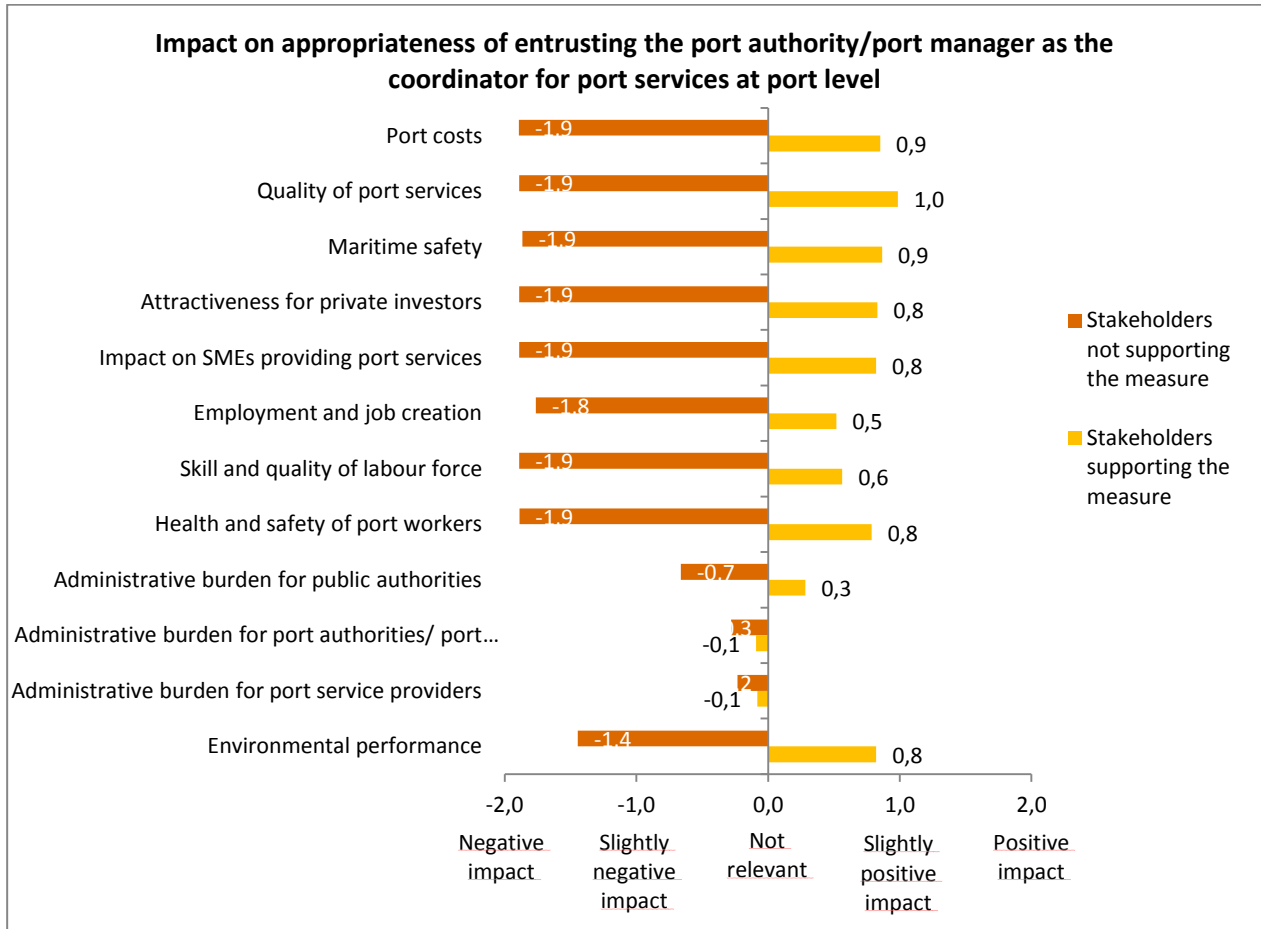


Table 56 provides an overview of the comments provide by stakeholders.

**Table 56 - Stakeholders' comments on “simplifying procedures and improve coordination mechanisms within ports”**

<b>Port authorities/managers and other public authorities</b>	<b>Port users</b>
<p>No need for further action.</p> <p>Committees should be spontaneous and not imposed. There is no one-fits-all approach possible. It is better to leave it to local arrangements.</p> <p>The port authority / port manager role to play as coordinator for port services at port level is best defined at local level. If deemed useful, users committees should be set up in a bottom-up manner.</p> <p>Already present best practices concerning coordination and committees in some ports.</p>	<p>Improved communication between operators, carriers and ports, etc. can increase ports performance in terms of time of loading/unloading, precision of estimates on schedules (expected arrival time vs. actual arrival time), time for clearing freight for import and precision on picking-up freight.</p> <p>Port users' committee is highly welcomed as a continuous discussion would likely enhance the quality and efficiency of port services.</p>
<b>Port service providers</b>	<b>Terminal operators</b>
<p>As long as service providers have the role to give advice, it can work well.</p> <p>Given the differences among services (in particular of commercial interest and of public interests), it is not appropriate to set up a single entity coordinating all services.</p> <p>Pilotage is not always limited to the port area, thus it should be considered that coordination should go beyond it.</p> <p>If the managing entity is the coordinator, it should be independent.</p> <p>Coordinating entity must have no commercial interests.</p>	<p>No need for further actions.</p> <p>Already present best practices concerning coordination and committees in some ports.</p> <p>It should not be forgotten that part of European port handling is in the hands of foreign investors or operators. According to Singaporean, Hong Kong, Dubai, etc. legislation it is very unusual to see contract conditions changed by a non-contractual party, as is also the case under European contract law.</p> <p>Cost reductions and efficiency gains can be achieved if competing operators are prepared to share some logistical planning.</p> <p>Should avoid imposition of coordination.</p>

**Policy Package 1, 2, 2a***Measures included:*

9. Port users' committee.

*Impact:*

Establishing a port users' committee would guarantee a dialogue between providers and authorities, which is expected to increase efficiency, even if time and resource-intensive. It is highly regarded by port service providers, while port authorities are not keen to have it implemented, fearing it might inherit a duty they consider their own. Impacts are generally considered positive, with the exception of administrative burden, which would increase due to the cost of coordinating, inherent in the creation of a committee itself. In case the committee carries out its activities efficiently, the increase in administrative burden should be exceeded by cost reduction due to the elimination of inefficiencies. For the same reason, quality should increase as well. As highlighted earlier, coordination would most likely increase port safety, as safe operations would be spread out as best practice throughout all service providers. Those ports where the committee works properly would therefore gain competitive advantage over others, attracting investors.

No other substantial impact is expected on other elements.

The cost of implementation at each port depends on the number of annual meetings and the number of port users, port service provider and authorities taking part at the different meetings. Overall these costs are expected to be fairly irrelevant if compared to the benefits that can be achieved.

## ECONOMIC

### *Port costs*

The implementation of a port users committee is expected to have best practice shared and coordination to improve, leading to activities to be performed more efficiently. Likely, costs could be reduced accordingly.

### *Quality of port services*

An increase in quality of port services is probably where the effect of the port user committee is more relevant. The spreading out of information, best practices and consequent increase in efficiency would definitely increase the quality of services.

### *Attractiveness for private investors*

A more efficient, more organized port would most likely attract investors. This way, those ports in which the port committee efficiently functions, would most likely be preferred to those where it does not.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

Sharing of best practice would produce a certain sharing of capabilities, which should translate into increased quality of labour force.

### *Maritime safety, health and safety of port workers, employment job creation*

Sharing of best practices would most likely increase all the above mentioned elements. Employment is hardly directly affected by the measure.

## ENVIRONMENTAL

### *Environmental performance*

No relevant impact expected.

## **Policy Package 3**

### *Measures included:*

#### 8. Central Port Coordination.

### *Impact:*

PP3 considers the implementation of a Central Port Coordination. The need for increasing port coordination is considered crucial by all stakeholders, with the exception of terminal operators, which are more cautious on the matter. The adoption of this measure is expected to be positive, with substantial differences in particular on administrative burden depending on how the measure is implemented. Quality of port services seems to be particularly affected, as more coordination would facilitate information sharing and thus increase focus on best practice. For similar reasons, safety is expected to increase accordingly.

The Central Port Coordination would be centralized, and therefore easier to manage than the user committee. Nonetheless, its spectrum of activities would be more limited. The cost of this measure would be rather small.

## ECONOMIC

### *Port costs*

Port costs are likely to decrease as effect of improved coordination. A central entity organizing the port should be able to avoid conflicts within the port, but its contribution is not expected to be of particular relevance.

### *Quality of port services*

Quality of port services might increase due to the limitation of conflicts. Nonetheless, it is hard to predict the relevance of this increase on the overall level of quality.

### *Attractiveness for private investors*

No relevant differences from PP1, 2, 2a.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

No relevant differences from PP1, 2, 2a.

### *Maritime safety, health and safety of port workers, employment job creation*

The Central Port Coordination would increase safety during entry/exit of the port, as service providers would be better organized and no conflicts would occur.

## ENVIRONMENTAL

### *Environmental performance*

No relevant impact expected.

## **9.2.2 SO2: Create framework conditions which incentivise investments in ports**

### **OO2.1: Ensure a level playing field by more transparent financial relations between public authorities, ports and providers of port services**

Ensuring a level playing field seems to be a core issue in the port service market, as demonstrated by the high rate of positive responses received from stakeholders, when asked to consider measures ensuring transparency. Port authorities/port managers are, in this case, directly involved, as their role can be both public function bodies and service provider. Separating the two dimensions is observed in most stakeholder responses, with substantial differences arising when considering which way these should be separated and which degree of separation is necessary for attracting investments in ports.

