



BULLETIN

FAL

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Infrastructure charges: Creating incentives to improve environmental performance

This edition of the *FAL Bulletin* analyses the way in which port charges are currently differentiated, focusing on strategic differentiation to understand current practices and to identify potentials for reaching local environmental goals and standards.

Port dues differentiation has evolved in a market-driven, competitive environment. It has been proven to contribute to certain development goals, but always in combination with other flanking measures. It could even be said that differentiation of port dues is a flanking measure within a wider policy-based approach. Particular emphasis in this respect is afforded to the possibilities of differentiating port charges with reference to environmental performance at a local level. The experiences from Europe are particularly interesting in terms of their lessons for Latin America and the Caribbean, where strategic differentiation for environmental goals is still absent.

The concept of strategic differentiation of infrastructure charges to encourage more environmentally sound behaviour, reduce emissions or promote technological change can be used as a tool for moving towards a greener economy.

Introduction

"The assumption that a pattern of change exists in the history of mankind [...], that it consists of irreversible changes in one direction only, and that this direction is towards improvement." Sidney Pollard, 1968

As society has progressed, the demand for infrastructure and transport as a means for meeting society's needs has grown. But history has shown that technological improvements and advancements alone are not

This *FAL Bulletin* analyses the potential contribution of differentiated infrastructure charges to the promotion of more environmentally sound behaviour, such as energy efficiency and technological change.

Port infrastructure charges are used as an example of how charge differentiation can be used as a fiscal tool to enhance the environmental performance of infrastructure services.

This issue was written by Gordon Wilmsmeier, Economic Affairs Officer of the ECLAC Infrastructure Services Unit.



Introduction



I. Port infrastructure charging



II. Port charges-structure and differentiation



III. Strategic differentiation, discriminatory charges and voluntary differentiation



IV. Discussion



V. Conclusion



UNITED NATIONS

ECLAC

enough to improve the environmental performance of the transport sector.

More than 80% of world trade (in terms of volume) is moved using waterborne transport (UNCTAD, 2010). Port infrastructure fulfils a facilitating role in meeting the demands of world trade; its availability has important repercussions for trade, economic development and the competitiveness of economies. As a result, the pressure for port infrastructure development is high. Decisions on how this infrastructure is managed and where it is located in the supply and logistics chains can move maritime transport sector development towards sustainability. In this context, port infrastructure charges and their strategic differentiation might be an intermediate step, creating incentives at the local level to improve environmental performance and encourage more environmentally sound behaviour on the part of port users.

Levels and structures of port infrastructure charges vary markedly across countries and terminals. Particularly in developing countries, existing charging regimes seem to be far from internalizing external costs and are rarely based on efficiency principles.

This issue of the *FAL Bulletin* reviews examples of charge differentiation structures in place at a number of European ports, in order to understand current practices and identify potentials and challenges for wider implementation. The bulletin stresses the need for a dynamic approach when introducing strategic differentiation of charges in order to maintain the efficiency of the strategy over time. The author compares data from two primary sources: (a) qualitative data derived from personal interviews at ports and (b) data obtained through interviews with port users.

Potential differentiated charging schemes on ships for port channels/fairways, associated port infrastructure and port services are identified, and recommendations for effective differentiation of charges in order to enhance the sustainability of port infrastructure management are provided.

I. Port infrastructure charging

In general, ports are no different from any other multiproduct industry offering a range of services and operating under different environments and organizational structures. However, the port sector is neither standardized nor homogenous in regards to ownership, organization, competitive framework or management. Furthermore, ports vary in size, functions and geographical location. Despite the fact that basic scaling factors used for price differentiation are somewhat similar, the operational scheme of a port

(public-sector, concessioned or 100% privately-operated) has a significant impact on the charges levied because of the different degrees of regulation and supervision involved. In the case of container ports, the landlord port model is the most common one. To understand differentiation schemes for port charges it is necessary to understand the general objectives of a port and its current pricing principles.

Rationales for providing port services vary. They range from the European (continental) view of ports as part of the social infrastructure, valuing their contribution to development in the region, to the Anglo-Saxon rationale focusing on port profitability and self-sufficiency (Bennathan and Walters, 1979), the Latin rationale entailing centralized control of ports, and the municipal Hanseatic model, involving autonomous port authorities (Veenstra, 1999).

The traditional role of the public sector in the delivery of port services has declined throughout the years. Today, ports are generally perceived as commercial entities that should recover their full costs from the user (Strandenes and Marlow, 2000). On the one hand, port operation has become more fragmented since the terminals of one port might have different operators, and port services (such as pilotage) have passed to private-sector operators. On the other hand, horizontal and vertical integration in the maritime industry have led to the development of global and regional terminal networks being operated by a single operator and shipping lines operating specific dedicated terminals.

