

COMPETITION IN THE IRISH PORTS SECTOR

2013



The Competition Authority
An tUdarás Iomaíochta

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EXECUTIVE SUMMARY

Context

In the context of the Action Plan for Jobs, the Minister for Jobs, Enterprise and Innovation, Mr Richard Bruton T.D. asked the Competition Authority to carry out a study of competition in the ports sector in Ireland.

As an island nation Ireland is heavily dependent on its ports, and it is widely recognised that Ireland's future economic success will be dependent on its ability to trade internationally. Exports have been Ireland's only net contributor to economic growth in recent years. If port charges are unnecessarily high, or ports are operating inefficiently, this will increase the cost of importing and exporting goods.

Competition keeps prices and costs down and drives efficiency and service quality, all of which are key determinants of national competitiveness. Therefore, it is vital that competition in the Irish ports sector is working well. Research indicates that an increase in transport costs and/or port inefficiency will reduce trade volumes. It is especially important that competition for cargo handling services is working well as these services typically account for the largest percentage of the total cost of moving goods through a port.

This study evaluates how competition in the ports sector is working. We specifically examine the level of inter-port competition (competition between ports) and intra-port competition (competition within ports) for different cargo types. The main focus is on unitised cargo (i.e., Lo-Lo and Ro-Ro cargo in containers) and bulk cargo (e.g., liquid fuel, coal, fertiliser and animal feed). This is because exports are dominated by unitised cargo, while imports are dominated by bulk cargo.

Based on our evaluation, we have made six recommendations to improve the level of competition in the Irish ports sector. The evaluation and the recommendations are based on over 40 meetings with stakeholders, a public consultation process, Requests for Information (RFIs), quantitative analysis and economic literature.

Key findings

- The characteristics of the Irish ports sector are such that competition between ports (i.e., inter-port competition) appears limited.
- Ensuring that competition within a port (i.e., intra-port competition) works well is especially important.
- The leasing and licensing arrangements for Lo-Lo terminal operators in Dublin Port may have the effect of restricting competition.
- The current licensing arrangements for general stevedore services in Dublin Port also appear to have the effect of restricting competition.
- There is a lack of data collection and performance measures within the Irish ports sector.

The characteristics of the Irish ports sector are such that competition between ports (i.e., inter-port competition) appears limited.

Many factors influence inter-port competition. These include port location, traffic trends, haulage costs, cargo specialisation, service frequency, road connectivity and the level of competition within a port.

Lo-Lo terminal users increasingly utilise larger ports like Dublin, Belfast and Cork that are located next to Ireland's largest urban centres. Exporters, importers and freight-forwarders value the level of choice and service frequency, while container shipping lines value large scale terminals that can minimise cost by facilitating bigger vessels and larger more efficient cranes.

Competition for Ro-Ro services is limited to ports on the East Coast next to the shortest sea-crossings to Great Britain, while the demand for ports to supply frequent high quality Ro-Ro services has again placed larger ports like Dublin and Belfast in a strong position vis-à-vis smaller ports. Like Lo-Lo, larger ports are now more likely to attract business away from smaller ports than vice-versa.

Moreover, port service users will usually seek to use the nearest port to minimise haulage costs. This is especially the case for heavy bulk cargo. The concentration of dry bulk at Shannon Foynes and liquid bulk at Cork is heavily influenced by nearby industries. This limits the scope for inter-port competition.

Ensuring that competition within a port (i.e., intra-port competition) works well is especially important.

It is vital that intra-port competition is working well to lessen the ability of providers of port services to earn monopoly profits and offer inefficient services, particularly where inter-port competition is limited. Intra-port competition includes (a) competition between independent terminals and (b) competition to provide ancillary services. Competition to provide ancillary services occurs where multiple operators in a port compete to provide services such as stevedoring, pilotage and towage.

Ensuring that intra-port competition is working well in Dublin Port is especially important due to its pre-eminent position in the Irish ports sector. Dublin is the only major port in the State to have grown its overall market share since 2005, and export focused Lo-Lo and Ro-Ro cargo is becoming increasingly concentrated within Dublin Port at the expense of smaller ports like Rosslare and Waterford. In 2012, Dublin handled 43% of Ro-Ro cargo and 57% of Lo-Lo cargo on an all-island basis.

The leasing and licensing arrangements for Lo-Lo terminal operators in Dublin Port may have the effect of restricting competition.

The Competition Authority has concerns regarding the length of the leases and licences for the three Lo-Lo terminal service providers in Dublin Port. It is our understanding that two terminal operators have approximately 110 years and 85 years left to run on their leases, while the third terminal operator is providing Lo-Lo services under a general stevedore licence that was granted by Dublin Port Company (DPC) 20 years ago and will be renewed next year for another 20 years on identical terms once certain conditions are met. This

creates the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods. In other countries the average term for port terminal leases ranges from about 15 to 40 years.

The length and nature of the leases and the licences combined with the lack of cargo handling space next to the North Quay walls means the threat of entry is limited. Dublin Port's pre-eminent position for Lo-Lo cargo and the terminal operators' vertical integration with shipping companies means that in the absence of spare capacity, there is potential for the incumbent terminal operators to charge significantly more and offer an inferior level of service than would be the case in a more open competitive market. Moreover, while DPC can impose performance measures on the licensed terminal operator, it cannot do the same for the leaseholders.

The current licensing arrangements for general stevedore services in Dublin Port may have the effect of restricting competition.

The Competition Authority also has concerns regarding the licensing of stevedore services within Dublin Port. There are only two 'general stevedore' licences currently available that allow for the direct provision of stevedore services in the common user quays on the Northside and Southside of the port where most dry bulk handling takes place. Furthermore, the need to provide cranes and warehousing means that one stevedore service provider generally provides stevedore services on the Northside while the other provides stevedore services on the Southside of the port. These companies therefore enjoy effective monopolies in their respective licensed areas.

The general stevedore licences were granted 20 years ago and will be renewed next year for another 20 years on identical terms once certain conditions are met (one of these stevedores also provides Lo-Lo cargo-handling services using the same licence). This again creates the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods.

While new licences can be issued, DPC have indicated that due to space constraints, licensing multiple stevedores may not be the optimal outcome and could limit the scope for future investments in cranes and other cargo handling equipment. DPC have also requested that licence applicants must demonstrate that they can attract new business to the port. A similar conservative approach to stevedore licensing has been adopted by other port authorities around the country.

The current licensing system appears overly restrictive and could be limiting competition from more efficient stevedores. If Dublin Port were to experience a spike in bulk tonnage, the incumbents could charge a higher price and offer a lower quality of service than would be the case in the presence of robust competition where there is a threat of entry.

There is a lack of data collection and performance measures within the Irish ports sector.

While recognising that collecting data and producing performance measures in the ports sector is extremely challenging, it is important that these challenges should not inhibit the collection and development of new data metrics and port performance measures. For example, while there is no "catch-all" benchmark to facilitate a cross-comparison of port charges and efficiency levels, an

alternative would be to examine the performance of each port against its previous year's performance. A cross-comparison of port charges and efficiency, both nationally and internationally, can provide an indication of the competitive environment that ports are operating in.

The lack of data collection is hindering the ability for national policy-makers to accurately monitor competition and performance levels within the ports sector and direct future policy in a way that ensures that ports are operating as effectively as possible.

Recommendations

Recommendation 1: Leasing and licensing of Dublin Lo-Lo terminals

The leases that Lo-Lo terminals operate under are exceptionally long and may have the effect of restricting competition by severely limiting the scope for new entry. Dublin Port Company should seriously consider reducing the duration of these leases in order to address their anti-competitive impact.

For the same reason, the clause which appears to allow the repeated renewal of the licence of the third Lo-Lo terminal operator should be amended to facilitate new entry.

Future terminal leases and licences should be awarded for shorter periods on a fair, reasonable and non-discriminatory basis and should include efficiency incentives that are enforced by Dublin Port Company.

The terms and conditions of the leases and licences, including their length, should be designed in a manner that ensures effective competition and reflects the level of investment required to provide cargo handling services.

Consideration by: *The Department of Transport, Tourism and Sport and Dublin Port Company.*

Recommendation 2: Stevedore licensing

Dublin Port

In Dublin Port, at least two new general stevedore licences should be issued by Dublin Port Company – one on the Northside and one on the Southside of the port. As stated in Recommendation 1, the clause in the existing stevedore licences which appears to allow the repeated renewal of the existing stevedore licence at the licensee's option and on identical terms should be amended.

All ports

General stevedore licences should be granted to applicants on a fair, reasonable and non-discriminatory basis or through a tendering process. Specifically, licensing criteria adopted by any port authority requiring applicants to demonstrate that they will attract new business to the port should be removed. Where stevedore services are provided exclusively by a port authority stevedore, this requirement should be clearly justified by the relevant port authorities.

Self-handling licences should be made available to all responsible operators on a fair, reasonable and non-discriminatory basis at a cost that does not discourage entry.

Consideration by: *The Department of Transport, Tourism and Sport, Dublin Port Company and all other Tier 1 and Tier 2 Ports of Regional Significance.*

Recommendation 3: Port closure and amalgamation

The policy focus should be to preserve competition and ensure that larger ports are working effectively and competing with one another. While port closure or amalgamation may result in lower administrative costs they are unlikely to enhance inter-port competition.

Any amalgamation should be carefully considered and focus on ensuring that the amalgamated entity can generate the necessary scale to compete with Dublin Port.

The Competition Authority recommends:

- If a merger is being proposed, the Department of Transport Tourism and Sport should be required to seek the views of the Competition Authority regarding a range of factors that would need to be considered to ensure that the merger does not substantially lessen competition;
- Alternatively, those ports with turnovers below the existing merger thresholds should be designated by the Minister for Jobs Enterprise and Innovation as a class of mergers and acquisitions that would have to be notified to the Competition Authority for review regardless of the turnover of the parties involved.

Consideration by: *The Department of Transport, Tourism and Sport and the Minister for Jobs, Enterprise and Innovation.*

Recommendation 4: Modify existing ownership and management models

The Department of Transport, Tourism and Sport should mandate the promotion of effective intra-port competition as a key objective for port authorities that is imposed by regulation or legislation as appropriate.

Consideration by: *The Department of Transport, Tourism and Sport.*

Recommendation 5: Government investment in port-related road and rail infrastructure

Future government investment to improve road and rail infrastructure may be justified for a number of reasons – e.g., to remove bottlenecks, to abide by EU regulations or to drive regional development.

However, it is unlikely that any future government investment in port-related road and rail infrastructure could be warranted exclusively on competition grounds. Therefore, any decision to justify investment in port-related road and rail infrastructure within this context should be carefully considered.

Consideration by: *The Department of Transport, Tourism and Sport*

Recommendation 6: Data collection and port performance measures

This study has highlighted the lack of data collection and port performance measures within the Irish ports sector. This information is vital to analyse the level of competition and to guide future policy-making in the Irish ports sector.

While recognising the challenges involved, the Department should prioritise the collection and development of new data metrics and port performance measures for Tier 1 and Tier 2 ports.

Consideration by: *The Department of Transport, Tourism and Sport*

1. INTRODUCTION

Background to the study

Ministerial request

- 1.1 The Action Plan for Jobs 2012 calls for the identification of any sheltered areas of the economy where competition is restricted¹. In the context of the Plan, on 15 June 2012, the Minister for Jobs, Enterprise and Innovation, Mr Richard Bruton T.D. asked the Competition Authority to carry out a study of competition in the ports sector in Ireland. This is in accordance with section 30(2) of the Competition Act 2002².
- 1.2 The main focus of this study is to examine whether competition in the Irish ports sector is working well for consumers and the economy. The specific terms of reference of the study are as follows:
- Examine the level of competition between ports in the State and the effect of specialisation.
 - Examine the impact of competition from ports in Northern Ireland.
 - Examine how competition works within the State's major ports.
 - Identify international experience of competition and efficiency in port services.
 - Assess the impact on competition of developments in other transport modes in Ireland and developments in shipping internationally.
 - Examine whether changes in port ownership and structures could enhance competition in port services.
 - Identify any actions the State could take to promote the competitiveness of Ireland's ports including potential benefits to the economy.

The public consultation

- 1.3 The Competition Authority published a public consultation document on 14 December 2012. Before producing the consultation document, the Competition Authority arranged over 30 meetings with Government Departments and public agencies, industry representatives, port authorities, terminal operators, ferry companies, container shipping lines, stevedore companies³, hauliers, bulk importers, freight-

¹ Department of Jobs, Enterprise and Innovation (2012), *Action Plan for Jobs*, Action 1.32. Available from: www.djei.ie.

² According to section 30(2), the Minister for Jobs, Enterprise and Innovation may request the Competition Authority to carry out a study or analysis of any practice or method of competition affecting the supply and distribution of goods or the provision of services or any other matter relating to competition and submit a report to the Minister in relation to the study or analysis; the Competition Authority shall comply with such a request within such period as the Minister may specify in the request.

³ Stevedore companies are employed to load and unload vessels.

forwarders⁴ and other port users. A list of the meetings conducted during the study is outlined in **Appendix 1(A)**.

- 1.4 These meetings were necessary to build an understanding of how port competition works and to identify the key issues. The objectives of the consultation were (a) to verify that our understanding of how competition works in the sector was correct and (b) provide interested parties with the opportunity to identify ways to strengthen competition in the ports sector.
- 1.5 The Competition Authority received 33 submissions. A list of the questions asked in the consultation is outlined in **Appendix 1(B)**, while a list of the public submissions is outlined in **Appendix 1(C)**. The response to the consultation and the analysis contained within was largely positive, though a few areas were identified that warranted further analysis. Specifically, some of the submissions requested that we include more quantitative information to back up our analysis regarding the level of competition in Ireland.
- 1.6 In April 2013, the Competition Authority sent formal Requests for Information (RFIs) to a number of port companies, service providers and port users. The main objective of the RFIs was to gather additional quantitative information.
- 1.7 The Competition Authority would like to take this opportunity to thank all of those who made submissions to the public consultation, those with whom we conducted meetings, and those that responded to the RFIs.

Why examine ports?

Economic significance

- 1.8 Ireland is heavily dependent on ports for trade. While trade of non-transportable services⁵ has grown, most of Ireland's merchandise imports and exports of goods are transported by sea. The Competition Authority estimates that sea-borne freight accounts for 84% of Ireland's trade in volume and 62% in value terms⁶. Many of Ireland's major exporting sectors – e.g., pharmaceuticals, chemicals and food – are heavily reliant on sea transport.
- 1.9 It is widely recognised that Ireland's future economic success will be dependent on its ability to trade internationally. Exports have been Ireland's only net contributor to economic growth in recent years⁷. If Irish ports charge unnecessarily high charges or are inefficient and/or congested this will increase the cost of exporting goods and the cost of imports that are used to manufacture exports. It will also increase the

⁴ Freight-forwarders are companies that organise shipments for individuals or other companies. A freight-forwarder is in effect a travel agent for the cargo industry, or a third-party non-asset based logistics provider.

⁵ Non-transportable services include financial services, communications, legal and computer services, tourism and travel, insurance and research and development.

⁶ Based on data from Irish Exporters Association (2012), *Trade and Transport Analysis*. Available from: <http://www.irishexporters.ie>.

⁷ NCC (2012), *Ireland's Competitive Scorecard 2012*, National Competitiveness Council, Forfás.

price of consumer goods and damage Ireland's ability to trade and create jobs.

- 1.10 It is important that competition in the ports sector is working well because competition keeps prices and costs down, drives efficiency and service quality, all of which are determinants of national competitiveness⁸. This is especially the case for Ireland since its location as a small island on the edge of Continental Europe means that Irish ports are not exposed to competition to the same extent as ports in other European countries.
- 1.11 While port-related charges account for a small percentage of the cost of most products⁹, they can be influenced by national ports policy¹⁰ and account for a significant proportion of transport costs. Like trade tariffs, transport costs tend to have a disproportionate effect on trade volumes¹¹. It has been estimated that raising transport costs by 10% reduces trade volumes by more than 20%¹². Moreover, inefficiency and congestion within ports can result in enormous costs to shippers, exporters and the economy. Research has found that each extra day in transit has the effect of reducing trade volumes by about 1%¹³. The full benefits from competition in the ports sector are described in Section 3 and Section 4.
- 1.12 A number of submissions to the public consultation highlighted the importance of ensuring that Irish ports are internationally competitive and can deliver the highest level of connectivity and cargo handling options¹⁴.
- 1.13 Ports in Northern Ireland play an important role in shaping the competitive environment of the ports sector on the island of Ireland and their influence is recognised in this study.

Prevalent competition issues

- 1.14 The ports sector has a history of competition related problems. Indeed, the OECD¹⁵ and the World Bank¹⁶ have found that the characteristics of

⁸ Sanchez, R.J. (2003), "Port Efficiency and International Trade", *Maritime Economics and Logistics*, Volume 5(2).

⁹ See Section 3 (paragraph 3.7 to 3.9) for more information on the influence of port-related charges on product and transport costs.

¹⁰ National ports policy can influence the type of port ownership and management models being used and thus the level of competition in the sector. In comparison, other major determinants of transport costs such as oil prices are not as heavily influenced by the national policy. Port ownership and management models are discussed in detail in Section 2.

¹¹ Clark, X., Dollar, D. and Micco, A. (2004), "Port Efficiency, Maritime Transport Costs, and Bilateral Trade", *Journal of Development Economics*, Volume 75, 417-450.

¹² Limao, N. and Venables, A.J. (2000), "Infrastructure, Geographical Disadvantage and Transport Costs", *The World Bank Economic Review*, Volume 15(3), 451 - 479.

¹³ Djankov, S., Freund, C. and Pham, Cong S. (2006), "Trading on time", *Policy Research Working Paper 3909*, Washington DC: The World Bank.

¹⁴ Submissions from the Irish Exporters Association (IEA), R&H Hall, Port of Cork, Cork Chambers and Forfás/IDA/Enterprise Ireland.

¹⁵ OECD (2011), *Competition in Ports and Port Services*, OECD Competition Committee Roundtable Discussion.

¹⁶ World Bank (2007), "Module 2: The Evolution of Ports in a Competitive World", *Port Reform Toolkit, Second Edition*, Washington DC: World Bank.

the sector are such that competition problems often arise. The European Commission also recognises there are competition related problems in the sector, and the ultimate aim of the EU ports policy is to improve competition between and within ports in Europe¹⁷.

- 1.15 Ports often develop as natural monopolies¹⁸. This can create a barrier to entry that allows the main supplier of port services – i.e., the port authority or a private service provider – to exercise a considerable degree of market power. This can lead to the provision of a lower level of service at a higher price than if the supplier was subject to competition. If there is vertical integration¹⁹, market power may be extended into potentially competitive areas, leading to foreclosure and access issues. These characteristics have resulted in a number of competition cases. For example, in the UK, a terminal operator allowed a related shipping line to schedule its service so as to disrupt an entrant's loading and unloading of passengers²⁰. Typical anti-competitive behaviour arising from port operators with a dominant or monopoly position is outlined in **Appendix 2**.
- 1.16 There have also been international competition cases where competing stevedores were involved in price fixing agreements and the Belgian Competition Authority is currently conducting an investigation into price fixing between stevedores at Belgian ports²¹.
- 1.17 The Competition Authority in Ireland has previously received complaints about competition issues in relation to (a) the provision of stevedore and towage services, (b) charges levied by port authorities on shipping lines and (c) prices charged by shipping lines. The Competition Authority did not take legal proceedings in any of these cases, though in one instance the Competition Authority formed the preliminary view that the actions of some port services providers were anti-competitive. However the matter was settled when the parties undertook to change their behaviour.

Evaluating competition

Inter-port and intra-port competition

- 1.18 The ports sector has wide-ranging influence on other sectors and the economy in general. Indeed, submissions to the public consultation raised a number of related issues including the pricing policy of shipping lines, rail policy, regional development and customs and excise.
- 1.19 It is not possible to examine every facet of the sector within this study. Our main objective is to evaluate how inter-port competition

¹⁷ EU ports policy is discussed in more detail in Section 2 (paragraph 2.31 to 2.37).

¹⁸ A natural monopoly is where costs are minimised when the entire output of a sector is supplied by one supplier. The concept of a natural monopoly is explained in more detail in Section 3 (paragraph 3.14 to 3.16).

¹⁹ A typical example of vertical integration is where a port authority or container terminal operator also owns a shipping line. This issue is discussed further in Section 4 (paragraph 4.35 to 4.36 and paragraph 4.66).

²⁰ Case IV/34.174, B&I Line PLC v. Sealink Harbour Ltd. & Sealink Stena Ltd., 5 C.M.L.R. 225.

²¹ See press release: http://economie.fgov.be/en/binaries/20120426_Press_Release_tcm327-173311.pdf.

(competition between ports) and intra-port competition (competition within ports) is working and make recommendations on how to improve both. Specifically, we will focus on the Lo-Lo, Ro-Ro and bulk sectors²² as these cargo types are of greatest importance to the exporting sectors of the Irish economy.

- 1.20 Inter-port competition arises when ports – e.g., Dublin, Cork and Belfast – are competing for the same cargo from importers, exporters and shipping lines. Intra-port competition is competition within ports, where terminal operators, cargo handlers and other port service providers operating in the same port compete for the same cargo.
- 1.21 Competition between and within ports is based on a number of factors including the overall cost of transport, service frequency, efficiency and service quality.

Structure and approach of this study

- 1.22 There are a number of factors that can limit the scope for inter-port and intra-port competition in Ireland. Some ports may specialise in one type of cargo, benefit from excellent road infrastructure, or perhaps have restrictive licensing practices in place. **Section 2** describes the environment that Irish ports are operating in and provides a backdrop to evaluate competition in the ports sector.
- 1.23 **Section 3** builds on Section 2 and focuses specifically on inter-port competition. It explains what inter-port competition is, its value to the economy, and evaluates how inter-port competition is working in Ireland. **Section 4** does the same in relation to intra-port competition. No comprehensive research has previously been conducted to examine how inter-port and intra-port competition in the Irish ports sector is working. Therefore, our evaluation of competition is dependent on a broad range of sources. These include meetings with relevant parties, a public consultation, a formal RFI process, quantitative analysis international literature. Many academic experts in the ports sector have had their research published by World Bank publications which explains why the agency is frequently referenced throughout this study.
- 1.24 **Section 5** analyses the merits of prospective policy measures on inter-port and intra-port competition and provides some specific recommendations regarding policy measures that can promote competition in Ireland.
- 1.25 There is ongoing work in the area of ports policy at a national level and at an EU level. The Department of Transport, Tourism and Sport ("the Department") published the *National Ports Policy*²³ earlier this year and has committed to considering and responding to the recommendations made in this study within six months of publication. The Department is also reviewing the current and future role of Rosslare Europort. At an EU level, concerns about unfair competition remain due to restrictive practices and barriers to entry and the EU Commission recently brought forward proposals to introduce new regulations to allow for a

²² See Section 2 (paragraph 2.13) for a full description of the different cargo types.

²³ Department of Transport (2013), *National Ports Policy*. Available from: www.transport.ie.

more open market in providing port services. These issues are all discussed in Section 2²⁴.

²⁴ See Section 2 (paragraph 2.25 to 2.37).

2. OVERVIEW OF THE PORTS SECTOR

Introduction

- 2.1 This section provides an overview of the environment that Irish ports are working in. It is important to provide this backdrop to allow for a detailed examination of how inter-port and intra-port competition in the sector is working for consumers and the economy in Section 3 and Section 4.
- 2.2 The following broadly describes the services that Irish ports provide the relationship between port authorities and port users and how this is affected by port organisation and management. We also examine the level of road and rail connectivity between major Irish ports and cities, the main shipping corridors, ports' financial capacity and the growth of supply chain networks and vessel size.
- 2.3 These elements individually and cumulatively influence the level of competition. For example, if a port specialises in one type of cargo, or if it has poor road connections, this will limit its ability to compete with other ports.

Ports and how they operate

Primary activities

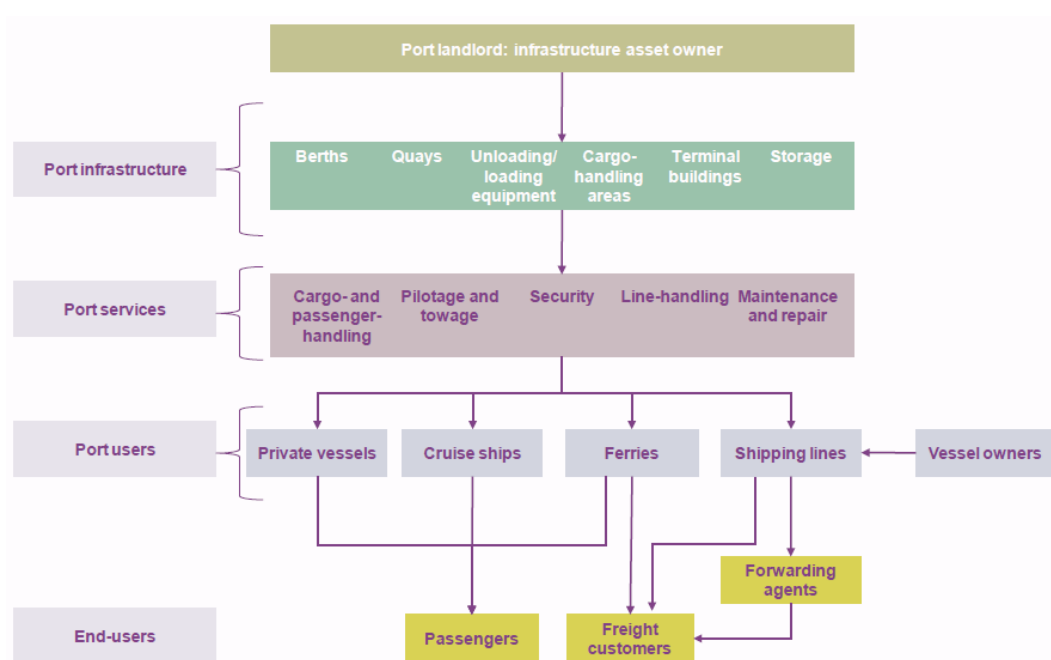
- 2.4 Ports provide supporting infrastructure and services for the berthing of ships. Port infrastructure includes berths, quays, cargo handling areas and equipment, terminal infrastructure and storage.
- 2.5 The primary services provided at a port include:
- **Pilotage:** Pilotage is defined as those operations required for a ship to enter or exit a port safely. It usually implies the presence in the vessel's bridge of an expert with sufficient knowledge of the local waters.
 - **Towage:** Towage refers to the operation of moving a ship into harbour using tugs.
 - **Storage:** Storage refers to the provision of facilities for the storage of goods at the port. This is usually customised to the needs of customers and varies with the type of product moving through the port.
 - **Cargo handling:** This involves the movement of cargo to and from ships and across port facilities. Cargo handling typically involves using specialist infrastructure such as cranes and employing stevedoring labour.
 - **Ancillary services:** Ancillary services include stevedore services, administration, supplies to ships (e.g., fuel, water and food), services to crew members (e.g., medical) and general common services (e.g., cleaning and repairs). These services are often provided by designated shipping agents.

2.6 The main users of port facilities are:

- Private vessels that utilise the berths and related infrastructure, paying the relevant access and usage charges;
- Third party port service providers (e.g., stevedores); and
- End-users such as passengers, freight customers and freight forwarding agents.

2.7 **Figure 1** provides a graphical overview of the typical infrastructure and services provided at a port and the main users of these facilities under the landlord port management model²⁵. This structure is reflective of how port services are provided in Ireland since most ports operate either as a landlord port or as a hybrid between a landlord port and a tool port²⁶. The different port management models are described in more detail in paragraph 2.22 to 2.24 below and in Section 4 and Section 5.

Figure 1: Port services and main users



Source: OECD (2011). See footnote 15 for full reference

Payment for port infrastructure and services

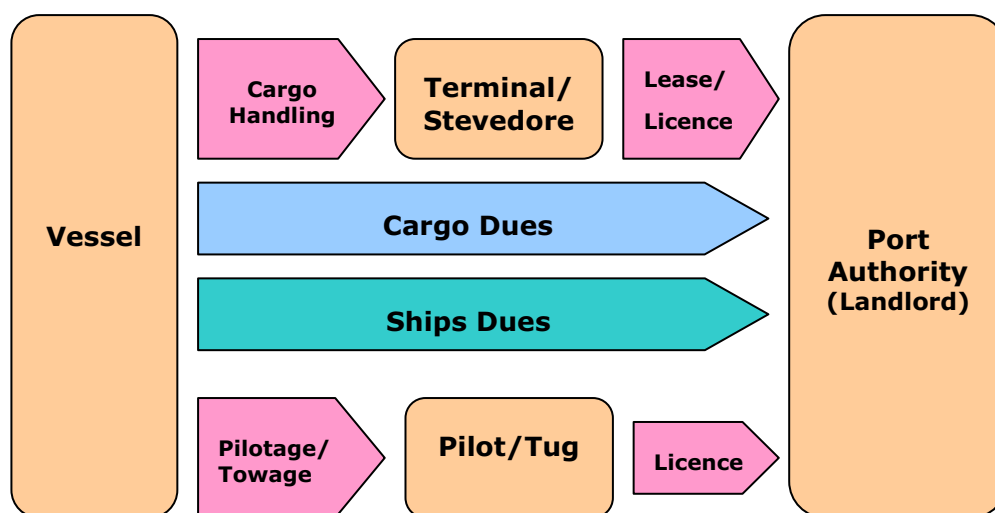
2.8 Port users – namely vessels and third party port service providers – must pay for the use of port infrastructure and other port services. There are two main categories of port charges:

²⁵ Under the landlord model, port management provides the supporting infrastructure (i.e., berths and quays) while private companies own the superstructure (i.e., cranes) and employ stevedore labour.

²⁶ Under the tool port management model, management provides the infrastructure and superstructure while private companies provide stevedoring labour.

- **Goods dues:** Dues levied on goods include: cargo handling and stevedore charges, warehousing, storage and cargo dues. Cargo dues are generally calculated per tonne and differentiate between different types of cargo.
 - **Vessel dues:** Dues levied on vessels include: pilotage, charges for the use of tugs, mooring, light dues²⁷ and ships dues. While ports have different methodologies to calculate ships dues, it is generally calculated on the gross registered tonnage of a vessel and covers a range of services including anchorage and dredging. The larger the vessel, the higher the ships dues.
- 2.9 Certain port charges are always levied by the port authority (i.e., cargo dues and ships dues), while other charges can be levied by private providers depending on the type of port management model in place. **Figure 2** below outlines the typical port charges structure for a vessel using the landlord model.
- 2.10 Under the landlord port model a range of services can be privately provided including cargo handling, stevedore services, tug services, mooring, warehousing and storage. Consequently, port land and infrastructure is frequently leased to private service providers by port authorities. Port authorities can also license private service providers to provide stevedoring, pilotage and towage services. A more detailed description of leasing and licensing arrangements is provided in Section 4.

Figure 2: Typical port charges for a vessel using a landlord port



Source: Competition Authority analysis

- 2.11 While all port charges are relevant when deciding what port to use, the cargo handling element (i.e., terminal charges, stevedoring and storage) appears to be the biggest cost for vessel owners, exporters

²⁷ Light dues are the charges levied on vessels for the maintenance and operation of lighthouses and aids to navigation.

and importers. It has been estimated that cargo handling typically makes up between 70% and 90% of the total cost of moving goods through a port, with cargo dues, ship dues, pilotage and towage making up the remaining 10-30%²⁸. While one submission indicated that the cargo handling figure is not as significant, it is clear that ensuring effective competition for cargo handling services is particularly important.

- 2.12 The port charges levied by port authorities and other service providers are influenced by competition from other ports and competition within the port. This directly affects the price that port users (e.g., shipping lines) charge for their services, the price that end-users (e.g., exporters) must pay to transport goods, and thus the competitiveness of the Irish economy.

Port cargo

- 2.13 A range of cargoes are transported through ports. These include:

- (a) **Liquid bulk:** Examples of liquid bulk include crude oil, liquefied natural gas and liquid chemicals.
- (b) **Dry and break bulk:** Examples of dry bulk include coal, ores, grains, fertiliser and animal feed. Break bulk specifically refers to loose material that must be loaded in bales, bags, barrels or boxes.
- (c) **Lift-on/lift-off (Lo-Lo):** Lo-Lo is containerised cargo that must be loaded on and off ships using cranes. Lo-Lo is used for short-haul and long-haul container transportation via transshipment hubs²⁹.
- (d) **Roll-on/roll-off (Ro-Ro):** refers to wheeled freight traffic that is driven on or off a ship³⁰. Ro-Ro transport is commonly used to deliver time sensitive cargo to the UK and Continental Europe. Ro-Ro trailers can be 'accompanied' by the same truck for the duration of a journey or transported 'unaccompanied' on specialised ships³¹.
- (e) **Con-Ro:** Con-Ro is a hybrid between Ro-Ro and Lo-Lo where vessels generally carry stacked Lo-Lo type containers above deck and Ro-Ro trailers below deck.
- (f) **Passenger traffic:** Passengers travelling to and from Ireland by sea normally use ferries that are used to transport Ro-Ro cargo (i.e., Stena Line and Irish Ferries). In addition to regular

²⁸ Trujillo, L. and Nombela, G. (2000), Chapter 4 in Estache, A. and De Rus, G. (2000), "Privatisation and Regulation of Transport Infrastructure: Guidelines for Policymakers and Regulators", *World Bank Development Studies*, Washington DC: World Bank.

²⁹ Transshipment refers to the shipment of cargo to an intermediate destination on a small feeder vessel where the cargo is then transferred to a larger vessel for the next leg of the journey (e.g., Ireland to Asia via Rotterdam).

³⁰ The CSO defines Ro-Ro traffic to include HGVs and trailers, unaccompanied trailers, unaccompanied caravans and agricultural and industrial vehicles.

³¹ Unaccompanied Ro-Ro is where the trailer is driven to the port by a HGV, loaded on the ship, and then picked up by another truck on arrival. Almost half of Ro-Ro trailers transported to and from Ireland are unaccompanied.

passenger services, there were 229 large cruise vessel calls to Ireland in 2012. This represents less than 2% of the total number of vessel calls to Irish ports³².

- 2.14 This study largely focuses on Lo-Lo and Ro-Ro (unitised cargo) and bulk cargo because these are most important for export sectors (see paragraph 2.40 to 2.41) and job creation. We do not examine regular passenger or cruise services to the same extent.
- 2.15 We adopted this approach for the following reasons. First, the number of passenger and tourist car numbers disembarking and embarking at Irish ports has been falling over the past decade³³. Second, while recognising the growing importance of the cruise sector, and requests to consider the sector in more detail³⁴, most submissions to the public consultation did not raise major competition concerns that were specific to the cruise sector. Indeed, most of the concerns regarding the cruise sector – e.g., lack of water depth and growing vessel size – are common across all cargo types and are covered in this study.