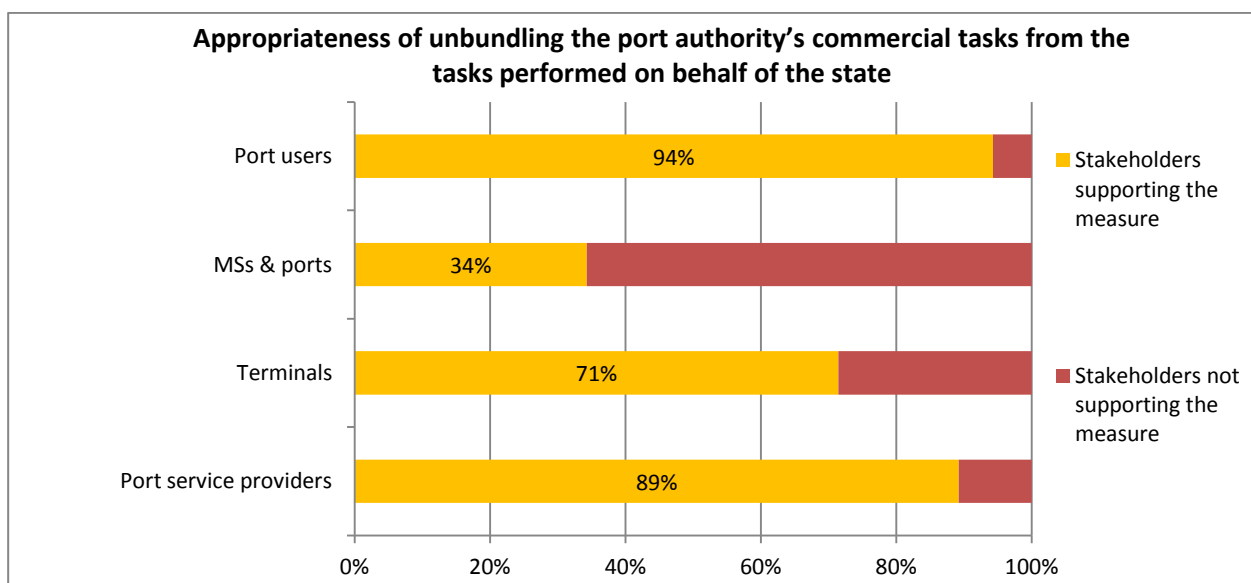
A strong approach – defined as the unbundling of port authorities/port managers' commercial tasks from their public function role – was considered first. The unbundling could be further divided into a strong unbundling,

where service providers must be legally and/or economically independent; and soft unbundling, where separate functions ought to be guaranteed – as much as separate accounts – but economic independence is not required. Stakeholders were not asked to consider this difference, nonetheless, their opinions can be considered as their interests are revealed when answering to the question presented in the following pages.

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.

When considering the unbundling of the port authority dimensions – managing body and service provider – port service providers and terminal operators are very supportive. In line with expectations, Member States and ports are much less, 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.

**Figure 85 - appropriateness of unbundling the port authority’s commercial tasks from the tasks performed on behalf of the state**



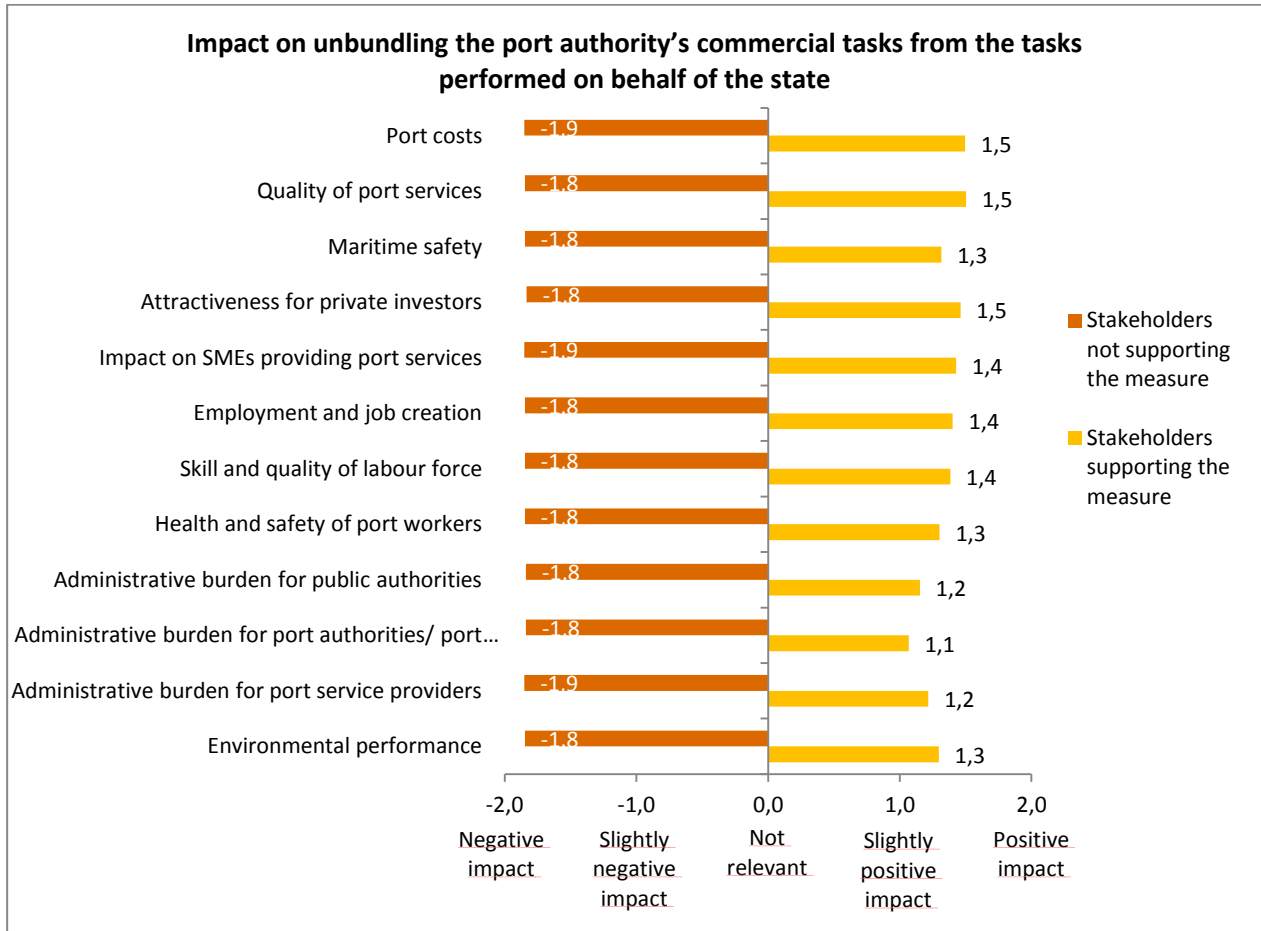
Expected impacts are overall positive. Those stakeholders not supporting the measure do not seem to discriminate between various elements that might be impacted and consider that overall, there would be a very negative impact.

Those supporting the measure, on the contrary, consider a general very positive impact, with higher focus on port costs and quality of services, which are expected to increase due to increased transparency and – at least in the case of public tendering – competition. Administrative burden appears to be slightly more negatively affected than other elements, as transparent procedures entail a set of operational activities that have to be performed by different players, first of all, port authorities/port managers.

The effect of the unbundling on port costs is nonetheless ambiguous. Indeed, as positive effects are expected to derive from higher competition – at least considering public tendering procedures when awarding the service contract – negative effects might occur as well. Indeed, port authorities/ port managers mainly perform services that cannot be efficiently carried out in a free-market regime (i.e. natural monopolies, especially in the case of public utility services). The current regime sees the port authority/port manager monitoring costs and keeping them fairly low, in most cases balancing them with other activities which are more remunerative. When operators independent from the managing body perform the very same activities, there would be no direct control from the managing body, but these operators should then cover their costs directly increasing the tariff requested as compensation for the service itself. If it is therefore true that the measure prevents the possibility for the port authority/port manager to set a higher than cost-proportionate tariff for the services it delivers, it is also to be considered that it prevents these very same services to be provided at fairly low prices in case they are necessary for the port to operate, but are not remunerative and therefore a state aid might be required.

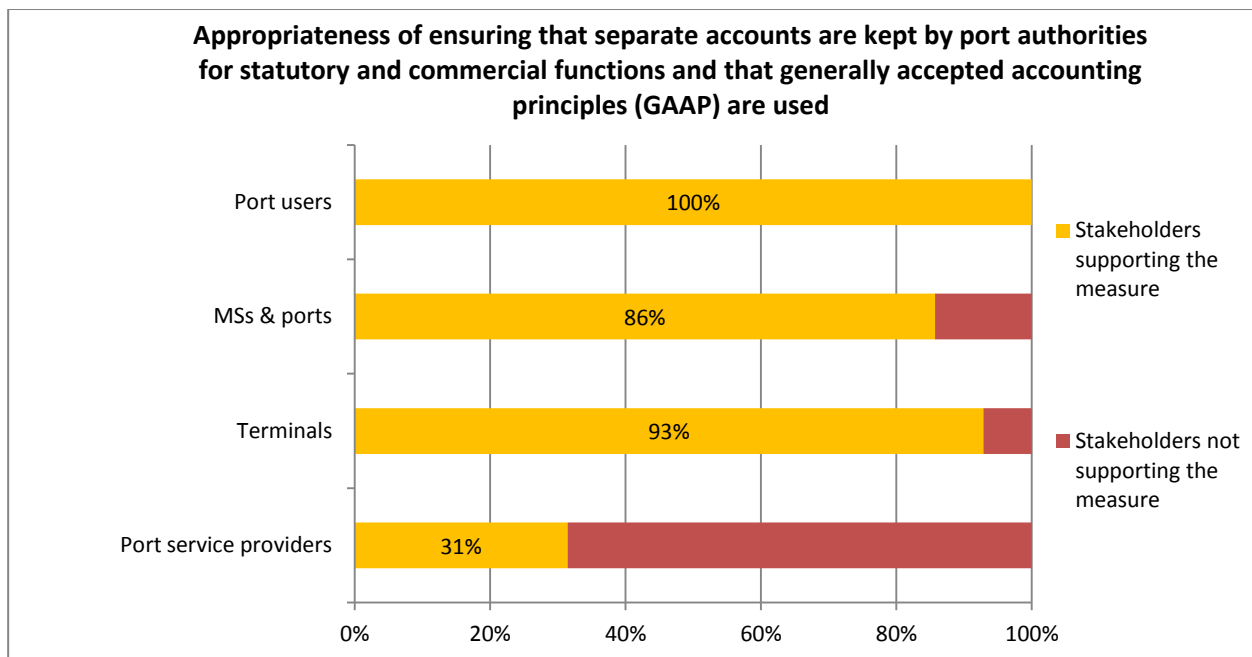


**Figure 86 - impact on unbundling the port authority’s commercial tasks from the tasks performed on behalf of the state**



