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**Economics as a Public Science, Part I: The
Economist's Ethos and Modes of Persuasion**

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*L'économie portuaire en quête d'une audience : les péripéties publiques de la
tarification portuaire au coût marginal social, 1870-2000*

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Port Economics in Search of an Audience: The Public Life of Marginal Social Cost Pricing for Ports, 1970-2000

Thomas Vanoutrive* and P.W. Zuidhof**

Economics and its sub-disciplines often developed in close relationship with its audiences. This paper examines the public life of one particular case, the idea of marginal social cost pricing for ports, by highlighting two key episodes. The first episode was the emergence of port pricing in the 1970s, when the academic concept found a willing ear at international organisations such as the World Bank. The idea of marginal cost pricing for ports replaced the then prevailing principle in port policy of national public interest, with the principle of economic efficiency. The second episode was the eager adoption of the idea of marginal social cost pricing for ports by the European Commission in the 1990s. Along the way, from the 1970s to the late 1990s, the relation between economics and its audience appears to have undergone a dramatic shift. In the earlier episode, academic economists took the lead finding only a receptive audience with international organisations. In the 1990s, by contrast, one such international organization, the European Union, took the lead in advancing the idea of marginal social cost pricing, pushing economists into the role of either intellectual defender or critical observer. The insights from this particular history may be useful to obtain a better understanding of the role of applied economics in the micropolitics of the various waves of deregulation, liberalization, and privatization that swept the world since 1970.

Keywords: port economics, port policy, marginal social cost pricing, the World Bank, European Union

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L'économie portuaire en quête d'une audience : les péripéties publiques de la tarification portuaire au coût marginal social, 1870–2000

La science économique et ses sous-disciplines se sont souvent développées en relation étroite avec leurs audiences. Ce papier examine la vie publique d'un cas particulier, l'idée d'une tarification au coût marginal social dans les ports, en soulignant deux épisodes clefs. Le premier épisode est l'émergence de la tarification portuaire dans les années 1970, lorsque ce concept académique a rencontré une écoute bienveillante dans des organisations internationales telles que la Banque mondiale. L'idée de la tarification au coût marginal social dans les ports a remplacé le principe qui prévalait alors dans la politique portuaire, l'intérêt national public, par le principe de l'efficacité économique. Le second épisode est la prompt adoption de l'idée de tarification au coût marginal social dans les ports par la Commission européenne dans les années 1990. Entre les années 1970 et la fin des années 1990, la relation entre la science économique et son audience semble s'être dramatiquement modifiée. Dans le premier épisode, les économistes académiques avaient pris l'initiative en ne trouvant un écho favorable que dans les organisations internationales. Dans les années 1990, en revanche, c'est une autre organisation internationale, l'Union européenne, qui a pris l'initiative en promouvant l'idée de la tarification au coût marginal social, poussant les économistes soit dans un rôle d'avocat intellectuel, soit dans un rôle d'observateur critique. Les leçons tirées de cette histoire peuvent être utiles pour mieux comprendre le rôle de l'économie appliquée dans la micropolitique des différentes vagues de dérégulation, de libéralisation et de privatisation qui ont ponctué le monde depuis 1970.

Mots-clés : économie portuaire, politique portuaire, tarification au coût marginal social, Banque mondiale, Union européenne

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There is a growing interest among historians of economics in tracing the public impact of economics, and its close relationship with its publics. Mata and Medema (2013), for example, used Eyal and Buchholz' (2010) notion of 'interventions' to study the concrete ways in which economists interact with their audiences. One area where there is obviously a strong interplay between economics and public reason, is applied economics (cf. Backhouse and Biddle, 2000; Backhouse and Cherrier, 2017). This paper focuses on the interaction between economics and its audiences when economics is applied to policy issues, presenting a case study where economics is applied to ports and port policy. It studies how, from 1970 to 2000, the nascent field of port economics interacted with its various audiences. It specifically focuses on the application of marginal social cost pricing to seaports,¹ and

¹ When referring to port pricing, the terms 'marginal cost pricing' and 'marginal social cost pricing' are used interchangeably in the literature and without clearly discriminating between the two (e.g. Button, 1979; EU, 1995; 1997; 1998). Walters

traces how this concept was first applied to ports by transport economists, slowly made its way into public policy in the 1970s, to eventually become the cornerstone of the European Union's (EU) port policy by 2000.