Irish ports

Port ownership and private participation

- 2.16 There are nine commercial State port companies established under the ownership of the Minister for Transport, Tourism and Sport and subject to the *Harbours Act 1996*³⁵. These are: Cork, Drogheda, Dublin, Dún Laoghaire, Galway, New Ross, Shannon Foynes, Waterford and Wicklow. In July 2011, Dundalk Port Company was merged with Dublin Port Company (DPC)³⁶. State port companies act as port authorities and handle over 85%³⁷ of commercial port tonnage in the Republic of Ireland. While the role of port authorities vary, they typically own the port land, supervise port operations, maintain quay space and quay walls, collect cargo and ships dues, and depending on the port management model in place, administer the leasing and licensing of private port service providers.
- 2.17 The remaining ports operate differently to commercial State port companies. Iarnród Éireann operates Rosslare Europort under a complex ownership arrangement involving Fishguard Port that dates back to the 19th century. Bantry Bay operates as a harbour authority under the aegis of the Department of Transport, Tourism and Sport, while local authorities operate Kinsale, Sligo, Fenit and Youghal Harbours. There are two fisheries centres (Killybegs and

³² Source: CSO (2013), *Statistics of Port Traffic 2012*. Available from: www.cso.ie.

³³ Ibid.

³⁴ Submissions from Dún Laoghaire Harbour Company and the Port of Cork.

³⁵ The *Harbours Act 1996* provided for the larger harbours to be set up as commercial State companies and to operate with greater commercial autonomy. Prior to the Act, Ireland's 26 State owned ports operated as harbour authorities and were essentially run as public utilities by harbour commissioners.

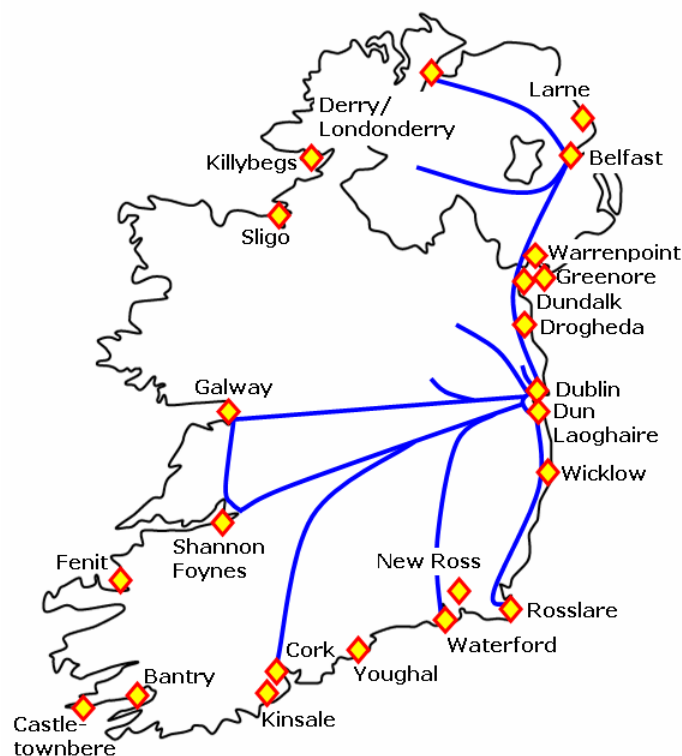
³⁶ Following the decision by the Minister for Transport, Mr Leo Varadkar T.D., to transfer ownership of Dundalk Port to Dublin Port Company (DPC), DPC organised a public tender process to operate Dundalk Port in 2011. The contract was awarded to O'Hanlon & Sons Contractors Ltd. The merger did not have to be notified to the Competition Authority because the world-wide turnover of Dundalk Port Company was below €40m.

³⁷ CSO (2013), *Statistics of Port Traffic 2012*. Available from: www.cso.ie.

Castletownbere) where commercial freight traffic is incidental to their primary purposes. There is one privately owned commercial port in Greenore operated by One51, though this is owned in conjunction with DPC.

- 2.18 In Northern Ireland the major ports are Belfast Port, Warrenpoint and Larne. Belfast and Warrenpoint are operated as trust ports³⁸ while Larne is privately owned. **Figure 3** provides a graphical illustration of the main ports and motorways in Ireland. This study will focus on the nine commercial State port companies, Rosslare, and the major ports in Northern Ireland.

Figure 3: Ports and motorways in Ireland³⁹



Source: CSO Statistics on Port Traffic 2012 and the UK Department of Transport

- 2.19 Internationally, there has been a general trend towards increased participation by the private sector in ports. The traditional view that port facilities are public goods and that ownership should be fully public is becoming obsolete due to poor port performance and tight fiscal constraints. Ports do not have to be fully public, and can be run as

³⁸ Trust ports in the UK are independent statutory bodies, each governed by its own unique statutes. There are no shareholders or owners. Any surplus is retained by the port for the benefit of its stakeholders.

³⁹ The N11 motorway from Dublin to Rosslare is not complete.

commercial institutions with significant private sector involvement⁴⁰. Indeed, the private sector has the potential to provide services at a lower cost than the public sector because it can be more productive, efficient and flexible. Moreover, the use of private capital means that public capital can be devoted to other government priorities⁴¹.

- 2.20 However most of the world's major ports are classified as being a mixture of public and private ownership. The port authorities are generally public institutions, while port service providers are private firms. Therefore, the role of port authorities has been transformed from institutions in charge of all activities, to one in which they coordinate private participation through the use of leasing and licensing arrangements⁴². This harnesses the benefits of private participation, but avoids the risks associated with complete privatisation of port authorities⁴³ - i.e., the monopolisation of essential assets. This issue is discussed further in Section 5.
- 2.21 As a consequence, ports in general are adopting the landlord port management model whereby public port authorities maintain ownership of essential port assets, while the private sector provide services like cargo handling, stevedore and towage services. This port management model is commonly facilitated within port ownership structures similar to the commercial State port company model in Ireland⁴⁴.

Port management models

- 2.22 There are three main types of port management models: a landlord port, a tool port and a service port⁴⁵:
- **Landlord port:** Under the landlord model, port management provides the supporting infrastructure (i.e., berths and quays) while private companies own the superstructure⁴⁶ and employ stevedoring labour.
 - **Tool port:** Under the tool port model, port management provides the infrastructure and superstructure, while private companies provide stevedoring labour.
 - **Service port:** Under the service port model, port management provides almost all services, including labour.

⁴⁰ Trujillo, L. and Nombela, G. (2000). See footnote 28 for full reference.

⁴¹ Thompson, L. and Budin, K.J. (2000), "Global Trends to Railway Concessions Delivering Positive Results", Viewpoint 143, *World Bank Finance, Private Sector and Infrastructure Network*, Washington DC: World Bank.

⁴² See Section 4 for more information on licensing and leasing (paragraph 4.27 to 4.32).

⁴³ Trujillo, L. and Nombela, G. (2000). See footnote 28 for full reference.

⁴⁴ Ibid.

⁴⁵ Guasch, J. and Spiller, P. (1999), *Managing the Regulatory Process: Design, Concepts, Issues, and the Latin America and Caribbean Story*, World Bank Publications.

⁴⁶ Superstructure includes cranes, terminal buildings, warehouses and offices.

Table 1: Port management models

Type	Infrastructure	Superstructure	Port labour	Other functions
Landlord	Public	Private	Private	Public/Private
Tool	Public	Public	Private	Public/Private
Service	Public	Public	Public	Majority Public

Source: Competition Authority analysis

2.23 In practice, the management model of a port will be influenced by the characteristics of an individual port, its history, the customers it serves and its size. Consequently, there is no uniform management model⁴⁷. Indeed, submissions to the consultation stated that the lines between the different management models of Irish ports have become increasingly blurred⁴⁸. Dublin is predominately a landlord port; however, Cork, Shannon, Waterford and Belfast operate as a hybrid between a landlord port and a tool port where stevedores own and operate their own cranes. Rosslare is more akin to a service port.

2.24 When carefully managed, the landlord port management model can enable effective management of private sector participation through the use of leasing, licensing and competing terminals⁴⁹. The tool port model can also be effective in this regard, though it is likely that many tool and service ports will eventually be transformed into landlord ports⁵⁰. In the case of small ports, while competing terminals may be desirable, it can be difficult to introduce. This is because ports are often not big enough to facilitate competing terminals and it may be more cost effective to have one supplier of port services using a tool or service port structure⁵¹. More discussion regarding the merits of port management models is found in Section 4 and Section 5.

Ports policy

2.25 Irish ports policy is influenced by national and EU policy. The most recent policy developments in Ireland and at a European level are outlined below.

⁴⁷ OECD (2011), *Competition in Ports and Port Services*. OECD Competition Committee Roundtable Discussion.

⁴⁸ Submissions from Dublin Port Company (DPC), Dún Laoghaire Harbour Company and R&H Hall.

⁴⁹ Guasch, J. and Spiller, P. (1999). See footnote 45 for full reference.

⁵⁰ World Bank (2007), "Module 3: The Evolution of Ports in a Competitive World." *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank.

⁵¹ See Section 4 for more information (paragraph 4.22 to 4.26).

National policy

- 2.26 The Department of Transport, Tourism and Sport (“the Department”) has produced two substantial policy documents over the past decade: the *Ports Policy Statement*⁵² in 2005 and the *National Ports Policy*⁵³ in 2013. According to the *National Ports Policy*, the *Ports Policy Statement* encouraged a less restrictive approach and port companies were encouraged to compete with each other. However, the State provided limited direction and no differentiation was made between ports of national significance and those of regional significance.
- 2.27 The *National Ports Policy* aims to provide more direction by categorising ports as follows:
- **Tier 1** Ports of National Significance (Dublin, Cork and Shannon Foynes)⁵⁴;
 - **Tier 2** Ports of National Significance (Waterford and Rosslare)⁵⁵;
 - **Ports of Regional Significance** (Drogheda, Dún Laoghaire, Galway, New Ross, Wicklow and all other ports that handle commercial freight)⁵⁶.
- 2.28 The Department’s view is that a tiered system will facilitate a more competitive and effective market for maritime transport services. Long-term international trends in the sector are towards consolidation in shipping and port infrastructure to maximise efficiencies. Therefore, the Department feels it is best that national ports policy is focused on the development of Ireland’s largest commercial ports. According to the Department, smaller ports like Dún Laoghaire and New Ross have lost considerable market share⁵⁷, are no longer of national importance, and would be more effectively managed by local authorities⁵⁸.
- 2.29 While Tier 1 or Tier 2 Ports of National Significance will receive no Exchequer funding for infrastructure development or otherwise, they will be expected to: (a) establish a clear dividend policy, (b) identify any gaps in competencies at board level, (c) advise the Minister in due time ahead of any vacancies and (d) lead the response of the State commercial ports sector to future national port capacity requirements.

⁵² Department of Transport (2005), *Ports Policy Statement*. Available from: www.transport.ie.

⁵³ Department of Transport (2013), *National Ports Policy*. Available from: www.transport.ie.

⁵⁴ The *National Ports Policy* defines Tier 1 ports as being responsible for 15% to 20% of overall tonnage and has potential to lead the development of future port capacity in the medium to long-term.

⁵⁵ The *National Ports Policy* states that Tier 2 ports are responsible for at least 2.5% of overall tonnage, have clear demonstrable potential to handle higher volumes of unitised traffic and have the existing transport links to serve a wider, national market place beyond their immediate region.

⁵⁶ Ports of Regional Significance are categorised in the *National Ports Policy* as serving an important regional purpose and/or specialised trades or maritime tourism. In the context of long-term international trends in ports and shipping, these ports are deemed limited in their future potential as centres of commercial shipping.

⁵⁷ According to the *National Ports Policy 2013*, between 1998 and 2011 the level of tonnage handled by Dún Laoghaire and New Ross fell by 95% and 65% respectively.

⁵⁸ The Department has indicated that this categorisation will not prevent Ports of Regional Significance from attracting future private investment.

- 2.30 The Department has appointed Indecon consultants to undertake a review of the current and future role of Rosslare Europort. The review started in early 2013 and its main objective is to look at optimal ownership and operational structures for the port and make recommendations to the Minister for Transport, Tourism and Sport.

EU policy

- 2.31 The tiered approach being adopted by the Department is consistent with the European Union's Trans European Network – Transport (TEN-T) Policy⁵⁹. Under the TEN-T Policy, Tier 1 high priority ports⁶⁰ (i.e., Dublin, Cork and Shannon Foynes) can apply for direct EU funding and avail of credit enhancement facilities from the EU Commission and the European Investment Bank (EIB) that will help them attract private sector financing for individual infrastructure projects⁶¹.
- 2.32 The ultimate aim of EU ports policy is to improve competition in the sector; yet previous attempts to introduce a port services directive in 2003 and 2004 that would encourage greater market access to port services across the EU were not successful. One of the main objectives of the proposed directives was to stimulate greater intra-port competition by ensuring there are at least two service providers for navigation (e.g., pilotage, towage and mooring), cargo handling (e.g., stevedoring, transshipment services and warehousing) and passenger services. There were also proposals to allow port users to self-handle cargo using their own equipment and labour.
- 2.33 A broad concern is that a 'one size fits all' approach cannot be applied to European ports policy, an issue that was exacerbated by conflict between the 'Northern European approach' to port organisation (in favour of open access) and the 'Mediterranean approach' (not in favour of open access).
- 2.34 National governments largely agreed with the proposals, with some Mediterranean countries and new EU members seeking the introduction of intra-port competition into their state port systems. However, there were objections to the proposals from other national governments and interest groups⁶² favouring both the Northern European approach and the Mediterranean approach to port organisation.
- 2.35 Countries that already had open access to port services felt the proposals could have negative effects in terms of crowding-out existing

⁵⁹ Further information is available from: <http://tentea.ec.europa.eu>.

⁶⁰ The TEN-T Policy defines Tier 1 ports are those that handle at least 15% to 20% of national tonnage. This is the same as the Tier 1 categorisation adopted by the Department in the *National Ports Policy*.

⁶¹ This initiative is known as the "Europe 2020 Project Bond Instrument". The instrument is designed to provide an alternative to financing projects through bank loans or public sector grants. Through the issuing of an EU/EIB backed bond, it is hoped that TEN-T infrastructure projects including ports can attract alternative investment from pension funds and insurance companies. The initiative is currently being operated on a pilot phase. See link for more information: <http://www.eib.org/products/project-bonds>.

⁶² Interest groups include representatives of port authorities, private port operators, ship-owners, shippers, trade unions and pilots.

private service providers and creating legal uncertainty. The major issues of conflict among interest groups include⁶³:

- The maximum duration of new licensing and leasing arrangements;
- The level of compensation provided to incumbent service providers where the right to provide an exclusive service is revoked;
- Clarification regarding the potential for public funding to cause distortions of port competition;
- The proposed permission of self-handling and the liberalisation of pilotage services.

2.36 Following the failure to introduce a port services directive, in 2013 the EU Commission brought forward proposals to introduce regulations on the way EU ports operate in terms of services, governance and overall supervision⁶⁴. The core objective is to again allow for greater market access to port services across the EU. However, a major criticism of the new proposals is that they only cover services like pilotage, towage and dredging and will not be imposed on cargo handling services or passenger terminals. These will be dealt with through a future directive dealing with the award of concession contracts⁶⁵.

2.37 Compared to many EU countries, market access to port services in Ireland is relatively open. For example, there is potential for cargo to be self-handled. However, some of the issues identified above - namely leasing and the licensing of cargo handlers - have the potential to create competition issues and are discussed later in this study. DPC is currently conducting a review of its franchises including leases, licensing and terminal operating agreements⁶⁶. DPC had intended completing the review in early 2013, but it is expected that the review will now be completed following the publication of this study.

Port traffic trends and capacity⁶⁷

2.38 The total tonnage handled by ports in the State grew between 2002 and 2007; fell between 2008 and 2009, before recovering in recent years. Ireland imports more maritime cargo than it exports, and the growth and the subsequent decline in total tonnage was largely import

⁶³ Pallis, A. and Tsiotsis, G. (2008), "Maritime interests and the EU port services directive", *European Transport: Institute for the Study of Transport within the European Economic Integration (ISTIEE)*, Volume 38, 17-31.

⁶⁴ The proposed regulations (COM 2013/296) are titled the "European Commission's proposal for a Regulation to establish a framework on market access to port services and financial transparency of ports".

⁶⁵ In September 2013 draft rules setting out minimum EU requirements for the award by public authorities of concession contracts to procure works or services from private suppliers were approved.

⁶⁶ More information available from:
<http://www.dublinport.ie/news/singlenews/browse/1/article/dublin-port-company-franchise-review//28/>.

⁶⁷ Unless stated, the statistics contained in this sub-section are sourced from the CSO's *Statistics of Port Traffic* (2013) and the IMDO's *Irish Maritime Transport Economist* (2013). Available from: www.cso.ie and www.imdo.ie.

driven. In contrast, export levels have remained relatively constant; though the value of our exports fell during the first half of 2013⁶⁸ (see **Figure 4** below).

Figure 4: Port tonnage trends in the State, 2002-12



Source: CSO Port Traffic Statistics

Imports by cargo type

2.39 Imports are dominated by dry bulk (37% of total tonnage) and liquid bulk (32%) followed by Ro-Ro (20%) and Lo-Lo (11%). While all imports have declined since 2007, Lo-Lo has experienced the sharpest percentage fall, reflecting lower demand for consumer goods. The decline in dry bulk and break bulk imports were symptomatic of the downturn in the construction sector which has hit smaller ports especially hard. While there was an increase in import volumes in the early part of 2013, this was mainly due to a surge in animal feed imports because of poor weather conditions⁶⁹.

Exports by cargo type

2.40 Ro-Ro accounts for the largest percentage of total export tonnage (33%), followed by dry bulk (25%), liquid bulk (22%) and Lo-Lo (20%). While export tonnage is small compared to imports, it accounts

⁶⁸ Comparing June 2013 with June 2012, the value of merchandise exports decreased by €703m (-9%). Source: CSO (2013), *Goods Exports and Imports*, August 2013. Available from: www.cso.ie.

⁶⁹ The IMDO's *iShip Index* reported that imports volumes increased by 26% in Q2 in 2013 compared to Q2 in 2012. Available from: www.imdo.ie.

for 66% of the total value of merchandise trade⁷⁰, and the value of these exports has remained relatively constant. This indicates that Ireland imports large quantities of heavy low value products and exports lighter, higher value products.

- 2.41 Many of Ireland's high value exports are transported using Ro-Ro and Lo-Lo which highlights the importance of ensuring that the unitised sectors are operating competitively. Ireland's most valuable merchandise exports are medical and pharmaceutical products, chemicals, manufactured articles, oils, office machines, electrical machinery and dairy products (see **Table 2** below). Nominally, our most valuable merchandise imports are petroleum products, medical and pharmaceutical products, office machines, organic chemicals and transport equipment⁷¹.

Table 2: Value of merchandise exports by commodity group, 2012

Product Type	Exports €m	Exports % share
Medical & pharma	24,447	27%
Organic chemicals	20,123	22%
Essential oils	6,245	7%
Misc manufactured	5,444	6%
Scientific apparatus	3,615	4%
Office machines	3,597	4%
Chemical materials	3,206	3%
Meat products	2,971	3%
Electrical machinery	2,609	3%
Petroleum products	1,692	2%
Dairy products	1,636	2%
Misc edible products	1,431	2%

Source: IMDO Irish Maritime Transport Economist

Port capacity

- 2.42 Fischer Associates produced the most recent publicly available report on future port capacity for the Department of Transport in 2006⁷². The main objective of the report was to advise the Department whether the anticipated capacity requirements for unitised cargo to 2014 and beyond could be adequately met by implementation of projects identified by the relevant port companies and terminal operators.
- 2.43 Comparing existing port capacity to anticipated future demand, the report concluded that Lo-Lo and Ro-Ro capacity would be fully utilised by 2014. It predicted that government intervention would be required

⁷⁰ CSO (2013), *Good Exports and Imports*, May 2013. Available from: www.cso.ie.

⁷¹ In 2012, petroleum products accounted for 11% of the value of merchandise imports, medical and pharmaceutical products accounted for 8%, while office machines, organic chemicals and transport equipment accounted for 5% each.

⁷² Fischer Associates (2006), "Information Paper based on Report of Fischer Associates consultants regarding seaport capacity requirement for unitised trade in Ireland". Delivered to the Department of Transport in June 2006. Available from: www.transport.ie.

to encourage the construction of port infrastructure and thus prevent a shortfall in capacity.

- 2.44 The economic growth predictions that the analysis was based on were overly positive, and as **Figure 4** above demonstrates, imports fell sharply from 2007 onwards which meant that the predictions regarding a shortfall in capacity never materialised. This has led to spare capacity at a national level which means the scope for greater competition has increased. If a port or terminal operator has spare capacity it is more likely that they will offer lower prices and a higher quality of service to attract customers than if there is a shortfall in capacity⁷³. This is an important element to consider when evaluating the level of inter-port and intra-port competition.
- 2.45 DPC's "Masterplan" was published in 2012 and presents port capacity predictions that account for the fall-off in trade volumes since 2007⁷⁴. The Masterplan states that while there is spare capacity presently, particularly for Lo-Lo, Dublin Port is likely to increase its share of Ro-Ro and Lo-Lo cargo which will pose significant challenges in the future. DPC believes that more efficient use of land and container terminals can be secured which will allow the port to cater for considerable volume increases, but some element of new land reclamation may be required to meet future demands. Specifically, there is likely to be a need for cargo handling space next to quay walls, a concern that was shared by a number of stakeholder submissions who felt that it could create a barrier to entry - particularly for Lo-Lo⁷⁵.
- 2.46 An application by DPC to extend the port and increase port capacity was rejected by An Bord Pleanála in 2010 on the basis that it would involve the loss of wetland habitat. DPC had proposed a €200m investment in a 21 hectare expansion of the North port area.

Major ports and cargo specialisation⁷⁶

- 2.47 In 2012 almost 80% of the island's total tonnage was handled by four ports: Dublin (29%), Belfast (22%), Shannon Foynes (15%) and Cork (13%)⁷⁷. The other major ports on the island include Rosslare (3%), Waterford (2%) and Larne and Warrenpoint (4% each) in Northern Ireland. Within the State, Dublin was the only Tier 1 or Tier 2 port that experienced an increase in overall market share between 2005 and 2012.
- 2.48 While most major ports will strive to provide a wide range of services, most tend to specialise in handling specific types of cargo. Dublin Port currently handles 57% of Lo-Lo traffic and 43% of Ro-Ro traffic on the island. Shannon has 42% of the dry bulk market while Cork holds 33% of the liquid bulk trade. Dublin, Cork and Belfast are the only ports that handle all the major cargo types.

⁷³ UK Department of Transport (2012), *National Policy Statement for Ports*, London. Available from: www.gov.uk.

⁷⁴ DPC (2012), *Dublin Port Company Masterplan - 2012-2040*. Available from: www.dublinport.ie.

⁷⁵ Submissions from the Chartered Institute of Logistics and Transport (CILT), the Irish Freight Forwarders Association (IFFA) and BG Freight Line.

⁷⁶ Unless stated, the statistics contained in this sub-section are sourced from the CSO's *Statistics of Port Traffic* (2013). Available from: www.cso.ie.

⁷⁷ Source: CSO, Department for Transport UK and Competition Authority analysis.

- 2.49 Looking at each port individually, the level of specialisation is even more apparent. In 2012, 100% of Rosslare's cargo tonnage was all Ro-Ro, 88% of Shannon Foynes cargo was dry bulk, 73% of Dublin's cargo was unitised (Ro-Ro and Lo-Lo), 70% of Waterford's cargo was dry bulk, while 60% of Cork's cargo was liquid bulk.
- 2.50 As **Table 3** illustrates, unitised trade is becoming increasingly concentrated in the State's largest ports, particularly within Dublin Port. In 2005, Dublin and Cork shared 60% of the islands Lo-Lo traffic. By 2012 this had increased to almost 75% with Waterford's share of traffic falling significantly. Dublin's share of Ro-Ro traffic has also increased from 36% to 43% during the same time period. Market shares among the main ports for liquid bulk and dry bulk have remained comparatively static⁷⁸. Further examination of market concentration is outlined in the quantitative analysis in Section 3.

Table 3: Tonnage by port, 2005 and 2012

2005	% Total	% Ro/Ro	% Lo/Lo	% Liquid	% Dry
Dublin	26%	36%	47%	23%	10%
Shannon	15%	0%	1%	10%	42%
Cork	13%	1%	13%	37%	8%
Rosslare	4%	13%	0%	0%	0%
Waterford	3%	0%	13%	1%	4%
Other RoI	9%	1%	5%	13%	15%
Belfast	18%	20%	17%	17%	18%
Larne	7%	23%	0%	0%	0%
Warrenpoint	3%	6%	4%	0%	3%

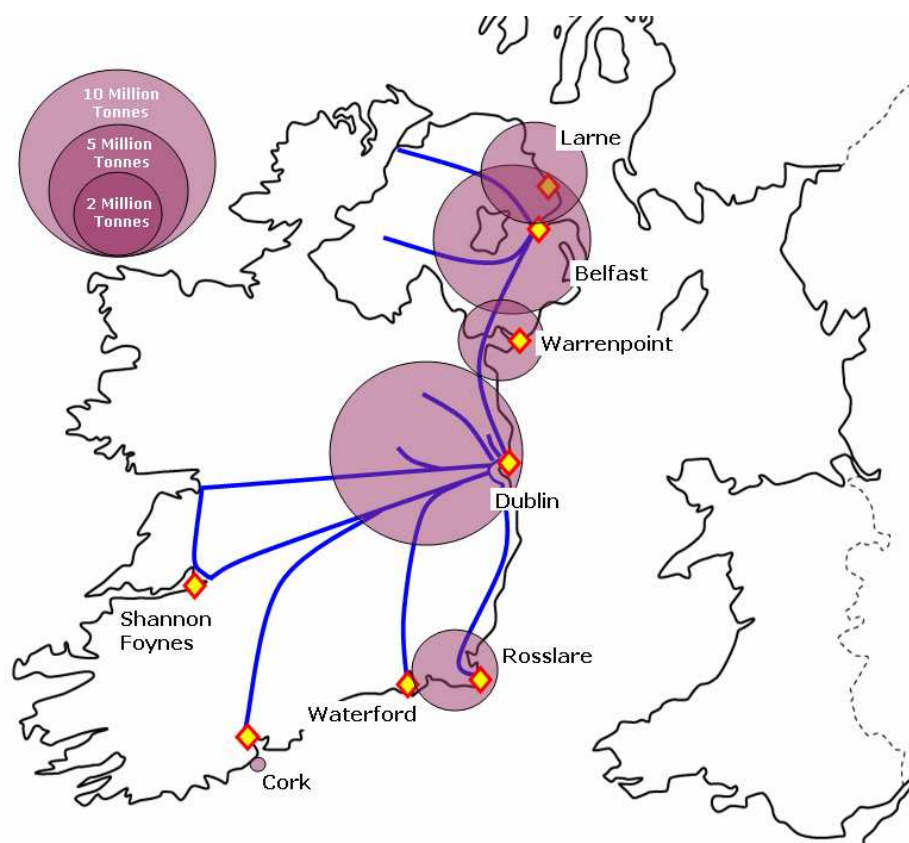
2012	% Total	% Ro/Ro	% Lo/Lo	% Liquid	% Dry
Dublin	29%	43%	57%	22%	9%
Shannon	15%	0%	0%	7%	42%
Cork	13%	0%	18%	33%	9%
Rosslare	3%	8%	0%	0%	0%
Waterford	2%	0%	4%	0%	4%
Other RoI	9%	0%	0%	24%	10%
Belfast	22%	28%	20%	14%	23%
Larne	4%	13%	0%	0%	0%
Warrenpoint	4%	8%	2%	0%	2%

Source: CSO Statistics of Port Traffic, UK Department of Transport, Competition Authority analysis

⁷⁸ Bantry Bay experienced a sharp increase in liquid bulk tonnage in 2012 that is reflected in the market share for "Other ROI" ports as illustrated in Table 3 above.

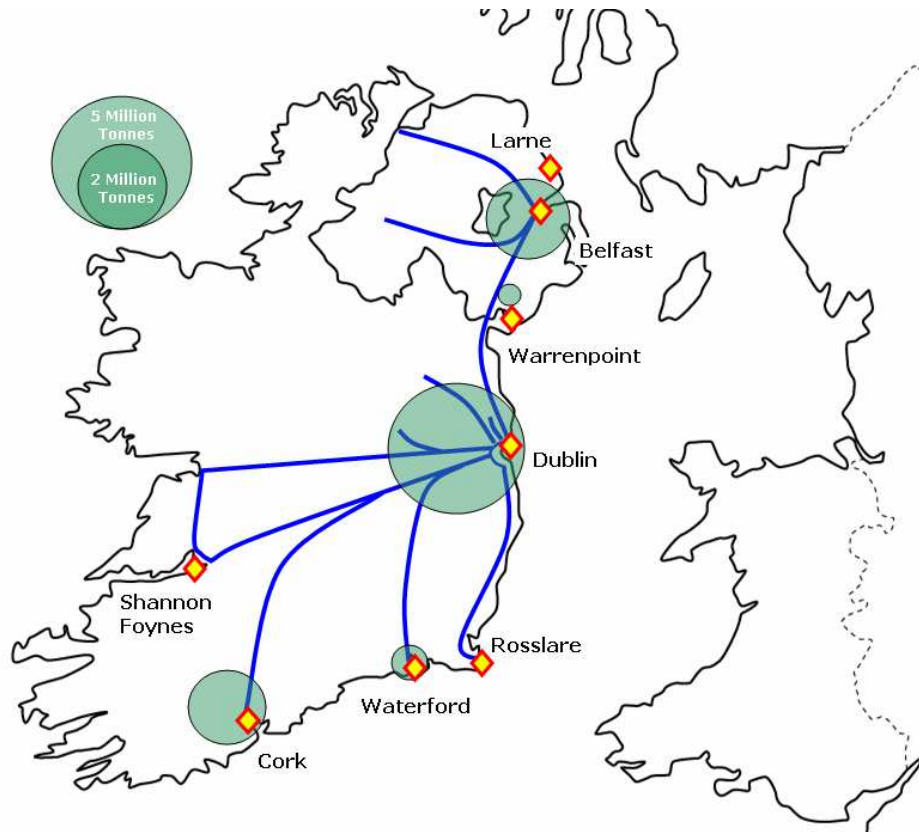
- 2.51 The level of cargo specialisation is largely determined by the location of a port. For example, Dublin Port and Belfast Port are located on the East Coast next to large urban centres and the shortest sea crossings to Great Britain (see **Figure 5**). This provides them with a natural location advantage for the provision of frequent Ro-Ro services compared to Shannon Foynes and Cork.
- 2.52 While Ireland's Lo-Lo trade is not concentrated on the East Coast to the extent that Ro-Ro is, Lo-Lo is concentrated next to the largest urban and commercial centres on the island of Ireland – namely Dublin, Belfast and Cork (see **Figure 6** below). This means Dublin, Belfast and Cork are likely to continue to hold a competitive advantage for the provision of Lo-Lo services.

Figure 5: Ro-Ro tonnage profile, 2012



Source: CSO Statistics of Port Traffic, UK Department of Transport, Competition Authority analysis

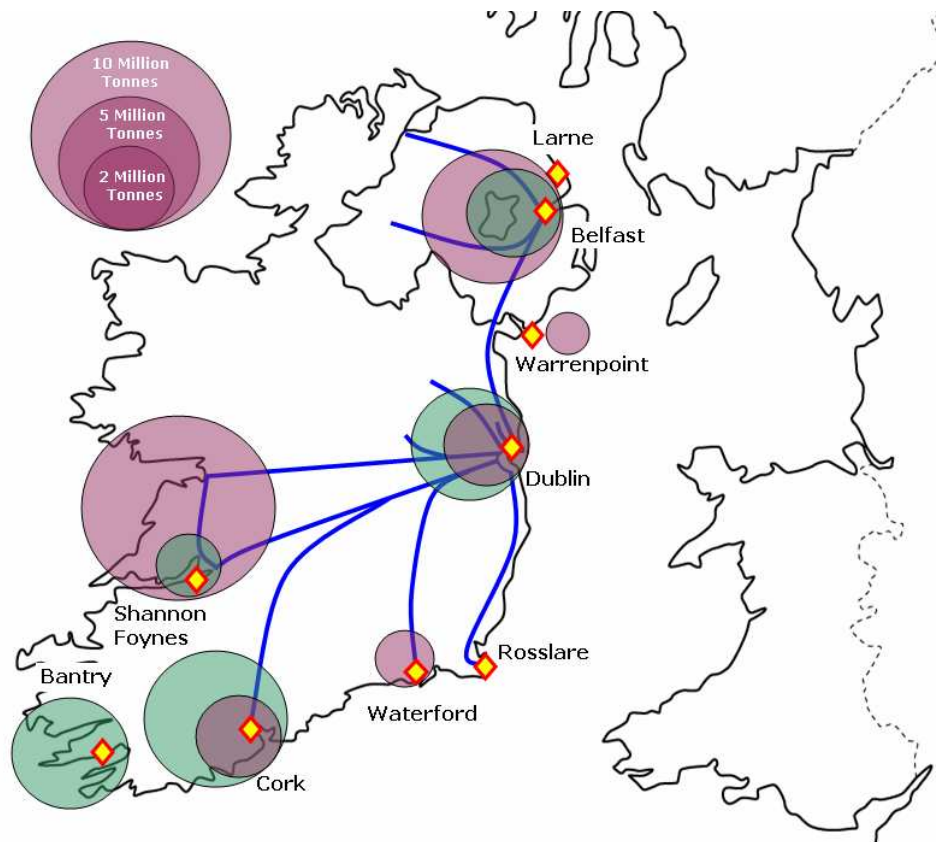
Figure 6: Lo-Lo tonnage profile, 2012



Source: CSO Statistics of Port Traffic, UK Department of Transport, Competition Authority analysis

- 2.53 The location of Shannon Foynes, the Port of Cork and Bantry next to major bulk importing industries (Aughinish Alumina and Moneypoint Powerstation in Shannon Foynes, the Whitegate Refinery in Cork and an oil storage and transshipment terminal in Bantry) means that they also enjoy location advantages relative to other ports (see **Figure 7** below). Natural water depth and the high costs involved in transporting bulky goods over long distances by road means that the scope for using other ports to handle this type of cargo is limited. The influence of port specialisation on inter-port competition is examined in detail in Section 3.

Figure 7: Bulk tonnage profile, 2012⁷⁹



Source: CSO Statistics of Port Traffic, UK Department of Transport, Competition Authority analysis

Internal connectivity

2.54 The quality of the national road and rail network can also affect competition by encouraging demand-side substitution⁸⁰ among port users and customers. Indeed, a port can develop a competitive advantage based on its road and rail connectivity. The main issues identified that affect road and rail connectivity are outlined below.