Transparent financial relations can also be achieved through a softer approach. The eventuality to merely impose a separation of accounts between services the port authority/port manager provides for statutory and commercial functions was then considered. Again, port users unanimously agree. Nevertheless, the distribution of stakeholders supporting the measure is almost opposite to the one analysed before: port service providers tend to oppose this measure, which is welcomed by Member States and ports and terminal operators.

**Figure 87 - appropriateness of ensuring that separate accounts are kept by port authorities for statutory and commercial functions and that generally accepted accounting principles (GAAP) are used**



In terms of impacts, responses are odd. All stakeholders agree on the fact that the impact derived from this measure is positive on all aspects apart from administrative burden, which is negatively impacted. Quality of port services is expected to increase, as is attractiveness for private investors, while port costs and safety are not seen to have an as-positive impact as the other elements considered.

The lack of negative impacts as presented in Figure 88 is nonetheless to be mainly ascribed to the different panel considered. Indeed, port service providers – who represent the great majority of stakeholders not supporting the measure – did not change their expectations in any significant way on impacts between the two proposed solutions. On the contrary, if a change occurred it still was towards less positive values. Nonetheless, they still consider the need for separating the two functions of port authorities/port managers so important that even in a softer way; it should lead to a positive impact.

Those claiming that the previous measure was leading to negative impacts – mainly Member States and ports – are now supporting the measure and therefore fall into the “supporting the measure” bar. Since Member States and ports are however conservative, it appears that those supporting the measure expect a less positive impact than those not supporting it at all.

Synthetically, from the joint analysis of the two measures it can be said that Member States and ports are not particularly keen to have their role further regulated, nonetheless, fearing this will be the case, show strong preference for the softer approach, but keep their conservative attitude towards it. On the other hand, port service providers consider it a core issue and, even if strongly support a heavy regulatory intervention, do recognise that a positive impact would come as consequence of whatever measure in the direction of separating the managing body functions from the port service operation ones. Port terminals are in between, while port users support whatever measure.

**Figure 88 - impact on ensuring that separate accounts are kept by port authorities for statutory and commercial functions and that generally accepted accounting principles (GAAP) are used**

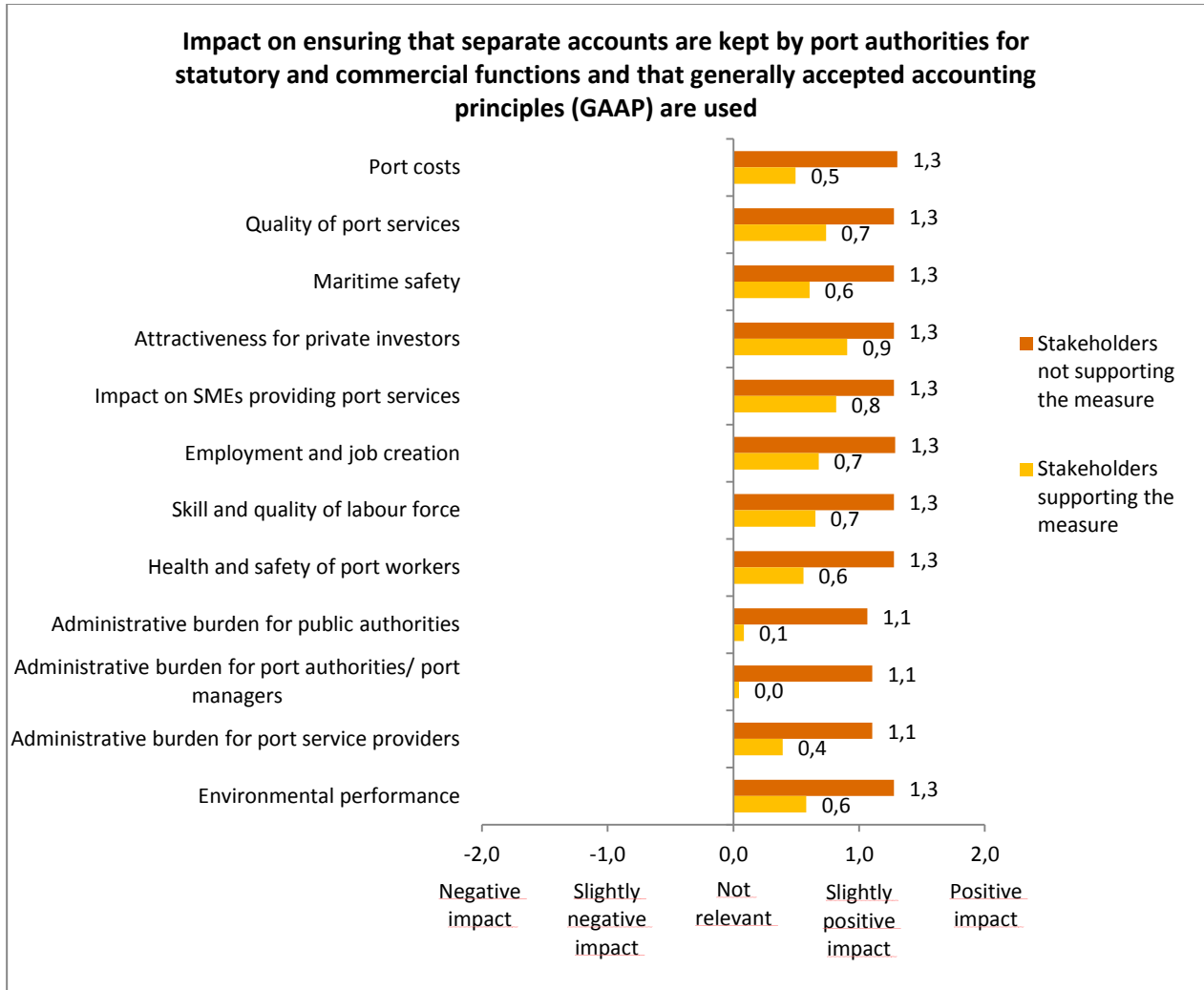


Table 57 provide a summary of stakeholder opinion.

**Table 57 - Stakeholders' comments on “ensuring a level playing field by more transparent financial relations between public authorities, ports and providers of port services”**

<b>Port authorities/managers and other public authorities</b>	<b>Port users</b>
<p>The core business of port authorities is the development and maintenance of port infrastructure. Their responsibility should be limited to these activities. Commercial functions are in the responsibility of private port operators.</p> <p>Not necessary in UK and Ireland.</p> <p>It is appropriate to ensure transparency of financial relations involving public money but not where it involves commercially funded private sector operations.</p> <p>To implement transparency requirements and state aid guidelines for sea ports it is vital to define the port authority's tasks.</p>	<p>Ship owners request clarity on what costs they pay for, therefore measures that ensure more clarity on the port authorities' financial relations are welcomed.</p> <p>Whether and to which extend the port authorities are involved in economic activities must be left to the Member States.</p> <p>Not sure there is dramatic variety on charges between ports.</p> <p>Port accounts should be made more transparent and charges paid for by the port users clearly based on the costs (fixed and variable costs) of the facilities and equipment used.</p> <p>More clarity on the different items that compose port dues, as well as on more transparency in their relation with relevant costs is needed.</p> <p>Some criteria for pricing would discriminate ships used for Short Sea Shipping and this should be overcome.</p>
<b>Port service providers</b>	<b>Terminal operators</b>
<p>Separation is necessary to avoid distortions among different port management systems across Member States.</p> <p>One-size-fits-all is not welcome.</p>	<p>Transparency of financial relations between public authorities and port authorities are generally important.</p> <p>Port authorities business should be limited to the development and maintenance of infrastructures.</p> <p>Separation between functions allows higher efficiency.</p> <p>The commercial activities of a port authority should therefore face competition from commercial operators in the same market on equal conditions.</p>

**Policy Package 1***Measures included:*

13. Financial transparency between public and port authorities.

*Impact:*

PP1 only considers a soft approach. As financial flows from public authorities would be monitored, in order to avoid a distortion due to state aids, no other relevant information would be provided.

## ECONOMIC

*Port costs*

The limitation of the state aid distortive effect would generally provide a more equal competitive scenario among ports, thus favouring infra-port competition and thus forcing ports to lower costs in order to survive to more efficient competitors.

*Quality of port services*

As considered for port costs, those ports where financial aids from public authorities contribute to cover inefficiencies would have this benefit no more. This way, quality is expected to increase as cost decreases, in order to better compete with other ports.