Over the period studied, like so many other public services and utilities, ports and port policy underwent important transformations. Prior to the 1970s, port policy was primarily framed in 'public' terms: ports were perceived as public utilities serving the national interest. By the end of the 20th century however, after waves of deregulation, liberalization, and privatization, port policy became increasingly more 'economized,' meaning that ports were increasingly viewed in economic terms and port policy was increasingly guided by neoclassical economic principles (for a general overview for the case of infrastructure, see Graham and Marvin, 2001). The present paper examines how the interventions of economics and economists facilitated such a transformation and what role the idea of marginal social cost pricing played in this. Port economics as an academic discipline was thus not only shaped by evolutions in the port industry. Indeed, developments in economic thought in general, interactions with key audiences, and the policy views of academics made port economics what it is today.²

For the case of port pricing, the audience consisted primarily of large international organizations, first in the 1970s, the United Nations Conference on Trade and Development (UNCTAD) and the World Bank, and later in the 1990s, the EU. To examine how economists helped shape port policy and especially the issue of pricing access to ports, this paper reviews two important episodes in the history of port economics. The first was the emergence of port pricing theory in the 1970s in the context of UNCTAD and the World Bank. The second episode took place in the 1990s, where the EU emphatically

uses the concept of 'marginal *social* cost' in his work on road pricing (Walters, 1954; 1961), but drops the term 'social' in his work on ports (Walters, 1975; Bennathan and Walters, 1979). For EU documents it is clear that 'marginal *social* cost pricing' is meant, even when 'marginal cost pricing' is used (see EU, 1998, 6-8), but the port economist Haralambides (2002) for instance refers to 'marginal cost' instead of 'marginal *social* cost'. When applied to the pricing of public utilities such as ports, marginal cost automatically implies social costs too. Thus, when determining the marginal cost of ports and port usage, marginal social cost are obviously included. In the current paper therefore, marginal cost is sometimes used as a shorthand for marginal social cost.

² In this respect our analysis differs from the received view, as expressed by Heaver for instance, who stated that "the economic objective of ports and the systems of which they are a part have not changed. It is to provide value to shippers. (The extent to which governments ascribe other objectives, for example, local employment or sovereignty, is beyond economics although the objectives may have economic consequences worthy of economic analysis.)" (Heaver, 2006, 32)

adopted marginal social cost pricing as a central tool for European port policies within the Common Transport Policy. These episodes illustrate that the worlds of academic economics and policy are hardly isolated and that the idea of port pricing emerged from the continuous interaction between port economics and its wider policy publics. The interventions of economics and the use of the idea of marginal social cost pricing shifted considerably along the way. Where in its early days, marginal cost pricing was mostly a critical device pressed by economists, it ended up being a normative ideal for EU policy. By tracing the public life of the idea of marginal social cost pricing in the port sector, this article hopes to contribute to a more detailed understanding of the role played by economics in the micropolitics of the 'economization' of public utilities within the larger process of deregulation and liberalization taking place since the 1970s and onwards.

1. The Birth of Port Economics in the 1970s: Marginal Cost Pricing in Search of an Audience

Up until the 1970s, economic theory did not occupy a prominent position in the literature on ports. The economic literature that existed was mostly directed at practitioners in the port sector (e.g. Cunningham, 1926; Bown, 1953; Bown and Flere, 1967). In the academic economics literature, there was also very little attention given to ports (Kershaw, 1947; Heaver, 1993; Brooks and Pallis, 2012; Woo et al., 2011). Reviewing the early history of maritime economics, Goss remarks that the early publications "were certainly useful to the 'practical men' of their day ... but none of these contain anything likely to be recognised as related to economic principles as known today" (Goss, 2002, 396). Note that "economic principles" here refers to those of neoclassical microeconomics, given that other economic ideas have always played a role in port policy, as ports were generally seen as essential economic infrastructures for the national or regional economy.