Competition, commercialization and vertical integration in the maritime transport sector have significantly influenced the prevalent quality factors of ports, which in turn influence demand elasticities. The role of port costs from a user perspective also varies significantly, depending on the type of traffic and service. Port charges make up only 5% to 10% of overall transit costs for deep-sea shipping compared with 40% to 60% for vessels engaged in short-sea trades (European Commission, 1997).

Strandenes and Marlow (2000) argue that existing pricing structures try to satisfy conflicting objectives and that any successful pricing policy would have to acknowledge the trade-offs being made between financial, economic, environmental and social objectives while maintaining rigid managerial discipline and encouraging trade.

The next section examines the current structure of port charges and evaluates the degree to which port users are charged in a manner that differentiates and encourages more environmentally sound behaviour.

II. Port charges-structure and differentiation

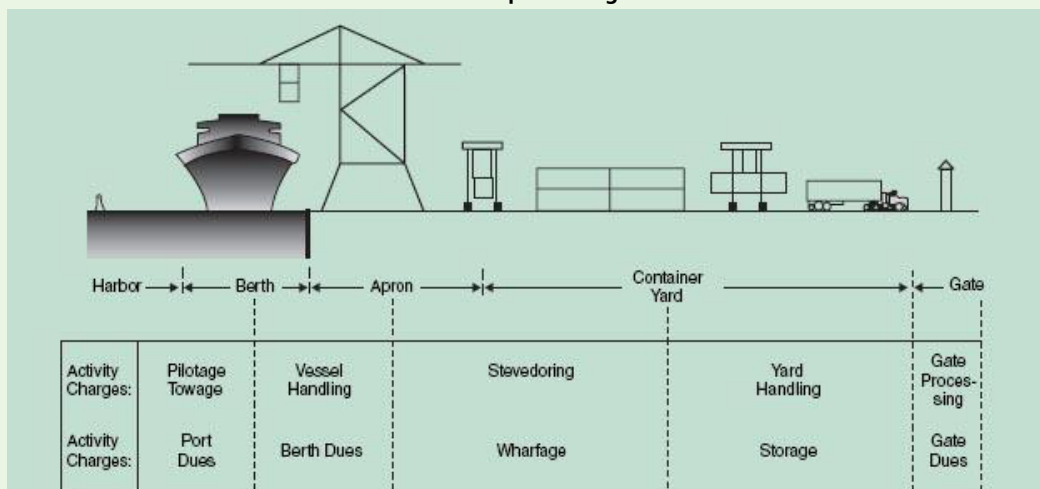
Current port pricing structure in many ways reflects the history and traditions of each port. UNCTAD (1995) classifies port pricing as a strategic matter with three approaches to port financing: economic, financial and public enterprise. The economic approach argues for marginal cost pricing, taking into consideration the effects on all parties, including benefits and costs to others. The financial approach argues for prices to be set on the basis of accounting costs in order to achieve a profit. The public-enterprise approach aims to foster local development, economic activities and maximization of throughput. As

such, it has also proven to require subsidies to cover part of the infrastructure or fairway costs.

The analysis of current pricing structures shows that in most cases clear classification of a particular port into any single one of these approaches is not possible. In a competitive environment ports, like any other business, seek to gain competitive advantages. Differentiation of pricing is one way to do that.

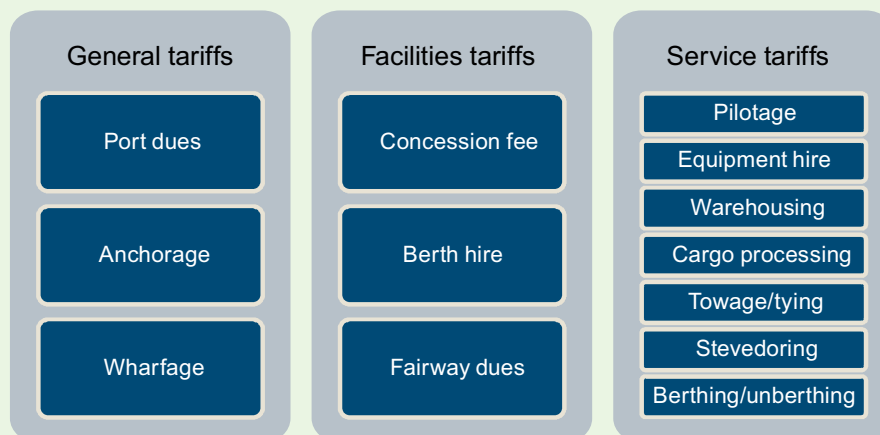
In general, charges can be assigned to different phases of a ship call (see figure 1) and can be classified into facilities, services and general tariffs (see figure 2). The specific dues and fees under each category reflect the complexity of port charges.