#### *Attractiveness for private investors*

Investors are expected to be much keener to invest where transparency is ensured. Indeed, it does not only lead to increase efficiency in ports, but ensures a level playing field and avoids unfair practices to be carried out. state aids would be easily identified, preventing unfair competition between ports.

#### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

### SOCIAL

#### *Skill and quality of labour force*

No relevant impact

#### *Maritime safety, health and safety of port workers, employment job creation*

No relevant impact

### ENVIRONMENTAL

#### *Environmental performance*

No relevant impact expected.

### **Policy Package 2, 2a**

#### *Measures included:*

12. Separation of accounts.

#### *Impact:*

The separation of accounts solution is favoured by Member States and ports, but concern is raised amongst port service providers, who consider it too soft to produce the desired outcome. Nonetheless, positive impacts are expected by its implementation, even if those supporting this measure are less positive than those supporting the functional separation one. In particular, port costs are not expected to decrease as much and administrative burden is clearly not positively affected. Still, quality of services, attractiveness for private investors and impact on SMEs providing port services should definitely increase, as a result of higher transparency. Indeed, it allows monitoring market distortion and, thus, effective interventions to improve the system.

The separation of accounts involve one off cost to the managing body for the definition of the new accounting system and for updating the accounting IT system. These costs will vary according to the size of the company and the number of accounting operations to be performed.

Recurrent costs for the preparation of separate accounts are small or not relevant.

### ECONOMIC

#### *Port costs*

The effect of the policy on port costs concerning the increase in transparency of financial relations is generally expected to be positive. Almost all stakeholders agree that increased transparency should lead to cost reduction, as transparency increases and, therefore, it would not be possible to freely set charges, as these would be cost-based.

#### *Quality of port services*

Quality of port services should not be affected.

#### *Attractiveness for private investors*

Investors are expected to be much keener to invest where transparency is ensured. Indeed, it does not only lead to increase efficiency in ports, but ensures a level playing field and avoids unfair practice to be carried out. Moreover, state aids would be easily identified, preventing unfair competition between ports.

#### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

### SOCIAL

#### *Skill and quality of labour force*

No relevant impact

#### *Maritime safety, health and safety of port workers, employment job creation*

No relevant impact

### ENVIRONMENTAL

#### *Environmental performance*

No relevant impact expected.

### **Policy Package 3**

#### *Measures included:*

11. Functional/legal separation.

#### *Impact:*

A functional separation is a stronger approach than the mere separation of accounts that is analysed above. As the port authority/port manager is forced to leave the provision of port service to a third operator, its role would be confined to manage the port. Inefficiencies due to lack of transparency or lack of interests in having services carried out efficiently – as it is expected when competition is guaranteed – should therefore bring positive impacts. In particular, it is expected to see a decrease in costs, an increase in quality of port services, attractiveness for private operators and, in particular, SMEs providing port services, as the port service market would benefit from more business opportunities.

A certain degree of interference is possible between port authority/port manager and service provider, up to the situation in which the latter is owned – or owned or at least majority owned - by the former. Transparency would still be guaranteed, but independence would not. It is therefore expected that the impact of the measure, in this case, is much more similar to the separation of accounts than to the effective separation of the two entities.

The implementation of a new structure of governance and management for each new legal entity will generate substantial costs.

## ECONOMIC

### *Port costs*

Port costs are likely to decrease should the port authority, which is usually considered to be less efficient than a private operator, separate its functions. Almost all stakeholders agree that the port authority should focus on its public function and leave the others to the market, which results in a more efficient allocation of resources, thus reducing costs.

### *Quality of port services*

As the port authority would focus on its public role, and leave the provision of services to other companies (even if financially owned or partially owned), the quality is expected to increase as efficiency increases.

### *Attractiveness for private investors*

No relevant differences from PP1, 2, 2a.

### *Impact on SMEs providing port services*

Since almost half the port service providers participating to the survey claimed to be a SME (and 40% to be a micro-enterprise), it is considered that the policy would mainly affect these smaller entities.

## SOCIAL

### *Skill and quality of labour force*

No relevant differences from PP1, 2, 2a.

### *Maritime safety, health and safety of port workers, employment job creation*

No relevant differences from PP1, 2, 2a.

## ENVIRONMENTAL

### *Environmental performance*

No relevant differences from PP1, 2, 2a.

### **OO2.2: Ensure efficient port infrastructure charging policies**

Port costs might increase or decrease depending on the current procedure in place for setting charges.

For example in some ports charges may be set at a higher level than what is required in terms of cost recovery: therefore the introduction of the proportionality principle would have a positive impact, reducing costs. The opposite impact is also possible – whereby a port authority sets a charge that is lower than that required to recover costs: its approach to cost recovery relies on only certain service charges, or revenue from one service is used to subsidise another.

Each measure should contribute to the creation of a level playing field between ports and assist in increasing private investment.

Usually measures comprising binding rules are not accepted with favour by stakeholders. Indeed, EU geographical regions and ports entail specificities that can hardly be efficiently regulated by an EU-wide set of

rules. Guidelines for Member States on regulating specificities on their territory seem a much more reliable way to enhance quality and efficiency of port services.

Administrative costs are expected to increase as ports are required to set up new and more complex procedures for the calculation of charges in line with transparency, proportionality, etc. principles.

### **Policy Package 1**

#### *Measures included:*

16. Transparency of port due calculation.

#### *Impact:*

Transparency of port due calculation would be supported by port users. It would however not necessarily be welcomed by port authorities as could be seen as having a negative impact on the competitive position of that port.

Transparency is not going to generate relevant impacts but if implemented along with any of the previous measures it will allow for easy monitoring of the compliance to new guidelines or rules.

The measures might imply small administrative burden by the port managing body to publish relevant information.

#### **ECONOMIC**

##### *Port costs*

Although the increase in transparency of port due calculations is expected by port users to reduce the amount of dues they pay, other stakeholders find it much less relevant, considering that it is mainly useful as a monitoring instrument.

##### *Quality of port services*

The impact on the quality of port services is not expected to be particularly relevant. Transparency would mainly impact costs, since the quality of the service is, in this case, represented by the port infrastructure managed by the port authority. It is unlikely that these are going to be of higher or lower quality due to an increase of transparency of charges.

##### *Attractiveness for private investors*

Transparency is always beneficial for investments; nonetheless, in this case, the impact is unlikely to be of any relevance.

##### *Impact on SMEs providing port services*

Not relevant.

#### **SOCIAL**

##### *Skill and quality of labour force*

Not relevant.

##### *Maritime safety, health and safety of port workers, employment job creation*

Not relevant.



## ENVIRONMENTAL

### *Environmental performance*

Not relevant.

## **Policy Package 2**

### *Measures included:*

15. Transparent, cost-based and differentiated dues.

### *Impact:*

By creating a robust link between costs and revenues (e.g. through charges), the port authority can become more efficient and commercial in its operation, which in turn increases quality, volume and attractiveness to the private sector.

The measure could involve significant administrative burden and cost to the port authority where there are unclear practice with regards to cost recovery and charging, for example.

## ECONOMIC

### *Port costs*

Having port dues calculated on the base of costs is highly welcomed by port users and is expected to lead to a port costs reduction or, at least, to a rationalization.

### *Quality of port services*

By creating a robust link between costs and revenues (e.g. through charges), the port authority can become more efficient and commercial in its operation, which in turn increases quality, volume and attractiveness to the private sector.

### *Attractiveness for private investors*

As seen for quality of port services, the creation of a link between costs and revenues activates a virtuous circle that leads to higher efficiency and, thus, increased attractiveness to the private sector.

### *Impact on SMEs providing port services*

Although most shipping companies are not SMEs, those smaller companies would benefit from lower port dues, which represent a relevant fixed cost -in particular, when considering short routes.

## SOCIAL

### *Skill and quality of labour force*

Not relevant.

### *Maritime safety, health and safety of port workers, employment job creation*

Not relevant.

## ENVIRONMENTAL

### *Environmental performance*

Not relevant.

## **Policy Package 2a**

### *Measures included:*

14. Freedom for individual ports to set dues;
16. Enabling variations based on environmental performance; and
17. Transparency of port due calculation.

### *Impact:*

PP2a is similar to PP1, but the inclusion of measures on the freedom to set dues and classification for differentiation at EU level on the base of environmental performance changes quite relevantly the expected impact.

Port authorities will be in favour of opening the possibility for them to set dues, particularly those that might feel constrained by their public sector owners or partners and the level of influence that they have. Member States will have mixed views, in that the decisions made by the port authority could lead to social and negative impacts for the region or country, should those port dues be set at too high level, thus influencing the level of throughput through the port and hinterland.

Port users are likely to have least support for this measure given that the possibility of higher dues could impact on their business.

There would potentially be a decrease in administrative burden as the port authority becomes the only entity involved in setting charges.

The inclusion of guidelines for the classification of charges would become a useful instrument for encouraging the market to take a specific direction (i.e. different charges on the base of environmental performance might encourage less pollutant engines and fuels to be developed and used).

## **ECONOMIC**

### *Port costs*

Determining the impact on port costs is complex. Indeed, as individual ports would be free to set dues, the impact depends on single ports, which could implement or not the cost-based principle. Of course, the presence of a measure assuring transparency would encourage them to set dues fairly, but it would not always be the case.

### *Quality of port services*

Similar considerations that those made for port costs. Port authorities could take advantage of their position, which would have a negative impact on port users. Nonetheless, quality is hardly relevantly involved. It is more a matter of cost. The main effect on quality of port services would depend on the decrease in efficiency, which would in turn discourage investments, which would then impact quality of the infrastructure. The freedom provided to port authorities would therefore be both source of quality, if wisely used, or decrease it, where port authorities do not consider long term effect while managing the opportunity.

### *Attractiveness for private investors*

As seen for quality and costs, attractiveness for private investors mainly depends on how the port authority decides to manage the freedom they have. If they become more efficient, decrease costs, and attract users, investments are likely to flow in. If they do not, other ports might be found more attractive.