Road

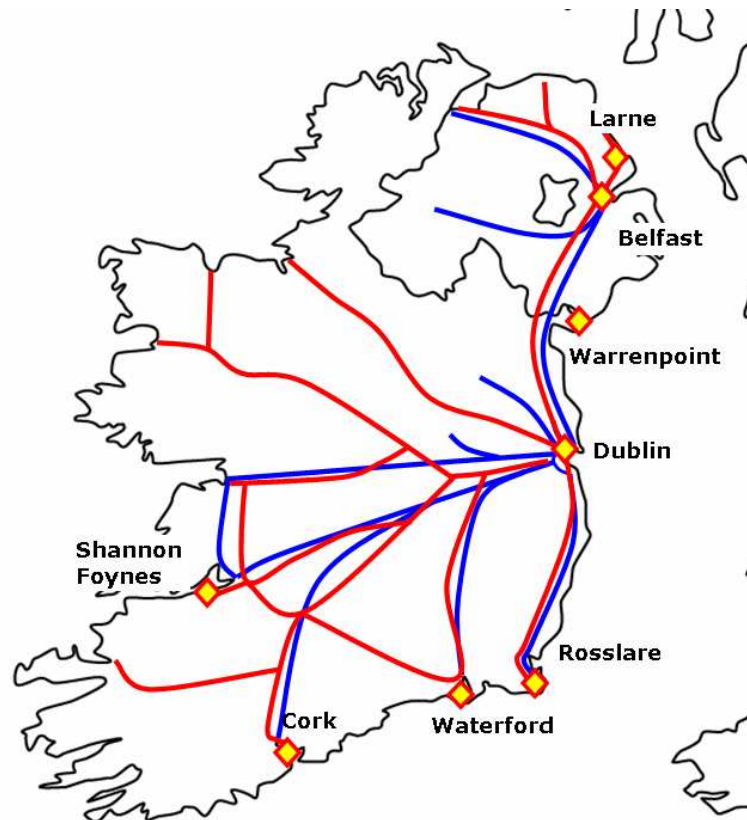
2.55 Substantial improvements have been made to the Irish road and motorway network. Ireland now has a radial motorway network out of Dublin that is on par with other European countries. Many inter-urban links are new, well maintained, and have appropriate capacity⁸¹. As **Figure 8** below illustrates, there are good motorway connections to Ireland's major ports, though they largely radiate to and from Dublin.

⁷⁹ Purple represents dry bulk. Green represents liquid bulk.

⁸⁰ See Section 3 (paragraph 3.5) for a full description of demand-side substitution.

⁸¹ Engineers Ireland (2012), *The State of Ireland in 2012: A Review of Infrastructure in Ireland*. Available from: www.engineersireland.ie.

Figure 8: Motorways, railway lines and major ports⁸²



Source: Iarnród Éireann, NTA, Competition Authority analysis

2.56 The quality of road infrastructure connecting a port to its surrounding hinterland and the national road network can influence inter-port competition for the following reasons:

- Poor roads can create congestion that increases the time to access and egress a port⁸³. Service reliability and efficiency decline which weakens its competitive position.
- Poor road connections can limit port users' ability to link with the rail network, airports and other players within the supply chain network⁸⁴.
- A high quality inter-urban motorway network connecting cities and ports will provide port users and hauliers with more options regarding port usage.

⁸² The blue lines represent the motorway network while the red lines represent the rail network. The N11 motorway from Dublin to Rosslare is not complete.

⁸³ OECD (2008), *Port Competition and Hinterland Connections: Discussion Paper No. 2008-19*, Joint Transport Research Centre.

⁸⁴ OECD (2008), *The Relationship between Seaports and Intermodal Hinterland in Light of Global Supply Chains: Discussion Paper No. 2008-10*, Joint Transport Research Centre.

- 2.57 While there is a tendency for importers and exporters to use the nearest port, better roads increase the potential for inter-port competition. For example, the completion of the M9 motorway between Waterford and Dublin may tempt a Kilkenny-based manufacturer or haulier that typically uses Waterford Port or Rosslare to use Dublin Port due to the greater level of service frequency on offer there. Furthermore, the construction of the Dublin Port Tunnel and subsequent reduction in congestion has made Dublin Port more attractive.

Rail

- 2.58 Like road infrastructure, a good rail link can strengthen the competitive position of a port, particularly when handling bulky products like timber, mineral ores and liquid bulk.
- 2.59 While freight options were limited for decades, there has been renewed interest in the use of rail freight and the number of freight services being provided by Iarnród Éireann has grown. Regular services provided by Iarnród Éireann for Coillte and DFDS connect with Waterford Port⁸⁵, while services provided for International Warehousing and Transport (IWT) and Tara Mines connect with Dublin Port⁸⁶. Iarnród Éireann also offers one-off charter style freight services.
- 2.60 Some ports such as Dublin, Waterford, Rosslare Europort and Larne are well connected to the national rail network. There is a rail line connecting Shannon Foynes, but it would require re-commissioning. Cork does not have a rail connection in Ringaskiddy, the lack of which was one of a number of reasons why plans to expand operations there were rejected by An Bord Pleanála in 2008.

External connectivity

- 2.61 Service frequency to and from destinations in Great Britain and transshipment hubs in Continental Europe is a major determinant of port attractiveness and the level of inter-port competition in Ireland. As described in Section 3, large ports attract shipping companies who compete to provide frequent and reliable connections with ports in Great Britain and Continental Europe. The quality of these connections can heavily influence the ability of a port to compete for cargo, especially for time-sensitive Ro-Ro and Lo-Lo cargo.

Ro-Ro connectivity

- 2.62 Great Britain accounted for 93% of Irish Ro-Ro traffic in 2012 with the remaining 7% being shipped directly to mainland Europe. About 85% of the Ro-Ro traffic that is shipped to Great Britain has its final destination there with the remainder using it as a land-bridge to access mainland Europe or connect with international flights out of London⁸⁷.

⁸⁵ DFDS offer container services from Ballina to Waterford two days a week. Coillte transport pulpwood from Ballina and Westport to Waterford on a weekly basis.

⁸⁶ IWT offer intermodal services between Ballina and Dublin Port. Three trains per day operate from Tara Mines to Dublin Port five days a week.

⁸⁷ IMDO (2013), *Irish Maritime Transport Economist*, Volume 10. Available from: www.imdo.ie.

- 2.63 There are four primary Ro-Ro corridors: the Northern, Central and Southern corridors to Great Britain⁸⁸, and the Continental corridor to France and the Benelux countries (see **Figure 9** below). The Northern Corridor (46% of the market) and the Central Corridor (42% of the market) are the busiest Ro-Ro routes⁸⁹.
- 2.64 On the Northern corridor there are three shipping lines providing regular Ro-Ro services from Belfast, Larne and Warrenpoint to Cairnryan, Troon, Liverpool and Heysham⁹⁰. There are approximately 127 weekly sailings on the corridor⁹¹, with Belfast (through Stena Line) and Larne (through P&O) both offering services to Cairnryan. There is no duplication of services between ports or shipping lines on the other Northern corridor routes.
- 2.65 On the Central Corridor there are four shipping lines providing regular Ro-Ro services from Dublin and Dún Laoghaire to Liverpool, Holyhead and Heysham⁹². There are approximately 104 weekly sailings on the corridor, with the majority servicing Dublin⁹³. Stena Line and Irish Ferries provide Ro-Ro services to Holyhead while Seatruck and P&O provide services to Liverpool. Stena Line also provides seasonal services from Dún Laoghaire to Holyhead. There is no duplication of services between ports or shipping lines for services to Heysham on the Central Corridor. It takes one hour less to travel between Belfast and Cairnryan compared to Dublin – Holyhead which perhaps explains why ferry operators on the Northern Corridor can provide more frequent ferry services.
- 2.66 On the Southern Corridor there are two shipping lines providing services from Rosslare to Pembroke and Fishguard⁹⁴. There are approximately 28 regular weekly sailings on this corridor including peak summer sailings⁹⁵. While there is technically no duplication of services between shipping lines on the Southern Corridor, Pembroke and Fishguard are less than 40km apart.

⁸⁸ Atkins McCarthy (2000), *Transport Corridors in Europe*. This research was undertaken by Atkins McCarthy Consultants for the Spatial Planning Unit of the Department of Environment and Local Government. Available from: <http://www.irishspatialstrategy.ie/docs/report20.pdf>.

⁸⁹ IMDO (2013). See footnote 87 for full reference.

⁹⁰ Stena Line provides Ro-Ro services from Belfast to Liverpool and Cairnryan. P&O provides Ro-Ro services from Larne to Cairnryan and Troon, while Seatruck provides an unaccompanied freight-only service from Warrenpoint to Heysham.

⁹¹ Source: Data provided by the IMDO in November 2013. This figure is approximate.

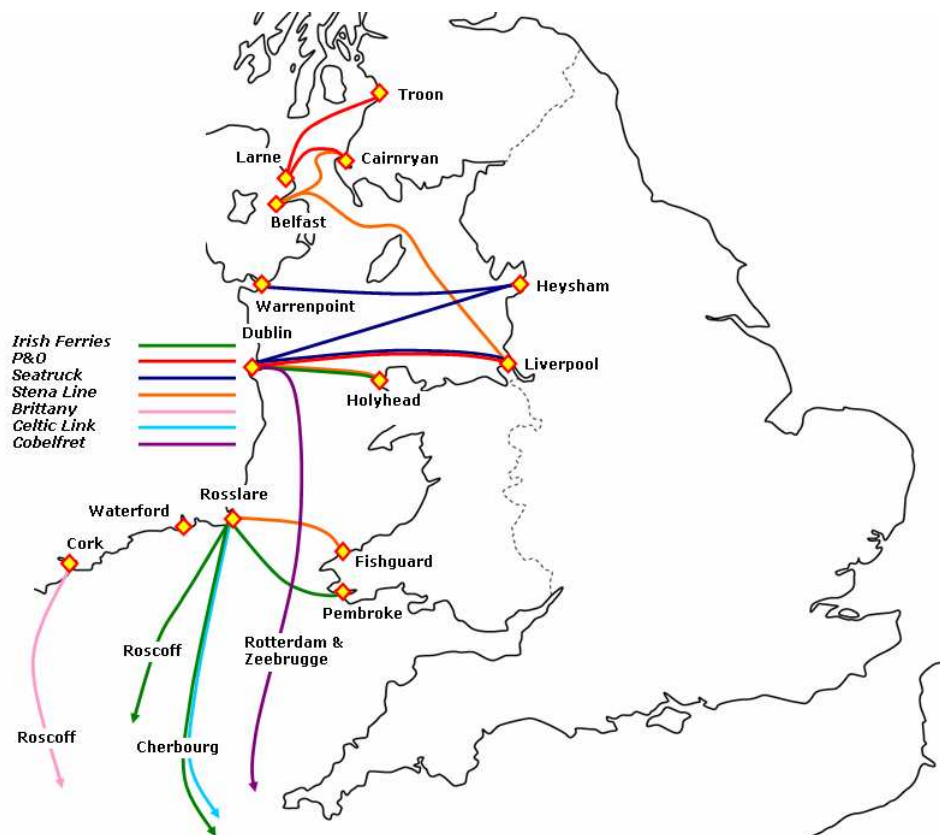
⁹² Stena Line and Irish Ferries provide Ro-Ro services from Dublin to Holyhead, P&O and Seatruck provide services to Liverpool, while Seatruck provides services to Heysham. Stena Line also provides seasonal Ro-Ro services from Dún Laoghaire to Holyhead. There is a seasonal service between Dublin and the Isle of Man which is provided by the Isle of Man Steam Packet Company and a service to West Africa operated by RMR Shipping.

⁹³ Source: Data provided by the IMDO in November 2013. This figure is approximate.

⁹⁴ Stena Line provides Ro-Ro service to Fishguard while Irish Ferries provides services to Pembroke.

⁹⁵ Source: Data provided by the IMDO in November 2013. This figure is approximate.

Figure 9: Ro-Ro & Con-Ro routes to and from Ireland, 2012



Source: Company data

- 2.67 On the Continental Corridor there are three shipping lines providing services from Dublin, Rosslare and Cork to France. There are approximately eight regular crossings on the corridor including peak summer sailings from Cork (through Brittany Ferries) and Rosslare (through Irish Ferries) to Roscoff. Irish Ferries and Celtic Link also offer Ro-Ro services from Rosslare to Cherbourg⁹⁶.
- 2.68 CLdN-Cobelfret also operates a Con-Ro⁹⁷ service on the Continental Corridor from Dublin to Rotterdam and Zeebrugge. There are two sailings each week servicing Rotterdam and two servicing Zeebrugge⁹⁸. Con-Ro offers an alternative to using Great Britain as a land bridge to access markets in Germany, France and the Benelux. Con-Ro services can also compete with Lo-Lo services into Rotterdam and Zeebrugge. Con-Ro services are not available in other Irish ports.

⁹⁶ Source: Data provided by the IMDO in November 2013. This figure is approximate.

⁹⁷ See Section 2 for a definition of Con-Ro (paragraph 2.13).

⁹⁸ Source: Data provided by the IMDO in November 2013. This figure is approximate.

Lo-Lo connectivity

- 2.69 Most Irish Lo-Lo trade is feeder traffic to and from European transshipment hubs. Rotterdam is the busiest and most important destination for short-sea and deep-sea connections⁹⁹ followed by ports such as Antwerp, Zeebrugge, Liverpool, Southampton and Felixstowe¹⁰⁰.
- 2.70 Dublin Port provides approximately 17 weekly Lo-Lo services to major transshipment hubs including daily services to Rotterdam¹⁰¹. There are approximately 11 different container shipping companies operating from Dublin Port, with Eucon, BG Freight Line, MacAndrews, X-Press, Samskip and DFDS being the major service providers to European transshipment hubs¹⁰². Many services are provided jointly by Eucon, BG Freight Line and X-Press and connect with other Irish ports.
- 2.71 Many feeder services from Dublin also call to deep-sea terminals in Rotterdam and Antwerp and connect with deep-sea shipping lines including CMA-CGM, Evergreen, Hapag-Lloyd and MSC. Regular Lo-Lo services to France, Iberia and the Mediterranean also operate out of Dublin¹⁰³.
- 2.72 While Cork and Belfast provide a good level of service to transshipment hubs including Rotterdam and Antwerp, the level of service and competition between container shipping lines is not as strong compared to Dublin Port. There are approximately seven weekly services operating from Cork and six from Belfast and many of these services also call to Dublin¹⁰⁴.
- 2.73 The Lo-Lo connections and services available from Waterford and Warrenpoint are even more limited compared to Cork and Belfast. Waterford has a twice-weekly service to Rotterdam while Warrenpoint has a service to Cardiff where onward connections are available to destinations in Iberia and the Mediterranean¹⁰⁵.
- 2.74 Declining Lo-Lo imports has led to some container shipping lines pooling capacity on shared routes linking Ireland, the UK and Continental Europe. BG Freight Line and Eucon continue to operate the largest Vessel Sharing Arrangement (VSA)¹⁰⁶, while a number of other operators have rotated schedules in order to carry empty containers to

⁹⁹ Short-sea trade refers to the movement of cargo without crossing an ocean. Deep-sea trade, or intercontinental shipping, refers to the movement of cargo across oceans. Deep-sea shipping lines generally do not call to Irish ports. See footnote 120 for more information on feeder vessels.

¹⁰⁰ Rotterdam typically accounts for 35% of Lo-Lo sailings to and from Ireland. Source: CSO (2013), *Statistics of Port Traffic* 2012. Available from: www.cso.ie.

¹⁰¹ Source: Data provided by the IMDO in November 2013. This figure is approximate.

¹⁰² Source: IMDO (2013). See footnote 87 for full reference.

¹⁰³ These services call to Le Havre, Rouen, Bilbao, Lisbon, Izmir and Beirut.

¹⁰⁴ Source: Data provided by the IMDO in November 2013. This figure is approximate.

¹⁰⁵ The service in Waterford is operated by DFDS which operates a regular freight service from Ballina. The service from Warrenpoint is operated by Cardiff Line that also services Dublin Port.

¹⁰⁶ The three largest VSAs accounted for 70% of estimated Lo-Lo capacity in Ireland in 2011. Source: Source: IMDO (2012). *Irish Maritime Transport Economist*, Volume 9. Available from: www.imdo.ie.

ports where imbalances are greatest¹⁰⁷. The use of VSAs has enabled operators to maintain service levels and improve utilisation whilst also sharing the cost of maintaining vessels and services that could otherwise not be provided¹⁰⁸. However, similar arrangements have raised some competition concerns with the EU Commission in recent years¹⁰⁹.

Bulk connectivity

- 2.75 Bulk vessels are typically voyage chartered – i.e., they are chartered to bring a particular cargo from one port to another - and do not operate as scheduled services to the extent that Ro-Ro and Lo-Lo services do. Bulk trade is predominately concentrated in ports in Europe and Great Britain, although some bulk imports are sourced from South America and Africa. The largest owner of bulk vessels in Ireland is Arklow Shipping that operates approximately 40 dry-bulk vessels and has offices in Arklow, Liverpool and Rotterdam.

Financial capability

- 2.76 Dublin generates more operating profit than all the other ports in the State combined. Given the capital intensity involved in port ownership, cash generation capability to replace and invest in port assets can provide a port with a strong competitive advantage. **Figure 10** below summarises the EBITDA¹¹⁰ and EBIT¹¹¹, measures of cash generation, of the major ports on the island of Ireland.

¹⁰⁷ With Lo-Lo export tonnage remaining constant and import tonnage falling, some shipping lines must import empty containers to service export demand.

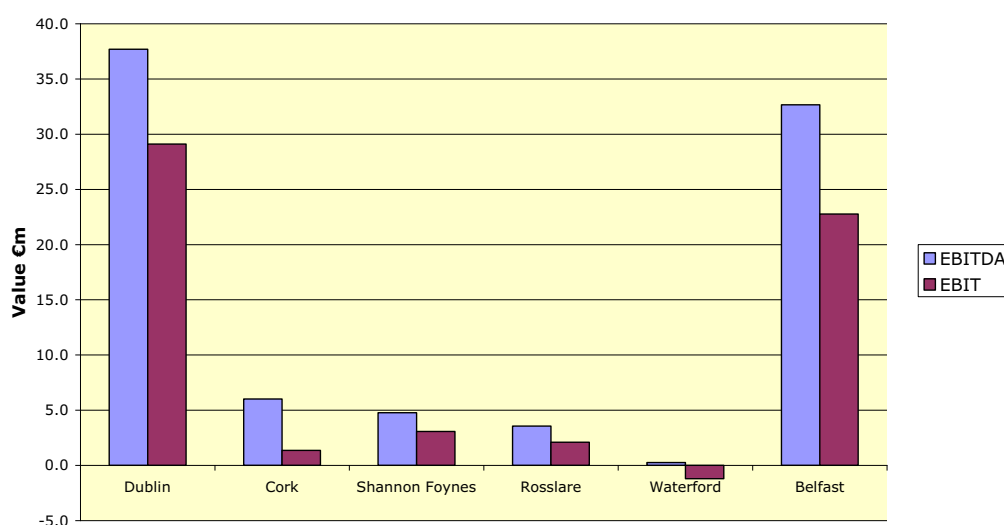
¹⁰⁸ Source: IMDO (2012). *Irish Maritime Transport Economist*, Volume 9. Available from: www.imdo.ie.

¹⁰⁹ The EU Commission has investigated a number of shipping companies as part of a probe into suspected price-fixing in the sector. Case number: 39850. See press release link: http://europa.eu/rapid/press-release_MEMO-11-307_en.htm?locale=en

¹¹⁰ Earnings before interest taxation depreciation and amortisation. This is a measure of cash generation.

¹¹¹ Earnings before interest and taxation. This is a measure of cash generation after making a charge for amortisation and asset replacement

Figure 10: Irish Ports' EBITDA & EBIT (€m), 2012.



Source: Company data, Competition Authority analysis

- 2.77 Demand for Dublin's port services means that even in a recessionary environment the port can deliver healthy returns. In addition, where demand exists, DPC is able to meet this with investment, be it new terminal ramps, rail infrastructure or the realignment of port lands. This could provide Dublin Port with a strong competitive advantage in terms of future investment.
- 2.78 While profitability at Dublin Port appears much greater than at other ports in the State, profit margins appear broadly similar to other ports that specialise in unitised cargo – namely Belfast and Helsinki¹¹².
- 2.79 According to the *National Ports Policy*, Tier 1 and Tier 2 ports will receive no Exchequer funding for infrastructure development. Under the TEN-T Policy, Tier 1 ports (Dublin, Cork and Shannon Foynes) can apply for direct EU funding and avail of credit enhancement facilities from the EU Commission/European Investment Bank (EIB) that will help ports to attract private sector financing for individual infrastructure projects¹¹³. Tier 1, Tier 2 and Ports of Regional Significance can also use commercial funding to finance infrastructure projects.

¹¹² These findings are based on an assessment by the Competition Authority of the Port of Helsinki and Belfast Harbour, both of which have similar scale to Dublin. In Helsinki, about 90% of the cargo throughput by tonnage in 2012 was unitised (circa 73% for Dublin and 52% for Belfast). In 2012, Helsinki reported revenues of €87.2m, with estimated EBITDA and EBIT margins of 56% and 33% respectively, compared with Dublin's revenues of €65.3m and estimated EBITDA and EBIT margins of 58% and 45% respectively. Belfast has revenues of €47.8m for the same period and estimated EBITDA and EBIT margins of 68% and 48% respectively.

¹¹³ See footnote 61 for further details.

International trends

Supply chain networks

- 2.80 The operating environment for Irish ports changed enormously after the worldwide introduction of containerisation in the 1960s. Containerisation helped to standardise port services and drove the construction of bigger more productive ships and ports. Transport costs fell as a result, but more importantly, cargo transport became more reliable. This generated demand for just-in-time, door-to-door services, and the growth of global supply chain management using unitised freight.
- 2.81 Supply chain management integrates supply and demand management within and across companies. For example, an exporting firm typically employs a logistics service provider to oversee all elements of transport logistics including road haulage, port selection, shipping lines, warehousing and all the associated charges and administration.
- 2.82 As a result, ports across Europe no longer compete as individual places that handle ships, but as links within global supply chains. Port and route selection are now related to the entire transport network in which the port is just one link. The ports that are being chosen by customers are those that will help minimise the sum of sea, port and inland costs¹¹⁴. In theory, this means that ports in the same region are becoming closer substitutes and more exposed to competition from other ports and routes¹¹⁵. It also highlights the importance of quality internal connectivity to maximise inter-port competition.
- 2.83 However, the geography of Ireland - as a sparsely populated island on the edge of Continental Europe - means the potential for inter-port competition for unitised freight in Ireland is limited compared to Europe. Investment in Ro-Ro is focused on a few ports on the East Coast, while Lo-Lo is concentrated in large ports with the required scale and critical mass¹¹⁶. The scope for transit traffic in Ireland is also limited compared to Continental Europe. This means that despite the rapid developments in global supply networks, Irish ports are potentially operating in a relatively sheltered environment compared to our European neighbours.

Larger vessel size

- 2.84 Average vessel size has been steadily increasing as shipping companies continually seek to improve efficiency and lower costs¹¹⁷. In 2013, the average size of a Lo-Lo vessel deployed between Asia and North Europe exceeded 10,000 TEUs¹¹⁸ for the first time, and orders for such vessels continues to grow¹¹⁹. Larger ships are being cascaded into other

¹¹⁴ ITMMA (2009), *Economic Analysis of the European seaport system*, Institute of Transport and Maritime Management, Antwerp.

¹¹⁵ OECD (2008), *Port Competition and Hinterland Connections*. Discussion paper No. 2008 – 19.

¹¹⁶ See Section 3 (paragraph 3.47 to 3.48).

¹¹⁷ Irrespective of ship type, as the ship size increases, costs at sea per tonne decreases. Source: Pearson, R. (1988), *Container Ships and Shipping*. London, Fairplay Publications.

¹¹⁸ TEU (Twenty Foot Equivalent Unit) is a measure used for capacity in container transportation.

¹¹⁹ Research by Drewry Consultants. "Drewry Container Insight", Week 17, 2013. Available from: <http://ciw.drewry.co.uk/>.

trade lanes, and it has been forecast that a new generation of feeder vessels¹²⁰ in the order of 1,800-2,000 TEUs and larger will become typical¹²¹.

- 2.85 The average Eucon and BG Freight Line container vessel used for Lo-Lo feeder services in Ireland is currently about 750-850 TEUs¹²² which suggests that Lo-Lo vessel size is likely to increase. However, feedback from stakeholder meetings and submissions suggested that most Irish ports should be capable of facilitating increases in Lo-Lo vessel size for the foreseeable future. There are also disadvantages with using larger containers vessels in a small market like Ireland – e.g., the extra time needed to fill larger vessels may affect service frequency.
- 2.86 Ro-Ro vessel size has also been increasing in size with the number of vessels with more than 3,000 lane metres¹²³ growing significantly¹²⁴. Irish Ro-Ro vessels servicing ports in Great Britain currently have about 2,000 lane metres¹²⁵, though the Irish Ferries vessel “Ulysses” has over 4,000 lane metres.
- 2.87 It is more difficult to gauge the increase in bulk vessel sizes; however we would expect that trends are broadly similar. Indeed, an examination of the average gross-tonnage of all cargo vessels arriving in Ireland between 2007 and 2011 indicates that vessel size has been increasing¹²⁶. This is in line with trends at an EU level¹²⁷.
- 2.88 The increase in vessel size could influence competition between Irish ports in the long-term. Deep water ports like Cork and Shannon Foynes may benefit from their ability to handle larger vessels, particularly for heavy bulk vessels that require comparatively more water depth compared to Lo-Lo and Ro-Ro vessels.
- 2.89 Perhaps more importantly, increased vessel size may require that ports spend more on dredging and invest in larger berths, terminals and taller cranes with a longer reach. This will favour ports that are in a strong financial position with a level of throughput that can justify further investment.

¹²⁰ A feeder vessel is part of a network in which the larger vessels only call at the major ports at both ends of the area being covered. Smaller ports are served by smaller feeder vessels that transfer the cargo to and from the major port terminals.

¹²¹ Ocean Shipping Consultants (2012), “Bigger Container Ships – Port Implications”. Presentation available from: www.pianc.org.uk.

¹²² Information derived from: www.eucon.nl and www.bgfrieghtline.com.

¹²³ The TEU measure for capacity and size is not applicable to Ro-Ro and bulk vessels.

¹²⁴ There has been a significant increase in the number of ships with greater than 3,000 lane metres between 2006 and 2012. Source: MDS Transmodal (2012), “Market Prospects for the Ro-Ro sector”. Presentation at the Ro-Ro 2012 Conference, Gothenburg, May 2012.

¹²⁵ Based on Competition Authority analysis of the Ro-Ro vessels used by Irish Ferries, Stena Line, Seatruck and P&O on the Northern, Central and Southern Ro-Ro Corridors.

¹²⁶ Between 2006 and 2012, there was almost no increase in the combined gross tonnage of vessels arriving in Irish ports, but there was a 27% reduction in the number of vessel arrivals. Source: CSO (2013), *Statistics of Port Traffic 2012*. Available from: www.cso.ie.

¹²⁷ Based on Eurostat data on average size of vessels calling to EU ports. Available from: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>.

Summary: Overview of the ports sector

This section provides a backdrop to facilitate an evaluation of inter-port and intra-port competition that follows. The key points are summarised below.

- There are two categories of port charges: vessel dues and goods dues. Goods dues include cargo handling and stevedore charges that make up between 70% and 90% of the cost of moving goods through a port.
- By whom these port charges are levied depends on the port ownership and management model. There has been a move towards private participation and most major Irish ports operate as commercial State port companies that facilitate private service providers through a mixture of landlord and tool port management structures. When properly managed, the landlord port model can be a particularly effective way to manage private participation and competition in large ports.
- Ro-Ro, Lo-Lo and bulk cargo are the most important for Ireland's export sectors. The total tonnage handled by ports fell between 2008 and 2009 before recovering somewhat in recent years. The decline in total tonnage was driven by a fall off in Lo-Lo and bulk imports which has led to spare capacity in the market. Export levels have remained relatively constant.
- Ireland's four largest ports handle almost 80% of the island's tonnage and tend to specialise in handling specific cargo types due to their geographic location and proximity to bulk using industries. Dublin specialises in unitised cargo, Cork specialises in liquid bulk while Shannon Foynes specialises in dry bulk.
- Dublin Port's market share for unitised trade has been growing. Dublin Port has the scale and critical mass to justify investment in the supporting infrastructure for unitised trade and generates more operating profit than all the other ports in the State combined.
- The quality of the road and rail network can encourage demand-side substitution among port users, and substantial improvements have been made to the motorway network. The availability of frequent shipping services to and from destinations in Great Britain and transshipment hubs in Continental Europe is also a key determinant of demand-side substitution.
- Average vessel size has been steadily increasing and deep water ports like Cork and Shannon Foynes may benefit from their ability to handle larger vessels in the long-term.
- The Department of Transport, Tourism and Sport in Ireland and the European Union both favour a tiered approach to ports policy that focuses on maximising the performance of commercial ports to facilitate a more competitive and effective market for maritime transport services.

3. INTER-PORT COMPETITION

Introduction

3.1 If Irish ports are competing for cargo this will help to keep price and costs down, drive efficiency and service quality, all of which are key determinants of national competitiveness. Section 2 provided an overview of the environment that Irish ports are operating in and a backdrop to examining inter-port competition. This section:

- Describes how inter-port competition works;
- Outlines the benefits of inter-port competition and the factors that affect it; and
- Provides a detailed evaluation of inter-port competition for each cargo type based on meetings, stakeholder submissions to the public consultation, literature and quantitative analysis.

How inter-port competition works

3.2 Inter-port competition arises where ports in the same country, or in different countries, are rivals and compete for the same cargo and/or port users.

3.3 Rotterdam competes with Antwerp, Hamburg and Bremen for cargo destined for Central Europe while competition for transshipment container trade can involve large geographic regions¹²⁸. However within an Irish context, inter-port competition is confined to the island of Ireland. For example, Dublin and Belfast compete for Ro-Ro cargo; Waterford and Cork compete for Lo-Lo cargo while Shannon Foynes and Cork compete for dry bulk.

3.4 The level of competition between ports is dependent on a number of factors. These include the ability of port users to utilise another port, the bargaining power of port users and service providers and the threat of new entrants¹²⁹. For example, a shipping line could threaten to use Belfast instead of Dublin for handling Lo-Lo cargo or a specialised Ro-Ro port like Rosslare could develop new Lo-Lo handling services and compete with Dublin.

3.5 Thus the level of inter-port competition is determined by two main factors¹³⁰: demand-side substitution and supply-side substitution. These terms are explained as follows:

- (a) **Demand-side substitution:** Demand-side substitution refers to the degree to which port customers or users are able to switch between ports in response to changes in prices or levels of service (see **Figure 11** below). For example, a port might lower its charges to attract importers, exporters and shipping

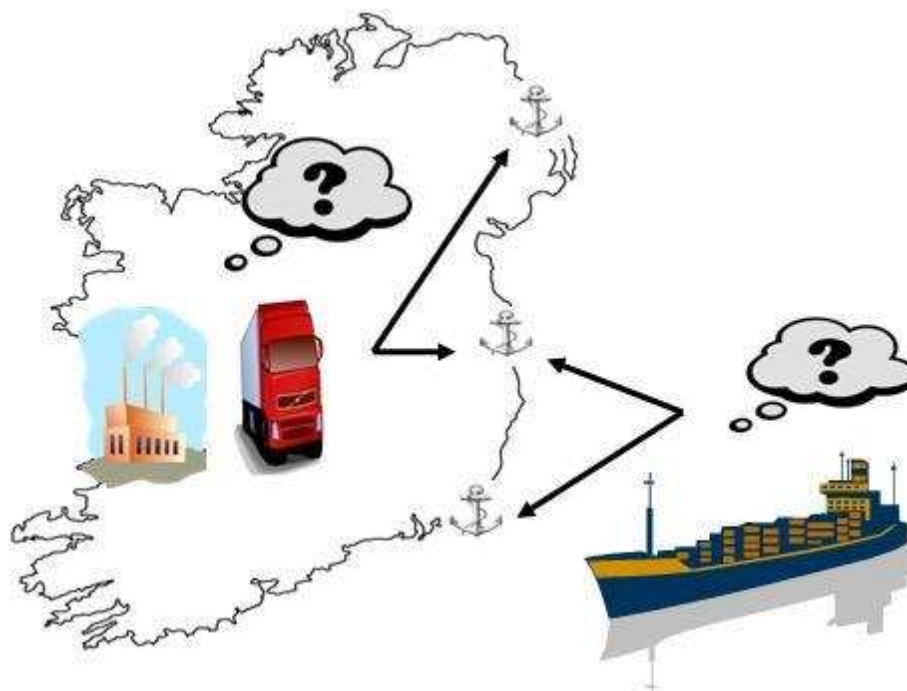
¹²⁸ In the South Asian region, Singapore competes with ports in Malaysia and the United Arab Emirates.

¹²⁹ World Bank (2007), "Module 2: The Evolution of Ports in a Competitive World." *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank, 2007.

¹³⁰ OFT (2010), *Infrastructure Ownership and Control Stock-take*. Final Report: Case Study Annexes.

lines, or facilitate more frequent sailings, provide deeper berths or more efficient cranes. Larger customers, particularly shipping lines, can also threaten to switch their business to another port unless charges are lowered or service quality is improved.

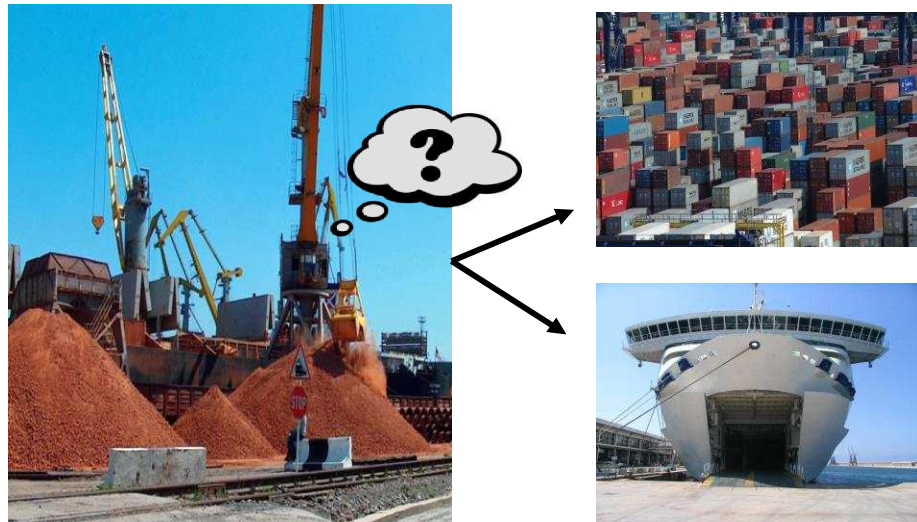
Figure 11: Demand-side substitution



Source: Company data, Competition Authority analysis

- (b) **Supply-side substitution:** Supply-side substitution relates to the extent to which existing ports can switch between different types of traffic. For example, a specialised bulk port may wish to enter the Lo-Lo or Ro-Ro markets (see **Figure 12** below). An important factor may also be the ability of a port to expand.

Figure 12: Supply-side substitution



Source: Company data, Competition Authority analysis

- 3.6 The factors that affect demand-side and supply-side substitution within the context of inter-port competition are described in paragraph 3.14 to 3.20 below.

The benefits of inter-port competition

- 3.7 The main benefits of inter-port competition are lower port charges and the provision of high quality, efficient port services.
- 3.8 If ports are rivals and competing for the same cargo, there is an incentive for port authorities and private service providers to keep port-related charges down and provide better and more efficient services. This helps to keep transport costs down which can have a significant influence on trade volumes. As noted earlier, it has been estimated that raising transport costs by 10% reduces trade volumes by more than 20%¹³¹. Indeed, it has been shown that transport costs can have the same effect as tariff and non-tariff barriers to trade¹³².
- 3.9 It is not uncommon for transport costs to account for 10% of the total cost of a product¹³³, though it has been estimated that on average

¹³¹ Limao, N., and Venables, A.J. (2000), "Infrastructure, Geographical Disadvantage and Transport Costs", *The World Bank Economic Review*, Volume 15(3), 451 - 479.

¹³² Clark, X., Dollar, D. and Micco, A. (2004), "Port Efficiency, Maritime Transport Costs, And Bilateral Trade," *Journal of Development Economics*, Volume 75, 417-450. A tariff is usually a tax on imports or exports. Non-tariff barriers to trade include import bans and quotas.