1.1. The Push for Marginal Cost Pricing in Ports

Port economics as an academic field only emerged with the application of neoclassical microeconomic principles and economic analysis in the 1970s (Goss, 2002; Heaver, 2006). The discussion on port pricing in the present paper relates exclusively to the dues charged by port authorities for the use of infrastructure to access quays, including dredged channels and traffic control for instance, but not port facilities user charges for services like pilotage and towage or occupancy

charges for the use of berths, cranes and storage facilities.³ The application of the principle of marginal cost pricing to transport derives from a more general discussion on marginal costs and public utilities that dates back to the 1940s (Hotelling, 1938; Vickrey, 1948; 1955). For various reasons, the application of marginal social cost pricing came to ports later than to road transport and railways.⁴ Here we will concentrate on how it made its first appearance in the literature on ports.

A first attempt to apply microeconomic principles and the notion of marginal social cost analysis to port pricing was offered in 1974 by Ian G. Heggie. At the time, Heggie was Director of the Oxford University Transport Studies Unit, but wrote his contribution as a visiting professor at the Centre of Transportation Studies at the University of British Columbia (UBC) in Vancouver, Canada.⁵ The opening lines of Heggie's intervention set the stage:

Publicly owned ports rarely price port services on a commercial basis. They do not keep comprehensive cost accounts, and they make little attempt to relate specific revenues to costs in any organised way. By and

³ There exists a large variety of institutional arrangements for ports ranging from municipally or government owned ports to trust ports, and various models of managing ports exist (see for instance Verhoeven, 2010; Verhoeven and Vanoutrive, 2012). These are in turn matched by a wide variety of charging principles and practices observed and proposed both in theory and practice (e.g. Thomas, 1978).

⁴ O'Neill (2013) point out that the conceptualisation of infrastructure networks as public utilities in sectors such as electricity and transport in the 1950s to 1970s paved the way for the application of 'market' principles and 'privatisation' logics to these infrastructures in following decades. Vickrey's (1952) proposal to revise the rapid transit fare structure in New York City was a response to the financial problems of the city. Regulation of railway monopolies in the United States and Canada had a long tradition and was considered more urgent than interventions in the more competitive shipping market. Moreover, the diversity in service providers in the ports sector, including railways, has made it a heterogeneous industry which is more difficult to analyze and regulate, also for its international character (Heaver, 2006). Furthermore, shipowners and port authorities have been rather defensive and secrecy has been highly valued (Goss, 2002). Furthermore, the fact that ports and railroads have been priced might make alternative ways of pricing, on the one hand, more acceptable, but the gradual disappearance of toll roads and investments in toll-free motorways can, on the other hand, have made road pricing a more urgent topic of discussion in the 1950s and 1960s (Lindsey, 2006). Other relevant factors include the 1970s oil crises, and the rise of the environmentalist movement and the increased support for the pricing of externalities.

⁵ The Centre of Transportation Studies at the University of British Columbia was established in the 1960s with funding from the UPS Foundation (of the global express delivery services) and federal grants. At the time it was headed by Trevor Heaver who managed to attract several leading European transport economists for shorter and longer research stays. The Centre still exists until today and. See: http://www.sauder.ubc.ca/Faculty/Research_Centres/Centre_for_Transportation_Studies/About_Us (last accessed: 25 April 2018).

large, their tariff structures were established before the turn of the century and have simply been extended and revised to cover their added responsibilities and their increased costs. (Heggie, 1974, 3)

According to Heggie, prevailing port tariffs “lack any obvious rational basis” (ibid., 6) and conventional “non-cost-based pricing” is usually defended with reference to flawed perceptions of the public benefits of ports. He therefore proposed that port “charges should be based on the [marginal] social opportunity cost of providing each service” (ibid., 10). To determine the marginal social cost of these services, Heggie drew on his own earlier work in transport economics (1972) and the pricing of transport improvements, where he used social accounting prices.⁶ In his view, the advantages of using marginal social costs were threefold. In the short run it produces port prices that are conducive to an efficient use of facilities. In the long run, it offers a rational basis for port investment programs. Lastly, it could fuel competition among port users.