### *Impact on SMEs providing port services*

Although most shipping companies are not SMEs, those smaller companies would benefit from lower port dues, which represent a relevant fixed cost -in particular, when considering short routes.

#### SOCIAL

##### *Skill and quality of labour force*

Not relevant.

##### *Maritime safety, health and safety of port workers, employment job creation*

Not relevant.

#### ENVIRONMENTAL

##### *Environmental performance*

The inclusion of guidelines on classification should environmentally differentiate charges depending on the impact on the environment, therefore favouring more environmental-friendly propulsion/fuels, etc. In this case, it would be in the user's interest to become more concerned on their environmental performance.

### **Policy Package 3**

#### *Measures included:*

14. Freedom for individual ports to set dues.

#### *Impact:*

PP3 only allows individual ports to set dues freely. This measure finds the support – of course – of port authorities, but is opposed by several other stakeholders, mostly port users, which show concern on the possibility to have this measure leading to an overall improvement of the efficiency of ports.

#### ECONOMIC

##### *Port costs*

As individual ports would be free to set dues, the impact depends on single ports, which could implement or not the cost-based principle. No measures are present to limit – not even through guidelines – the power of port authorities to set dues. It is unlikely that port authorities would cut dues.

##### *Quality of port services*

Similar considerations that those made for port costs. Port authorities could take advantage of their position, which would have a negative impact on port users. Nonetheless, quality is hardly relevantly involved. It is more a matter of cost. The main effect on quality of port services would depend on the decrease in efficiency, which would in turn discourage investments, which would then impact quality of the infrastructure. The freedom provided to port authorities would therefore be both source of quality, if wisely used, or decrease it, where port authorities do not consider long term effect while managing the opportunity.

##### *Attractiveness for private investors*

As seen for quality and costs, attractiveness for private investors mainly depends on how the port authority decides to manage the freedom they have. If they become more efficient, decrease costs, and attract users, investments are likely to flow in. If they do not, other ports might be found more attractive.

*Impact on SMEs providing port services*

Although most shipping companies are not SMEs, those smaller companies would benefit from lower port dues, which represent a relevant fixed cost -in particular, when considering short routes.

## SOCIAL

*Skill and quality of labour force*

Not relevant.

*Maritime safety, health and safety of port workers, employment job creation*

Not relevant.

## ENVIRONMENTAL

*Environmental performance*

Not relevant.

## 9.3 Analysis of impacts

This section jointly considers the outcome of the previous analyses (qualitative and quantitative) and presents a structured analysis of impacts, presenting the role that the different policy packages proposed by the Commission would have in achieving the desired objectives.

### 9.3.1 Economic Impacts

#### Impact on the capability to meet future demand

Maritime traffic is expected to grow across Europe in the future. It has been previously considered that even a mild growth should produce intense impacts in volumes of freight flowing to Europe in the next decades. Traffic growth is not expected to be homogeneous throughout the different type of freight, nor are vessels expected to maintain their size, as the need for maritime transport increases. Therefore, ports need to adapt to changes not only in quantity of freight to load/unload, but also to the different need for technical equipment, quays length, etc. in order to satisfy future demand.

Policy packages can affect the future demand for maritime traffic through incentives. In particular, lower user costs are the main incentive that is expected to lead to a shift from land transport to sea transport. As it will be further explained in the next paragraph, **PP1** has a limited impact on user costs reduction, thus a limited incentive to use maritime options (calculated to increase about 0.5%). As **PP2**, **PP2a** and **PP3** have stronger impact on user costs, they will have a stronger impact on modal shift, too (relatively 0.7%, 1.6% and 1.9%).

#### Impact on the efficiency of ports (port costs, quality)

The impact on the efficiency on ports derives from the joint consideration of outcomes from quantitative and qualitative analyses on the effect of the different policy packages on port costs and quality of services provided. When considering efficiency, the capacity of one port to provide high quality services at a reasonable cost is considered. The achievement of these goals seems to be generally regarded as dependant on transparency of the activities of the managing body as well as on the presence of competition on port services provision.

**PP1** does not seem to produce evident positive impacts on the matter. The application of soft approaches is not expected to substantially produce changes from the baseline situation, in particular, when entry barriers and competition are concerned. Main positive impacts are due to the implementation of measures regulating the price of port services providers benefitting from exclusive of special rights, nonetheless limited impacts can be expected. Overall, the change in total port related costs is expected to be around 2%.

**PP2**, on the contrary, introduces a European framework applicable to all ports. This option would most likely lead to positive impacts, both in terms of port costs and quality of services. The implementation of measures forcing public tendering and market freedom would boost competition, resulting in higher quality of services and lower costs. It also introduces some moderate measures aiming at preventing port authorities from being able to benefit from their position. There is no doubt that PP2 would increase the quality of ports as a result of increased competition and market access, as well as reduce costs. Nonetheless, the policy mildly considers measures applying to narrower cases than the broad port sector. This way, it might lack in preciseness and punctuality in addressing measures. Overall, the change in total port related costs is expected to be around 3%.

**PP2a** is similar to PP2, but entails measures to quicker adapt the market to competition and market opening. It is also more specific on measures, aiming at regulating the sector more precisely. The effect on costs and quality of port services is expected to be similar to that seen in PP2, but probably the increase in efficiency would come quicker and in a shorter time. Overall, the change in total port related costs is expected to be around 7%.

**PP3** could be considered aggressive, as it intends to completely open the market leaving little time for the market to naturally adapt. In this case, the benefits due to open market and increased competition might be overturned by a market shock, due to a too radical change to be applied. Stakeholders show sincere concern regarding the possibility to have a benefit deriving from this measure, as specificities and peculiarities of some ports and geographical areas/countries are not considered at all. Low consideration is also given to physical constraints, trying to impose a certain level of competition even in a space-constrained scenario. This way, the beneficial effect of competition and market opening would easily be overturned by negative effects and outcomes might go in the opposite direction than expected. In theory, PP3 would sensibly increase competition, similarly to the approach used in Directive 96/76/EC on groundhandling services in airports and in the Commission's proposal of 2001 and 2004 on ports. Overall, the expected change in total port related costs is expected to be around 8%.

Table 58 summarizes the saving in port costs related to the implementation of each policy package.

**Table 58 - Cost reduction related to each policy package**

	Change (%) in total port related costs	Annual savings (€ million)
<b>PP1</b>	-2.0%	-318.15
<b>PP2</b>	-3.0%	-481.47
<b>PP2a</b>	-6.8%	-1,071.37
<b>PP3</b>	-7.9%	-1,245.21

#### Impact on the development of ports (attractiveness for investors)

The analysis of port development considers the degree to which the proposed packages are able to attract investors, which, in turn, would contribute to the development of the port.

In the last decades, port development has been strongly sustained through public financing. Private sector investments mainly funded the upgrading of terminals. This approach has been questioned within the 2012 report by the European Court of Auditors, which shown that public sector led investments might not be effective and efficient. Therefore, investments have to be market driven. Given these premises, the capacity of EU interventions to increase the attractiveness for private investors becomes essential for the development of the whole sector.

Stakeholders have been quite clear considering the attractiveness to private investors to be linked more or less to the same elements that would produce an increase in port efficiency (namely, market opening and increased competition). Nonetheless, it is also important to eliminate those issues that might create concern to investors, such as presence of imbalance of power among players.

**PP1** is expected not to substantially change the situation. As described above, the policy entails soft measures that can hardly guarantee a level playing field and open market competition. Some hints are present, but their relevance is limited, as they would mainly ratify practices that already are commonly accepted within the market. The main benefits relate to PP1 are thus related to the increase in transparency both financially and on cost calculations, which are necessary for private investors to be attracted.

**PP2** limits restrictions to open market and competition, thus attracting investors. Stakeholders are almost unanimous in considering the need for public tendering procedures to be implemented as well as competition to be guaranteed. PP2 moves towards this direction.

The attractiveness for public investors also relies on the need to guarantee transparency, which is expected to improve as state aids are to be clearly identified, no intra-port unfair competition would be possible, and the role of the managing body is required to provide substantial documentation, discriminating between its public role and its role as service provider. All of these aspects jointly contribute to attracting investors and, therefore, leading to investments that would develop the port.

**PP2a** is very similar to PP2. Nonetheless, some substantial differences stand out. More guarantees of fair competition are provided when considering service contracts, as substantial modifications of contracts require new tendering procedures. Moreover, more freedom is conferred to the managing body of the port, which would therefore be able to manage it more freely, pursuing its objective (continuous improvement and public utility) better than in the PP2 scenario. This freedom is nonetheless justified by stringent transparency measures, which guarantee the fair and efficient use of resources.

Considering what stated above, PP2a might attract even more investments than PP2.

**PP3** considers a strong opening of the market and competition (also imposed competition). In substance, PP3 relies on the market for the port sector to develop and becoming more efficient. On one hand, investors are keen to have a deregulated market where to compete freely. On the other, fewer measures than in PP2 and PP2a are taken to guarantee transparency of the public authorities/managing bodies activities. Investors might need some more guaranteed that the port is required to be fairly managed.

### Impact on SMEs

It was previously considered that a relevant share of port service providers (i.e. pilotage, mooring, towage, bunkering, etc.) is represented by SMEs or micro-enterprises (from 30% to 50%). PP1 does not include measures impacting relevantly on market access, which is nonetheless considered in PP2, PP2a and PP3.

Increased market access is expected to increase the possibility for SMEs to increase their presence in the market, as SMEs would not suffer from barriers to entry raised by incumbents.