¹³³ Rodrigue, J.P. (2013), *The Geography of Transport Systems*. Third Edition. New York.

5%¹³⁴ of the value of imported merchandise is spent on freight and insurance costs relating to their international carriage¹³⁵. Transport and maritime costs are influenced by a range of factors including road haulage costs¹³⁶, ship travel time, ship size and cargo handling charges which makes calculating the port-specific cost element difficult. While it is likely that port-related charges account for 10% to 20% of total transport costs¹³⁷, the influence of these costs on trade means they should not be ignored by policymakers.

- 3.10 Inter-port competition also incentivises improvements in service quality and port efficiency. Port efficiency is found to be a key determinant of national competitiveness¹³⁸ that strongly influences transport costs¹³⁹.
- 3.11 Port efficiency can be defined as maximising port output relative to input levels¹⁴⁰. By improving efficiency, ports can provide a comparative advantage that will attract more cargo. To secure traffic flows, ports will seek to improve efficiency through a range of factors – i.e., by handling cargo more rapidly, providing more and better handling equipment, reducing berth times and delays, by enabling large storage capacity and ensuring good transport connections to the hinterland¹⁴¹. Thus, measurements of port efficiency include labour productivity, TEU¹⁴² lifts per hour and vessel turnaround times. Port efficiency measurements are outlined in more detail later in this section, in Section 4 and in **Appendix 4**.
- 3.12 While a port may impose higher charges if it can provide more efficient services, this may benefit port users if they achieve savings elsewhere. Efficient port services reduce the likelihood of delays and congestion that can result in enormous costs to shippers, exporters and the economy. These costs are significant compared to the sum of regular port-related charges such as dues on goods and vessels. It has been estimated that Nike must spend about \$4 million per week to carry an extra 7-to-14 days of inventory to compensate for shipping delays¹⁴³ and that a one-day delay can drive up costs on average by about

¹³⁴ This figure is an international average. Source: Sanchez, R.J. et al (2003), "Port Efficiency and International Trade", *Maritime Economics and Logistics*, Volume 5, Issue 2.

¹³⁵ This figure may be higher in Ireland due to its location as a sparsely populated island on the edge of Continental Europe.

¹³⁶ Road haulage costs are deemed to account for the largest percentage of transport costs (see paragraph 3.18 below).

¹³⁷ UNCTAD (2012), *Review of Maritime Transport*, Freight rates and Maritime Transport Costs, Chapter 3, New York and Geneva. Available from: <http://unctad.org>.

¹³⁸ Sanchez, R.J. et al (2003), "Port Efficiency and International Trade", *Maritime Economics and Logistics*, Volume 5, Issue 2.

¹³⁹ It has been found that doubling port efficiency in a pair of ports has the same impact on international transport costs as halving the distance between them would have. Source: Wilmsmeier, G., Hoffmann, J. and Sanchez, R.J. (2006), "The Impact of Port Characteristics on International Maritime Transport Costs", *Transportation Economics*, Volume 16, 117-140.

¹⁴⁰ Merk, O., Dang, T. (2012), "Efficiency of World Ports in Container and Bulk Cargo (Oil, Coal, Ores and Grain)", *OECD Regional Development Working Papers*, 2012/09, OECD Publishing.

¹⁴¹ The hinterland refers to the inland region lying behind a port.

¹⁴² TEU (Twenty Foot Equivalent Unit) is a measure used for capacity in container transportation.

¹⁴³ Isbell, J. (2006), "Maritime and Infrastructure Impact on Nike's Inbound Delivery Supply Chain". Presentation to the TRB Freight Roundtable, October 23. Available at: www.trb.org/conferences/FDM/Isbell.pdf.

0.8%¹⁴⁴. Research has also found that each extra day in transit has the effect of reducing trade volumes by about 1%¹⁴⁵. For exporters of perishable agricultural products, every additional day of delay can reduce trade volumes by 6%¹⁴⁶.

- 3.13 Apart from port charges and efficiency, a port authority may also try to gain an advantage over its rivals by providing the infrastructure to facilitate multi-port services including frequent shipping services, or services to emerging trade destinations. The growth of supply chain networks means it is often preferable for a port user to use a distant port instead of a closer one, provided that the former has better facilities and connections than the latter¹⁴⁷.

Factors that affect demand-side and supply-side substitution

Ports as natural monopolies

- 3.14 While there are a number of factors that influence demand-side and supply-side substitution – e.g., port charges, internal transport costs, potential for ports to expand – one of the most influential factors is the tendency for ports to display natural monopoly characteristics.
- 3.15 A natural monopoly exists where costs are minimised when the entire output of a sector is provided by one supplier. This occurs in sectors with high entry costs¹⁴⁸ where the largest supplier (often the first supplier) benefits from economies of scale¹⁴⁹ that give it a significant cost advantage over other actual or potential competitors. This creates a barrier to entry that allows the main supplier to exercise a considerable degree of market power. Market power can limit demand-side and supply-side substitution and lead to the provision of a lower level of service at a higher price than if the supplier was subject to competition.
- 3.16 It has been found that there is scope for some port authorities to exercise a degree of local market power and natural monopolies can arise particularly in small ports on islands where traffic is too limited to justify competing terminals¹⁵⁰.

Demand-side factors

- 3.17 Demand-side substitution refers to the degree to which port customers or users are able to switch between ports in response to changes in prices or levels of service.

¹⁴⁴ Hummels, D. (2001), "Time as a Trade Barrier", *GTAP Working Papers*, 1152, Centre for Global Trade Analysis, Purdue University.

¹⁴⁵ Djankov, S., Freund, C. and Pham, Cong S. (2006), "Trading on Time", *Policy Research Working Paper 3909*, Washington DC: World Bank.

¹⁴⁶ Ibid.

¹⁴⁷ Trujillo, L. and Nombela, G. (2000), Chapter 4 in Estache, A. and De Rus, G. (2000), "Privatisation and Regulation of Transport Infrastructure: Guidelines for Policymakers and Regulators", *World Bank Development Studies*, Washington DC: World Bank.

¹⁴⁸ Other examples include electricity wires, gas pipelines, railway tracks and major airports.

¹⁴⁹ Economies of scale refer to the reduction in costs that occur as the scale of a firm's output is increased.

¹⁵⁰ Defilippi, E. (2010), "Access Regulation for Naturally Monopolistic Port Terminals: Lessons from Regulated Network Industries". Doctoral Thesis, Erasmus Research Institute of Management.

3.18 Influenced by the growth of supply chain networks, port and route selection are related to the entire transport network in which the port is just one link. Therefore, when deciding what port to use, an importer, exporter, freight-forwarder or shipping line will examine the total cost of transporting cargo from A to B. In doing so, they will consider a combination of factors including¹⁵¹:

- **Port charges:** As noted previously, it has been estimated that cargo handling charges accounts for the largest percentage of the total cost of moving goods through ports¹⁵². Therefore, while charges levied by port authorities (i.e., vessel and cargo dues) are not irrelevant, cargo handling charges are likely to have a greater influence on port selection. These charges, like other demand-side factors, are influenced by the level of intra-port competition in a port.
- **Final on-land destination:** Even if a port's charges are competitively priced, the final on-land destination (or point of origin) will have an impact on port selection. This is because 'land miles' or haulage costs (i.e., transport cost per tonne per unit of distance) are more costly than 'sea miles', especially for bulky goods¹⁵³. It has been estimated that land miles account for between 40% and 80% of total transport costs for container shipment¹⁵⁴. The quality of road and rail infrastructure linking a port and the final on-land destination also influence port selection¹⁵⁵.
- **Service frequency and port efficiency:** The demand for 'just-in-time' delivery means high frequency services provided by competing cargo handlers and shipping lines increasingly determines port selection. The risk and subsequent cost associated with infrequent and unreliable shipping services is likely to outweigh the combined cost of port charges and on-land transport costs. For this reason, ensuring that ports are efficient and congestion-free is especially important¹⁵⁶.
- **Port facilities and destination of shipping services:** The facilities available at a port (e.g., whether there is the necessary water depth, cargo handling equipment or warehousing facilities for central distribution¹⁵⁷) and the destination of shipping services and their ability to connect with transshipment hubs also

¹⁵¹ These factors are based on meetings, stakeholder submissions and economic literature.

¹⁵² See Section 2 for more information (paragraph 2.11).

¹⁵³ OFT (2010). See footnote 130 for full reference. This is confirmed by the fact that in Ireland Lo-Lo container vessels may call to Dublin first, followed by Cork and Waterford or vice versa.

¹⁵⁴ Notteboom, T. and Rodrigue, J.P. (2005), "Port Regionalization: Towards a New Phase in Port Development", *Maritime Policy and Management*, Volume 32, No. 3, 297-313.

¹⁵⁵ Wilmsmeier, G., Hoffmann, J. and Sanchez, R.J (2006), "The Impact of Port Characteristics on International Maritime Transport Costs", *Transportation Economics*, Volume 16, 117-140.

¹⁵⁶ Ibid.

¹⁵⁷ The growth of "port-centric logistics" where large importers or exporters construct or use warehousing or central distribution facilities in or next to a port can increase the level of "captive" cargo and limit inter-port competition. Reference: Mangan, J. and Fynes, B. (2008), "Port-Centric Logistics", *The International Journal of Logistics Management*, Volume 19(1), 29-41.

influence port selection. Vertical integration – e.g., where a container terminal operator owns a shipping company – may also influence port selection, though this is likely to have a greater impact on intra-port competition¹⁵⁸.

Supply-side factors

3.19 Supply-side substitution relates to the extent to which existing ports can switch between different types of cargo. An important factor may also be the ability of a port to expand. Of lesser importance, due to the limited number of possible sites for ports, is the ease with which new ports can enter the market.

3.20 When deciding whether to provide new cargo services or expand, a port will consider the following factors¹⁵⁹:

- **Port location:** Many ports have a natural competitive advantage for the provision of specific cargo services due to their location and connectivity. This means ports often specialise in one cargo type which makes switching difficult. A Lo-Lo focused port will benefit from being located next to a large urban and commercial centre meaning it will have the critical mass to justify investment in Lo-Lo handling equipment. A Ro-Ro focused port will benefit from being located next to the shortest sea-crossings, while a bulk port will benefit from being next to bulk using industries. Indeed, port services are regarded as being a derived demand¹⁶⁰ that ultimately depends on providing cargo services that the hinterland demands¹⁶¹.
- **Ability to expand:** Port authorities may wish to expand their services to compete with other ports, but there are factors that could prevent this. A port may not have the space or natural water depth to expand its operations and cater for more or larger vessels. Other factors that can hinder expansion include problems getting a foreshore licence¹⁶², planning permission and the ability of a port to raise the necessary capital to invest in port infrastructure. The ability of a port to expand directly influences port capacity which as described in Section 2 (paragraph 2.42 to 2.46), is a key determinant of inter-port and intra-port competition.

¹⁵⁸ See Section 4 for more information (paragraph 4.35 to 4.36 and paragraph 4.66).

¹⁵⁹ These factors are based on meetings, stakeholder submissions and economic literature.

¹⁶⁰ Derived demand occurs where the demand for a product or service is dependent on there being a demand for some other product or service.

¹⁶¹ Source: OECD (2011), *Competition in Ports and Port services*. OECD Competition Committee Roundtable Discussion.

¹⁶² The foreshore is the part of a shore between the water and occupied or cultivated land. All the foreshore of Ireland is presumed state-owned unless a valid alternative title is provided. A lease must be issued by the Department of Environment, Community and Local Government (DECLG) for a development that requires exclusive occupation of the foreshore. Developments requiring a lease include: jetties, bridges, piers, marinas, offshore wind farms and reclamation of any foreshore. A licence is issued by the DECLG for development that does not require exclusive occupation of the foreshore. Examples include: repair work, some coastal protection work, undersea pipelines, cables, site investigation works and dredging works.

Evaluating inter-port competition in Irish ports sector

- 3.21 The following presents an evaluation of inter-port competition in Ireland for each of the three main cargo categories. It combines the information presented in Section 2 with the factors that influence demand-side and supply-side substitution. The evaluation draws on meetings, submissions to the public consultation, international literature and quantitative analysis.
- 3.22 Our public consultation stated that: *"...our meetings and analysis suggests there is some inter-port competition for niche products¹⁶³, and in some instances for Ro-Ro, Lo-Lo and bulk trade; however, most ports seem to operate as natural monopolies and the level of inter-port competition is limited. Dublin is in a naturally strong position and the competitive threat from other ports is limited..."*
- 3.23 This position has not changed. While some submissions felt that we were being overly negative regarding the scope for inter-port competition, the responses to the consultation largely agreed with our view that the scope for demand-side and supply-side substitution appears low. Indeed the economic literature broadly indicates that there are a number of factors that can restrict inter-port competition including the specialised and often deterministic nature of demand for the services of certain ports¹⁶⁴, hinterland size¹⁶⁵, switching costs¹⁶⁶, relationships between shipping companies and ports and capacity¹⁶⁷.
- 3.24 We begin our evaluation of inter-port competition by providing some quantitative analysis that examines port charges and efficiency levels in Irish ports. We then analyse the level of inter-port competition for each cargo category (Ro-Ro, Lo-Lo and bulk).

Quantitative analysis of inter-port competition

- 3.25 A cross-comparison of port charges and efficiency, both nationally and internationally, can provide an indication of the competitive environment that ports are operating in. While high port charges may reflect added value in the form of more efficient services, a combination of high charges and inefficient services can indicate that inter-port competition is limited.
- 3.26 Some submissions requested that our assessment of inter-port and intra-port competition should include more analysis of port charges and port efficiency¹⁶⁸. In response, the Competition Authority sent Requests for Information (RFIs) to Irish port companies and port service providers regarding charges and measurements of efficiency. We also reviewed existing national and international analysis of port efficiency

¹⁶³ For example wind turbines and mining products.

¹⁶⁴ Fleming, D.K. and Baird, A.J. (1999), "Some Comments on Port Competition in the United States and Western Europe", *Maritime Policy & Management*, Volume 26, 1999.

¹⁶⁵ Ibid.

¹⁶⁶ Hesse, M. and Rodrigue, J.P. (2004), "The Transport Logistics of Geography of Logistics and Freight Distribution", *Journal of Transport Geography*, Volume 12, 2004.

¹⁶⁷ D'este, G.M. and Meyrick, S. (1992), "Carrier Selection in the Ro-Ro Ferry Trade", *Maritime Policy and Management*, Volume 19, 1992.

¹⁶⁸ Submissions from Chartered Institute of Logistics and Transport (CILT) and Forfás/IDA/Enterprise Ireland.

and describe the level of market concentration in the ports sector. The outcome from these sources is analysed separately.

- 3.27 It is important to note that cross-comparison analysis in the ports sector is extremely challenging. There is no “catch-all” benchmark to facilitate cross-comparison as no two ports are the same regarding size, area and product specialisation. This challenge is recognised nationally¹⁶⁹ and internationally¹⁷⁰. As a result, we do not try to use the data gathered from the RFI to compare absolute charges or efficiency. Instead the focus of the RFI data analysis is to capture general trends by examining the performance of each port against its previous year performance. This approach has been adopted in Australia and New Zealand¹⁷¹. However, we do reference some national and international studies that cross-compare port charges and the efficiency of Irish ports relative to other domestic and international ports.
- 3.28 While the data gathered through the RFIs provide some indication of competition in the Irish ports sector, the scope of this analysis is limited and is used only to complement input from meetings with industry experts, stakeholder submissions to the public consultation and relevant economic literature.

Port charges

- 3.29 **Figure 13** below illustrates the average port charge growth rate using data from Dublin, Cork, Shannon Foynes, Waterford, Belfast and Rosslare. The analysis for all charges in this study focuses on the Compound Annual Growth Rate (CAGR) over a five year period¹⁷².
- 3.30 There are two main categories of port charges: vessel dues and good dues¹⁷³. Port authorities levy most vessel dues and good dues. However cargo handling charges, a category of goods dues that account for the largest percentage of the total cost of moving goods through a port, are levied by private service providers in most Irish ports.
- 3.31 Vessel dues include ‘tonnage dues’ and ‘other charges’¹⁷⁴. These charges are levied by port authorities and have increased on average by 0.7% and 1.3% per annum since 2008. Port authorities also levy

¹⁶⁹ The IMDO previously carried out a feasibility and scoping study on port benchmarking for the Department of Transport, Tourism and Sport. It found that there are many performance indicators and analytical tools available; however, the main problem is the diversity within the Irish ports in terms of physical nature and operational scale.

¹⁷⁰ The EU Commission has started looking at this issue with a view to producing comparable EU port performance indicators. A series of indicative indicators have been produced under the EU PPRISM project (Port Performance Indicators: Selection and Measurement), but the task of compiling, adjusting and maintaining the data is proving very challenging and is not complete.

¹⁷¹ Instead of focusing on cross-country comparison, the Australian Bureau of Infrastructure, Transport and Regional Economics (BITRE) sources data from port operators which allows them to assess port productivity benchmarked against their own performance from the previous period. A similar approach was adopted by the Ministry of Transport in New Zealand. Examples of port performance measures used by the BITRE are outlined in Appendix 4.

¹⁷² Not all respondents were able to provide data for precisely the same period. To address this, the port charges were evaluated by their compound annual growth rate, rather than absolute percentage changes over the periods provided by each respondent. As such, the growth rates shown should be seen as general indicators of pricing trends.

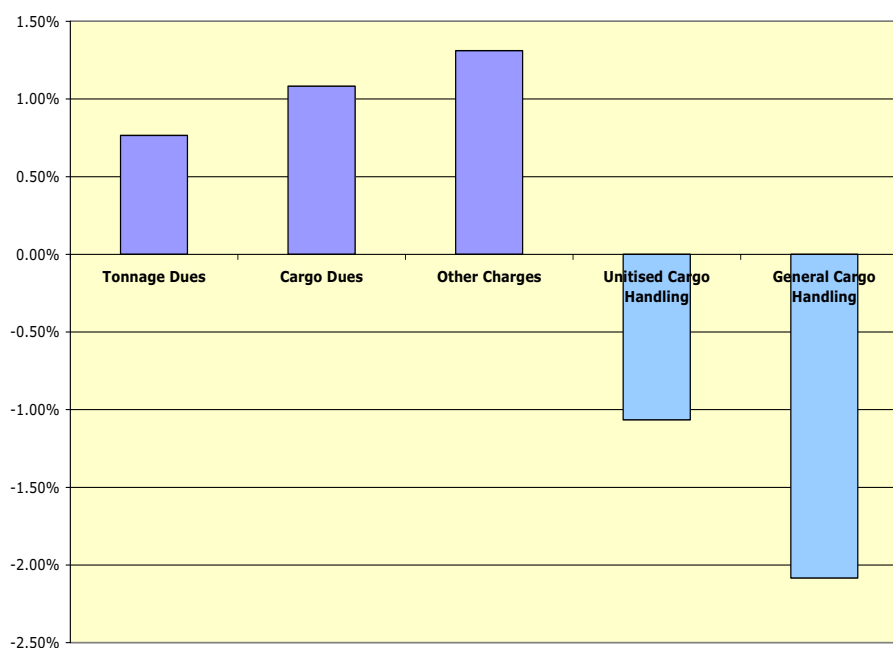
¹⁷³ See Section 2 (paragraph 2.8 to 2.12) for more information on vessel dues and goods dues.

¹⁷⁴ ‘Other charges’ include pilotage dues, pilot launch fees, towage dues and container service charges.

'cargo dues', a form of good dues, and these have increased by 1% on average per annum between 2008 and 2013. While these rates are slightly lower than the Consumer Price Index (CPI) rates for the same period, some stakeholder submissions stated that port authorities should lower their charges to mirror falling profit margins in the maritime sector. Their reluctance to do so may indicate that ports do not compete on the basis of charges levied by port authorities, though it should be noted that there is no guarantee that shipping lines will pass any savings from lower goods dues or vessel dues on to cargo owners.

- 3.32 Our analysis of cargo handling charges levied by private operators found that 'unitised cargo handling' charges fell by 1.1% per annum¹⁷⁵, while charges for 'general cargo handling' fell by 2.1% per annum since 2008¹⁷⁶. This may indicate that ports are more likely to compete with one another in terms of cargo handling charges, though it is likely that cargo handling charges are also influenced by capacity and/or the level of intra-port competition within the ports.

Figure 13: Annual growth rate of port charges, 2008-2013



Source: Port authorities, stevedores service providers and Competition Authority analysis

¹⁷⁵ This figure is based on data from two Lo-Lo terminal operators and a stevedore operating in Dublin Port. Many Ro-Ro operators employ their own stevedore labour which makes a cross-comparison of handling charges more difficult.

¹⁷⁶ We collected 'General Cargo Handling' data for Dublin, Cork, Shannon, Belfast and Waterford from seven different stevedore service providers.

Port efficiency

- 3.33 The RFIs requested that port authorities and private cargo handlers provide us with any efficiency tracking data, metrics or reports that they have¹⁷⁷. We received some data, though many port authorities and private cargo handlers informed us that they do not routinely collect efficiency data. Moreover, the data we did receive through the RFI is not robust or reliable enough to cross-compare port performance, though it can be used to identify trends within individual ports and cargo handling facilities. An improvement in efficiency can signal that a port is trying to gain a competitive advantage over a rival port.
- 3.34 Data provided by Dublin Port Company and Shannon Foynes Port Company through the RFI indicates that cargo handlers in Dublin and Shannon have become more efficient by increasing labour efficiency, crane efficiency and by reducing turnaround times for trucks and vessels. The IMDO also produce a port efficiency measurement based on turnover per employee¹⁷⁸. While measurements based on turnover are limited¹⁷⁹, it implies that efficiency per employee within Irish ports has been growing, with Dublin being the most efficient. Like port charges, it is also unclear the extent to which port efficiency is influenced by intra-port competition as opposed to inter-port competition.
- 3.35 While the above suggests that Irish port efficiency is growing, international literature indicates there is room for improvement. One study found that port efficiency in Ireland is behind international best practice¹⁸⁰, while another study found that aspects of port infrastructure in Dublin were 10% to 35% less efficient than the most efficient port benchmarked¹⁸¹.

Market concentration

- 3.36 As noted already, Ireland's ports tend to specialise in handling specific types of cargo and unitised trade in particular is becoming increasingly concentrated in Dublin Port¹⁸².
- 3.37 A concentrated market is one with a small numbers of firms with a large market share, and an unconcentrated market is one with a large number of firms with a small market share. If the Irish ports sector is becoming more concentrated, the market power of major ports like Dublin, Cork and Shannon Foynes is likely to increase which can limit the scope for inter-port competition.

¹⁷⁷ There are a number of ways to measure efficiency. These include measures of labour efficiency (i.e., turnover per employee), crane efficiency (i.e., TEU lifts per hour), vessel turnaround times and truck waiting times. More examples of port efficiency measures are outlined in Appendix 4.

¹⁷⁸ IMDO (2012), *Review of Port Financial Accounts*. Available from: www.imdo.ie.

¹⁷⁹ An employee working in a large unitised port is likely to generate more turnover than an employee in smaller bulk port even though the employee in the small port might be maximising port output relative to input levels.

¹⁸⁰ Clark, X., Dollar, D. and Micco, A. (2004), See footnote 132 for full reference.

¹⁸¹ Herrera, S. and Pang, G. (2008), "Efficiency of Infrastructure: The Case of Container Ports", *Economia*, 2008, Volume 9(1), 165-194.

¹⁸² See Section 2 for more information (paragraph 2.47 to 2.53).

- 3.38 The *Herfindahl-Hirschmann Index* (HHI) is used to describe market concentration. This index is used by the Competition Authority to help assess the effects of a merger on competition and can be applied to examine how market concentration in the Irish ports sector has changed over a period of time.
- 3.39 The HHI is calculated by adding the sum of the squares of the market share of each competitor. Together, the level and the change of the HHI are used to form a threshold of market concentration. In this case, we examine the change in the level of market concentration for each cargo category between 2005 and 2012 on an all-island basis. The results are outlined in **Table 4** below.
- 3.40 The thresholds of market concentration indicate that any HHI above 1800 indicates that the market is highly concentrated¹⁸³. In this case, the market concentration for all cargo types is between 2,269 and 3,993.

Table 4: HHI Index for the Irish ports sector

	2005	2012	Change
Ro-Ro	2,432	2,932	500
Lo-Lo	2,878	3,993	1,115
Liquid Bulk	2,377	2,269	-108
Dry Bulk	2,430	2,444	14

Source: Competition Authority analysis

- 3.41 While the HHI index for liquid bulk and dry bulk changed little between 2005 and 2012, the unitised market is becoming more concentrated. Any change greater than 100 indicates that the market is becoming more concentrated and is likely to affect competition in the market¹⁸⁴. The level of Ro-Ro and Lo-Lo concentration increased by 500 and 1,115 between 2005 and 2012 respectively. This level of market concentration is likely to limit competition between ports in Ireland.

Competition Authority evaluation

Lo-Lo analysis

- 3.42 Compared to Ro-Ro and bulk cargo, there is more economic literature that examines competition for Lo-Lo cargo. It indicates that containerisation, vessel size, and supply chain networks all influence inter-port competition. Containerisation resulted in ports becoming closer substitutes, larger vessels reduced shipping lines' dependence on particular ports, and the growth of supply chain networks meant ports were selected to minimise total transport costs¹⁸⁵. These developments, in addition to improvements in road and rail infrastructure, have led to

¹⁸³ Competition Authority (2002), *Guidelines for Merger Analysis*, Decision No. N/02/004. Available from: www.tca.ie.

¹⁸⁴ Ibid.

¹⁸⁵ See Section 2 (paragraph 2.80 to 2.83).

container shipping lines becoming more flexible regarding port selection¹⁸⁶.

- 3.43 In theory, this means that Lo-Lo ports in the same region have become closer substitutes and more exposed to inter-port competition. This has certainly been the case in Continental Europe where there is vigorous competition between Antwerp, Zeebrugge, Rotterdam, Bremerhaven and Hamburg¹⁸⁷. These ports all face on to the North Sea, are within eight hours driving time of each other¹⁸⁸ and between them handled approximately 43% of Lo-Lo containers in the EU in 2010¹⁸⁹. Rotterdam, Hamburg and Antwerp are also among the world's busiest transshipment ports.
- 3.44 However, the level of competition between Lo-Lo ports in Ireland is not as vigorous compared to Continental Europe. While the barriers to entry in terms of installing Lo-Lo handling equipment and infrastructure are not overly restrictive¹⁹⁰, the requirement for concentration of population and industry to create the necessary scale to sustain multiple competing Lo-Lo ports - particularly ports with competing terminals - acts as a significant barrier to entry. Ireland is also on the edge of the European transport network which limits the scope for transit traffic and transshipment.
- 3.45 Lo-Lo service users including exporters, importers and freight-forwarders value the level of choice and frequency available at larger ports. Container shipping lines also value large scale Lo-Lo facilities. Studies on port selection show that local cargo volumes and market size are among the most important selection criteria¹⁹¹ as shipping lines seek to minimise costs by using bigger vessels and larger more efficient cranes¹⁹². It was reported that container shipping lines are even more likely to use larger ports during recessionary periods¹⁹³.
- 3.46 Consequently, service users increasingly use Ireland's three largest Lo-Lo ports: Dublin, Belfast and Cork. In 2012, these three ports handled 95% of the island's Lo-Lo cargo compared to 77% in 2005¹⁹⁴. This increase in market concentration has come at the expense of smaller ports that cannot offer comparable levels of scale, choice and

¹⁸⁶ OECD (2008), *Port Competition and Hinterland Connections*. Discussion paper No. 2008 – 19.

¹⁸⁷ ITTMA (2009), *Economic analysis of the European seaport system*. Report serving as input for discussion on the TEN-T policy.

¹⁸⁸ It would take approximately eight hours to drive between the most westerly port (Zeebrugge) and the most easterly port (Hamburg).

¹⁸⁹ Information sourced from Eurostat:
http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=mar_mg_am_pvh&lang=en

¹⁹⁰ While bulk cranes can be equipped to handle Lo-Lo containers relatively cheaply, the cost of constructing more efficient fixed gantry cranes that are typically found in medium and large sized Lo-Lo ports is more expensive and can act as a barrier to entry.

¹⁹¹ Chang, Y., Lee, S. and Tongzon, J. (2008), "Port Selection Factors by Shipping Lines: Different Perspectives between Trunk Liners and Feeder Service Providers", *Marine Policy*, Volume 32, 877-885.

¹⁹² Asteris, M. and Collins, A. (2010), "UK Container Port Investment and Competition: Impediments to the Market", *Transport Review*, Volume 30(2), 163-178.

¹⁹³ It is more efficient to empty/load a container vessel in a large port rather than calling to a number of small ports with limited throughput. Therefore, during a recession a container vessel is more likely to call to one large port where there is a high level of throughput.

¹⁹⁴ See Table 3 in Section 2 for more information.

frequency¹⁹⁵. Between 2005 and 2012, Waterford saw its market share fall from 13% to 4%¹⁹⁶ while Warrenpoint saw its share fall from 4% to 2%. In 2007, Shannon Foynes discontinued their Lo-Lo services due to insufficient throughput¹⁹⁷.

- 3.47 The location of Dublin Port, Belfast Harbour and the Port of Cork next to Ireland's largest population, industrial and commercial centres¹⁹⁸ means that they are assured a higher level of Lo-Lo throughput compared to ports in other locations. Dublin's market share has been growing the fastest and it now handles 57% of Ireland's Lo-Lo cargo¹⁹⁹. This equates to approximately 425,000 TEUs per annum, some 121,000 TEUs more than Belfast and Cork combined²⁰⁰. Since ports' traffic volumes are proportional to the demands of their respective hinterlands, this is largely a reflection of Dublin Port's location within the Greater Dublin Area (GDA)²⁰¹.
- 3.48 As a result, Dublin Port has a greater capacity to facilitate independent terminals. Research indicates that only ports handling 100,000 TEUs or more can facilitate competing terminals²⁰²; however this figure should be treated with some caution and is discussed in more detail in Section 4²⁰³. Dublin has three Lo-Lo terminals²⁰⁴ and also provides Con-Ro services to the Continent. Belfast currently has two terminals²⁰⁵ (though they are currently proposing to consolidate their two terminals into one²⁰⁶) while Cork does not have competing terminals. This means Dublin can provide more choice and service frequency relative to other large ports. It also shows that the level of intra-port competition is a key determinant of inter-port competition.
- 3.49 While the lack of information on the origin and destination of cargo limits the ability to analyse the potential for competition between ports, it has been reported that there is some inter-port competition, particularly for customers located within equal distance of two Lo-Lo ports. However, the likelihood that a GDA-based port user will use another Lo-Lo port appears slim. A switch is unlikely to lower the total cost of transport for a GDA-based user; Dublin Port offers the most choice and frequency of Lo-Lo services including Con-Ro and it is likely

¹⁹⁵ See Section 2 (paragraph 2.69 to 2.74).

¹⁹⁶ CLdN-Cobelfret moved their Con-Ro services from Waterford to Dublin Port during this period.

¹⁹⁷ Submission from Shannon Foynes.

¹⁹⁸ Dublin, Cork and Belfast are the three largest cities in Ireland.

¹⁹⁹ Dublin's market share has grown by 10 percentage points since 2005, Cork's has grown by 5% while Belfast's grew by 3%.

²⁰⁰ In 2012, Belfast handled 165,000 loaded TEUs while Cork handled 139,000 TEUs. Source: IMDO (2013), *Irish Maritime Transport Economist*, Volume 10. Available from: www.imdo.ie.

²⁰¹ Due to the population and value of output generated in the GDA, a large percentage of the imports coming into Dublin Port are destined for areas around the M50. See paragraph 3.55 for more information.

²⁰² Trujillo and Nombella (2000). See footnote 147 for full reference. This issue is discussed in more detail in Section 4.

²⁰³ See Section 4 (paragraph 4.52 to 4.58).

²⁰⁴ Dublin Ferry Port Terminals (operated by Irish Continental Group), Marine Terminals Ltd (operated by Peel Ports) and Burke Shipping Group (BSG).

²⁰⁵ Belfast Container Terminals (operated by Irish Continental Group) and VT3 (operated by Peel Ports).

²⁰⁶ See Section 4 for more information (paragraph 4.28).

that the additional haulage costs would override the benefits from lower port charges and/or more efficient services at other ports. Moreover, most container shipping lines that call to other ports including Belfast and Cork also call to Dublin, while two Lo-Lo terminal operators in Belfast also provide container services from Dublin Port²⁰⁷.

- 3.50 While port users will usually seek to use the closest port to minimise haulage costs, it is more likely that port users located in Northern Ireland, the Southwest or the Southeast will use Dublin Port to reduce the total cost of transport. For example, an exporter in Cork may wish to avail of Lo-Lo services to the Mediterranean that are only available from Dublin. The improvement in motorway infrastructure has also increased the likelihood that Lo-Lo cargo will shift from smaller ports to larger ports (e.g., from Waterford to Dublin).
- 3.51 Most of the quantitative analysis presented in this section is Lo-Lo focused. It found that unitised cargo handling charges levied by Lo-Lo terminal operators in Dublin Port have been falling and efficiency levels have improved. While this could suggest that there is some inter-port competition between Lo-Lo ports, the above analysis indicates that it is more likely that these trends have been driven by intra-port competition rather than inter-port competition.

Summary of inter-port competition: Lo-Lo

- Compared to Continental Europe, Ireland does not have the concentration of population and industry to sustain a number of vigorously competing Lo-Lo ports – particularly ports with competing terminals. Ireland is also on the edge of the European transport network which limits the scope for transit traffic and transshipment.
- Lo-Lo service users and container shipping lines value the level of choice and frequency available at larger ports like Dublin, Belfast and Cork. Due to its high level of throughput, Dublin can provide more even choice, frequency and connections to transshipment hubs compared to other Irish ports. This provides Dublin with a strong competitive advantage and makes it increasingly difficult for existing or potential entrants to compete.
- While there is some competition between ports, particularly for customers located within equal distance of two Lo-Lo ports, the likelihood that a GDA-based port user will switch to another port is slim. It is more likely that users of Cork, Belfast or Waterford will shift their business to Dublin in order to lower total transport costs.

²⁰⁷ Dublin Ferry Port Terminals and Belfast Container Terminals are both operated by Irish Continental Group while Marine Terminals Ltd in Dublin and VT3 in Belfast are both operated by Peel Ports.