Heggie’s contribution was only a prelude to the real uptake of marginal social cost pricing in the ports literature following the interventions of Alan A. Walters. In 1975, Walters published a seminal paper titled ‘Marginal cost pricing in ports’. It was followed in 1979 by a book-length treatise titled *Port Pricing and Investment Planning for Developing Countries* co-written with Esra Bennathan, which was prepared for and published by the World Bank. Later authors built on Walters’ ideas (notably Bobrovitch, 1982; Button, 1979; Noritake, 1985) and review papers and textbooks invariably refer to Walters’ contribution on optimal port pricing (e.g. Jansson and Schneerson, 1983; Goss and Stevens, 2001; Abbes, 2007; Acciaro, 2013; Heaver, 2006; Bergantino, 2002). Published only one year after Heggie’s, Walters’ paper, apart from some differences, makes similar claims but is more convincing.⁷ Incidentally, the paper was written while Walters was also a Visiting Professor at UBC. Walters’ paper starts with the

⁶ Social accounting prices was an instrument borrowed from development economics where it was developed as part of Social Cost Benefit Analysis, a method used at the OECD and World Bank in the 1960s and 1970s to assess development projects (viz. Little and Mirrlees, 1969).

⁷ One difference between Heggie (1974) and Walters (1975) is that the former borrows his cost concept from social accounting prices that were used in the context of Cost Benefit Analysis, while the latter is more firmly rooted in conventional welfare analysis. Another difference is that Heggie and Walters each propose a different solution for the problem of recouping fixed costs, with different political ramifications. If pricing is based on marginal (social) cost, large investments are sunk costs that are not earned back. Heggie suggests to cover these by introducing a subvention due, basically a subsidy, to be paid by the port authorities or government. Walters proposes using two-part tariffs, that consists of a fixed annual fee plus a marginal cost fee for services. The fact that Walters proposes to put the burden on users as opposed to governments may be part of the explanation as to why his intervention got more play than Heggie’s over time.

observation that “ports are normally operated by public authorities” (1975, 299) and that governments, as a rule, rely on a set of historical standards for determining port charges. Walters claimed that “the long history of government regulation has not produced a rational system of charges either according to the marginal costs of providing the service or to any discernible principle of social justice,” and that there is “no single guiding principle of port pricing as there is now in the area of road pricing” (ibid., 300). The reference to road pricing is no coincidence. Walters had been an important pioneer in modern transport economics and made important contributions to the research on congestion pricing—marginal social cost pricing applied to roads (Lindsey, 2006; Vanoutrive, 2017).

Walters discussed some examples of port pricing to illustrate how the application of short-term marginal cost pricing challenges or even runs counter to the then existing perspective on port charges. The common practice of charging large vessels more for the use of a dredged channel may seem right from the perspective of equity or ability to pay, but has little basis in terms of marginal cost. For Walters, the idea of marginal cost pricing was hence a way to debunk existing port pricing policies. Walters points out that if port authorities do not apply marginal cost pricing, they consistently provide incorrect price signals that hamper economic efficiency. The first objective of better pricing is to encourage economic efficiency in the short term, and the second is to offer a rational guide for port investment decisions (see also Goss and Stevens, 2001). Third, by not pricing according to marginal costs, port authorities willingly or unwillingly distort competition in the logistic chain that runs from international shipping to domestic transport, with potentially disturbing effects on trade. Walters’ conclusion was that “the introduction of marginal cost pricing into port operation involves many difficulties of detail and administration”—not the least the problem of how ports will be able to recoup sunk costs or fixed costs—it does however clearly “supply a useful set of principles to deploy in the discussion of port pricing policy” (ibid., 306).

The intellectual inspiration for marginal cost pricing in ports came straight from the field of transport economics, where both Heggie (e.g. 1972) and Walters had earned their stripes. Walters, who would later become a macroeconomic advisor to Margaret Thatcher, got his first job in 1952 at the University of Birmingham working with the transport economist Gilbert Walker and the maritime economist, Esra Bennathan. Working on public utility pricing and the pricing of road services, he developed the argument that pricing policies should be based on short-term, not long-term marginal costs (Walters, 1954). He extended this to a theory of congestion pricing published in *Econometrica* (Walters, 1961) and in *The Economics of Road User Charges* published with the World Bank (Walters, 1968). With Bennathan, he

made his first foray into maritime economics with *The Economics of Ocean Freight Rates* (1969).

After his stint as macroeconomic advisor in the Heath government in the UK, Walters spent a year in Vancouver (in 1974), a year at the World Bank, and four years at Johns Hopkins University. The time abroad provided Walters with the opportunity to extend his earlier research on marginal social cost pricing and congestion pricing for roads to the new context of ports.⁸ The 1975 essay on port pricing was, together with Bennathan, developed into *Port pricing and investment policy for developing countries* (Bennathan and Walters, 1979), published by the World Bank. It could be considered the first textbook on port pricing, explaining key principles and discussing practical applications and complications.