## 9.3.2 Social Impacts

### Skill and quality of labour force

It is not the intention of the Commission to focus on labour improvement through the policy packages presented in this document. First in 2001 and then in 2004, the Commission proposed directives on market access for port services (ports packages I and II), including provisions concerning labour practices. The proposals raised strong opposition from social parties and were finally rejected. As tension with Unions is still present, the Commission considers more appropriate to solve eventual issues through Social Dialogue than proposing legislation.

Nevertheless, policy packages can impact on the condition of workers in terms of quality of labour, training and skills. Being aware that the role of workers is of utmost importance for the delivery of high quality services and to pursue the overall objective of enhancing the port services sector, an analysis of impacts on labour is necessary.

**PP1** does not include any measure responsible of relevant changes in skills and quality of labour force from the baseline scenario.

**PP2** and **PP2a** have very similar impacts on labour force. The slight difference in intensity is moreover very difficult to calculate and it is supposed to be not relevant enough to suggest a substantial discrimination among the two policy packages. Briefly, the quality of labour force to be related with the level of competition, as the increase in competition leads to the necessity for improving the service offered in terms of quality. Being port services labour intensive, the quality of labour has a strong impact on the overall quality of the service provided. As a result, since PP2a focuses on enforcing higher competition than PP2, a slightly higher impact is expected to be produced on labour force quality and skills.

**PP3** relies on the market for improving the port service sector. Competition would surely produce an increased interest in quality of labour, as described above.

### Employment and job creation

The impact on employment is particularly relevant as it goes beyond the port service sector, but spreads its effects on the whole of society. It is not the intention of the Commission to regulate the labour market; nonetheless, indirect impacts are present. As it was considered in the baseline scenario paragraph, a relevant increase in employment levels is expected as a result of increased traffic. In particular, 47% increase between 2010 and 2030 in the number of employed port workers, and 15% in the total direct employment impact in the sector. This effect does not depend on the Commission's regulatory activity, which can nonetheless increase the effect, even if not sensibly.

**PP1** will have very small impact on traffic volume increase; hence, additional port volume would help to generate just around 700 additional jobs by 2030 (+0,1% against the baseline scenario).

**PP2** and **PP2a** are, again, very similar. The impact of these policy packages on employment levels is ambiguous. On one hand, some stakeholders at port level (port authorities/managers, mainly) are concerned that market opening might reduce the need for employees, in particular in the port administration, as the managing body would be less relevant as service provider. On the other hand, other stakeholders claim that the higher efficiency of ports would attract more traffic and increment modal shift from land transport towards maritime transport, thus favouring the development of the port in the medium to long term and, consequently, increasing the demand for labour. Our calculations led to consider an increase in the number of additional jobs in 2030 against the baseline scenario equal to around 1000 for PP2 (+0.2% against the baseline scenario) and around 2200 for PP2a (+0,4%).

**PP3** is in the same direction of PP2 and PP2a, moreover imposing competition it would increase the need for labour even in those cases where the other policy packages would allow monopolies. Synthetically, the more companies providing services, the more workers required. Nonetheless, extreme competition might have undesired effects on the levels of efficiency of ports, thus compromising the long term performance and, consequently, need for labour, some stakeholders claim. The expected increase in number of jobs in 2030 is similar to that related to PP2a, with around 2500 new jobs (+0,5 against the baseline scenario).

### Maritime safety, health and safety of port workers

Although there already are rules and regulations to guarantee that activities within ports are conducted following specific safety standards, it is worth analysing the impact of the different policy packages on safety.

**PP1** does not include any measure responsible of relevant changes on employment from the baseline scenario.

**PP2** and **PP2a** produce similar effects, which are nonetheless of little relevance. It is worth noting that port authorities/managers and port service operators providing public utility services fear that competition might lead to the necessity to cut costs through a reduction in safety of operations.

**PP3** impacts are very similar to PP2 and PP2a. Nonetheless, the inclusion of a Central Port Coordination should guarantee that safety is maintained at highest levels.



### 9.3.3 Environmental

#### Environmental performance

The environmental performance is again not directly addressed by all policy packages, nonetheless the increase in traffic that is intrinsic in the maritime sector as well as modal shift would attract more firms to transport goods via maritime routes rather than using landside transport means, thus reducing pollution. As for the increase in employees over the next years, the environmental performance is to a large extent an exogenous variable to the Commission’s regulatory activities. However, a higher impact can be produced through tailored measures, as described below.

**PP1, PP2, PP3** have no relevant impact on the environment that leads to substantial differences from the baseline scenario. If differences are present, these are only related to the increased in traffic due to increased efficiency of the port sector. Indeed, higher efficiency would allow a higher number of ships to be served by ports (both because of increased capacity and because of modal shift due to comparative advantage of maritime transport over land transport) and, therefore, the environmental impact to increase.

**PP2a** is the only policy package that explicitly considers the environmental performance, introducing the possibility to reduce the charging burden to port users depending on their environmental performance. An impact of this measure cannot be calculated without any knowledge of what parameters and cost reductions are to be applied, but it is expected to produce relevant benefits to the community.

When only the impact of the modal shift is considered, the general impact of measures is to be calculated through the ability of each PP to attract volumes of freight, as presented in Table 59.

**Table 59 - Modal shift**

	Inland tonne-kms(m)	Maritime tonne-kms(m)	Maritime tonnes	Change in Short Sea Shipping (%)	Change in road transport over 300Km	External cost fall (€/pa)
<b>PP1</b>	-1,929	3,603	4,951,830	0.49%	-833	-23
<b>PP2</b>	-2,894	5,404	7,427,745	0.73%	-1,249	-34
<b>PP2a</b>	-5,996	13,311	16,550,502	1.63%	-2,634	-69
<b>PP3</b>	-6,713	15,942	19,099,402	1.88%	-2,972	-76

### 9.3.4 Administrative burdens on businesses and public sector

The implementation of the measures identified in the different policy packages result in additional costs imposed on the public administrations, the port managing bodies and port businesses.

Administrative costs have been identified according to the Commission specifications (see IA guidelines – chapter 10<sup>77</sup>), as “the cost incurred by different stakeholders in meeting legal obligation to provide information on their action or production, either to public authorities or to private parties”. Accordingly, the identification and assessment of administrative costs have been made through the EU Standard Cost Model.

There are 16 policy measures out of 17 which imply variation of the administrative burden compared to the baseline scenario.

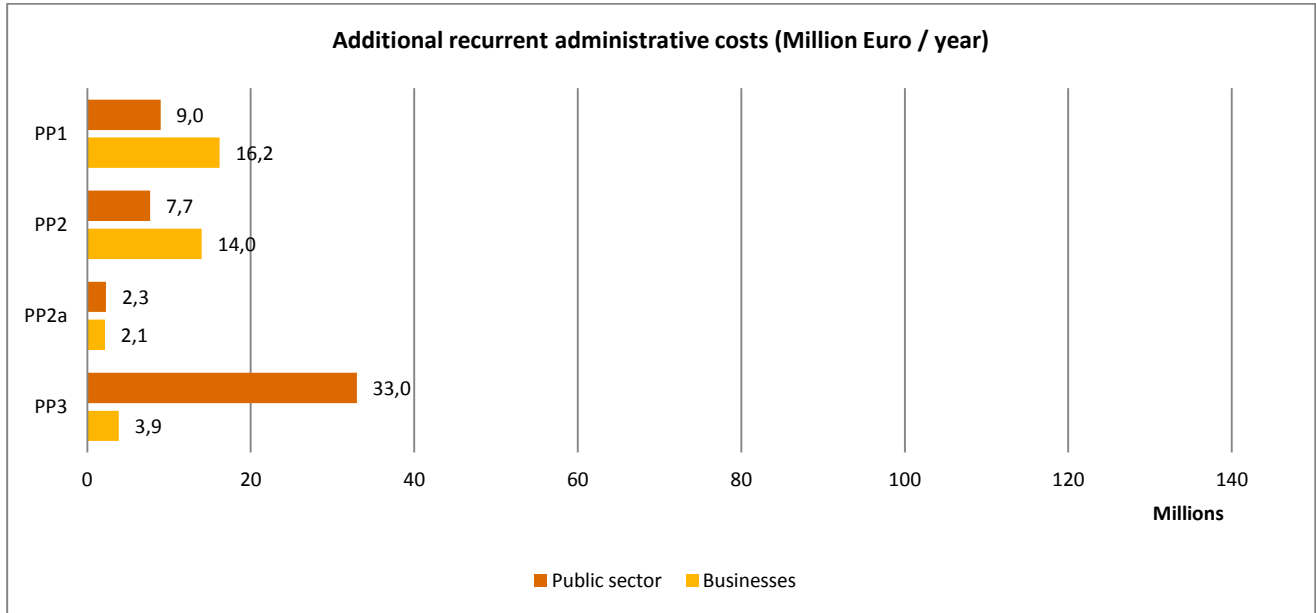
Costs which can be both recurrent and one off, are presented separately for businesses and the public sector. Full calculation details and assumptions are provided in annex to this document.