Figure 1
Basic structure of port charges and dues



Source: Doerr 2006.

Figure 2
Categorization of port charges



Source: Prepared by the author.



Gross tonnage (GT) is the principal scale factor for port dues; one exception is France.¹ Its spreading throughout most of the world has its origin in the International Convention on Tonnage Measurement of Ships, 1969, which introduced a universal tonnage measurement system.²

In its general remarks on port tariffs, ISL (2006) states that there is no common regulation for the compilation and publication of tariffs for port users. The ISL study continues "... in most cases ports are free to decide about the nature and absolute level of charges..." Even if the charges are published, the final price paid by the user is, in general, negotiable. Under the landlord scheme, the port authority often has responsibility only for the infrastructure charge.

Interviews with port officials have confirmed that port authorities perceive themselves to be operating in very competitive environments. This is a leading argument in defence of their existing pricing and differentiation schemes. For example, the Port of Valencia uses port pricing to distinguish itself from competing ports, giving discounts to vessels that call regularly and to RoRo vessels that operate between European Union ports, thereby strengthening intermodality. This port also grants discounts to ships complying with specific regulations and standards. For instance, vessels accrediting the delivery of liquid waste in accordance with MARPOL I receive a discount of 20 euros per ton with a limit of 10% of the net amount; services certified to UNE-EN 45011 or equivalent standards receive a 3% discount.

The main objectives for price differentiation are equity, cost coverage (no clear evidence exists as to whether this is based on marginal or long-term costs), profits or the principal of "what the cargo can bear". The strategic objectives are environmental, specific market capture (such as short sea shipping) and safety.

Table 1
Types of differentiation in relation to objectives in ports

Objectives/types		Ship type	Ship size	Type of traffic	Frequency	Compliance with environmental standards	Compliance with safety standards	Type of cargo
	Equity							
	Cost coverage							
	Profits							
Strategic	Safety							
	Environmental							
	Markets							

Source: Prepared by the author.

Note: Analysis based personal interviews with port officials and literature research.

Used to achieve objectives Partly used to achieve objectives

¹ In France, port dues are based on the volume of the ship. This scale factor is calculated from the length, breadth and summer draft of the ship, which is then multiplied by a specific factor based on the type of ship. For details see, for example, the port tariff table at <http://www.havre-port.net/pahweb.html>.

² For details, see www.imo.org/conventions/mainframe (August 2007).

III. Strategic differentiation, discriminatory charges and voluntary differentiation

Strandenes and Marlow (2000) argue that traditional port charges can typically be defined as discriminatory, as previously identified by Talley (1994) and Svendsen (1967). While this might be true, the author holds that specific differentiation regimes are based more on strategy than on discrimination.

The approach to differentiated port charges can be driven by a port's own strategic decision (UNCTAD, 1995) or can be voluntary in order to anticipate developments driven by external influences (such as environmental policy at the national level). The main difference between strategic and voluntary differentiation is that, in theory, a voluntary differentiation scheme has to be revenue-neutral to be attractive for implementation and should not negatively impact competitiveness with other ports. Examples of voluntary differentiation schemes can be found primarily in the Swedish port sector, in the form of environmental differentiation schemes.

The decision by a port to adopt strategic differentiation may also be driven the goal of maximizing profits from a certain user group or a long-run strategy for market expansion. Consequently, it will not necessarily be revenue-neutral. These regimes are prevalent in many ports because they favour certain types of traffic over others or try to attract certain types of traffic to enhance the port's strategic position within the global and /or regional port system.

For example, several ports in the European Union have adopted a scheme that incentivizes intra-European Union container shipping services. The reasons for this strategic pricing option are manifold. First, a preferential tariff for intra-European Union short sea shipping services is in line with European Union policy to strengthen waterborne transport and to shift intra-European Union traffic from road to sea. Second, port administrators in general have incentives to increase or maximize port throughput, which also strengthens their position within the port hierarchy in the region. In order to be attractive for mainline services, ports need to attract a high level of feeder services that provide the fine distribution within the region.

The following section focuses on strategic differentiation of port charges to reach environmental policy objectives. Strategic differentiation of port charges for other strategic reasons, such as to promote short sea shipping, will not be discussed further in this bulletin.

The Green Award system was launched in 1994 based on an initiative by the Port of Rotterdam. The programme was designed to give large liquid and dry bulk vessels an incentive to increase their attention to safety and environmental protection. The Green Award is given to ship owners if their vessels, crews and procedures comply with a number of requirements in vessel operation and specifications. To date, 284 dry bulk ships and tankers belonging to 78 companies have been certified. A number of ports give incentives to certified ships in the form of differentiated user charges. However, no ports in Latin America and the Caribbean provide such incentives.

Map 1
Incentives providers-Green Award



预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_1317