Ro-Ro analysis

- 3.52 The Ro-Ro market is becoming increasingly concentrated in large ports. Dublin and Belfast combined increased their share of Ro-Ro cargo from 56% to 71% between 2005 and 2012²⁰⁸. Warrenpoint's share also increased from 6% to 8%, though Larne's share fell from 23% to 13% and Rosslare's fell from 13% to 8% during the same period. Dún Laoghaire's share has fallen slightly and now accounts for less than 1% of the market.
- 3.53 Ro-Ro trade is concentrated on the East Coast, from Larne in the North to Rosslare in the South (see **Figure 5** in Section 2). This is the natural location for Ro-Ro ports. Northern Ireland, the GDA and the Southeast are well populated²⁰⁹ and located next to the shortest sea-crossings to Continental Europe and Great Britain²¹⁰. Consequently there is strong demand for Ro-Ro cargo services on the East Coast. While the barriers to entry in terms of port infrastructure are typically low²¹¹, the time-sensitive nature of Ro-Ro and the high cost of haulage limit the potential for ports like Cork and Shannon Foynes on the Southern and Western Coast to expand and compete for Ro-Ro²¹².
- 3.54 The level of inter-port competition between ports on the East Coast is also limited. The prevailing view from stakeholder submissions is that Ro-Ro ports, like other ports, largely service different markets and traffic volumes that are proportional to the demands of their respective hinterlands²¹³. A port user in Northern Ireland will typically use a Northern Ireland port, while a port user located close to the M50 will use Dublin Port to minimise haulage costs²¹⁴. Indeed, the market share of Ro-Ro ports is broadly reflective of the population and the commercial capacity of the regions that they are situated in²¹⁵.
- 3.55 In Dublin Port's case, due to the population and value of output generated in the GDA²¹⁶, a large percentage of the imports coming into Dublin Port are destined for areas around the M50; similarly, many Ro-

²⁰⁸ Dublin's market share of Ro-Ro cargo on an all-island basis increased from 36% to 43% while Belfast's share increased from 20% to 28% between 2005 and 2012.

²⁰⁹ The GDA and Northern Ireland each have a population of approximately 1.8m people while the Southeast has a population of about 0.5m people. Combined these regions make up about 65% of total population of the island of Ireland.

²¹⁰ Great Britain is the main destination for Irish Ro-Ro exports.

²¹¹ A Ro-Ro ramp is relatively cheap to construct compared to a fixed Lo-Lo gantry crane.

²¹² Shannon Foynes's submission stated its location on Ireland's West Coast precludes it from handling Ro-Ro cargo.

²¹³ Submissions from the Chartered Institute of Transport and Logistics (CILT) and Dublin Port Company (DPC).

²¹⁴ Meetings and conversations with ports and port users in Northern Ireland suggested that importers or exporters in Northern Ireland will usually use a port in Northern Ireland while an importer or exporter in the Republic of Ireland will usually use a port in the State. Haulier preference can also play an important role in port selection.

²¹⁵ In 2012 Dublin port handled 43% of the islands Ro-Ro cargo while the ports in Northern Ireland handled 49%. The GDA and Northern Ireland each have a population of approximately 1.8m people with large commercial centres.

²¹⁶ The GDA accounts for over 40% of the population of the Republic of Ireland while Dublin and the Mid-East regions combined accounted for 50% of Gross Value Added (GVA). Source: CSO (2013), *County Incomes and Regional GDP*. Available from: www.cso.ie.

Ro exports are sourced around the M50²¹⁷. This means the competitive threat to Dublin from Rosslare and ports in Northern Ireland is limited because land transport costs are likely to override potential benefits from lower port charges or more efficient services. Moreover, Dún Laoghaire is not regarded as a major competitor for freight traffic²¹⁸.

- 3.56 The lack of information regarding the origin and destination of cargo again limits our ability to analyse the potential for competition between ports on the East Coast. There appears to be scope for demand-side substitution for Ro-Ro users, particularly those that are located within equal distance of the two ports. Rosslare views Dublin Port as its biggest competitor²¹⁹, while Warrenpoint stated that a portion of its cargo has its source or destination in the State²²⁰. Moreover, since port selection is largely focused on minimising total transport costs, an exporter in the Midlands may find it cheaper to use Belfast or Dublin instead of Rosslare if the cargo's final destination is in Northern England.
- 3.57 Port users may also decide against using the nearest port and still save on transport costs due to Working Time Directives²²¹, rail connections, weather conditions or other unique aspects associated with a particular port. For example, Rosslare provides more frequent Ro-Ro services to Continental Europe vis-à-vis other ports, and it is the only port that currently facilitates ferries that cater for live export trucks²²².
- 3.58 However, leaving these examples aside, the demand and subsequent supply of port infrastructure (e.g., Ro-Ro ramps) that can facilitate frequent, high quality Ro-Ro cargo services has placed large ports like Dublin and Belfast in a strong competitive position compared to smaller ports like Rosslare, Larne and Warrenpoint²²³. Service frequency is very important for Ro-Ro, and both Dublin and Belfast can offer a higher level of frequency vis-à-vis smaller ports²²⁴. In the case of Dublin, improvements in the road and rail network, particularly the Dublin Port Tunnel, has expanded the port's hinterland and thus its competitive position. Like Lo-Lo, the facilitation of intra-port competition is a key determinant of inter-port competition.

²¹⁷ Department of Transport (2005), *Ports Policy Statement*. This statement suggests that between 40% and 50% of the goods coming through Dublin Port are destined for areas falling within the M50 ring. Furthermore, this proportion increases to approximately 75% within an 80 km radius of the city.

²¹⁸ In their submission to the public consultation, Dún Laoghaire Harbour Company stated that they do not view themselves as a major competitor to Dublin for freight traffic. They cannot handle large Ro-Ro vessels like the Irish Ferries *Ulysses* or the *Stena Adventurer* or unaccompanied Ro-Ro service such as those operated by Seatruck. However, they feel that they can compete with Dublin for passenger and cruise services.

²¹⁹ Submission from Rosslare Europort.

²²⁰ Submission from Warrenpoint Harbour.

²²¹ An exporter or importer may choose to use the longer ferry crossing as this counts as rest time for a driver.

²²² The export of livestock in trucks is facilitated on Celtic Link ferry services to France.

²²³ Many submissions including Dublin Port Company (DPC) and the Chartered Institute of Logistics and Transport (CILT) mentioned that the competitiveness of a Ro-Ro port is largely determined by the level of competition between the shipping lines.

²²⁴ See Section 2 for more information on service frequency (paragraph 2.62 to 2.68).

- 3.59 The result is that frequent users of Ro-Ro services at Dublin Port or Belfast are unlikely to shift their business to a smaller port, though it is more likely that the opposite will happen – i.e., a frequent user of Rosslare will shift their business to Dublin or a frequent user of Larne will shift their business to Belfast. Indeed as noted above, Rosslare and Larne have seen their market shares fall since 2005 while Dublin and Belfast have seen their market share increase.
- 3.60 Our quantitative analysis of port charges and efficiency is not particularly useful for Ro-Ro since most of the data and literature focuses on the Lo-Lo sector. Many Ro-Ro operators also employ their own stevedore labour, which makes a cross-comparison of handling charges even more challenging.

Summary of inter-port competition: Ro-Ro

- Competition for Ro-Ro services is limited to ports on the East Coast. The region is well populated and located next to the shortest sea-crossings to Great Britain.
- The competitiveness of a Ro-Ro port is largely determined by the level of competition between ferry companies. The supply of frequent high quality Ro-Ro ferry services and good internal connectivity has placed Dublin and Belfast in a strong competitive position vis-à-vis other Irish ports.
- Ro-Ro service users will usually seek to use the nearest port to minimise haulage costs. While some inter-port competition exists, the concentration of Ro-Ro service users within the GDA and in Northern Ireland means that other ports find it difficult to place significant competitive pressure on Dublin and Belfast. Larger ports are increasingly likely to attract business away from smaller Ro-Ro ports than vice-versa.

Bulk analysis

- 3.61 While there are more ports competing for bulk cargo compared to the unitised sectors, the market is also highly concentrated, though market shares have remained relatively static compared to unitised trade. In the dry bulk market, Shannon Foynes handles 42% of total tonnage on an all-island basis, followed by Belfast (23%), Cork and Dublin (both 9%). In the liquid bulk market, Cork handles 33%, followed by Dublin (22%), Bantry (22%) Belfast (14%) and Shannon (7%).
- 3.62 Dublin does not occupy the same position of strength in bulk compared to Ro-Ro and Lo-Lo, but has become increasingly active in the sector. Some small bulk ports benefitted from an overflow from Dublin from 2000 to 2006, but since then have been losing market share. Indeed, the Department of Transport, Tourism and Sport has decided to place many of these ports back into local authority ownership as outlined in the *National Ports Policy*²²⁵.

²²⁵ See Section 2 (paragraph 2.26 to 2.30).

- 3.63 The concentration of bulk traffic at Shannon Foynes and Cork is heavily influenced by nearby importing bulk industries (e.g., Aughinish Alumina, Moneypoint Powerstation in Shannon Foynes and the Whitegate Refinery in Cork). This is common for bulk ports. The location advantage, and the high cost associated with transporting bulky goods long distance by road can create a significant barrier to entry which limits the scope for inter-port competition²²⁶.
- 3.64 Similarly, the specialist nature of some bulk cargo means that bulk operators and/or bulk industries may prefer to use their own quay space and self-handle cargo adjacent to their own manufacturing, treatment or storage facilities. This is common for industries including cement manufacturing and waste recycling and can further limit the scope for inter-port competition.
- 3.65 Handling and storage requirements tend not to be as specialised for other bulk products such as animal feed, fertiliser and mining products and there is more scope for demand and supply-side substitution. The low value, high volume nature of these products also means they are particularly sensitive to cargo handling charges. Consequently, bulk operators can bargain hard with cargo handlers operating in different ports for the most competitive price. This can have a significant bearing on port selection and suggests that there is some inter-port competition for this category of bulk cargo.
- 3.66 There is also reported to be a good level of inter-port competition among ports of all sizes for niche products like wind turbines. These niche products are often one-off projects for high value goods. More generally, it has been reported that Dublin's desire to become more active in the bulk sector is said to be having a positive influence on competition in the bulk sector.
- 3.67 However, the high costs associated with transporting bulk products means that bulk industries will generally prefer to use the nearest port which diminishes their bargaining power. Increasingly, the economies of scale associated with transporting bulk products also militate against competition from smaller ports. Our meetings indicated that importers of agricultural bulk increasingly use bigger ports like Dublin, Cork and Belfast that have the water depth and storage facilities to import large quantities of cargo at a time²²⁷.
- 3.68 Again our quantitative analysis indicates that bulk ports do not appear to compete on the basis of charges levied by ports; indeed, considering the characteristics of some bulk cargo, there is often less of an incentive for port authorities to lower their charges compared to unitised cargo that is lighter and cheaper to transport. However, cargo handling charges have fallen which suggests there may be competition between ports for some bulk cargo, though bulk volumes also fell during this period so it is unclear the extent to which spare capacity or indeed intra-port competition has influenced this trend.

²²⁶ The OFT has concluded in merger analysis that the geographic market for dry bulk goods is likely to be 30 miles around port. This is due to so called 'land miles' (transport cost per tonne per unit of distance) being more costly than 'sea miles'. Source: OFT (2002), 'Acquisition by Peel Ports Ltd of Clydeport plc', ME/1656/02 and OFT (2006), 'Acquisition by Montauban of Simon Group plc', ME/2500/06.

²²⁷ Submission from R&H Hall.

Evaluation of inter-port competition: Bulk

- The concentration of bulk traffic at Shannon Foynes and Cork is heavily influenced by nearby industries. This is common for bulk ports.
- The specialist nature of other bulk industries also limits the scope for inter-port competition, though there appears to be some competition for general bulk cargo and for some niche products like wind turbines.
- However, bulk operators, importers and exporters will generally prefer to use the nearest port, and where there is movement between ports, it is usually away from smaller ports towards larger ports that can offer greater economies of scale which is especially important for high volume, low value bulk products.

Dublin Port's pre-eminent market position

- 3.69 Dublin handles 29% of trade on an all-Ireland basis, and is heavily involved in all sectors of port trade. Dublin is the only major port in the State to have grown its overall market share since 2005, and export focused Ro-Ro and Lo-Lo cargo is becoming increasingly concentrated within Dublin at the expense of ports like Rosslare and Waterford. In 2012, Dublin handled 43% of Ro-Ro and 57% of Lo-Lo cargo and is also becoming increasingly involved in the bulk sector.
- 3.70 Dublin's pre-eminent position in the ports sector is based on a number of factors. Its location on the East Coast next to the island's largest concentration of people and industry has created the demand for, and subsequent supply of Ro-Ro and Lo-Lo port infrastructure that can facilitate a choice of high quality and frequent Ro-Ro and Lo-Lo services to Great Britain and Europe. The growth of just-in-time delivery and the need for consolidation and greater scale in the maritime sector generally means Dublin Port is proving increasingly attractive to port users.
- 3.71 Dublin also enjoys other advantages due to its financial situation, and has also benefited from improvements in infrastructure, most notably the completion of the motorway network and the Dublin Port Tunnel. These road improvements and the reopening of the rail connection have made Dublin Port an even more attractive option for exporters and importers that may have typically used other ports. It appears less likely that frequent users of Dublin Port will shift their business to other ports.
- 3.72 The cumulative effect of these factors is that Dublin Port is in a very strong position compared to other ports. The scope for demand-side substitution (by port users) and supply-side substitution (by potentially competing ports) is limited, and so therefore is the scope for robust inter-port competition. The characteristics of ports as natural monopolies means there is a potential for Dublin Port to charge higher prices and offer inferior services than they would in the presence of

effective inter-port competition, particularly for unitised cargo. This would increase transport cost for exporters, increase transport costs and damage national competitiveness.

- 3.73 This highlights the importance of ensuring that intra-port competition in Dublin is working as well as it can. In the absence of effective inter-port competition, intra-port competition lessens the ability for providers of port services to earn monopoly profits. This keeps port-related charges down and promotes greater efficiency within ports. The following section evaluates the level of intra-port competition.

Summary: Inter-port competition in Ireland

- Inter-port competition arises where ports are rivals and compete for the same cargo and/or port users. The benefits of inter-port competition include lower port charges and greater efficiency, both of which help to keep transport and export costs down.
- Inter-port competition is determined by two main factors: demand-side substitution and supply-side substitution. The factors that affect demand-side and supply-side substitution include ports characteristics as natural monopolies, port charges, on-land destination, service frequency and efficiency, port location, the ability to expand and the level of intra-port competition in a port.
- Our quantitative analysis does not provide conclusive evidence that there is robust inter-port competition between ports and charges levied by port authorities have increased slightly. While cargo handling charges have fallen and there are signs of efficiency improvements, it is unclear the extent to which these improvements are being driven by spare capacity and/or intra-port competition. The market for all cargo types is becoming more concentrated which is likely to limit inter-port competition.
- Competition for Ro-Ro services is limited to the East Coast. The competitiveness of a Ro-Ro port is largely determined by the level of competition between ferry companies. The supply of frequent high quality Ro-Ro ferry services has placed Dublin and Belfast in a strong competitive position vis-à-vis other Irish ports and these ports are increasingly likely to attract business away from smaller Ro-Ro ports than vice-versa.
- Lo-Lo service users and container shipping lines value the level of choice and frequency available at larger ports like Dublin, Belfast and Cork. Due to a high level of throughput, Dublin can facilitate a number of independent competing terminals which can provide even more choice, frequency and connections to transshipment hubs compared to other Irish ports. Like Ro-Ro, Dublin is more likely to attract business away from smaller ports than vice-versa.
- While there is inter-port competition for bulk cargo, bulk traffic is heavily influenced by nearby industries and the high costs associated with transporting bulk products means the bulk operators will generally use the nearest port which limits the scope for inter-port competition.
- Dublin is the only major port in the State to have grown its overall market share since 2005, and export focused Ro-Ro and Lo-Lo cargo is becoming increasingly concentrated within Dublin. Dublin is also becoming increasingly involved in the bulk sector. The lack of inter-port competition means it is important to ensure that intra-port competition in Dublin is working as well as possible.

4. INTRA-PORT COMPETITION

Introduction

4.1 The previous section described why inter-port competition in Ireland is limited. The main reasons include:

- The tendency for ports to display natural monopoly characteristics and service the markets and traffic volumes of their respective hinterlands;
- High quality unitised services require a level of scale that can only be achieved from a port with a hinterland of sufficient critical mass;
- Bulk throughput is largely determined by local bulk consuming industries.

4.2 The limited scope for inter-port competition means that it is vital to ensure that intra-port competition in all Irish ports is working as well as possible. In the absence of effective intra-port competition, there is a possibility that port authorities, and service providers operating from and within the port, could charge higher prices and offer inferior service levels than they would in the presence of vigorous competition. This would increase the cost of imports and exports and damage national competitiveness. The level of intra-port competition can also influence ports' ability to compete by making them more attractive to port users²²⁸.

4.3 This section describes how intra-port competition works, the benefits of intra-port competition, the factors that influence it, and provides a detailed evaluation of intra-port competition in the Irish ports sector for each cargo type based on meetings, stakeholder submissions to the public consultation, literature and quantitative analysis. Due to Dublin Port's pre-eminent position²²⁹, we place a strong emphasis on intra-port competition in Dublin Port.

How intra-port competition works

4.4 Intra-port competition is the level of competition within a port. In this study we identify two types of intra-port competition: **competition between terminals** and **competition to provide ancillary services**.

4.5 Many large modern ports, including Dublin, contain independently operated quays and terminals. Where two or more operators own different terminals, a degree of intra-port competition can exist. In these cases, port users may have several options where to dock and which terminal to use. This is what we categorise as competition between terminals.

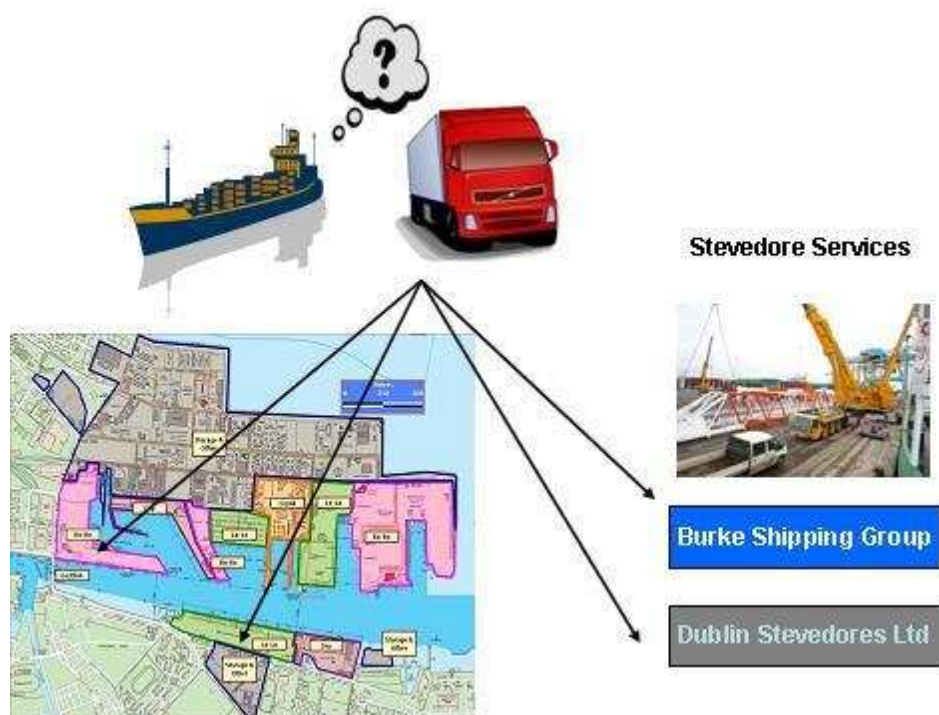
4.6 The left side of **Figure 14** illustrates simply how competition between terminals operates. A container vessel or freight-forwarder using Dublin Port has a choice of using three different container handling terminals

²²⁸ Langen, P.W. and Pallis, A.A (2006), "Analysis of the Benefits of Intra-port Competition", *International Journal of Transport Economics*, Volume 33(1), 66-85.

²²⁹ See Section 3 (paragraph 3.69 to 3.73).

for Lo-Lo cargo. The terminal operators compete for cargo based on price and efficiency levels. In addition, terminal operators sometimes offer deeper water or better road or rail infrastructure vis-à-vis their competitors.

Figure 14: Intra-port competition: Competition between terminals and to provide ancillary services



Source: Competition Authority analysis

- 4.7 Competition to provide ancillary services is where multiple operators provide competing services within the same port²³⁰. This can occur with competing terminals and where there is only one terminal, as is often the case in Ireland. This type of competition is sometimes referred to as 'intra-terminal' competition²³¹.
- 4.8 The right side of **Figure 14** simply illustrates how competition to provide ancillary services works. A bulk vessel entering Dublin Port has a choice of what stevedore to use (e.g., Burke Shipping Group or Dublin Stevedores). Ancillary services refer mainly to stevedoring, pilotage and towage in this study, but can also include security, ships agency, warehousing, and maintenance and repair.

²³⁰ OECD (2011), *Competition in Ports and Port Services*. OECD Competition Committee Roundtable Discussion. December, 2011.

²³¹ The World Bank has adopted a similar definition of intra-port competition. Intra-port competition refers to the situation where two or more different terminal operators within the same port are vying for the same market while 'intra-terminal' competition refers to companies competing to provide the same services within the same terminal. Source: World Bank (2007), "Module 3: The Evolution of Ports in a Competitive World", *Port Reform Toolkit, Second Edition*, Washington DC: World Bank.

4.9 Like inter-port competition the level of intra-port competition is determined by two main factors: demand-side substitution and supply-side substitution. These terms are explained as follows:

- (a) **Demand-side substitution:** Demand-side substitution is the degree to which port customers or port users are able to switch between service providers within a port in response to changes in price or service levels. For example, a shipping line might switch from one Lo-Lo terminal operator to another to avail of lower cargo handling charges or more efficient cranes (competition between terminals) or a bulk importer may switch between stevedore service providers (competition to provide ancillary services).
- (b) **Supply-side substitution:** Supply-side substitution mainly refers to the extent to which existing service providers can provide new services in a port. For example, an international terminal operator may wish to establish a new Lo-Lo terminal in Dublin Port (competition between terminals) or a bulk stevedore may wish to expand the services that it currently offers (competition for ancillary services).

The benefits of intra-port competition

- 4.10 The benefits from intra-port competition are similar to those for inter-port competition. Indeed, effective intra-port competition is likely to have an even greater influence on port charges and efficiency. This can influence inter-port competition where a port with effective intra-port competition proves more attractive compared to a port with limited intra-port competition.
- 4.11 The characteristics of ports as natural monopolies, and the limited scope for inter-port competition, means there is potential for Irish port authorities and port service providers to earn monopoly profits²³² and offer poor, inefficient services. This can increase transport costs which can have a significant influence on trade volumes²³³.
- 4.12 In the absence of effective inter-port competition, intra-port competition lessens the ability for providers of port services to earn monopoly profits²³⁴. This keeps port-related charges down, namely cargo handling charges, which typically make up between 70% and 90% of the total cost of moving goods through a port²³⁵. If there is one

²³² A monopoly situation can allow a firm to set a price which is higher than the price that would be found in a more competitive industry and to generate economic profit over and above normal profit that is typically found in a perfectly competitive industry. This is known as monopoly profit or "rent".

²³³ See Section 3 for more information (paragraph 3.7 to 3.13).

²³⁴ Goss (1999) acknowledges that intra-port competition prevents monopolistic rent seeking by port service providers when inter-port competition is imperfect. Notteboom (2002) states that increased competition in the European container system can prevent monopolists from acquiring supra-normal profits even if high barriers to entry to the monopolist's port exist. References: Goss, R.O. (1999), "On the Distribution of Economic Rent in Seaports", *International Journal of Maritime Economics*, Volume 1(1), 1-9. Notteboom, T.E. (2002), "Consolidation and Contestability in the European Container Handling Industry", *Maritime Policy and Management*, Volume 29(3), 257-269.

²³⁵ Trujillo, L. and Nombela, G. (2000), Chapter 4 in Estache, A. and De Rus, G. (2000), "Privatisation and Regulation of Transport Infrastructure: Guidelines for Policymakers and Regulators", *World Bank Development Studies*, Washington DC: World Bank.

Lo-Lo terminal or one general stevedore in a port, they could charge a higher price than if faced with competition from one or more competitors. Research has shown that opening of port terminals and stevedore service to competition can lead to a reduction in port charges²³⁶.

- 4.13 Another benefit of intra-port competition is that it promotes greater efficiency, innovation and specialisation within ports²³⁷. A competing Lo-Lo terminal or bulk stevedore may try to gain an advantage over its rivals by offering larger and more efficient cranes that can facilitate faster vessel turnaround times²³⁸. Port efficiency is a key determinant of national competitiveness that strongly influences transport costs by reducing the likelihood of delays and congestion²³⁹.
- 4.14 As described in Section 3, the level of intra-port competition can influence the overall attractiveness of a port and thus inter-port competition. For example, Dublin Port's ability to provide the infrastructure to facilitate competing Lo-Lo and Ro-Ro service providers has placed it in a strong competitive position. The level of competition between shipping lines is deemed to be a key determinant of the competitiveness of a port, particularly for Ro-Ro traffic.

Factors that affect intra-port competition

- 4.15 There are a range of factors that influence both the level of demand-side substitution and supply-side substitution. These factors are described below.

Port management models

- 4.16 The type of port management model employed can directly influence the scope for demand-side and supply-side substitution within a port. The three main port management models (landlord port, tool port and service port) were briefly explained in Section 2 (paragraph 2.22 to 2.24), though it should be noted that most Irish ports operate as a hybrid between a landlord port and a tool port.
- 4.17 The landlord port management model is deemed the best model to promote demand-side and supply-side substitution and is growing in popularity²⁴⁰. It can facilitate competition between terminals and the provision of stevedoring and other ancillary services through the leasing and licensing of multiple private service providers. It can also allow for new entry that limits the potential for service providers to earn monopoly profits or provide inefficient services. However, it is important that the landlord port model is carefully managed as poor

²³⁶ The opening of port terminals to competition led to an 80% reduction of port charges in Buenos Aires (Argentina), while the opening of stevedoring operations to multiple parties in Guayaquil (Ecuador) led to a 60% reduction of port charges. Reference: Guasch, J. (1996), "Lessons for Port Reforms", in *New Port Policies in Latin America and Caribbean*, eds, Guasch, J. and Amargos, L., New Press, Barcelona, Spain.

²³⁷ Langen, P.W. and Pallis, A.A (2006). See footnote 228 for full reference.

²³⁸ The opening of stevedore services to multiple operators in the port of Montevideo (Uruguay) increased stevedore productivity by 300% while Guayaquil (Ecuador) increased stevedore productivity by 55%. Reference: Guasch, J. (1996). See footnote 236 above for full reference.

²³⁹ See Section 3 (paragraph 3.10 to 3.12).

²⁴⁰ Guasch, J. and Spiller, P. (1999), *Managing the Regulatory Process: Design, Concepts, Issues, and the Latin America and Caribbean Story*, World Bank Publications.

leasing and licensing practices and/or vertical integration among terminal operators can limit the models effectiveness²⁴¹.

- 4.18 A tool port management structure is where a port authority provides the core infrastructure and superstructure while private service providers compete to provide labour services. A port authority may own and operate cranes using their own labour while private stevedores compete to provide labour on vessels and quay-spaces; however, most tool ports also allow private stevedores to operate the cranes.
- 4.19 In terms of promoting demand-side and supply-side substitution the tool port model can also work well - particularly for smaller sized ports²⁴² - though it is generally not as effective compared to the landlord model. There is often just one terminal and private stevedores are not in full control of cargo handling operations that are largely dependent on crane infrastructure and sometimes labour provided by the port authority. This can limit the potential of stevedores to lower costs, improve efficiency and provide a higher quality of service relative to their competitors.
- 4.20 In Ireland, the structure of many ports as a hybrid between a landlord and a tool port means that multiple private operators can be licensed to provide stevedore services using their own cranes and labour. Private service providers are also licensed to provide other services such as pilotage and towage services using their own equipment and labour under the hybrid port model.
- 4.21 In a service port, there is generally no competition between terminals or providers of port services. Thus, compared to the landlord model, or even a tool port, the scope for demand-side and supply-side substitution is extremely limited. **Appendix 3** provides more detail regarding the strengths and weaknesses of each port management models.

Port size and economies of scale

- 4.22 While having competing terminals is desirable to maximise demand-side and supply-side substitution, particularly for Lo-Lo cargo, some ports do not have sufficient scale or throughput to facilitate competing terminals.
- 4.23 It is difficult to estimate the level of cargo required to justify competing terminals for all cargo types, though as mentioned in Section 3, research on Lo-Lo suggests that a port handling 100,000 TEUs²⁴³ per annum is large enough to cater for independent competing Lo-Lo terminals that are usually facilitated using the landlord port management model²⁴⁴. Please note that this research should be treated with some caution and is discussed in more detail below.
- 4.24 If annual cargo is less than 100,000 TEUs but greater than 30,000 TEUs, having several operators, possibly sharing a single terminal, may

²⁴¹ These factors are explained in paragraph 4.27 to 4.32, 4.35 to 4.36 and 4.66 below.

²⁴² See paragraph 4.22 to 4.26 below.

²⁴³ TEU (Twenty Foot Equivalent) is a measure used for capacity in container transportation.

²⁴⁴ Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference.

be feasible. This is known as 'intra-terminal' competition²⁴⁵ and can be facilitated by a hybrid between a landlord and a tool port model or a more rigid tool port management model.

- 4.25 A port handling less than 30,000 TEUs a year may be too small to have several terminals and operators. This is because economies of scale for a small port may only be realised through one terminal or one supplier of a port service, as is often the case with a service port. An important condition for the viability of intra-port competition for all cargo types is that the market should be at least twice as large as the Minimum Efficient Scale (MES) for providing a port service. This means the market size must be capable of supporting at least two service providers, each operating at an optimal scale of production. A small market size relative to the MES restricts the scope for intra-port competition²⁴⁶.
- 4.26 However, if there is only one supplier of port services, in the absence of inter-port competition the service provider is likely to earn monopoly profits and provide a poor quality service. In such cases, to maintain economies of scale and competitive conditions for ancillary services, port authorities may invest in tugs, cranes and other port infrastructure. These assets can then be leased or licensed to competing port service providers to prevent monopoly profits and the provision of inefficient services. Alternatively, it may be possible to tender the right to provide a service for a relatively short period of time and thus provide some level of supply-side substitution for ancillary services²⁴⁷.

Leasing and licensing arrangements

- 4.27 Leasing and licensing arrangements play a pivotal role in determining the level of demand-side and supply-side substitution²⁴⁸. As part of the move towards more private participation in the ports sector, leasing and licensing arrangements are increasingly becoming the norm.
- 4.28 In a landlord or tool port, port land and infrastructure are often leased to private service providers by port authorities²⁴⁹. A lease is usually required where the private service provider requires the exclusive use of port assets (e.g., land, warehousing or berths). Lo-Lo terminal operators, ferry companies and fuel refineries located in a port typically operate under a leasing arrangement, usually for a period of 15 to 40 years depending on the level of investment required²⁵⁰. For example, in

²⁴⁵ This is where cargo handling services provided to port users by various stevedoring companies make use of the equipment (cranes) that the port authority owns or employ their own equipment depending on their financial position.

²⁴⁶ Langen, P.W. and Pallis, A.A (2006). See footnote 228 for full reference.

²⁴⁷ Ibid.

²⁴⁸ UNCTAD (2012) *Review of Maritime Transport, Freight rates and Maritime Transport Costs*, Chapter 3. Available from: <http://unctad.org>.

²⁴⁹ The lease to be paid to the port authority is usually a fixed sum per square metre per year, typically indexed to some measure of inflation. The lease amount is related to the initial preparation and construction costs (e.g., land reclamation and quay wall construction).

²⁵⁰ Sources: Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference. Also, Theys, C. and Notteboom, T. (2010), "Determining Concession Durations in Seaports: Theoretical Considerations, Applicable Techniques and Current Practices", *Journal of International Logistics and Trade*, Volume 8(1), 13-40. Based on the approach adopted by the Antwerp Port Authority,

Buenos Aires, Lo-Lo terminal leases are between 18 and 25 years²⁵¹ while in Valparaíso in Chile, the Lo-Lo terminal lease is 20 years with the option of a 10 year extension²⁵². It is proposed that the contract to operate a consolidated Lo-Lo terminal in Belfast will be for five years with a rolling three year option to extend at the discretion of Belfast Harbour Commissioners, up to a maximum of 20 years in total²⁵³.

- 4.29 The main benefit of a lease is that a government can retain ownership and safeguard public interests, while at the same time relieve themselves of operational risks and financial burden²⁵⁴. Leasing arrangements are often used to facilitate competing terminals, but are not as common in tool or service ports. Leasing arrangements can also incentivise more efficient use of port land and infrastructure which can be particularly useful where independent competing terminals are not feasible. A lease can specify minimum performance measures like average ship turnaround time and/or TEUs per crane hour and include financial penalties for low terminal throughput or poor capacity utilisation. For example, a lease may include a port dwell time charge that stipulates that a port authority will charge a terminal operator a fee for any containers that spend more than five days within a specific port area. Port dwell time is critical to limit delay, congestion and overall transport costs, particularly in a port where space is at a premium²⁵⁵. A list of common port operating and financial performance indicators included in port management contracts and leasing arrangements is outlined in **Appendix 4**.
- 4.30 Licensing arrangements are common across all port management models. A licence is usually required for port services where the private service providers do not require exclusive use of port assets. Within this group are ancillary services such as stevedore services, pilotage and towage. Port authorities can also issue licences to use port infrastructure including cranes and Ro-Ro ramps, and are usually for a shorter time period compared to leasing arrangements.
- 4.31 However, leasing and licensing arrangements need to be carefully managed, otherwise they can place an incumbent in a favourable position that limits the threat of entry and increases the potential for monopoly profits and/or the provision of poor service quality. An example of this would be if a port authority granted a lease to just one terminal operator or a licence to just one stevedore company where greater numbers are possible, or granted leases or licences for an inordinate length of time.

Theys and Notteboom (2010) outlines in detail how a port authority can calculate the appropriate lease length based on the level of investment required.

²⁵¹ Source: Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference.

²⁵² Valparaíso is one of the most efficient Lo-Lo ports in the world. Source: Presentation by Ramón Moreno Caprile, Operations Director, Terminal Pacífico Sur S.A at the *Irish Ports Association Conference*, September 27, 2013. Presentation available to download from: <http://ipadublin2013.com/>.

²⁵³ In September 2013 Belfast Harbour Commissioners advertised for an operator to provide container services for one consolidated Lo-Lo terminal (they currently have two Lo-Lo terminals). For more information see: OJEU Tender Notice (2013/S 185-319941).

²⁵⁴ World Bank (2007), "Module 3: The Evolution of Ports in a Competitive World", *Port Reform Toolkit, Second Edition*, Washington DC: World Bank.

²⁵⁵ Raballand, G., Refas, S., Beuran, M. and Isik, G. (2012), "Why Cargo Dwell Times Matter in Trade", *Economic Premises, The World Bank Poverty Reduction and Economic Management Network (PREM)*, May 2012, Number 81.

- 4.32 There are cases where port authorities may feel that restrictive leasing and licensing arrangements are justified. For example, pilotage is not always provided on a competitive basis, the assertion being that competition will lower safety standards. Pilotage dues are often regulated either at the national level or by a port authority, while pilots are similarly employed, either on a national basis or by a port authority.

Ability to expand

- 4.33 If a port authority or terminal operator is unable to expand capacity and services to satisfy an increase in demand this will have a negative effect on intra-port competition²⁵⁶. Specifically, this can affect demand-side and supply-side substitution by limiting the potential for new and existing terminal operators and stevedores to compete for cargo, and perhaps for some terminals to handle larger vessels.
- 4.34 A number of factors can prevent ports from expanding including a lack of space, natural water depth or problems getting a foreshore licence, planning permission or a port's ability to raise the necessary capital to invest in port infrastructure. These factors also affect inter-port competition, and recent trends regarding port capacity, larger vessel size and financial capability are described in Section 2.