<sup>77</sup> IMPACT ASSESSMENT GUIDELINES, SEC(2009) 92, 15 January 2009, available at: [http://ec.europa.eu/governance/impact/commission\\_guidelines/docs/iag\\_2009\\_en.pdf](http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf)

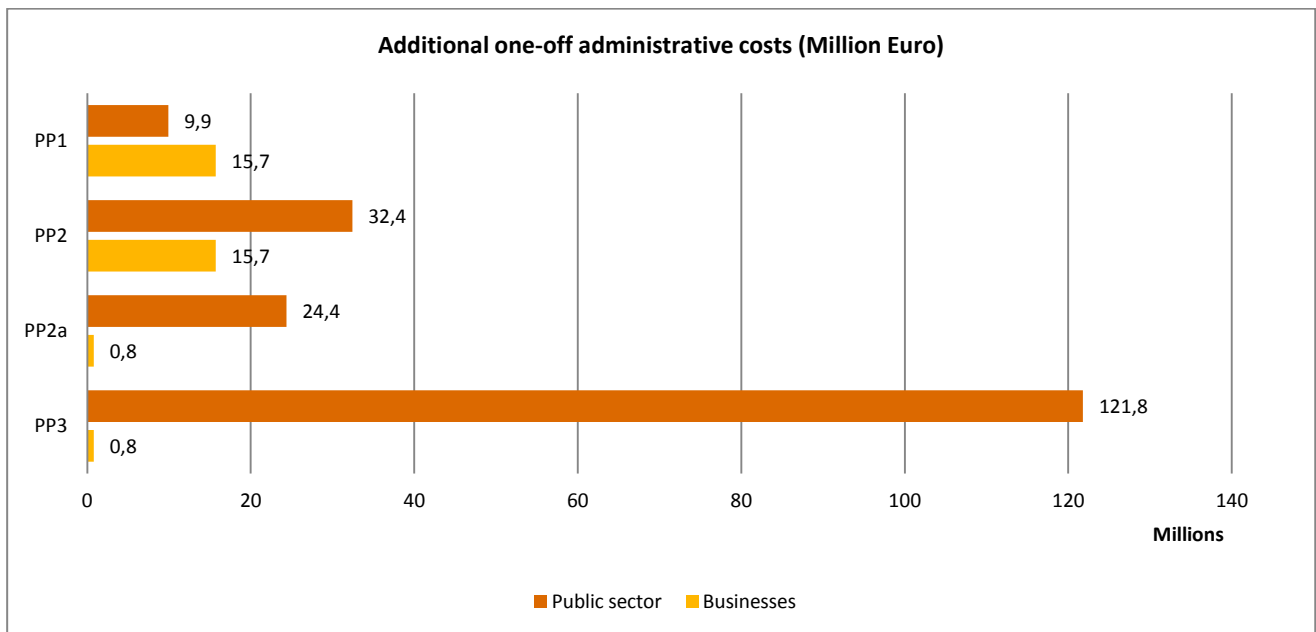


Figure 89 and Figure 90 show the additional administrative costs to be incurred under each policy package compared to the baseline.

**Figure 89 - Additional recurrent administrative costs per each policy package against the baseline scenario (million euro/year)**



**Figure 90 - Additional one-off administrative costs per each policy package against the baseline scenario (million euro)**



**PP1** is expected to have a certain impact on administrative costs compared to the baseline. Total additional recurrent costs to the ports and other public administrations are expected to be nine million Euro/year, which is roughly equal to 28 thousand Euro/year per port. The additional expected cost to the businesses is 16.2 million Euro/year corresponding to almost 51,000 Euro/year per port. Administrative costs are mainly expected to increase as result of the introduction of rules on the price of port services provided by operators in monopolistic position (measure 7). The introduction of Port users committees (measure 10) is also expected to bring relevant impacts on the administrative costs. The Communication from the Commission (measure 3) and the Financial transparency (measure 13) will have only minor effect on administrative costs. The expected one

off costs which are consequent to the application of measure 7 are 9.9 and 15.7 million Euro for the public sector and the businesses respectively.

Under **PP2** the administrative costs are expected to be slighter lower if compared to PP1. Again, the highest effects on administrative costs increase are brought by the introduction of rules on the price of port services (measure 7). On one hand, the rules on freedom to provide service for "normal services" (measure 1) will result in cost saving for tendering which would not be needed anymore. On the other hand, the introduction of obligation for public tendering in case of contracts with special or exclusive rights (measure 2) will generate some additional administrative costs. The combined effect of measure 1 and measure 2 is expected to generate some cost saving to both the public sector and the businesses. Other measures which will bring small impacts on administrative costs are the implementation of port users committees (measure 10) and the introduction of rules on port dues definition (measure 15). Total additional recurrent costs to the ports and other public administrations comprise almost 7.7 million Euro/year, which is equivalent to 24,000 Euro/year per port. The additional expected recurrent cost to the businesses is 14 million Euro/year corresponding to about 44,000 Euro per port. One-off administrative costs are 32.4 and 15.7 million Euro respectively for the public sector and the businesses. These are the result of the introduction of rules on the price of port services (measure 7) and the adoption by the port managing bodies of new accounting systems for the preparation of separate accounts (measure 12).

Administrative costs under **PP2a** are expected to be lower than under PP2. Indeed, under PP2a rules on the price of port services are introduced only for services awarded directly to operators in monopolistic position (measure 8): because of this relevant cost savings are expected if compared to PP2. As for PP2 the introduction of rules on freedom to provide service for "normal services" (measure 1) will result in cost savings for tendering which would not be needed anymore. Other measures will result in small impacts. Overall, the adoption of PP2a would result on recurrent administrative costs of 2.3 million Euro/year to the public sector and of 2.1 million Euro/year to the businesses. One-off administrative costs are expected to be 24.4 million Euro/year for the port managing bodies and other public administrations, equal to 76,300 Euro per port. One-off administrative costs to the business are of small relevance.

**PP3** presents the highest impacts in terms of additional administrative costs to the public sector. The additional recurrent cost to the public sector is estimated to be 33 million Euro/year corresponding to 103,000 Euro/year per port. As for PP2a the businesses are expected to experience small recurrent administrative costs - almost 3.9 million Euro/year. High administrative cost to the public sector and the port managing bodies in particular are expected to rise from the functional and legal separation of commercial activities (measure 11). The overall one-off administrative cost to the public sector is expected to be roughly 122 million Euro which is equal to 382,000 Euro per port. Again this one-off administrative cost is in large part the consequence of the introduction of the obligation for the legal separation of commercial activities from the core activity of the port. This measure is expected to bring relevant cost for the incorporation and administration of new firms.

# 10 Policy options compared

This section provides an overview of the policy packages, with an oversight of their capability to reach the strategic objectives the Commission considers essential for the fair and efficient development of the port sector. While in the previous sections considered the impact of each policy package on the sector, this section now considers the extent to which the policy packages can achieve final goals.

Table 60 overleaf has been designed to provide a clear understanding of the policy packages and their impacts, indicating a rate of gap between each of them and the baseline scenario identified with asterisks (- equals no change, \*\*\*\* equals very relevant changes) and a description of the sources of this gap. The quantitative analysis is left out, as it has been already presented in previous sections or, when attached as annex, it is specifically indicated. The choice not to include figures has been made in order to provide the Commission with a simpler and easier overview, which would have not been possible should calculations be provided and explained.

**PP1** is characterized by a soft approach without sufficient pressure regarding the modernization of the port service sector – at least in the short term. As already discussed, incentives for private investors are mainly related to measures increasing transparency. The softness of the approach, nonetheless, avoids the possibility of trade-offs between economic needs and social impacts. PP1 entails some costs to be sustained, both for the public and private counterparts, which are nonetheless not particularly relevant.

**PP2** is designed to produce a stronger impact on the modernization of port services, through increased competition. Attractiveness to investors is then increased compared to PP1 thanks to the inclusion of measures relating port dues to their effective cost. The implementation cost of PP2 is similar to PP1, but as its effects are expected to be more relevant, the efficiency increases too.

**PP2a** further opens the market, and increases transparency. It is also the only package to include measures supporting environmental protection. Being the least expensive of all measures – and being expected to produce positive outcomes – it is definitely the most efficient PP.

**PP3** relies on free market to enhance the port service sector and increase investments. Nonetheless, if on one side, private investors would most certainly benefit from a deregulated market, which allows free competition, on the other hand, exaggerated deregulation would make it hard to guarantee that strategies are made according to the port needs.

PP3 does not consider social aspects, which are expected to be affected by aggressive market deregulation; thus risks of discontent are to be considered, in the event that this policy package is implemented.

**Table 60 - Policy options comparison**

Impact	Policy Package 1	Policy Package 2	Policy Package 2a	Policy Package 3
<b>Effectiveness of the option in relation to the objectives</b>				
<b>SO1: Modernize port services and operations</b>	*	***	****	***
	PP1 does not provide sufficient pressure on modernization in the short term. Indeed, it might be effective in the long term, but it is still related to the willingness of Member States and stakeholders to adopt the guidelines on market access.	PP2 includes fair measures for the increase of market access and competition, which are expected to substantially transform the current scenario, increasing the quality of the provision of port services at lower costs.	PP2a provides even greater guarantees than PP2 that market is opened and competition ensured.	PP3 aims at modernizing port services and operations through a strong incentive to market opening, forcing competition also in cases where it might be counter-productive. The concern on public tendering procedures moreover increases the effectiveness in achieving SO1.
<b>SO2: Create framework conditions which incentivize investments in ports</b>	*	**	***	**
	PP1 does not constitute substantial changes compared with the baseline scenario, apart from increased transparency. Increased transparency over port authorities' activities would ensure verification on the involvement of state aids. Similarly, transparency on port dues ensures dialogue, but it is not likely to change the current scenario relevantly, at least in the short term.	PP2 would contribute to fostering incentives for investments through the removal of non-transparent relations and linking port dues to their actual cost. As previously described, investors require a level playing field to have their investments guaranteed from unfair practices and competition.	Very similar consideration as for PP2, with particular attention to higher transparency and avoiding overly strict regulation which hinders the power of ports to define a positive strategy for investments.	On one side, private investors would most certainly benefit from a deregulated market, which allows free competition. On the other hand, exaggerated deregulation would make it hard to guarantee that strategies are made according to port needs, even because of lack of measures guaranteeing transparency and the efficient allocation of resources might overturn the positive effect of the functional separation measures in achieving SO2 objective.