Vertical integration

- 4.35 Many Lo-Lo container handling services are vertically integrated, e.g., where a container terminal operator owns a shipping company. A vertically integrated shipping line will normally use the container handling services offered by its sister company which can limit the scope for demand-side substitution between terminal operators.
- 4.36 Where vertical integration exists, market power may be extended into potentially competitive areas, leading to foreclosure and access issues. These characteristics have resulted in a number of competition cases. For example, in the UK, a terminal operator allowed a related shipping line to schedule its service so as to disrupt an entrant's loading and unloading of passengers²⁵⁷. In Denmark, a terminal operator denied access to a ferry line on the grounds that it would prevent existing companies from expanding operations²⁵⁸.

Evaluating intra-port competition in the Irish ports sector

- 4.37 The following presents the Competition Authority's evaluation of intra-port competition in Ireland for each of the three main cargo categories. It combines the information presented in Section 2 with the factors that influence demand-side and supply-side substitution. The evaluation draws on submissions to the public consultation, meetings, quantitative analysis and economic literature. Many academic experts in the ports sector have had their research published by World Bank publications

²⁵⁶ UK Department of Transport (2012), *National Policy Statement for Ports*, London. Available from: www.gov.uk.

²⁵⁷ Case IV/34.174, B&I Line PLC v. Sealink Harbour Ltd. & Sealink Stena Ltd., 5 C.M.L.R. 225.

²⁵⁸ Commission Decision 94/119/EC, 1994 O.J. (L 055) 52 (concerning a refusal to grant access to the facilities of the Port of Rødby (Denmark)).

which explains why the agency is frequently referenced throughout this study.

4.38 Regarding intra-port competition, the public consultation stated that:

- *"The study should place a strong focus on Dublin Port due to its pre-eminent position. There is likely to be limited scope for intra-port competition in other ports";*
- *"There is good competition between the three terminal operators in Dublin for Lo-Lo; however, there were some concerns regarding leasing, vertical integration and that spare capacity is the main driver of competition";*
- *"While there was some concern that all Ro-Ro ramps are owned by Dublin Port Company, it does not appear to affect the level of competition between shipping lines";*
- *"The lack of competing terminals for bulk is not a major concern – instead the focus should be to ensure there is adequate competition between stevedores".*

4.39 As with inter-port competition, this position remains more or less the same, though we are not as convinced that there is good competition between the three Lo-Lo terminal operators in Dublin Port (see paragraph 4.65 to 4.66).

4.40 Stakeholder submissions indicated that there is limited scope for terminal competition outside Dublin²⁵⁹. While we were informed by some stakeholders that competition between Dublin Lo-Lo terminals is working well²⁶⁰, leasing, capacity issues and barriers to entry remain a concern. Regarding Ro-Ro, there were no major issues relating to Dublin Port Company's ownership of Ro-Ro ramps in Dublin Port. In the bulk sector, broad concern was expressed regarding stevedore licensing in a number of ports.

4.41 Stakeholder submissions also requested that we should back up our analysis with more quantitative evaluation where possible. This is presented below. This is followed by a detailed examination of the two types of intra-port competition (**competition between terminals** and **competition to provide ancillary services**) and how they work in Ireland.

Quantitative analysis

4.42 Like inter-port competition, a cross-comparison of port charges and efficiency levels can provide an indication of the level of competition in a port. While service provider may impose high charges if it can provide more efficient services, high charges and/or inefficient services may suggest that competition is not working well.

²⁵⁹ Submissions from the Port of Cork, Shannon Foynes and the Chartered Institute of Logistics and Transport (CILT).

²⁶⁰ Submissions from the Irish Freight Forwarders Association (IFFA), BG Freight Line and Dublin Port Company (DPC).

- 4.43 As described in detail in Section 3²⁶¹, evaluating this data poses significant challenges and is best analysed in conjunction with outcomes from meetings with industry experts, stakeholder submissions and relevant economic literature. Again, we do not use the data we received through RFIs to compare absolute charges or efficiency levels between different service providers. However, we do present literature that compares the efficiency levels of the three Lo-Lo terminal operators in Dublin Port.
- 4.44 Due to Dublin Port's pre-eminent position relative to other ports, we place a particularly strong focus on port charges and efficiency levels at Dublin Port.

Port charges

- 4.45 Port charges levied by a port authority are not relevant when evaluating intra-port competition. Instead, we focus solely on cargo handling charges that are levied by private service providers (i.e., Lo-Lo terminal operators and stevedores).
- 4.46 As described later in this section, there is a choice of terminal operators and stevedores in Dublin Port. Through RFIs, we received data from five different service providers including Lo-Lo terminal handlers, Ro-Ro stevedores, bulk stevedores, providers of stevedore labour and users of stevedore services in Dublin Port.
- 4.47 The analysis found that between 2008 and 2012, unitised handling charges fell by 1% per annum²⁶². Bulk handling charges fell by 4% per annum between 2008 and 2012. However, unitised and bulk cargo volumes also fell during this period which suggests there may be a correlation between port charges and spare capacity²⁶³.
- 4.48 Outside of Dublin and Belfast, there is limited competition between Lo-Lo and Ro-Ro terminals, while stevedore labour for unitised cargo is often provided directly either by Ro-Ro ferry companies or port authorities. In contrast, there are often numerous general or bulk stevedore service providers²⁶⁴. Our analysis of five different stevedore services operating in Cork, Belfast, Shannon Foynes and Waterford found that handling charges fell by 1% per annum between 2008 and 2012, though some charges remained static. However, the combined volume of dry bulk cargo in these ports fell during this period²⁶⁵. Therefore, it is again unclear the extent to which intra-port competition is being driven by spare capacity in Irish ports.

²⁶¹ See Section 3 (paragraph 3.25 to 3.28).

²⁶² Like the quantitative analysis presented in Section 3, cargo handling charges were analysed by their compound annual growth rate, rather than absolute percentage changes over the periods provided by each respondent. The growth rates shown should be seen as general indicators of pricing trends.

²⁶³ Source: CSO (2013), *Statistics of Port Traffic 2012* and CSO (2009), *Statistics of Port Traffic 2008*. Available from: www.cso.ie.

²⁶⁴ See paragraph 4.91 to 4.99.

²⁶⁵ Source: CSO (2013). See footnote 263 above for full reference.

Port efficiency

- 4.49 While we received some efficiency measures from Lo-Lo terminal operators and stevedores in Dublin Port, many of the service providers that we surveyed as part of the RFI - particularly bulk stevedores – indicated that they do not routinely collect efficiency metrics²⁶⁶. Therefore, our analysis of port efficiency is especially limited and focuses solely on Dublin Port.
- 4.50 The efficiency measures for Dublin Port are based on information gathered from two terminal operators regarding crane efficiency, land productivity and labour efficiency. One terminal operator stated that crane efficiency increased each year for the period 1998 to 2013. The other respondent stated that labour productivity measured in terms of TEU lifts per employee increased on an annual basis between 2007 and 2012. Unfortunately there are no comparable measures available from other Irish ports.
- 4.51 There has been some specific research conducted regarding the efficiency of the three Lo-Lo terminal operators in Dublin Port. Research provided to us by Drewry Shipping Consultants²⁶⁷ indicates that in 2010 the efficiency of Lo-Lo terminals operating in Dublin Port was potentially inferior to similar sized terminals in other ports. The European average for terminal efficiency (TEUs per hectare p.a.) was estimated to be 20,500 TEUs. The three Dublin terminals handled between 12,500 TEUs and 21,400 TEUs with an average of 16,500 TEUs. While one terminal operator (Burke Shipping Group) was reported to be operating near the European average, Dublin Ferryport Terminals (DFT) and Marine Terminals Limited (MTL) were reported to be operating below average. A separate piece of research found that different aspects of port infrastructure in Dublin were 10% to 35% less efficient than the most efficient port²⁶⁸.

Competition Authority evaluation of competition between terminals

- 4.52 In this study we identify two types of intra-port competition: **competition between terminals** and **competition to provide ancillary services**. This section looks specifically at the level of competition between terminals in Irish ports.
- 4.53 When carefully managed, competition between independently operated terminals is one of the most effective ways to limit the potential for service providers to earn monopoly profits and provide poor service levels. Competing terminals are especially important for Lo-Lo cargo.
- 4.54 Dublin and Belfast are currently the only ports in Ireland with individual competing Lo-Lo terminals, though Belfast is proposing to consolidate

²⁶⁶ The RFI's requested specific efficiency metrics such as vessel turnaround times, utilisation rates, labour productivity and average truck waiting times.

²⁶⁷ Website: www.drewry.co.uk/. Some of this data was included in a presentation by DPC to Engineers Ireland on 16 May 2012. Available online: <http://www.engineersireland.ie/EngineersIreland/media/SiteMedia/groups/societies/roads-transport/Intermodality-of-the-new-Dublin-Port-Masterplan-May-16th-2012.pdf?ext=.pdf>

²⁶⁸ Herrera, S. and Pang, G. (2008), "Efficiency of Infrastructure: The Case of Container Ports", *Economía*, 2008, Volume 9(1), 165-194.

their two terminals into one (see paragraph 4.28)²⁶⁹. As mentioned previously, there is a view that a Lo-Lo port handling more than 100,000 TEUs has enough scale to facilitate competing Lo-Lo terminals²⁷⁰. In 2012, Dublin handled 425,000 loaded TEUs while Belfast handled 165,000 TEUs²⁷¹.

- 4.55 Cork has two separate Lo-Lo terminals, though both are now operated by the Port of Cork. In 2012, Cork handled 139,000 TEUs²⁷². This means there appears to be potential to facilitate independently operated terminals. However, the Port of Cork²⁷³ and the Chartered Institute of Logistics and Transport (CILT)²⁷⁴ have argued that the port does not have sufficient throughput or service frequency to facilitate independent competing terminals. The Competition Authority recognises that the 100,000 TEU figure quoted above should be treated with caution and examined in the context of the port's characteristics and we do not have sufficient evidence to dispute the Port of Cork's assertions at this time. However, the potential for independent competing terminals in Cork should be revisited in the future and other means to promote intra-port competition for Lo-Lo cargo handling services within the port should be explored – e.g., there may be potential to allow two private operators to share a single terminal²⁷⁵.
- 4.56 The remaining Lo-Lo ports (Waterford and Warrenpoint) both handle close to or less than 30,000 TEUs which appears to be too small to facilitate competing terminals²⁷⁶.
- 4.57 It is more difficult to estimate the level of cargo required to justify competing terminals for Ro-Ro and bulk, though independently owned competing terminals are less important for Ro-Ro and bulk cargo because the availability of ramps and competition between ancillary services such as stevedore services tends to play a more important role. This will be explained in more detail in the evaluation that follows.
- 4.58 This section focuses on competing terminals in Dublin Port. It is especially important that intra-port competition within Dublin is

²⁶⁹ There are three competing Lo-Lo terminals in Dublin: Dublin Ferry Port Terminals (operated by Irish Continental Group), Burke Shipping Group and Marine Terminals Ltd (operated by Peel Ports). There are two competing Lo-Lo terminals in Belfast: VT3 (operated by Peel Ports) and Belfast Container Terminal (operated by Irish Continental Group).

²⁷⁰ Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference.

²⁷¹ IMDO (2013), *Irish Maritime Transport Economist*, Volume 10. Available from: www.imdo.ie.

²⁷² Ibid.

²⁷³ The Port of Cork stated in their submission that they could not facilitate competition between independently operated terminals. There are various factors that need to be considered including: physical size and location of a second or even third terminal, the already competitive pricing levels in existence, the minimum throughput and profitability levels and particularly with the trend towards larger and deeper drafted Lo-Lo vessels, the ability to fund the necessary infrastructure and superstructure.

²⁷⁴ The Chartered Institute of Logistics and Transport (CILT) in their submission argue that there is no scope for competition between independently operated terminals outside Dublin and Belfast. The submission stated that there are only five Lo-Lo services per week servicing Cork at present which is not enough to justify competing terminals even if the necessary facilities were available.

²⁷⁵ The same research suggests that if cargo is less than 100,000 TEUs but greater than 30,000 TEUs, having several operators possibly sharing a single terminal appears feasible. Source: Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference.

²⁷⁶ Ibid.

working well due to its pre-eminent position and because it is currently the only port in the State with independently owned Lo-Lo terminals.

Competition between Lo-Lo terminals in Dublin Port

- 4.59 There are three terminal operators in Dublin Port: Dublin Ferryport Terminals (DFT), Marine Terminals Limited (MTL) and Burke Shipping Group (BSG) (see **Figure 15** below). DFT are part of the Irish Continental Group (ICG) that owns Irish Ferries and is vertically integrated with the container shipping line Eucon. MTL are owned by Peel Ports who are the second largest group of ports in the UK and is vertically integrated with the container shipping lines BG Freight Line and Coastal Container Line. BSG are an Irish-owned shipping and logistics company and is the principal operating subsidiary of the Doyle Group. BSG are not vertically integrated with a shipping line but they do provide shipping agent services²⁷⁷ to Xpress and CLdN-Cobelfret.
- 4.60 As a landlord port, Dublin Port Company (DPC) is responsible for the licensing and leasing of land and facilities to terminal operators who own the cranes and other port superstructure. It is our understanding that DFT have approximately 110 years left to run on their lease while MTL have approximately 85 years left to run on their lease²⁷⁸. This is exceptionally long compared to international norms²⁷⁹. In addition, throughout this study we became aware that BSG, the third terminal operator, has been operating under a 20 year 'general stevedore licence' that will be automatically renewed in 2014 for a further 20 years on identical terms. This appears to create the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods.
- 4.61 BSG's licensing arrangement allows DPC to influence the efficiency with which BSG utilises the port infrastructure. While the licensing arrangement with BSG allows DPC to introduce dwell time charges on containers that stay in a terminal beyond a given number of days²⁸⁰, they cannot do this for DFT and MTL under their long-term lease agreements.

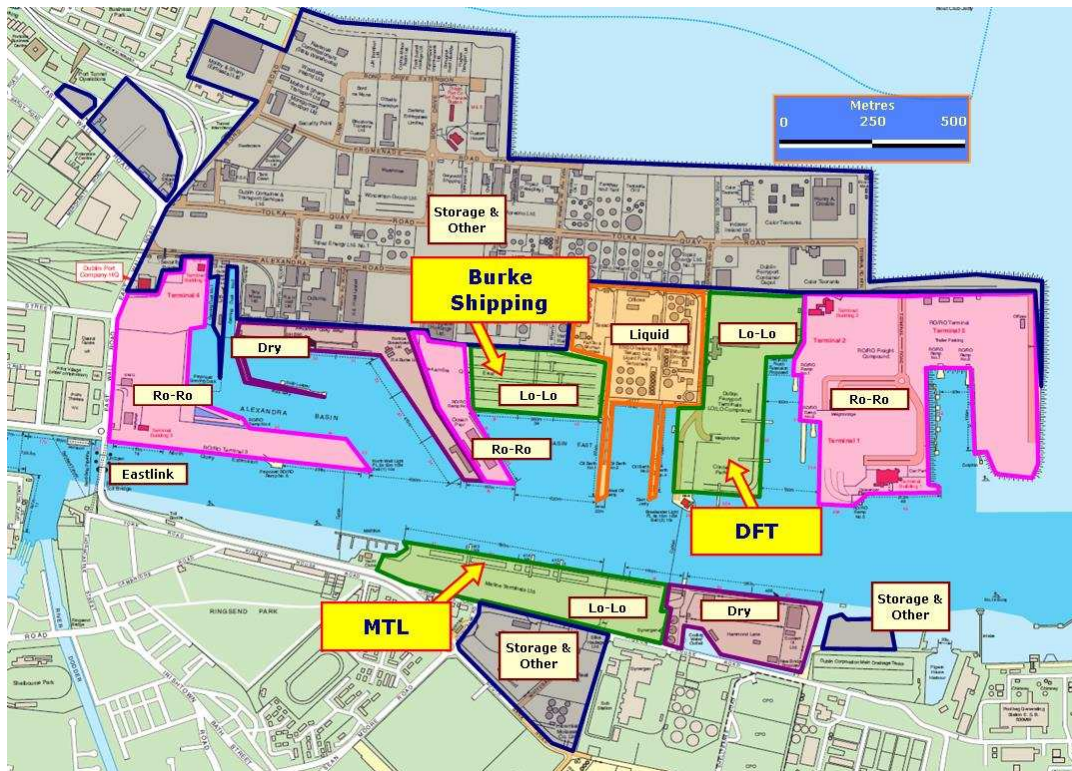
²⁷⁷ See Section 2 for definition (paragraph 2.5).

²⁷⁸ Source: Meetings with DFT and MTL.

²⁷⁹ In other countries, the average term for port leases generally ranges from 15 to 40 years. See paragraph 4.28 for more details.

²⁸⁰ See paragraph 4.29 for more information on dwell times.

Figure 15: Dublin Port Lo-Lo Terminals (Burke Shipping, MTL and DFT)



Source: Dublin Port Company, Competition Authority analysis

- 4.62 Submissions from DPC, BG Freight Line and meetings with the terminal operators gave the impression that there is a good level of competition between the Lo-Lo terminal operators in Dublin Port. Due to the fall off in port traffic and resulting spare capacity²⁸¹, we were told that competition has intensified and terminal users are in a strong position to demand lower prices and higher service standards. Con-Ro²⁸² is also growing in strength which is also placing some competitive pressure on Lo-Lo terminal operators.
- 4.63 We were also informed that contracts between shipping companies and terminal operators are now shorter and switching between terminals is increasingly common. It was reported that even vertically integrated shipping lines are switching between terminals. This trend is being influenced by greater competition among shipping lines that are more likely to seek the most competitive handling rates being offered by terminal operators²⁸³.

²⁸¹ See Section 2 for more information (paragraph 2.38 to 2.46).

²⁸² See Section 2 for definition (paragraph 2.13).

²⁸³ UNCTAD has reported substantial freight rate drops for all cargo types including Lo-Lo with many remaining at unprofitable levels. The oversupply of vessels has been identified as a driving factor behind this development. Source: UNCTAD (2012) *Review of Maritime Transport*, Freight rates and Maritime Transport Costs, Chapter 3, New York and Geneva. Available from: <http://unctad.org>.

- 4.64 Our Lo-Lo quantitative analysis indicates that between 2008 and 2012 unitised handling charges fell by 1% per annum; however, Lo-Lo cargo volumes fell during the same period which suggests that spare capacity is having an effect²⁸⁴. Regarding efficiency; while there are signs of progress, there also appears to be room for improvement with research indicating that Lo-Lo terminals in Dublin are not as efficient as similar sized terminals in other international ports.
- 4.65 Though we have been informed that competition is working well, we are mindful that views regarding the prevalence of effective intra-port competition were mainly provided by DPC, the incumbent terminal operators and vertically integrated shipping lines. Our quantitative analysis does not facilitate international cross-comparison of price levels, while efficiency in some terminals appears to be inferior to similar sized terminals in other European countries. Indeed, we are concerned that competition is being heavily influenced by spare capacity in the ports sector and among shipping lines, a situation that may not continue indefinitely.
- 4.66 Our concerns are compounded by the following market characteristics:
- **Dublin Port's pre-eminent position for Lo-Lo cargo:** The scale and resulting choice and frequency of Lo-Lo services on offer provides Dublin with a strong advantage over its competitors. Dublin's share of Irish Lo-Lo cargo has been growing and this is likely to continue. Consequently, while we have been informed that the Lo-Lo terminals are currently competing, the guarantee of a certain level of throughput means that the incentive to compete may diminish in the absence of spare capacity or the threat of new entry.
 - **Long-term leasing and licensing:** DFT and MTL operate under long-term leases where the port authority has no influence over efficiency levels. The threat of new entry is also limited. BSG is operating under a 20 year licence that will be automatically renewed in 2014 for a further 20 years and there appears to be limited room for expansion or new entry within the port²⁸⁵. Consequently, the pre-eminent position of Dublin Port for Lo-Lo and the lack of inter-port competition could lead to a situation where the incumbents could charge higher prices and offer inferior levels of service than would be the case in a more open competitive market.
 - **Vertical integration:** Additionally, because DFT and MTL are in long-term leases and are vertically integrated with shipping companies, they are guaranteed a certain level of throughput that can further limit the potential for competition between the terminals and between shipping lines, particularly in the absence of spare capacity. Vertical integration has the effect of segmenting a ports Lo-Lo market by limiting the potential for shipping lines that are not vertically integrated to switch between Lo-Lo terminals²⁸⁶. This issue is exacerbated by the

²⁸⁴ Source: CSO (2013). See footnote 263 above for full reference.

²⁸⁵ See Section 2 for more information (paragraph 2.42 to 2.46).

²⁸⁶ For example, Eucon will mostly use the DFT terminal, BG Freight Line would use the MTL terminal, while shipping lines that are not vertically integrated will usually prefer to use the BSG terminal.

growth of Vessel Sharing Arrangements (VSAs) among the major Lo-Lo shipping lines; indeed, the largest VSA in Ireland is between Eucon and BG Freight Line who are vertically integrated with DFT and MTL²⁸⁷. Moreover, while not vertically integrated, BSG also provide ships agency services²⁸⁸ to Xpress and CLdN-Cobelfret, something that is likely to further limit the scope for movement between terminals²⁸⁹.

Competition between Ro-Ro terminals in Dublin

- 4.67 Ro-Ro is handled at four dedicated Ro-Ro terminals (Terminals 1, 2, 3 and 5) and a ramp in Alexandra Basin East (Ocean Pier). There are eight ferry ramps, three of which are two-tier. **Figure 15** above outlines where the main Ro-Ro terminals are situated within the port while **Table 5** below specifies the terminals, berths and ramps that each shipping line uses.
- 4.68 Three of the Ro-Ro terminals have operating licences incorporating stevedoring licences from DPC²⁹⁰. This arrangement between DPC and the Ro-Ro ferry companies is by way of comparatively short-term operating agreements (five to seven years) which give access to Ro-Ro ramps and storage land subject to a guarantee of a minimum revenue stream to DPC. Irish Ferries is operating on the basis of historical legacy agreements.

²⁸⁷ See Section 2 (paragraph 2.74) for more information on VSAs. In 2012, it was estimated that Eucon and BG Freight Line each held 23% of the Lo-Lo capacity (46% in total). Source: IMDO (2013), *Irish Maritime Transport Economist*, Volume 10. Available from: www.imdo.ie.

²⁸⁸ See Section 2 for definition (paragraph 2.5, bullet 5).

²⁸⁹ In 2012 the IMDO (see footnote 287 above for source) estimated that X-Press held 8% of Lo-Lo capacity while CLdN held 2%. Combined with Eucon and BG Freight Line (see footnote 287 above for source) approximately 56% of the Lo-Lo capacity that is either vertically integrated with terminal operators legacy arrangements²⁸⁹, or linked with a terminal operator that also provides ships agency to shipping lines.

²⁹⁰ Stena Line, Seatruck and P&O.

Table 5: Dublin Port Ro-Ro Terminals, 2012

Ro/Ro Shipping Line	Route	Terminal	Berth	Ramp	Tier(s)	Ramp Owner	Stevedore
Stena	UK	2	51	1	2	DPC	BSG
Stena	UK	2	51A	9	1	DPC	BSG
CLdN	Europe	Ocean Pier	37	2	1	DPC	BSG
RMR	West Africa	2	51A	9	1	DPC	BSG
Isle of Man	Isle of Man/UK	1	49	5	2	DPC	BSG
Irish Ferries	UK	1	49	5	2	DPC	Irish Ferries
Irish Ferries	UK	1	51A	9	1	DPC	Irish Ferries
Seatruck	UK	5	53	8	1	DPC	Seatruck
Seatruck	UK	5	52	7	1	DPC	Seatruck
P&O	UK	3	25	4	2	DPC	P&O
P&O	UK	3	21	6	1	DPC	P&O

Source: Dublin Port Company

- 4.69 DPC is the only provider of Ro-Ro terminal facilities within Dublin Port. DPC invests in the infrastructure and then licenses its use to the ferry companies. The ferry companies are customers of the port – there are no intermediary terminals operating as a separate entity. The ferry companies run the Ro-Ro terminals under licence largely for their own use unlike Lo-Lo terminal operators. Therefore, it appears that there is no competition between Ro-Ro terminals in Dublin Port.
- 4.70 The impression given to the Competition Authority during our meetings with ferry companies and through the public consultation was that the lack of an intermediary terminal operator is not a competition concern. The ferry companies appear satisfied to allow DPC invest in the required infrastructure, and the time-sensitive nature of consumer demand in the sector is such that Ro-Ro ferry companies value having exclusive access to a terminal. This means there is no uncertainty regarding access and availability of ramps during peak sailing times.
- 4.71 The current situation does not appear to be affecting the level of upstream competition between Ro-Ro ferry companies. There is sufficient access to ramps within Dublin Port and good competition between Ro-Ro service providers on the major routes to Great Britain. The level of competition between shipping lines is deemed to be a key determinant of the competitiveness of a Ro-Ro port, and on the Central Corridor there are four shipping lines providing regular services from Dublin and Dún Laoghaire to Liverpool, Holyhead and Heysham²⁹¹.
- 4.72 Overall, competition in the Ro-Ro sector appears to be working relatively well, though like Lo-Lo and bulk, it is unclear to what extent this is being driven by spare capacity. It would appear that the key issue is to ensure sufficient Ro-Ro ramp availability going forward to maximise the potential for competition between shipping lines.

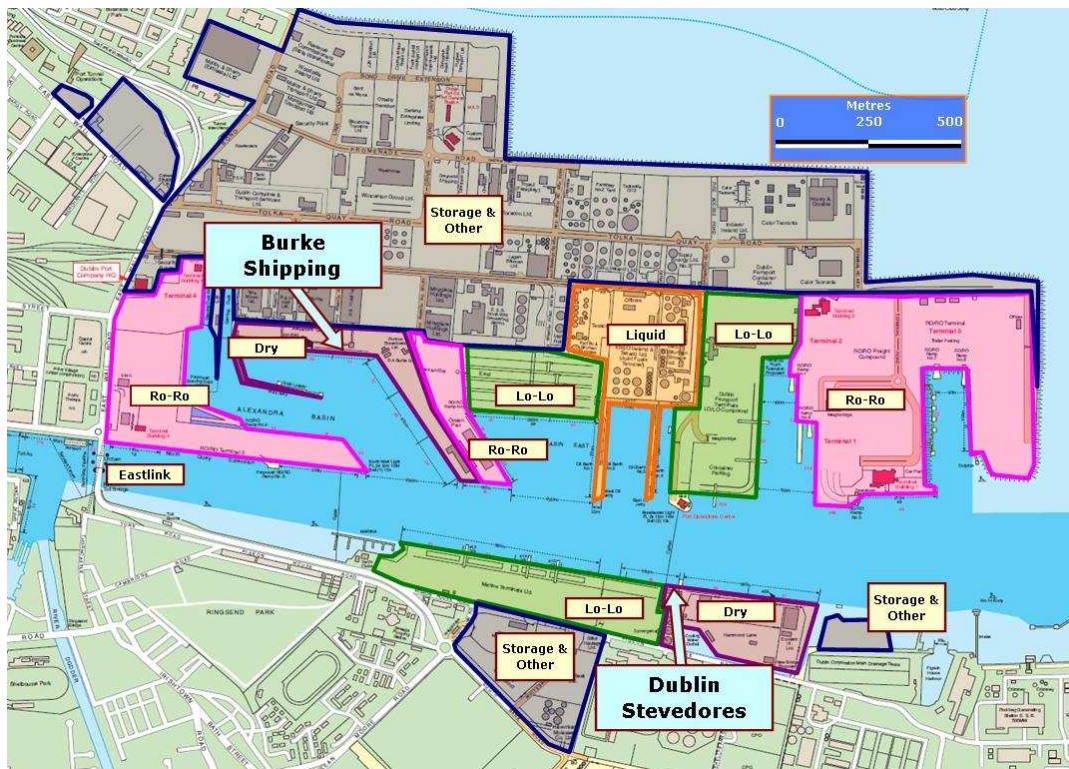
²⁹¹ See Section 2 (paragraph 2.62 to 2.68).

Competition between bulk terminals in Dublin

- 4.73 There is often a lack of concentrated demand to handle bulk cargo types which makes it more difficult to create the necessary scale for structured competing terminals. There are a number of reasons why this is the case:
- Unlike unitised cargo which is standardised in its size and shape, bulk cargo comes in all shapes and sizes including different forms of liquid bulk, dry bulk and break bulk.
 - Bulk ships are usually voyage chartered with no scheduled services and handling methods vary for different bulk categories;
 - Bulk importers and exporters often prefer to self-handle cargo and use their own quay space;
 - The characteristics of bulk cargo are such that importers and exporters will normally use the closest port.
- 4.74 Consequently bulk terminals often do not to compete in the same structured way as Lo-Lo and Ro-Ro where terminals tend to be separated by specific berths, gantry cranes and ramps.
- 4.75 For liquid bulk, the Dublin Port oil storage and distribution facilities are operated by Topaz, Top and Esso/Valero. These facilities are linked to four oil berths by a common user oil pipe system owned by DPC. Oil tanker cargo can, therefore, be discharged to the storage facilities of any of the oil companies. In practice this should facilitate competition between each of the distribution facilities, though some concerns were raised regarding the scope for new entrants due to space restrictions.
- 4.76 Dry bulk handling is not as specialised as liquid bulk and there is greater scope for supply-side substitution between different quay-space and cargo-handlers within a port. Dry bulk in Dublin is mainly handled in the common-user terminals on the Northside (in Alexandra Basin) and Southside of the port (on the South Bank Quay). These terminals are both owned by DPC.
- 4.77 While this appears to limit the scope for intra-port competition, the nature of handling dry cargo is such that the provision of adequate quay space and ensuring there is competition between stevedores operating within that quay space is most important for intra-port competition. For example, if a port authority licensed four stevedores to operate within one large bulk terminal this would be preferable to having two separate bulk terminals with one stevedore licensed to operate within each terminal.
- 4.78 There are only two 'general stevedore' licences to provide stevedore services in the common user terminals on the Northside and Southside of the port where most bulk handling takes place (see **Figure 16 below**). This raises competition concerns that are discussed in more detail in the following sub-section that examines competition for the provision of ancillary services and later in Section 5²⁹².

²⁹² See paragraph 4.85 to 4.90 and Section 5 (paragraph 5.27 to 5.39).

Figure 16: Dublin Port bulk terminals (Burke Shipping and Dublin Stevedores)



Source: Dublin Port Company, Competition Authority analysis

- 4.79 Intra-port competition for bulk cargo can also be facilitated through issuing self-handling licences. This can provide bulk importers or shipping lines with the opportunity to handle their own cargo in a more cost effective manner and provide them with more bargaining power in their dealings with licensed stevedores. Considering the diverse nature of bulk products, this is important to allow for greater flexibility and innovation within the cargo handling sector. For example, a self-handling licence can facilitate the use of specialised self-unloading vessels that can keep costs down and improve efficiency²⁹³.
- 4.80 A limited number of self-handling licences have been issued by Dublin Port (see paragraph 4.90 for more information), though some submissions feel that more licences should be made available to improve competition for stevedore services. Self-handling licences are discussed in more detail in the following sub-section and Section 5.

²⁹³ Self-unloading vessels are equipped with onboard cargo handling systems that enable them to discharge without shore-based unloading equipment. These can be used for liquid bulk and for grains, fertilisers, ores and minerals.

Evaluation of competition between terminals

- Competition between terminals is one of the best ways to limit the potential for service providers to earn monopoly profits and provide poor services. However, many ports are too small to efficiently facilitate competing terminals, and Dublin is currently the only port in the State with competing Lo-Lo terminals.
- **Dublin Lo-Lo:** While we were informed that competition between the three Lo-Lo terminals is working well, we have concerns that competition is being influenced by spare capacity. These concerns are compounded by Dublin's pre-eminent position for Lo-Lo cargo, the leasing and licensing arrangements and vertical integration between terminal operators and shipping lines.
- **Dublin Ro-Ro:** The competitiveness of a Ro-Ro port is largely determined by the level of competition between ferry companies. While DPC owns all the Ro-Ro terminals and ramps in Dublin Port, this does not appear to be affecting the level of upstream competition between Ro-Ro ferry companies.
- **Dublin Bulk:** The characteristics of handling dry cargo is such that the provision of adequate quay space and ensuring there is competition between stevedores operating within that quay space is most important for intra-port competition. There are some concerns that DPC has only issued two 'general stevedore' licences to provide stevedore services in the common user terminals where most bulk handling takes place.

Competition for the provision of ancillary services

- 4.81 Ancillary port services refer mainly to stevedoring, pilotage and towage in this study, but can also include security, ships agency, warehousing, and maintenance and repair.
- 4.82 Competition between the providers of ancillary services is the second form of intra-port competition and like competing terminals, it is an effective way to limit the potential for service providers to earn monopoly profits and/or provide poor inefficient services. It is especially important in small single terminal ports that do not have sufficient scale or throughput to facilitate a landlord port model with competing terminals. For example, ports that are best served by adopting a hybrid between a landlord and tool port management model can promote private participation and competition for the provisions of ancillary services through the effective use of leasing and licensing arrangements.
- 4.83 This study focuses mainly on stevedore services. As highlighted previously, cargo handling and stevedore charges make up between

70% and 90% of the total cost of moving goods through a port²⁹⁴, which means the level of competition between stevedores is especially important in Dublin Port and in other ports. Some stakeholder submissions raised serious concerns regarding the licensing of stevedore services in Ireland.

- 4.84 While submissions did not raise any serious concerns regarding pilotage and towage, the characteristics of these services are such that they warrant further discussion.

Stevedore services

Stevedore services in Dublin Port

- 4.85 DPC is responsible for the licensing of stevedores in Dublin Port. While DPC advertises on its website that eight private companies are licensed to provide stevedore services in the port, most of these licences have been granted to ferry companies and Lo-Lo terminal operators to enable them to either handle cargo themselves, or to sub-contract stevedores to do it for them. For example, Dublin Ferryport Terminals (DFT) sub-contracts Scruttons-Hamilton to provide its stevedore services in Dublin.
- 4.86 Significantly, while there were previously three general stevedores licensed to operate in Dublin Port, there are now only two since BSG bought the company (Poolbeg) that held the third licence. The general stevedore licences being used by BSG and Dublin Stevedores allow for the direct provision of stevedore services in the common user quays on the Northside and Southside of the port where most dry bulk handling takes place. The need to provide cranes and warehousing mean that BSG generally provides stevedore services on the Northside while Dublin Stevedores provide stevedore services on the Southside. These companies therefore enjoy effective monopolies in these respective licensed areas. While the likes of DFT and MTL could handle cargoes other than Lo-Lo, they largely choose not to do so. By offering extensive bulk handling services Lo-Lo terminal operators would have to sacrifice limited quay and berth space that is currently dedicated to more lucrative Lo-Lo cargo.
- 4.87 Port users have questioned this licensing arrangement and feel it as having a negative impact on competition. While our quantitative analysis suggests that bulk charges have fallen, it is unclear from what level they have fallen and the extent to which this has been driven by falling bulk volumes and spare capacity. If Dublin were to experience significant growth in bulk tonnage, this would increase the likelihood that the incumbents could charge a higher price and offer a lower quality of service than would be the case in a more open competitive market.
- 4.88 Throughout this study we became aware that BSG and Dublin Stevedores have been operating under a 20 year 'general stevedore licence' that will be automatically renewed in 2014 for a further 20 years on identical terms once certain conditions are met (BSG provides Lo-Lo cargo handling services using the same general stevedore

²⁹⁴ See Section 2 (paragraph 2.11).

licence). This appears to create the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods.

- 4.89 New stevedore licences can be issued by DPC at any time. Applications have been made, but DPC have indicated that due to space constraints, licensing multiple stevedores may not be the optimal outcome and could potentially limit the scope for investment in cranes and other handling equipment²⁹⁵. It is our understanding that DPC also request that licence applicants must be able to demonstrate that they can attract new business to the port²⁹⁶.
- 4.90 In addition to general stevedore licences, stakeholder submissions have recommended that issuing more self-handling licences could further improve competition for stevedore services. As stated previously, this can provide bulk importers or shipping lines the opportunity to handle their own cargo in a more cost effective manner and provide them with greater bargaining power in their dealings with licensed stevedores. While all liquid bulk is effectively self-handled, there are five self-handling licences available not including those general stevedore licences held by BSG and Dublin Stevedores. However, most of these are held by ferry companies (P&O, Stena Line and Seatruck) and Lo-Lo terminal operators (DFT and MTL). Two other companies can also self-handle: Clearway Group (Recycling) and Tara Mines.

Stevedore services in other ports

- 4.91 This analysis focuses on stevedore services in Cork, Shannon Foynes, Belfast, Waterford and Rosslare. Like Dublin, all of these ports are responsible for licensing stevedore services, though some – notably Belfast and Rosslare – have adopted different approaches based on the specific port management models in place.
- 4.92 Belfast has adopted a more rigid tool port structure for stevedore services whereby the port authority owns and invests in the crane infrastructure and licenses multiple private stevedores to operate the cranes. Rosslare operates a service port management model and provides stevedores services itself, while Cork, Shannon Foynes and Waterford have adopted a hybrid between a landlord and a tool port model whereby the port authority licenses various private stevedores to provide cranes and labour themselves.
- 4.93 **Table 6** outlines the number of stevedores licensed to operate in each of the ports identified above. It identifies the number of stevedores that compete for third-party business. It does not include bulk importers/exporters, Ro-Ro shipping lines or Lo-Lo terminal operators that are with issued with a stevedore licence to self-handle their own cargo.

²⁹⁵ Submission from Dublin Port Company and meetings with Dublin Port Company.

²⁹⁶ Submission from North Quay Associates (NQA).

Table 6: Licensed stevedore service providers in other ports

	Port authority stevedores	Private stevedores	Total
Shannon	1	4	5
Belfast	0	4	4
Cork	1	2	3
Waterford	1	2	3
Rosslare	1	0	1

Source: TCA analysis

- 4.94 Belfast Harbour has licensed four private bulk stevedores²⁹⁷, some of whom specialise in handling timber, paper and steel²⁹⁸. Belfast has also issued numerous self-handling licences.
- 4.95 Shannon Foynes Port Company has licensed four private bulk stevedores in Foynes Port²⁹⁹ and one bulk stevedore in Limerick Dock (Limerick Cargo Handling) that is a wholly owned subsidiary of the port authority. The port company has also licensed two companies to self-handle in Limerick Dock.
- 4.96 The Port of Cork has licensed three stevedores - two private bulk stevedores³⁰⁰ and one 'port authority stevedore' (Cork Port Terminals) that is a wholly owned subsidiary of the port authority. The port authority stevedore is the exclusive provider of Lo-Lo cargo handling services (see paragraph 4.55). R&H Hall are also licensed to handle bulk cargo, though this is mainly for their own purposes.
- 4.97 Waterford Port Company also has three licensed stevedores - two private bulk stevedores³⁰¹ and one 'port authority stevedore' (Waterford Container Terminals) that is the exclusive provider of Lo-Lo cargo handling services in the port³⁰².
- 4.98 While there are a variety of licensed providers of stevedore services across Irish ports, the limited threat of entry is again of concern. Iarnród Éireann is the only provider of Ro-Ro stevedore services in Rosslare while stevedore services for specific quay spaces or cargo types are provided exclusively by port authority stevedores in Shannon, Cork and Waterford. Moreover, some port authorities have applied certain terms and conditions that further limit the threat of entry. For example:

²⁹⁷ Jenkins Shipping, Scruttons, Belfast Cargo Handling and Burke Shipping Group.

²⁹⁸ These licences are up for renewal at the end of 2013.

²⁹⁹ Mullock and Sons, Argosea Services, R.A Burkes (Burke Shipping Group) and James Scott & Co (Ronayne Shipping Ltd).

³⁰⁰ Burke Shipping Group and Ronayne Shipping Ltd.

³⁰¹ Southeast Port Services and Stokestown Port Services.

³⁰² Waterford Container Terminals also handle project cargo (i.e., large, heavy, critical pieces of equipment).

- In Shannon Foynes licensed stevedores must all use dock labour from the same pool and the cost of labour is the same for all.
 - The Port of Cork have indicated that additional stevedore licences will be issued after 2014, but new entrants will be asked to compensate the port company for monies spent to rationalise the sector.
- 4.99 Some port authorities have indicated that they are willing to issue new stevedore and self-handling licences where appropriate, however, most port authorities in the State have adopted a conservative approach to issuing stevedore and self-handling licences that can in effect limit entry. This approach has been largely influenced by dock worker rationalisation programmes, though port authorities have also justified restrictive licensing on the basis of market saturation, limited quay space and the effect new entrants may have in terms of threatening future investments of incumbents. This has the potential to limit the threat of entry and remove competitive constraints on the incumbents.

Pilotage and towage services

General pilotage services

- 4.100 Pilotage is defined as those operations required for a ship to enter and exit a port safely, and it usually implies the presence in the vessel's bridge (or at least in radio contact) of an expert with sufficient knowledge of the waters to avoid risks³⁰³. It generally accounts for small percentage of the total cost of moving goods through a port and it was not raised as a major competition issue in the public consultation. Indeed, many vessels that enter Irish ports do not require pilotage services. Dublin, Cork, Shannon Foynes, Rosslare and Belfast cater for vessels with Pilotage Exemption Certificates (PECs). A PEC is granted to a vessel once the person in command has the required skills and experience to safely manage the vessel in the waters in question. In Dublin, almost 80% of vessel arrivals have PECs.
- 4.101 However, pilotage remains an essential part of port traffic management and safety and a private sector pilot monopoly has the potential to bring port operations to a halt which presents a significant risk for ports and shipping lines. Consequently, it is common that pilots are employed directly by the port even when other aspects of port management and operations are privatised.
- 4.102 Under the *Harbours Act 1996* (the "Act") a port authority is responsible for the organisation and provision of pilotage services. The Act provides that a company may either (a) employ pilots as members of its staff or (b) licence persons to provide pilotage services. In Dublin and Waterford pilotage services are provided directly by employees of the ports. No major concerns were raised in the public consultation regarding the cost of pilotage services in these ports, though such arrangements may allow the port authority to exercise a degree of market power which could lead to the provision of a lower level of service at a higher price than if the supplier was subject to competition.

³⁰³ Trujillo, L. and Nombela, G. (2000). See footnote 235 for full reference.

- 4.103 To ensure that such arrangements continue to work well for port users, it may be useful that cost of pilotage services are monitored as described in Section 5 (see Recommendation 6, paragraph 5.80 to 5.85). If it is found that pilotage charges are high or increasing at a faster rate compared to ports where pilots are self-employed or fully privatised, opportunities to introduce intra-port competition should be explored. As described in Section 2, the EU Commission is currently examining ways to allow for greater market access to port services including pilotage and towage³⁰⁴.
- 4.104 In Cork and Shannon Foynes, pilots are licensed on a self-employed basis. While no concerns were raised with the Competition Authority in the course of the consultation process, competition concerns may arise where the port authority limits the number of licensed pilots at a port. While responsibility for setting pilotage charges remain with the port authority, restricting the number of licences may place licensees in a position where they can unduly influence the competitive conditions within the port. The Competition Authority intends to work with the Department of Transport, Tourism and Sport to explore this issue further in the context of the current review of the legislative framework.
- 4.105 Similar to ports that directly employ pilots as members of its staff, the characteristics of the pilotage sector are such that it would also be useful to regularly monitor the cost of pilotage services in ports that licence self-employed pilot to ensure that such arrangements are working well for port users.

General towage services

- 4.106 Towage refers to the operation of moving a ship into a port using a tug. Towage operations are often carried out by private firms and the optimum situation would be to have a number of towage firms competing in the port. However, if the volume of vessel traffic is not sufficient to support a towage service on a commercial basis, a port authority may be required to provide towage services itself.
- 4.107 There are varying degrees of competition for towage services within Irish ports. The Port of Cork owns and operates a tug itself, but there are also two private tug operators that provide towage services, while a fourth tug operator was also present in the port for a period in 2012. One private company is licensed to provide towage services in Shannon Foynes, while there are two private operators licensed in Waterford. There are four separate companies providing towage services in Belfast.
- 4.108 Dublin Port provides towage services itself. In 2010 Dublin launched two new tug boats that are part of an overall plan to upgrade towage services in the port. Dublin Port has indicated that private tug operators are free to enter the market, but the volume of vessel traffic does not appear sufficient to attract private providers of towage services.
- 4.109 While the scope for inter-port competition between providers of towage services is limited, there does not appear to be significant regulatory

³⁰⁴ See Section 2 (paragraph 2.31 to 2.37).

barriers to entry and it was not raised as a major competition concern in the public consultation. However, potential competition concerns may arise where port authority investment in tug boats operated by the port authority may in effect deter market entry or displace existing competition. Similar to pilotage services, the characteristics of the sector are such that it may be useful to regularly monitor the cost of towage services in ports to ensure that they are working well for port users.

5. PROMOTING COMPETITION: RECOMMENDATIONS

Introduction

- 5.1 Dublin Port's preeminent position underlines the need to ensure that inter-port competition is maximised and that intra-port competition is working well. Outside Dublin, it is especially important that intra-port competition, or more specifically, 'intra-terminal' competition for ancillary services, is being fully utilised.
- 5.2 Our analysis has found that competition is working well in some areas; however, the potential for inter-port competition appears limited and we have concerns regarding the level of intra-port competition in Dublin Port and other Irish ports. These concerns relate to leasing and licensing arrangements for Lo-Lo terminals and stevedore services.
- 5.3 The Competition Authority believes that it is possible to further improve competition in the ports sector by ensuring that the correct structures are in place to reap the full benefits of competition in the medium to long-term.
- 5.4 In our public consultation, we outlined prospective policy measures covering a range of topics. We requested interested parties to submit their views regarding the potential for such measures to improve competition. We do not attempt to cover all the topics raised; rather we have grouped the most common issues raised under a series of headings as follows:
- Increase private sector participation;
 - Port closure and amalgamation;
 - Modify existing ownership and management models;
 - Improve internal connectivity;
 - Data and port performance measures.
- 5.5 This section has two main objectives:
- (a) To analyse prospective policy measures and their impact on inter-port and intra-port competition.
 - (b) To provide specific recommendations regarding policy measures that can promote competition in Ireland.
- 5.6 Some of the submissions to the public consultation stressed that the Government should not feel obliged to make unnecessary interventions. It was stated that the Competition Authority should be acutely aware of the maxim "if it ain't broke, don't fix it"³⁰⁵. The Competition Authority is conscious of this, and it was our aim from the outset to be clear on the questions that we seek to answer, and only to make recommendations that are targeted and proportionate and that promote the competitiveness of the economy and facilitate the creation of jobs.

³⁰⁵ Submission from the Chartered Institute of Transport and Logistics (CILT).

Analysis of prospective policy measures

Increase private sector participation

Introduction

- 5.7 Our public consultation asked, "*Would privatisation of one or more ports, or groups of ports, make any difference to inter-port competition? Importantly, would privatisation over-ride many of the factors outlined in this document that already limit inter-port competition (e.g., specialisation, location, infrastructure, fuel costs)?*"
- 5.8 At a worldwide level, many countries opted to promote the entry of private firms to invest in ports and provide services due to poor public port performance (high tariffs, inefficient services, overstaffing etc.) and tight fiscal constraints. International experience shows that private participation has prepared ports for a more competitive market with less financial help from governments³⁰⁶. The result is that ports are generally moving towards port management models that can effectively facilitate private participation³⁰⁷.
- 5.9 There are several ways to increase private sector participation. These can include full private ownership, or maintaining public ownership through a landlord or tool port model that can facilitate private participation through leasing and licensing arrangements.
- 5.10 The best way to facilitate private participation depends on a range of factors including: port size, cargo type and the level of inter-port competition. Within this context, the merits of full privatisation, the need for regulation and the effective use of leasing and licensing are discussed below.

Complete privatisation of port authorities

- 5.11 While the outright sale and privatisation of a port may be justified by serious fiscal needs in the public sector³⁰⁸, many submissions stated that privatising port authorities is unlikely to be the panacea to improve competition in the sector³⁰⁹. Private participation is particularly useful for harnessing efficiency³¹⁰ and reducing fiscal burden, though port characteristics as natural monopolies mean that in the absence of effective inter-port competition or state regulation to protect the public interest, private port authorities are likely to extract monopoly profits. Indeed, many nations consider that comprehensive privatisation is incompatible with national interests³¹¹.

³⁰⁶ Trujillo, L. and Nombela, G. (2000), Chapter 4 in Estache, A. and De Rus, G. (2000), "Privatisation and Regulation of Transport Infrastructure: Guidelines for Policymakers and Regulators", *World Bank Development Studies*, Washington DC: World Bank.

³⁰⁷ World Bank (2007), "Module 3: The Evolution of Ports in a Competitive World", *Port Reform Toolkit, Second Edition*, Washington DC: World Bank.

³⁰⁸ Trujillo, L. and Nombela, G. (2000). See footnote 306 for full reference.

³⁰⁹ Submissions from the Irish Exporters Association (IEA), the Chartered Institute of Logistics and Transport (CILT), R&H Hall and Dublin Port Company (DPC).

³¹⁰ Tongzon, J. and Heng, W. (2004), "Port Privatization, Efficiency and Competitiveness: Some Empirical Evidence from Container Ports (terminals)", *Transportation Research Part A*, Volume 39(5), 405-424.

³¹¹ World Bank (2007). See footnote 307 for full reference.

- 5.12 To optimise private sector participation, the consensus is that governments should retain public ownership of port infrastructure to avoid the risk of monopolisation of essential assets by private firms³¹². The use of landlord and tool port management models by State port companies can effectively manage and regulate private sector participation and competition in a way that does not neglect ports' public service function³¹³. This can be achieved through effective leasing and licensing and it is unlikely that the complete privatisation of an Irish port could over-ride the factors that limit inter-port competition, provide more competitive pressure on Dublin Port, and/or significantly enhance intra-port competition.
- 5.13 The use of full contract concessions (i.e., where a private entity manages a port or port assets before they revert to a port authority at the end of a fixed lease period) can also be an effective way to optimise private sector participation while maintaining public ownership of port infrastructure. Full contract concessions can be particularly useful where the existing ownership and/or management model of a particular port is deemed not to be working well for local port users³¹⁴.

The need for regulation

- 5.14 The public consultation asked if *"There are structural and/or regulatory changes which would stimulate greater inter-port competition?"*
- 5.15 If the complete privatisation of port authorities is not deemed the best outcome, then what type of regulation (if any) is needed to ensure that private participation and the commercial State port sector works well for the economy? The answer depends on a number of factors, including the level of inter-port competition and port size.
- 5.16 The regulatory role of a commercial State port authority has two dimensions. The first dimension relates to safety, environmental issues, and the quality of services. The second dimension is the economic regulation of private participants, in particular, whether governments or port authorities should keep control over the tariffs and performance of private service providers. While some form of supervision by port authorities is needed to control the infrastructure assets that private operators are using, the necessity for economic regulation by a port authority is not as clear.
- 5.17 If sufficient competition exists among ports, regulating price and performance (i.e., imposing minimum levels of efficiency on a private provider) is not essential because competition encourages private service providers to keep prices low and service quality high or risk losing business.
- 5.18 Our earlier analysis indicated that inter-port competition among Irish ports is low. This would suggest that economic regulation might be required in some cases. However, research indicates that the establishment of a port sector regulator is costly and should only be introduced in the event of serious threats to free competition within a

³¹² Trujillo, L. and Nombela, G. (2000). See footnote 306 for full reference.

³¹³ World Bank (2007). See footnote 307 for full reference.

³¹⁴ Full concession contracts are discussed in more detail in Appendix 6.

port³¹⁵, or in a small local port where a private company is the exclusive provider of a port service³¹⁶. There are few such examples in Ireland³¹⁷. Even in small local ports there is usually scope for competition between stevedores, while in a large landlord port like Dublin there are competing terminals. Therefore, while inter-port competition appears limited, intra-port competition and maintaining public ownership of ports infrastructure should ensure that private providers are incentivised to keep prices low and service quality high.

- 5.19 The obligation on port authorities to comply with competition law can also remove the need for a port sector regulator. As managers of port infrastructure that tends to demonstrate the characteristics of a natural monopoly, port authorities must ensure that they do not abuse a dominant market position and restrict inter-port and intra-port competition.
- 5.20 Depending on the level of price competition, barriers to entry, or the nature of the leasing or licence arrangements, some form of performance regulation by port authorities may be required where intra-port competition is deemed not to be working well. The need for this form of regulation and the importance of leasing and licensing contracts to promote intra-port competition is discussed below.

Leasing and licensing for Dublin Lo-Lo terminals

- 5.21 To facilitate private participation and intra-port competition, port authorities frequently lease port land and infrastructure to private service providers including terminal operators, ferry operators and other port users. A lease is usually required where the private provider requires the exclusive use of port assets.
- 5.22 In our consultation we asked, *"If changes to the current leasing arrangements, particularly those in Dublin Port, could improve competition and efficiency"*
- 5.23 While we received limited feedback regarding this issue in the public consultation, our competition concerns stem from our analysis of the leases and licenses that the three Lo-Lo terminal service providers are operating under³¹⁸. It is our understanding that DFT has approximately 110 years left to run on their lease, while MTL has approximately 85 years to run. While there are no specific rules about the proper length for a lease, the duration of these leases appears exceptionally long. In other countries the average term for port leases generally range from about 15 to 40 years depending on the level of investment required³¹⁹. Throughout this study we also became aware that BSG, the third

³¹⁵ World Bank (2007). See footnote 307 for full reference. More broadly, research has found that regulation aimed at controlling prices and entry into markets that would otherwise be workably competitive can impose significant costs on the economy. Reference: Guasch, J. and Hahn, R. (1999), *The Costs and Benefits of Regulation: Implications for Developing Countries*, *World Bank Research Observer*, Volume 14(1), 137-58.

³¹⁶ Trujillo, L. and Nombela, G. (2000). See footnote 306 for full reference.

³¹⁷ While there are examples where the port authority is the exclusive provider of port services in a small port (e.g., all cargo handling services in Rosslare and Lo-Lo cargo handling services in Cork and Waterford), we are not aware of cases where a private operator is the exclusive provider of a service in a small port.

³¹⁸ See Section 4 for more information (see paragraph 4.59 to 4.66).

³¹⁹ Trujillo, L. and Nombela, G. (2000). See footnote 306 for full reference.

terminal operator, has been operating under a 20 year 'general stevedore licence' that can be renewed on identical terms once certain conditions are met every 20 years, thereby creating the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods.

- 5.24 The length and nature of the leases and the licensing arrangements, and the lack of cargo handling space next to the North Quay walls, means that the threat of new entry is limited. While Dublin Port Company (DPC) and the terminal operators have informed us that competition is working well, Dublin's pre-eminent position for Lo-Lo cargo and DFT and MTL's vertical integration with shipping companies means that in the absence of spare capacity, there is potential for the incumbent terminal operators to charge significantly more and offer an inferior level of service than would be the case in a more open competitive market³²⁰. Moreover, BSG also provide agency services to shipping lines, something that further limits the scope for movement between terminals. Such arrangements seriously constrain the potential of the landlord port management model to stimulate effective intra-port competition.
- 5.25 This concern is exacerbated by DPC's inability to impose minimum performance measures on terminal operators under the current leasing arrangements. While DPC has indicated that there is scope for more Lo-Lo capacity, this can only be achieved through more efficient use of the existing Lo-Lo terminals³²¹. While the licensing arrangement with BSG allows DPC to introduce dwell time charges on containers which stay in a terminal beyond a given number of days³²², DPC cannot do this for DFT and MTL.
- 5.26 There is evidence that competition between the Lo-Lo terminal operators is not working as well as it could. In terms of efficiency, while there are signs of progress, there also appears to be room for improvement. Research suggests that BSG is operating near the European average for terminal efficiency while DFT and MTL are operating below average³²³. This could create further problems if the capacity of the more efficient terminal is constrained and a higher percentage of Lo-Lo cargo is diverted to less efficient terminals.

³²⁰ See Section 4 for more information (paragraph 4.59 to 4.66).

³²¹ DPC (2012), *Dublin Port Company Masterplan: 2012-2040*. Available from: www.dublinport.ie.

³²² See Section 4 for more information on dwell time charges (paragraph 4.29).

³²³ See Section 4 for more information on port efficiency (paragraph 4.49 to 4.51).

Recommendation 1: Leasing and licensing of Dublin Lo-Lo terminals

The leases that Lo-Lo terminals operate under are exceptionally long and therefore may have the effect of restricting competition by severely limiting the scope for new entry. Dublin Port Company should seriously consider reducing the duration of these leases in order to address their anti-competitive impact.

For the same reason, the clause which appears to allow the repeated renewal of the licence of the third Lo-Lo terminal operator should be amended to facilitate new entry.

Future terminal leases and licences should be awarded for shorter periods on a fair, reasonable and non-discriminatory basis and should include efficiency incentives that are enforced by Dublin Port Company.

The terms and conditions of the leases and licences, including their length, should be designed in a manner that ensures effective competition and reflects the level of investment required to provide cargo handling services.

Consideration by: *The Department of Transport, Tourism and Sport and Dublin Port Company.*

Stevedore licensing

- 5.27 To facilitate private participation and intra-port competition, port authorities can also licence private service providers. In contrast to leasing arrangements, licensing arrangements tend to apply to port services that do not require exclusive use of port infrastructure. Such services include towage, mooring and stevedore services.
- 5.28 Our consultation asked, *"Are the current arrangements for the licensing and provision of ancillary services fair, transparent and non-discriminatory? Do these services provide good value for money for port users?"*
- 5.29 The Competition Authority has previously received complaints about stevedore licences, and concerns were again raised during the consultation process regarding this issue, particularly in Dublin Port. While DPC advertises on its website that there are eight private companies licensed to provide stevedoring services in the port, most of these licences have been granted to ferry companies and Lo-Lo terminal operators to enable them to either handle cargo themselves, or to sub-contract stevedores to do it for them (see paragraph 4.90). Sub-contracting can expand business opportunities stevedores, though these opportunities are limited to handling unitised cargo within specific terminal areas and do not cover cargo handling for dry bulk.
- 5.30 Significantly, while there were previously three general stevedores licensed to operate in Dublin Port, there are now only two since BSG bought the company that held the third licence. The general stevedore

licences being used by BSG and Dublin Stevedores allow for the direct provision of stevedore services in the common user quays on the Northside and Southside of the port where most dry bulk handling takes place. The need to provide cranes and warehousing mean that BSG generally provides stevedore services on the Northside while Dublin Stevedores provide stevedore services on the Southside. These companies therefore enjoy effective monopolies in these respective licensed areas³²⁴.

- 5.31 Port users have questioned this licensing arrangement and view it as having a negative impact on competition for stevedore services in Dublin Port. Some feel that an increased number of general stevedore licences should be made available to ensure that there is greater competition. It has also been suggested that issuing self-handling licences³²⁵ to responsible operators could further improve competition for stevedore services³²⁶. For example, if a bulk importer were issued a self-handling licence this could enable them to handle their own cargo in a more cost effective manner and/or provide them with more bargaining power in their dealings with BSG or Dublin Stevedores.
- 5.32 Throughout this study we became aware that BSG and Dublin Stevedores have been operating under a 20 year 'general stevedore licence' that will be automatically renewed in 2014 for a further 20 years on identical terms once certain conditions are met (BSG provides Lo-Lo cargo handling services using the same general stevedore licence). This appears to create the possibility of repeated renewals of the licence for an indefinite number of consecutive 20 year periods.
- 5.33 New licences can be issued by DPC at any time. Applications have been made, but DPC have indicated that due to space constraints, licensing multiple stevedores may not be the optimal outcome and could limit scope for future investment in cranes and other cargo handling equipment³²⁷. DPC also request that licence applicants must demonstrate that they can attract new business to the port³²⁸.
- 5.34 The current licensing system appears overly restrictive and could potentially be limiting competition from more efficient stevedores, particularly for bulk cargo. If Dublin Port were to experience a spike in bulk tonnage, the incumbents could charge a higher price and offer a lower quality of service than would be the case in the presence of robust competition where there is threat of new entry.
- 5.35 DPC should adopt an application process that is fair, reasonable and non-discriminatory and provides scope for new entry and greater competition from efficient providers of stevedore services. The current licensing criteria do not appear fair, reasonable and non-discriminatory. It would be extremely difficult for a potential entrant to attract future business if they do not have a licence, and the current criteria being

³²⁴ While the likes of DFT and MTL could handle cargos other than Lo-Lo, they largely choose not to do so. By offering extensive bulk handling services Lo-Lo terminal operators would have to sacrifice limited quay and berth space that is currently dedicated to more lucrative Lo-Lo cargo.

³²⁵ Self-handling licences are explained in more detail in Section 4 (paragraph 4.89).

³²⁶ While all liquid bulk is effectively self-handled, there are approximately eight self-handling licences available. See Section 4 (paragraph 4.90).

³²⁷ Submission from North Quay Associates (NQA).

³²⁸ Ibid.

adopted by DPC is protecting the incumbents' position to an extent that does not seem justified either in the interests of the port or of its users.

- 5.36 The Competition Authority recommends that DPC should make at least two more general stevedore licences available (one on the Northside and one on the Southside of the port) and that existing stevedore licences should not provide the licence with an automatic renewal option. We also recommend that self-handling licences should be made available to all responsible operators on a fair, reasonable and non-discriminatory basis at a cost that does not discourage entry³²⁹. However, self-handling licences should not be regarded as an alternative to issuing general stevedore licences as self-handling licences may only be appropriate for certain cargo-types.
- 5.37 If the lack of quay space is a genuine concern, this should be clearly demonstrated by DPC. In such instances, to ensure that competition works effectively, it would be preferable that DPC tender the existing general stevedore licences on a five or ten year basis. Other possibilities might include DPC investing in cranes and licensing their use to multiple stevedores. Similarly, if there are legitimate health and safety concerns with regard to the issuing of self-handling licences, these should be clearly demonstrated by DPC.
- 5.38 While there are a variety of licensed providers of stevedore services in other Irish ports, many have adopted a largely conservative approach to issuing general stevedore and self-handling licences. For example, Lo-Lo handling services in Waterford and Cork, and Ro-Ro handling services in Rosslare are being provided exclusively by port authority stevedores. While this approach has been influenced by dock rationalisation programmes (and the associated industrial relations issues), port authorities have also justified restrictive licensing practices on the basis of market saturation, limited quay space and that new entrants may limit the scope for future investment in cargo handling equipment³³⁰.
- 5.39 Based on its analysis of stevedore licensing practices in Cork, Shannon, Waterford and Rosslare, the Competition Authority recommends that general stevedore licences and self-handling licences should be made available to all responsible operators on a fair, reasonable and non-discriminatory basis at a cost that does not discourage entry. Where stevedore services are provided exclusively by port authority stevedores, this requirement should be clearly justified by the relevant port authorities and means to promote intra-port competition should be explored (see paragraph 4.55).

³²⁹ Self-handling licences are explained in more detail in Section 4 (paragraph 4.90).

³³⁰ See Section 4 for more information (paragraph 4.91 to 4.99).

Recommendation 2: Stevedore licensing

Dublin Port

In Dublin Port, at least two new general stevedore licences should be issued by Dublin Port Company – one on the Northside and one on the Southside of the port. As stated in Recommendation 1, the clause in the existing stevedore licences which appears to allow the repeated renewal of the existing stevedore licence at the licensee's option and on identical terms should be amended.

All ports

General stevedore licences should be granted to applicants on a fair, reasonable and non-discriminatory basis or through a tendering process. Specifically, licensing criteria adopted by any port authority requiring applicants to demonstrate that they will attract new business to the port should be removed. Where stevedore services are provided exclusively by a port authority stevedore, this requirement should be clearly justified by the relevant port authorities.

Self-handling licences should be made available to all responsible operators on a fair, reasonable and non-discriminatory basis at a cost that does not discourage entry.

Consideration by: *The Department of Transport, Tourism and Sport, Dublin Port Company and all other Tier 1 and Tier 2 Ports of Regional Significance.*

Port closure and amalgamation

- 5.40 The importance of critical mass, scale and resulting choice and frequency in determining ports' attractiveness and inter-port competition was highlighted in Section 3. The 'McCarthy Report' stated that there are too many small ports in Ireland and that state-owned ports should be restructured into several competing multi-port companies³³¹. This view was also expressed in stakeholder meetings and implies that port closure and amalgamation could increase port scale outside Dublin and thus the ability of existing Tier 1 and Tier 2 ports to compete with Dublin Port. The merits of port closure and amalgamation are discussed below.

Port closure

- 5.41 We did not discuss port closure in the public consultation; however, one submission agreed with the findings of the 'McCarthy Report' and

³³¹ Department of Finance (2011), *Report of the Review Group on State Assets and Liabilities*.

questioned the cost of maintaining Dún Laoghaire Harbour Company in light of falling traffic numbers and operating losses³³².

- 5.42 One would intuitively think that closing ports would limit inter-port competition. While closing large Tier 1 and Tier 2 ports would certainly restrict competition, the closure of small ports is less likely to have a major effect on inter-port competition. While small ports do provide some competition for bulk and niche products, the likes of Dún Laoghaire, New Ross and Wicklow have seen their market share diminish in recent years³³³. They are unlikely to generate the scale to compete with larger ports for unitised cargo³³⁴.
- 5.43 However, closing smaller ports is unlikely to enhance competition. What is more important in terms of driving competition and national competitiveness is that efforts to maintain small ports for tourism and recreational reasons should not come at the expense of building the scale and efficiency of services within our larger commercial ports.
- 5.44 A number of submissions indicated that to improve competition and ensure national competitiveness the main policy focus should be on larger ports to ensure that they are working effectively and competing with each other³³⁵. It is a view supported by the Competition Authority and is consistent with the approach being adopted by the Department of Transport, Tourism and Sport in the *National Ports Policy*³³⁶ and the European Union's Trans European Network – Transport (TEN-T) Policy³³⁷.

Port amalgamation

- 5.45 Some submissions stated that the amalgamation of port authorities could lower administrative costs and increase the capacity for smaller ports to compete³³⁸. In particular, it was suggested that the amalgamation of ports in the West, Southwest³³⁹ and the merging of Waterford and Rosslare³⁴⁰ could generate the necessary scale to provide greater competition to Dublin.
- 5.46 However, most submissions were not persuaded regarding the benefits of amalgamation. Some felt it could be used to disguise losses and

³³² Dún Laoghaire does not regard the harbour as being a major competitor to Dublin for freight traffic (see footnote 218), but as a more suitable alternative to Dublin Port for cruise ships visiting the Dublin Bay area.

³³³ See footnote 57 for more information.

³³⁴ Research indicates that while small ports can grow into large ports, they usually focus on niche domestically driven products and do not compete with larger 'gateway' ports. Similarly, larger ports tend not to compete with small ports and focus on international trade. This means that small and large ports often complement one another, though if a small port tries to develop into a larger port this can lead to overcapacity. Source: Feng, L. and Notteboom, T. (2013), "Peripheral challenge by Small and Medium Sized Ports in Multi-port Gateway Regions: The Case study of Northeast of China", *Polish Maritime Research*, Special Issue 2013 S1 (79), Volume 20, 55-66.

³³⁵ Submissions from the Irish Exporters Association (IEA), R&H Hall and BG Freight Line.

³³⁶ Department of Transport (2013), *National Ports Policy*. Available at: www.transport.ie.

³³⁷ Further information available from: <http://tentea.ec.europa.eu/>

³³⁸ Submissions from Chartered Institute of Logistics and Transport (CILT) and BG Freight Line.

³³⁹ Submissions from the Port of Cork and Cork Chambers.

³⁴⁰ Submission from David J. Dalton & Associates.

cross-subsidise poorly performing ports and would restrict inter-port competition by reducing the number of ports³⁴¹.

- 5.47 The Competition Authority is not convinced regarding the competition benefits of port amalgamation or multi-port companies. While the amalgamation of administrative functions could save money, evidence from New Zealand³⁴² and Tasmania³⁴³ suggests it is unlikely to improve competition by over-riding the factors that limit the scope for inter-port competition. Research also indicates that cooperation and coordination between ports should only be considered where land is scarce or where port hinterlands are heavily congested³⁴⁴. In such instances amalgamation may be the optimal outcome to ensure that road, rail links and other services can best serve the needs of the respective port authorities and port users.
- 5.48 From a competition perspective, the focus of any amalgamation in Ireland should be to increase the scale of Tier 1 and Tier 2 ports outside Dublin to facilitate greater inter-port competition. This could yield benefits where two large ports are located close to one another. However, there are few such examples in Ireland. For example, it is difficult to envisage how the amalgamation of Shannon Foynes and Cork would generate enough scale to place more competitive pressure on Dublin for unitised trade. The ports are located 100km apart and amalgamation would remove existing competition for bulk and increase the likelihood that the amalgamated entity would charge higher prices and offer poor service quality.
- 5.49 While Waterford Port and Rosslare Europort do not compete with each other to the same extent, the ports are located more than 70km apart and it is again unlikely that an amalgamation of these ports (or, indeed, of Waterford and Cork) could create the necessary scale to place serious competitive pressure on Dublin Port for unitised trade.
- 5.50 While port mergers are not part of the current *National Ports Policy*, any future decision to amalgamate Tier 1 and/or Tier 2 ports or create multi-port companies should be carefully considered by the Department of Transport, Tourism and Sport ("the Department"). Such a move is unlikely to generate the necessary scale to place greater competitive pressure on Dublin and could further limit inter-port competition. For example, amalgamating Dublin Port and Rosslare could severely limit the scope for inter-port competition for Ro-Ro cargo in the State³⁴⁵.

³⁴¹ Submission from the Irish Freight Forwarders Association (IFFA) and the Port of Cork.

³⁴² A proposed merger between the Port of Otago and Lyttelton Port of Christchurch raised concerns with shipping lines regarding the dominance of the new port structure and how it would affect prices, services and competition. Articles from: www.portstrategy.com and www.munz.com (Maritime Union of New Zealand).

³⁴³ Following the amalgamation of Tasmania's four port authorities under one authority ('TasPorts'), the Tasmanian Audit Office found that since the amalgamation, TasPorts revenue has been declining at a greater rate than the general downturn in the broader Tasmanian economy. Source: www.audit.tas.gov.au/publications/media/pdfs/2012-13-2.pdf

³⁴⁴ Brooks, M., McCalla, R., Pallis, A. and Van Der Lugt, M. (2009), "Coordination and Cooperation in Strategic Port Management: The Case of Atlantic Canada's Ports", *Atlantic Gateway Initiative, Centre for International Trade and Transportation, Working Paper 1*.

³⁴⁵ Dublin Port and Rosslare combined handled 99% of the State's Ro-Ro cargo in 2012. Wexford County Council specifically requested that Rosslare Port should not be amalgamated with Dublin Port in their submission.