Impact	Policy Package 1	Policy Package 2	Policy Package 2a	Policy Package 3
<b>Efficiency of the option in achieving the objectives</b>				
<b>SO1: Modernize port services and operations</b>	*	***	****	**
	PP1 efficiency is related to the eventuality that stakeholders adopt the soft approach. Indeed, costs are kept modest, and mainly related to the reaching of Operational Objectives 2, 4 and 5.	The cost of implementing PP2, which is related to measures aiming at modernizing port services and operation is slightly lower than in PP1, but the positive impacts are more relevant. <sup>78</sup>	The cost of implementing PP2a that is related to measures aiming at modernizing port services and operations is mainly due to the obligation to set up public tendering procedures, which have nonetheless been demonstrated to lead to higher returns than their cost <sup>79</sup> and to the implementation of the port committee. Nonetheless, the overall cost related to the implementation is much lower than all other PPs and impacts are, on the contrary, very positive.	PP3 is less efficient than other PPs. Indeed, the cost of implementation that have to be sustained by the public sector are much higher and hardly justifiable compared to other PPs.
<b>SO2: Create framework conditions which incentivize investments in ports</b>	*	**	****	**
	PP1 leads to increased transparency, both considering financial relations and due calculations. Although measures considered are mild, they might be effective and the cost of their implementation is limited.	Separation of accounts produces relevant costs to be sustained, even if its effect is expected to be positive. PP2 also increases transparency through the application of cost-based dues, which are inexpensive and efficacious.	PP2a fosters investments through more selective measures, which are of little impact on costs, but are expected to guarantee a level playing field and transparency better than PP2.	PP3 is definitely an expensive policy package. Moreover the impact on incentivizing investors is ambiguous, as PP3 does not seem to guarantee a level playing field among ports.

<sup>78</sup> Study carried out by the European Commission on *procurement by entities operating in the water, energy, transport and postal sector*: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:1585:FIN:EN:PDF>.

<sup>79</sup> Ibidem.

Impact	Policy Package 1	Policy Package 2	Policy Package 2a	Policy Package 3
<b>Coherence of the option with overarching EU objectives, strategies and priorities</b>				
<b>The ability to provide a sustainable solution without conflicting with any EU principles</b>	***  PP1 does not produce relevant trade-offs between the different priorities of the EU (economic interests vs. social interests). In particular, the social tension that might arise from the removal of market access restrictions is fairly low.	**  PP2 does not produce relevant trade-offs between the different priorities of the EU (economic interests vs. social interests). Nonetheless, as the focus on opening market access is higher than in PP1, social tension that might arise is expected to be coherently higher than considered for PP1.	**  PP2a does not produce relevant trade-offs between the different priorities of the EU (economic interests vs. social interests). Nonetheless, as the focus on opening market access is higher than in PP1, social tension that might arise is expected to be coherently higher than considered for PP1.	*  PP3 leaves the port sector to be strongly market-driven and strongly deregulated, thus it might be related to relevant trade-offs between the different priorities of the EU (economic interests vs. social interests).
<b>Impacts</b>				
<b>Economic</b>	*  PP1 does not produce a substantially different economic impact compared to the baseline scenario. The change in total port related costs is 2%.	*  PP2 has no substantial effect as well, with a total port costs reduction around 3%.	**  PP2a impact is much more relevant than the two previous cases, with a port cost reduction reaching 7%.	**  PP3 would result in the highest reduction in port costs, of 8%.
<b>Social<sup>80</sup></b>	*  PP1 does not produce a substantially different social impact compared to the baseline scenario.	*  No direct social effect is expected; nonetheless as the sector evolves and the market grows, higher demand for labour would increase employment. Part of the increase is related to the modal shift caused by better conditions for firms to deliver freight through maritime	*  No direct social effect is expected; nonetheless as the sector evolves and the market grows, higher demand for labour would increase employment that is twice as high as considered for PP2. Part of the increase is related to the modal shift caused by better conditions for firms to deliver	*  No direct social effect is expected; nonetheless as the sector evolves and the market grows, higher demand for labour would increase employment that is slightly higher than PP2a. Part of the increase is related to the modal shift caused by better conditions for firms to deliver

<sup>80</sup> A deep analysis on employment increase was presented in par. 7.3.2

Impact	Policy Package 1	Policy Package 2	Policy Package 2a	Policy Package 3
		transport means than land means. Still, the increase is negligible at EU level.	freight through maritime transport means than land means. Still, the increase is negligible at EU level.	freight through maritime transport means than land means. Still, the increase is negligible at EU level. An initial social tension might arise from the strong deregulation and market opening embedded in PP3 measures.
<b>Environmental</b>	*	**	***	**
	PP1 does not produce a substantially different environmental impact compared to the baseline scenario. Not fostering maritime transport, it does not particularly attract users to shift from more polluting means of transport to maritime transport.	The environmental performance is expected to be limited. Nonetheless, the relative advantage of a more-efficient and less expensive maritime transport sector over other means of transport would lead firms to shift from land transport (on average very pollutant) to maritime traffic (less pollutant).	The inclusion of a measure considering a reduction of port dues depending on the environmental performance should foster – together with other incentives at EU and national level – firms to introduce cleaner practices.	The environmental performance is expected to be limited. Nonetheless, the relative advantage of a more-efficient and less expensive maritime transport sector over other means of transport would lead firms to shift from land transport (on average very pollutant) to maritime traffic (less pollutant).
<b>Costs<sup>81</sup></b>	*	**	****	*
	Relevant costs due to rules on the price of port services in monopolistic position. The burden is on businesses more than on the public sector.	Similar than PP1, but does not suffer from a series of smaller costs that, summed up, total a relevant share of PP1 overall cost of implementation. The freedom to provide services sensibly reduces overall costs.	The cost of implementation of PP2a is very limited compared to other PPs, both for the public sector and for businesses.	PP3 includes measures that are related to a substantial change from the baseline scenario, which involve a radical transformation of current practices and organization. This leads to elevated costs of implementation.

<sup>81</sup> Under the analysis of “costs” no positive impacts deriving from the implementation of the policy packages are considered. In order to have a cost-benefit analysis, the economic impact is to be considered.

# 11 *Monitoring and evaluation*

As provided by the Impact Assessment guidelines of the Commission, monitoring systems have the main function of enabling policymakers to verify to what extent the policy is achieving its set objectives.

For this purpose a set of core indicators need to be identified for the key objectives of the intervention. Such indicators must be checked against the purpose they are supposed to serve.

A proposed list of the above-mentioned set of indicators is given in the following paragraphs.

## **11.1 Proposed set of core indicators**

The definition of a monitoring and evaluating system starts with the identification of the key indicators. An indicator can be defined as the measurement of an objective to be met, a resource mobilized, an effect obtained, a level of quality or a context variable. Within the framework of the present impact assessment analysis, an attempt has been made to define some core indicators for the main policy objectives and to outline the monitoring system envisaged.

At this stage, it seems there is no point in laying down detailed indicators and the monitoring systems detailed features for all the options identified as part of the impact assessment. This will be done, more correctly, after the political choice of the most appropriate policy option has been made, as this is the last step in the policy design process.

That being said, some core indicators for the key policy objectives have been identified, as it is fair to assume that these general objectives are reasonably stable across the various alternative policy options envisaged in the impact assessment.

The evaluation of the implementation of the new policy initiative should be carried out within five years after its adoption, with the following set of core indicators (for a sample of ports):

**Table 61 – Core monitoring indicators**

Operational objective	Indicators	Source of data
OO1.1: Clarify and facilitate access to the port services market	<p>Number of suppliers at EU ports on average, for each category of service</p> <p>Share of contracts awarded with tendering procedures by type of service</p> <p>Share of contracts awarded with tendering procedures in case of service provided by a single operator, by type of service</p> <p>Number of ports which have access limitation because of PSO per each type of service</p> <p>Number of ports which have access limitation because of space constraints per each type of service</p>	<p>Survey addressing:</p> <ul style="list-style-type: none"> <li>- Member States or other relevant authorities;</li> <li>- Port managing bodies.</li> </ul>



Operational objective	Indicators	Source of data
	Average duration and value of contracts by type of service	
OO1.2: Prevent market abuses by service providers with exclusive/special rights	Number of ports which have rules in place on the price of port services if provided by operators with exclusive/special rights	Survey addressing: - Member States or other relevant authorities;
	Number of (public) ports providing port services in other port(s)	- Port managing bodies.
	Port users' satisfaction on proportionality (cost based), transparency and non-discrimination of prices of port services	Survey addressing: - Port users.
OO1.3: Simplify procedures and improve coordination within ports	Number of ports which have in place a procedure for Central Port Coordination	Survey addressing: - Member States or other relevant authorities;
	Number of ports which have in place a Port users' committee	- Port managing bodies.
	Stakeholders' satisfaction on administrative burden	Survey addressing: - Port service providers
	Stakeholders' satisfaction on level of coordination between port service providers and ports	- Port users.
OO2.1: Ensure a level playing field by more transparent financial relations between public authorities, port authorities and port service providers	Number of ports which directly provide commercial services by type of service	Survey addressing: - Member States or other relevant authorities;
	Number of ports which hold a separate company which provide commercial services by type of service	- Port managing bodies.
	Number of ports providing commercial services which have adopted separation of accounts	
	Number of ports receiving public findings which have adopted separation of accounts	
	Port service providers' satisfaction on the fairness and openness of the port services market	Survey addressing: - Port service providers

Operational objective	Indicators	Source of data
OO2.2: Encourage more efficient port infrastructure charging policies	Number of ports being autonomous in setting port dues  Number of ports having adopted a procedure for setting port dues according to long term marginal cost-based principle  Number of ports having adopted port dues based on the environmental performance	Survey addressing:  - Member States or other relevant authorities;  - Port managing bodies.
	Number of ports which have published on-line the port dues and calculation method	Review of ports websites
	Port users' satisfaction on proportionality (cost based), transparency and non-discrimination of port dues	Survey addressing:  - Port users.