- 5.51 The Competition Authority would also have concerns regarding amalgamations of larger Tier 1 and/or Tier 2 ports with smaller ports, particularly those involving Dublin Port. As mentioned previously, Dundalk Port Company was merged with DPC in 2011, while Greenore is also owned in conjunction with DPC. Any further mergers of ports within or close to the GDA could limit the scope for inter-port competition – particularly in relation to bulk cargo³⁴⁶.
- 5.52 It is unlikely that the amalgamation of any port in the State would constitute a merger that would have to be notified to the Competition Authority³⁴⁷. However, considering the need to maximise inter-port competition, if a merger is being proposed we would recommend that:
- The Department should be required to seek the views of the Competition Authority regarding the factors that would need to be considered to ensure that the merger does not substantially lessen competition. These factors include: the market share of the ports, the level of supply-side substitution and whether effective intra-port competition can lessen the potential for the amalgamated entity to earn monopoly profits (see **Appendix 6** for more details);
 - Alternatively, those ports with turnovers below the existing merger thresholds should be designated by the Minister for Jobs Enterprise and Innovation as a class of mergers and acquisitions that would have to be notified to the Competition Authority for review regardless of the turnover of the parties involved³⁴⁸.

³⁴⁶ In 2012, of the bulk cargo handled in ports located in the GDA, Dublin handled 59% of the total tonnage, Drogheda handled 28%, Greenore 9%, Dundalk 2% and Wicklow 2%. Source: CSO (2012), *Statistics of Port Traffic 2012*. Available from: www.cso.ie.

³⁴⁷ A notification must be made to the Competition Authority if, in the most recent financial year the worldwide turnover of each of two or more of the undertakings involved in the merger or acquisition is not less than €40m. While Dublin Port Company reported a turnover of €65.3m in 2012, Cork reported a turnover of €21.8m, while Shannon Foynes reported a turnover of €10.1m – both substantially less than the required €40m threshold. The turnover of all the remaining State port companies is less than €10m.

³⁴⁸ This obligation already applies in relation to media mergers (the Competition Act 2002, Part 3, section 23).

Recommendation 3: Port closure and amalgamation

The policy focus should be to preserve competition and ensure that larger ports are working effectively and competing with one another. While port closure or amalgamation may result in lower administrative costs they are unlikely to enhance inter-port competition.

Any amalgamation should be carefully considered and focus on ensuring that the amalgamated entity can generate the necessary scale to compete with Dublin Port.

The Competition Authority recommends:

- If a merger is being proposed, the Department of Transport Tourism and Sport should be required to seek the views of the Competition Authority regarding a range of factors that would need to be considered to ensure that the merger does not substantially lessen competition;
- Alternatively, those ports with turnovers below the existing merger thresholds should be designated by the Minister for Jobs Enterprise and Innovation as a class of mergers and acquisitions that would have to be notified to the Competition Authority for review regardless of the turnover of the parties involved.

Consideration by: *The Department of Transport, Tourism and Sport and the Minister for Jobs, Enterprise and Innovation.*

Modify existing ownership and management models

- 5.53 Most of the major commercial ports in Ireland are commercial State companies, the exception being Rosslare Europort, which is operated by Iarnród Éireann³⁴⁹. Dublin has largely adopted a landlord management model, while Cork, Shannon, Waterford and Belfast operate as a hybrid between a landlord port and a tool port³⁵⁰. Internationally there appears to be a move towards the landlord port model where it can be effectively facilitated by high cargo volumes.
- 5.54 The sub-section below examines the merits of commercial State port company ownership and if changes to this and the management models adopted by Irish ports could improve competition.

³⁴⁹ See Section 2 for more details (paragraph 2.17).

³⁵⁰ See Section 2 for more details (paragraph 2.22 to 2.24).

Commercial State port company ownership

- 5.55 The public consultation asked, "...if changes to the structure and implementation of commercial state port companies could enhance competition..."
- 5.56 Under the commercial State port company ownership model, governments remove themselves from commercial activities, and port authorities have full responsibility and autonomy for decisions on operations, investments, revenues, expenditure and commercial strategy. The government's role is largely limited to areas such as policy, legislation and auditing³⁵¹.
- 5.57 No major concerns were raised in the public consultation about the structure of commercial state port companies. Such structures are deemed an effective way to optimise private sector participation and competition while maintaining public ownership³⁵². This avoids the possible risks of complete privatisation that have been identified previously (paragraph 5.11 to 5.12 above). However, according to the *National Ports Policy*, the financial performance of many ports has been disappointing since corporatisation, particularly in respect of the financial return to the State³⁵³.
- 5.58 Like any company, it is crucial that port authorities are effectively managed³⁵⁴. This is especially important considering port authorities' role as supervisor of infrastructure that can display the characteristics of a natural monopoly that must fulfil the expectations of the public interest and the economy at large³⁵⁵.
- 5.59 In the absence of inter-port competition, poor management can lead to higher port charges and inefficient port services and thus increase transport costs for exporters. Therefore, there is a responsibility on port authorities to ensure that the policies they adopt are fair and equitable, offer maximum benefits across the whole stakeholder group³⁵⁶, and most importantly, stimulate intra-port competition. This requires that management and boards of port authorities have the appropriate skills, competencies and experience to recognise the benefits of competition. This point was frequently raised with the Competition Authority in stakeholder meetings, where the willingness of management personnel to recognise and maximise the benefits of competition - particularly intra-port competition - was identified as being of greater importance than the ownership or management model in place³⁵⁷.

³⁵¹ UK Department of Transport (2006), *Modernising Trust Ports*, Second Edition.

³⁵² Trujillo, L. and Nombela, G. (2000). See footnote 306 for full reference.

³⁵³ Department of Transport (2013), *National Ports Policy*. Available at: www.transport.ie.

³⁵⁴ UNCTAD (2012), *Review of Maritime Transport 2012* and Trujillo, L. and Nombela, G. (2000). See footnotes 137 and 306 for full references.

³⁵⁵ UK Department of Transport (2006), *Modernising Trust Ports*, Second Edition.

³⁵⁶ Ibid. In their public submission, Arklow Shipping/Dublin Graving Docks raised concerns regarding Dublin Port Company's decision to infill the graving dock on which their business is wholly independent.

³⁵⁷ We have already explained how some port authorities have adopted a conservative approach to stevedore licensing. This limits intra-port competition and thus the overall competitiveness of a port.

- 5.60 All State bodies, including State port companies, must adhere to the requirement of the *Code of Practice for the Governance of State Bodies*³⁵⁸ (the "Code"). The Code seeks to promote best practice in corporate governance across the State sector and asserts that boards should regularly review ways to improve effectiveness by meeting the highest standards in all their commercial and non-commercial dealings.
- 5.61 The Department of Transport, Tourism and Sport ("the Department") recognises that for each port authority to achieve its full potential, it is essential that its board contains the appropriate skill balance. The Department has started to advertise publicly for expressions of interest from suitably qualified members of the public to serve on the boards of port authorities. According to the Department, this process has attracted a wider and more diverse range of candidates for port board positions than the existing statutory consultation process which involves formal consultation with stakeholder organisations³⁵⁹.
- 5.62 In theory, the Code and the actions of the Department as described above can help ensure greater accountability and that State port companies have the appropriate management skills to recognise the benefits of competition. However, the Competition Authority recommends that the promotion of intra-port competition should be more clearly defined by the Department as a key objective for port management and boards of port authorities.
- 5.63 To ensure that the Department can effectively monitor the performance of management and boards of commercial State port companies to ensure that they are fulfilling public expectations, it is important that a comprehensive performance measurement system for State ports is introduced. A recommendation outlining the need to prioritise the collection of data that can facilitate the production of port performance measures is outlined below (see **Recommendation 6**).

Port management models

- 5.64 The public consultation asked, "*Are there changes to the structure and implementation of semi-state governance that could enhance the potential for greater competition?*"
- 5.65 When effectively managed, the landlord model is deemed an effective way to retain public ownership while encouraging private participation and intra-port competition through the use of leases, licences and competing terminals³⁶⁰. Some submissions called for its use in Irish ports where possible³⁶¹ - particularly for large Lo-Lo ports³⁶². While the Competition Authority recognises the value of the landlord model, small

³⁵⁸ Available online: <http://govacc.per.gov.ie/files/2012/03/codepractstatebod09.pdf>.

³⁵⁹ It is proposed to remove the statutory consultation process in favour of the broader expressions of interest process. However, it shall continue to be the practice, on a non-statutory basis, to consult the existing stakeholders on an annual basis with regard to forthcoming board vacancies. Department of Transport (2013), *National Ports Policy*. Available at: www.transport.ie.

³⁶⁰ See Section 4 (paragraph 4.16 to 4.21).

³⁶¹ The Irish Road Haulage Association (IRHA) said that landlord ports should be introduced where possible.

³⁶² Submissions from Dublin Port Company (DPC) and the Chartered Institute of Logistics and Transport (CILT) indicated that a landlord port management model is most effective for larger ports and for Lo-Lo trade in particular.

ports do not usually have sufficient scale or throughput to facilitate a landlord management model with competing terminals and a hybrid between a landlord port and a tool port management model will often work best for smaller ports.

- 5.66 While we have competition concerns regarding the service port management model that is in place in Rosslare³⁶³, most ports in Ireland appear to be using the appropriate port management model. Dublin is probably the only port with the necessary throughput at present to adopt a landlord model with independent competing terminals. It is doubtful that Cork, Shannon Foynes or any other Irish port could exert greater competitive pressure on Dublin by simply adopting a full landlord model.
- 5.67 The remaining ports appear to be best served by adopting a hybrid between a landlord and a tool port management model with the effective usage of leasing and licensing to stimulate private sector involvement and intra-port competition.
- 5.68 As mentioned above (see paragraph 5.13), the use of full contract concessions can be an effective way to optimise private sector participation while maintaining public ownership of port infrastructure, particularly where the existing ownership and/or management model of a particular port is deemed to be ineffective. The Competition Authority would be willing to discuss competition issues associated with the use of full contract concessions with the Department should the need arise in the future. Further information on full contract concessions is outlined in **Appendix 6**.

Recommendation 4: Modify existing ownership and management models

The Department of Transport, Tourism and Sport should mandate the promotion of effective intra-port competition as a key objective for port authorities that is imposed by regulation or legislation as appropriate.

Consideration by: *The Department of Transport, Tourism and Sport.*

Improve internal connectivity

- 5.69 A number of submissions identified the need to improve road and rail connectivity. The quality of infrastructure connecting a port to its hinterland and the national road and rail network can influence port

³⁶³ There is no competition between terminals or providers of ancillary services in Rosslare. See Section 4 for more information (paragraph 4.16 to 4.21).

selection³⁶⁴. Indeed, a port can develop a competitive advantage based on its road and rail connectivity³⁶⁵.

- 5.70 Due to limited inter-port competition and Dublin Port's pre-eminent position, an important long-term consideration is the extent to which regional investment in port-related road and rail infrastructure can place greater competitive pressure on Dublin Port.

Road connectivity

- 5.71 Substantial improvements have been made to the national motorway network over the past decade. These improvements have increased the potential for switching between ports, particularly for lighter unitised cargo. For example, the construction of the M9 has made Dublin Port more accessible to unitised service users in the Southeast and vice versa. There is also new motorway infrastructure connecting Dublin with Limerick, Cork and Rosslare (see **Figure 8** in Section 2).
- 5.72 The motorway network remains strongly Dublin orientated and further upgrades to the national road network – particularly roads connecting ports outside of Dublin³⁶⁶ – could increase the scope for inter-port competition. However, it is unclear if expanding the motorway network or upgrading the road projects identified in the submissions³⁶⁷ is sufficiently beneficial to justify the cost involved on competition grounds, particularly when other port selection factors that increasingly attract users of unitised port services to Dublin are considered³⁶⁸.
- 5.73 As described previously, building high quality inter-urban motorways increases the likelihood that frequent users of unitised services in the Southeast, the Southwest and other regions will shift their cargo to Dublin Port. While this has improved Dublin's attractiveness, it is less likely that the opposite will occur. This limits the potential for ports like Rosslare, Waterford and Cork to compete with Dublin.
- 5.74 Looking at the specific projects identified in the submissions that link ports to the national motorway network (e.g., the N28 in Cork and the N69 in Shannon Foynes), while these projects can contribute towards lower transport costs and improving the attractiveness of ports, the main benefactors will often be local bulk importers with limited potential for demand-side substitution.
- 5.75 To justify future Government investment in road infrastructure solely on competition grounds, port authorities would need to demonstrate that better road connectivity could make the port more efficient and

³⁶⁴ See Section 2 (paragraph 2.54 to 2.60).

³⁶⁵ Since the opening of the Dublin Port tunnel, Dublin's share of the all-island Ro-Ro market has increased by almost five percentage points. Source: Dublin Port Company (DPC) analysis provided in the RFI.

³⁶⁶ For example roads linking Cork with Shannon Foynes, Cork with Waterford and Rosslare with Waterford.

³⁶⁷ Road projects identified in submissions include: the N69 from Limerick to Shannon Foynes Port, the N11 from Dublin to Rosslare Europort, the N25 New Ross by-pass, the N28 from Cork City to Ringaskiddy and the Atlantic Corridor from Galway to Waterford (via Limerick and Cork). It was recently announced that the N28 and N69 are to be upgraded.

³⁶⁸ For example port scale, service frequency and location.

capable of building the scale and service frequency necessary to place greater competitive pressure on Dublin Port.

Rail connectivity

- 5.76 Many submissions to the public consultation highlight the importance of investment in rail infrastructure to promote inter-port competition³⁶⁹. The number of rail freight services has been growing and it is probable that a good rail connection can provide a port with some competitive advantage and improve inter-port competition. For example, before Dublin Port opened a new rail spur in 2011, Waterford Port could attract business from Coca Cola's liquid concentrate plant in Ballina due to its rail connectivity. There is also potential for competition between rail-connected ports for mining products, timber and other bulk cargo.
- 5.77 Despite the environmental benefits, other submissions were less convinced regarding the need for substantial rail investment, particularly following heavy investment in motorways. It has been argued that the comparatively short distances between Irish ports and cities means that regular rail freight services would be uneconomical for most cargo types and may require Government subsidisation³⁷⁰. Additionally, the demand for rail freight services in Ireland is likely to remain dependent on a small number of bulk using industries that may be in a position to negotiate their own arrangements with port authorities.
- 5.78 Like road infrastructure, rail has the potential to influence inter-port competition, but it is unclear if expanding the rail freight network is sufficiently beneficial on competition grounds to justify significant Government investment.
- 5.79 However, the growth in average vessel size means that the Government should be aware of the potential need for deep water ports like Cork and Shannon Foynes to be adequately connected to the national rail network³⁷¹. Neither Cork nor Shannon Foynes are currently connected³⁷², and this could become a concern if the lack of water depth in Dublin Bay prevented Dublin Port from handling larger vessels.

³⁶⁹ Submissions from the Irish Exporters Association and Forfás/IDA/Enterprise Ireland.

³⁷⁰ Submission from BG Freight Line.

³⁷¹ Submissions from the Chartered Institute of Logistics and Transport (CILT), Shannon Foynes, Chambers Ireland and Captain Raja Maitra.

³⁷² There is a rail line connecting Shannon Foynes, but it would require re-commissioning.

Recommendation 5: Government investment in port-related road and rail infrastructure

Future government investment to improve road and rail infrastructure may be justified for a number of reasons – e.g., to remove bottlenecks or abide by EU regulations or to drive regional development.

However, it is unlikely that any future government investment in port-related road and rail infrastructure could be warranted exclusively on competition grounds. Therefore, any decision to justify investment in port-related road and rail infrastructure within this context should be carefully considered.

Consideration by: *The Department of Transport, Tourism and Sport*

Data and port performance measures

- 5.80 This study has highlighted the dearth of data and port performance measures within the Irish ports sector.
- 5.81 Port performance measures can be used to provide policy-makers with a better understanding of how competition works, and more generally how the sector is operating. A cross-comparison of port charges and efficiency, both nationally and internationally, can provide an indication of the competitive environment that ports are operating in. Specifically, more robust data and comprehensive port performance measures could be used to:
- Accurately examine port charges and efficiency levels among ports and terminal operators in Irish ports;
 - Monitor the performance of management and boards of commercial State port companies to facilitate greater reporting and accountability and to ensure that they are fulfilling public expectations;
 - Examine the performance of ports operating under different port management models;
 - Identify the origin and destination of cargo;
 - Monitor the level of spare capacity across the major ports for different cargo types;
- 5.82 Such information can reliably guide future ports policy, not just in relation to the level of inter-port and intra-port competition, but also to identify the most effective port management and ownership models and where investment to improve port capacity and internal connectivity is needed most.
- 5.83 The Competition Authority has already acknowledged that collecting data and producing performance measures in the ports sector is extremely challenging – e.g., there is no “catch-all” benchmark to

facilitate cross-comparison of port charges and efficiency levels and that collecting data on the origin and destination of cargo is difficult.

- 5.84 However, it is important that these challenges should not inhibit the collection and development of new data metrics and port performance measures. For example, an alternative to cross-comparison of port efficiency levels would be to examine the performance of each port against its previous year's performance. Any performance measurement system could adopt this approach and focus on gathering metrics in relation to port charges levied by port authorities, charges levied by private service operators and financial and non-financial port efficiency measures including TEU lifts per hectare and vessel turnaround times (**Appendix 4** outlines examples of typical port efficiency measures).
- 5.85 The Competition Authority welcomes the commitment in the Department's *National Ports Policy* that performance measurement system for Port of National Significance (Tier 1 and Tier 2 ports) will be introduced by 2016. This has the potential to alleviate concerns regarding the lack of data collection and port performance measures within the Irish ports sector.

Recommendation 6: Data collection and port performance measures

This study has highlighted the lack of data collection and port performance measures within the Irish ports sector. This information is vital to analyse the level of competition and to guide future policy-making in the Irish ports sector.

While recognising the challenges involved, the Department should prioritise the collection and development of new data metrics and port performance measures for Tier 1 and Tier 2 ports.

Consideration by: *The Department of Transport, Tourism and Sport*

APPENDIX 1(A): MEETINGS CONDUCTED

Arklow Shipping/ Dublin Graving Docks Ltd.	Irish Exporters Association
Belfast Harbour	Irish Ferries (ICG)
BG Freight Line	Irish Freight Forwarders Association
Burke Shipping Group	Irish Maritime Development Office
Captain Raja Maitra	Irish Ports Association
Chartered Institute of Logistics and Transport	Irish Road Haulage Association
Department of Jobs, Enterprise and Innovation	Marine Terminals Ltd
Department of Transport, Tourism and Sport	Nolan Transport
Drogheda Port Company	New Ross Port Company
Dublin Ferryport Terminals (ICG)	Port of Cork
Dublin Port Company	Port of Greenore
Dublin Stevedores	Port of Waterford
Dún Laoghaire Harbour Company	Professor John Mangan, Newcastle University
Eucon (ICG)	R&H Hall
Forfás	Rosslare Harbour
Hamilton Shipping	Samskip
Indecon Economic Consultants	Seatruck
Irish Business and Employers Confederation	Shannon Foynes Port Company
	Stena Line

APPENDIX 1(B): QUESTIONS ASKED IN THE PUBLIC CONSULTATION

The competitive environment

2.1 Is the presentation of the factors shaping the competitive environment of Irish ports in this section reasonable?

2.2 Are there any other factors that need to be considered by the Competition Authority?

Inter-port competition in the Ro-Ro sector

3.1 Does the analysis presented in this section reflect how inter-port competition in the Irish Ro-Ro sector is working?

3.2 To what extent do Rosslare and ports in Northern Ireland compete with Dublin for Ro-Ro trade and vice-versa?

3.3 Could Rosslare, Belfast or any other port place more competitive pressure on Dublin for Ro-Ro trade and how might this be achieved?

Inter-port competition in the Lo-Lo sector

3.4 Does this analysis in this section reflect how inter-port competition in the Irish Lo-Lo sector is working?

3.5 To what extent do the other Lo-Lo ports compete with Dublin for trade and vice-versa?

3.6 Could any of the other ports place more competitive pressure on Dublin for Lo-Lo trade and how might this be achieved?

Inter-port competition in the bulk sector

3.7 Does this analysis in this section reflect how inter-port competition in the Irish bulk sector is working?

3.8 Is there scope to improve the level of inter-port competition for bulk trade generally?

Dublin Port's pre-eminent market position

3.9 Does the analysis in this section reflect Dublin's position vis-à-vis other ports on the island of Ireland?

Competition between terminals

4.1 Apart from Dublin and Belfast, is there scope for competing terminals in any other port in Ireland? How might this be brought about?

4.2 Are the Lo-Lo terminals competing vigorously with each other?

4.3 To what extent has excess capacity affected the level of competition?

4.4 Is there scope for new entrants, and what are the main barriers to entry?

4.5 Would changes to the current leasing/licensing arrangements improve competition and efficiency? If the answer is 'yes', please be specific about what changes are needed?

4.6 How do the Dublin Lo-Lo terminals compare internationally in terms of price, service and efficiency?

4.7 Is the current situation whereby DPC is the only provider of Ro-Ro terminal facilities within Dublin Port a major competition concern for port users?

4.8 Would ferry operators prefer to use intermediary terminals that operate as separate entities or continue to operate terminals under licence from DPC?

4.9 How would a potential entrant who wished to provide Ro-Ro services in Dublin Port gain access to terminal facilities?

4.10 Is there scope for competing bulk terminals within Dublin Port?

Ancillary services

4.11 Are the current arrangements for the licensing and provision of ancillary services (stevedoring, pilotage, towage as well as security, ships' agency, maintenance and repair) fair, transparent and non-discriminatory? Do these services provide good value for money for port users?

4.12 While recognising that appropriate quality standards must be met, are there unnecessary barriers to entry for firms wishing to provide these services in Irish ports?

Ownership, structure and governance

5.1 Are there structural and/or regulatory changes which would stimulate greater inter-port competition, particularly competition with Dublin?

5.2 What traffic areas are of most concern, and what ports offer the most potential to compete with Dublin in key areas?

5.3 Would privatisation of one or more ports, or groups of ports, make any difference to inter-port competition? Importantly, would privatisation over-ride many of the factors outlined in this document that already limit inter-port competition (e.g., specialisation, location, infrastructure, fuel costs)?

5.4 If either public or private ownership creates or maintains market power, are there ways in which regulation could counterbalance this? Would the benefits of regulation be sufficient to outweigh its costs?

5.5 Similarly, is amalgamation of ports likely to improve inter-port competition, or will it merely disguise losses among unviable ports and perpetuate inefficiency? If it is to occur, where is there the greatest potential to improve inter-port competition, particularly in terms of offering a competitive threat to Dublin?

5.6 Are there other simple areas like improvements in infrastructure (road and rail), or changes to the structure and implementation of semi-state governance that could enhance the potential for greater inter-port competition? For example, could shareholders place greater demands on management for efficiencies and innovation?

5.7 Are there steps that could be taken to improve competition on an all-island basis, so as to increase the competitive discipline on ports?

5.8 Given a landlord port model such as Dublin Port, would changes in the ownership of the port company make any difference to the conditions of competition?

5.9 Are the major ports (Dublin, Cork, Shannon Foynes, Rosslare) currently operating the appropriate models (landlord port, tool port, service port)? If other models are more appropriate, how might the required change be brought about?

APPENDIX 1(C): SUBMISSIONS TO THE PUBLIC CONSULTATION

Arklow Shipping/Dublin Docks Ltd	Graving	Irish Freight Forwarders Association
BG Freight Line		Irish Ports Association
Burke Shipping Group		Irish Road Haulage Association
Captain Raja Maitra		MDST Transmodal Ltd
Chambers Ireland		Mr Bernard Allan
Chartered Institute of Logistics and Transport		Mr Dan Brennan
Cork Chambers		North Quay Associates
Dalton and Dalton Associates		Phillips 66
Dublin Port Company		Port of Cork
Dublin Stevedores		Professor John Mangan, Newcastle University
Dún Laoghaire Harbour Company		Rosslare Europort
Forfás/IDA/Enterprise Ireland		Rushfleet
Futac Services Ltd		R&H Hall
Hamilton Shipping		Shannon Foynes Port Company
Irish Congress of Trade Unions		Warrenpoint Harbour
Irish Exporters Association		Wexford Chambers
		Wexford County Council

APPENDIX 2: TYPICAL ANTI-COMPETITIVE BEHAVIOUR

International literature suggests that in the absence of economic regulatory oversight, a port operator with a dominant or monopoly position could attempt to engage in the following anti-competitive practices, driving out potential competitors and increasing costs to port users and the economy at large.

- **Price gouging:** Using monopoly power to charge excessive tariffs for port services.
- **Service bundling:** Extending monopoly power in one area of port operations to another potentially competitive area (also referred to as a "tying arrangement"). For example, a terminal operator's extension of a monopoly position in the provision of cargo handling to require use of their tug assist services rather than obtaining those services from an independent provider.
- **Increasing entry barriers:** Constructing hurdles to increase the share of the market needed to operate at maximum efficient scale, raising absolute costs of entry, or by denying access to competitors from needed resources or outlets.
- **Raising rivals' cost:** Increasing the cost of services required by a rival to place it at a competitive disadvantage.
- **Exclusive dealing:** Requiring suppliers to sell only to them and not to any potential competitor. An example would be restricting a tugboat company from providing service to a rival terminal.
- **Predatory pricing:** Selling services below cost to induce a rival's exit from a market to deter future entry, or to dissuade a rival from future competition. An example would be temporarily lowering container handling charges below long-run marginal costs to force a rival out of business.
- **Price discrimination:** Similar to predatory pricing in that selective price discrimination by a powerful seller can eliminate competition or otherwise entrench the discriminating seller's monopoly power.

Source: World Bank (2007), "Module 6: The Evolution of Ports in a Competitive World." *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank, 2007.

APPENDIX 3: THE STRENGTHS AND WEAKNESSES OF EACH PORT MANAGEMENT MODEL

Box 5: Strengths and Weaknesses of Port Management Models

Public Service Port

Strength:

- Superstructure development and cargo handling operations are the responsibility of the same organization (unity of command).

Weaknesses:

- There is no role or only a limited role for the private sector in cargo handling operations.
- There is less problem solving capability and flexibility in case of labor problems, since the port administration also is the major employer of port labor.
- There is lack of internal competition, leading to inefficiency.
- Wasteful use of resources and underinvestment as a result of government interference and dependence on government budget.
- Operations are not user or market oriented.
- Lack of innovation.
- No or limited access to public funds for basic infrastructure.

Tool Port

Strength:

- Investments in port infrastructure and equipment (particularly ship/shore equipment) are decided and provided by the public sector, thus avoiding duplication of facilities.

Weaknesses:

- The port administration and private enterprise jointly share the cargo handling services (split operation), leading to conflicting situations.
- Private operators do not own major equipment, therefore they tend to function as labor pools and do not develop into firms with strong balance sheets. This causes instability and limits future expansion of their companies.
- Risk of underinvestment.
- Lack of innovation.

Landlord Port

Strengths:

- A single entity (the private sector) executes cargo handling operations and owns and operates cargo handling equipment. The terminal operators are more loyal to the port and more likely to make needed investments as a consequence of their long-term contracts.
- Private terminal handling companies generally are better able to cope with market requirements.

Weakness:

- Risk of overcapacity as a result of pressure from various private operators.
- Risk of misjudging the proper timing of capacity additions.

Fully Privatized Port

Strengths:

- Maximum flexibility with respect to investments and port operations.
- No direct government interference.
- Ownership of port land enables market-oriented port development and tariff policies.
- In case of redevelopment, private operator probably realizes a high price for the sale of port land.
- The often strategic location of port land may enable the private operator to broaden its scope of activities.

Weaknesses:

- Government may need to create a port regulator to control monopolistic behavior.
- The government (national, regional, or local) loses its ability to execute a long-term economic development policy with respect to the port business.
- In case the necessity arises to redevelop the port area, government has to spend considerable amounts of money to buy back the port land.
- There is a serious risk of speculation with port land by private owners.

Source: A. Baird and P. Kent (2001).

Source: World Bank (2007), "Module 3: Alternative Port Management Structures and Ownership Models." *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank, 2007.

APPENDIX 4: MEASURES OF PORT PERFORMANCE

The World Bank³⁷³ has identified some common indicators of port operating and financial performance included in management contracts and concession agreements. Often separate values for indicators will need to be specified corresponding to different major categories of port traffic and vessel types (e.g., unitised, break bulk, dry and liquid bulk).

Operating measures include:

- **Average ship turnaround times:** Total hours vessels stay in port divided by the total number of vessels.
- **Average waiting rate:** Total hours vessels wait for a berth divided by total time at berth.
- **Gross berth productivity:** Number of containers moved or tons of cargo divided by the vessel's total time at berth measured from first line to last line.
- **Berth occupancy rate:** Total time of vessels at berth, divided by total hours available.
- **Working time over time at berth:** Total time of vessels being serviced at berth divided by total hours at berth.
- **Cargo dwell time:** Cargo tons times days in port from time of unloading until cargo exits the port, divided by cargo tons.
- **Ship productivity indicator:** Total number of moves or tons handled divided by total hours in port.
- **Tons per gang-hour:** Total tonnage handled divided by total numbers of gang-hours worked.
- **TEUs per crane-hour:** Total number of TEUs handled divided by total number of crane-hours worked.
- **Tons per ship-day:** Total tonnage of cargo handled divided by total numbers of vessel days in port.

Financial measures include:

- **Operating surplus per ton handled:** Net operating income from port operations divided by total tonnage of cargo handled.
- **Charge per TEU:** Total charges for container handling divided by total TEUs handled.

Instead of focusing on cross-country comparison, the Australian Bureau of Infrastructure, Transport and Regional Economics (BITRE) sources data directly from five port operators which allows them to assess port productivity

³⁷³ World Bank (2007), "Module 6: The Evolution of Ports in a Competitive World." *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank, 2007.

benchmarked against their own performance from the previous period³⁷⁴. The following statistics are produced for five ports in Australia:

- The average number of containers per truck;
- Container and truck turnaround times;
- Crane rates;
- Vessel and ship working rate;
- Vessel turnaround times;
- Container ship visits by ports;
- Cargo throughput and general cargo tonnage;
- Container cargo exchanged;
- Average employment.

The United Nations Conference on Trade Development (UNCTAD) has also developed its own set of metrics by which port productivity could be measured³⁷⁵.

Operating measures developed by UNCTAD include:

- Fraction of time gangs idle;
- Tonnage per ship;
- Tonnage per gang hours;
- Turn-around times.

Financial indicators include:

- Berth occupancy revenue per tonne of cargo;
- Capital equipment expenditure per tonne of cargo;
- Cargo handling revenue per tonne of cargo;
- Labour expenditure and tonnage worked.

³⁷⁴ More information available from:
http://www.infrastructureaustralia.gov.au/gateways/files/ports_strategy_background_paper_20_December_2010.pdf.

³⁷⁵ More information available from:
http://unctad.org/meetings/en/SessionalDocuments/webdtltlb2013doc1_en.pdf.

APPENDIX 5: FACTORS TO CONSIDER WHEN AMALGAMATING PORTS

If the Government is considering amalgamating two ports, the Competition Authority recommends that a number of factors that should be considered. These are as follows:

- Whether the amalgamation will generate the necessary scale to enhance inter-port competition and provide a greater competitive threat to larger ports (i.e., Dublin Port);
- The market share of the ports in terms of total tonnage handled and for specific cargo types;
- The extent to which the ports' throughput is influenced by nearby industries;
- The geographic location of the ports and whether they compete for cargo;
- The level of supply-side substitution and barriers to entry and expansion;
- If effective intra-port competition can lessen the ability of the amalgamated entity to earn monopoly profits.

APPENDIX 6: FULL CONCESSION CONTRACTS

A government may wish to encourage further private involvement through the use of port concessions. In contrast to a landlord or tool port management models where private operators provide port services under a lease granted by a public port authority (i.e., a lease contract), a full concession contract goes one step further whereby a private operator covers investment costs and assumes all commercial risks associated with a port or port assets before they revert to the port authority at the end of a fixed period. This type of concession can apply to the management of ports or port terminals and may be desirable where the existing ownership and/or management model of a particular port is deemed not to be working well.

Full concession contracts are typically combined with specific financing schemes such as “build-operate-transfer” (BOT) or “build-transfer-operate” (BTO). In a BOT framework, a port authority may delegate a private sector entity to design and build port infrastructure and to operate and maintain these facilities for a certain period. During this period the private entity has the responsibility to raise the finance for the project and is entitled to all revenues generated by the project. In a BTO framework, the new project infrastructure is directly transferred to the port authority immediately after construction³⁷⁶.

This type of concession policy has become a powerful governance tool to port managers particularly in the terminal operating business³⁷⁷. There are a number of benefits including:

- The transfer of risk for construction, finance and operation of the facility to the private sector;
- The attraction and use of foreign investment and technology;
- Optimising the use of scarce resources while avoiding the drawbacks associated with monopolies through the inclusion of detailed concession conditions;

Broadly, in agreements involving a concessionaire, the government should ensure that:

- The concessionaire provides adequate service throughout the term of the concession;
- The concessionaire observes relevant safety and environmental protection standards;
- The charges levied on port users are reasonable and do not endanger the competitive position of the port;
- The concessionaire performs proper maintenance and repair of all assets to ensure that on their return at the end of the concession, the port authority receives an operational project and facilities in good working order.

³⁷⁶ World Bank (2007), “Module 6: The Evolution of Ports in a Competitive World.” *Port Reform Toolkit, Second Edition, 2007*. Washington DC: World Bank, 2007.

³⁷⁷ Notteboom, T.E. (2007), “Concession Agreements as Port Governance Tools”, *Research in Transportation Economics*, Volume 17, 437-455.

In considering an appropriate duration for a concession a government would need to balance the requirement for the concessionaire to recoup its investment with the need to ensure that the concession is not too long which can act as a barrier to entry. Research has indicated that concession length beyond the common 20-30 year duration seems to have little impact on Return on Investment (ROI)³⁷⁸. This appears to support the European Commission's past proposals of imposing a 30 year limit concession length. As described in the this study, Lo-Lo terminal operators, ferry companies and fuel refineries located in a port typically operate under a leasing arrangements usually for a period of 15 to 40 years depending on the level of investment required³⁷⁹.

The European Sea Ports Organisation (ESPO) is developing a code of practice to help individual port authorities develop sound and effective terminal award procedures and concession contracts³⁸⁰. The Code intends to give practical guidance to port authorities on the entire awarding process of seaport terminals in the form of a real toolkit for port managers.

³⁷⁸ Theys, C. and Notteboom, T. (2010), "Determining Concession Durations in Seaports: Theoretical Considerations, Applicable Techniques and Current Practices", *Journal of International Logistics and Trade*, Volume 8(1), 13-40.

³⁷⁹ See Section 4 (paragraph 4.28).

³⁸⁰ Notteboom, T., Verhoeven, P. and Fontanet, M. (2010). "Current Practices in European Ports on the Awarding of Seaport Terminals to Private Operators: Towards a Code of Practice". Paper presented at International Association of Maritime Economists Conference, Lisboa, Portugal, July 2010.



The Competition Authority
An tÚdarás Iomaíochta

Parnell House | 14 Parnell Square | Dublin 1 | Ireland
Tel: 353-(0)1 804 5400 | Email: info@tca.ie | Web: www.tca.ie