The conceptual toolbox of marginal cost pricing had been readily available within transport economics and both Heggie and Walters adapted it from roads to apply it to the case of ports. The theory of port pricing thus developed as an intellectual spill-over from road pricing. The initial push for marginal cost pricing in ports thus came largely from within the economic field, as a critical tool for appraising existing port policy. It was driven by a motivation to use sound economic principles to put port pricing policy on a new, rational footing. Where port pricing had largely been the province of national economic interest and public interest considerations, the neoclassical economic approach aimed to replace this with the objective of economic efficiency.

1.2. An International Audience for Marginal Cost Pricing in Ports

Designed as a critical tool for appraising existing port policies, marginal cost pricing could not immediately find a willing ear among policymakers. Port authorities, for one, would hardly be open to the suggestion of marginal cost pricing, which could imply lower charges for port services while leaving the problem of recovering sunk costs to the port authorities. Heggie (1974, 12) anticipated that port authorities or governments would have little incentive to embrace these notions:

Tariff revisions are generally associated with attempts to raise charges. They are therefore usually resisted by both shipping companies and cargo interest ... and they generate little interest from the port authority because of the lack of ultimate financial responsibility and the cost accounting and other difficulties. (ibid., 20)

⁸ The biographical details were derived from an auto-biographical paper published by Walters (1989) and obituaries published after his death in 2010, e.g. Blundell for the Mont Pèlerin Society published on the website of the Adam Smith Institute.

Walters' solution to the problem of investment cost recovery was the adoption of two-part or multipart tariffs that comprise a fixed charge to recoup fixed costs and a variable charge based on marginal costs.⁹ While his solution would make marginal cost pricing more palatable to port authorities, it still ran counter to the immediate interests of port authorities. Why replace a system of port charges that brought in sufficient dues, with one based on economic principles whose outcomes are still uncertain (Walters, 1975, 306)?

According to early port economists, another benefit of marginal cost pricing is that it would put more competitive pressure on large shipping interests, in particular the so-called shipping conferences. These conferences (which functioned like cartels) were agreements between shipping companies to set standard freight rates on shipping routes, which was a key issue in maritime economics in the 1970s. A problem posed by shipping conferences was that marginal cost price savings in one port would not have an immediate effect on shipping prices because of the standardized shipping rates for routes (see Heggie, 1974, 9; Bennathan and Walters, 1979, 134). Customers of shipping lines would thus not benefit from the efficiency gains of rational port pricing. Only if marginal cost pricing would improve the cost basis of outside competitors, could it set in motion a process of "chiselling" that could cause a conference to break down (Walters, 1975, 303; Bennathan and Walters, 1979, 204). The adoption of marginal cost pricing thus also ran counter to the interests of members of shipping conferences.

In light of the immediate interests of port authorities and large shipping interests then, marginal cost pricing would have been expected to garner little support. The project, in fact, presented an even more fundamental political challenge as it contested the then dominant view that emphasized the public function of ports. The reigning view, which never disappeared entirely, was that ports should serve the interests of national and regional industry and trade, and should act as engines of economic growth and employment.¹⁰ Bennathan and Walters referred to this as the 'European doctrine':

The European doctrine views the port as part of the social infrastructure of a whole region. The value of a port should be assessed not in the accounts of the facilities but in terms of the progress of industry and trade in the hinterland. (1979, 4)

⁹ The solution of a two-part tariff emerged as part of the 'marginal cost controversy' where it was introduced by Coase (1946) in response to Hotelling (1938). See also Frischmann and Hogendorn (2015).

¹⁰ Note that this is a broader claim about ports having a public function that goes beyond stating that ports are public goods in the technical economic sense (see also Baird, 2004).

The proposed 'economization' of ports through marginal cost pricing clearly challenged such a public and national function of ports:

The national interests which are supposed to motivate the European doctrine are elusive and nebulous. Nevertheless, most people would agree that the term somehow expresses the spirit which should guide port policy. (ibid., 4)

The rational economics of marginal cost pricing thus promised to dislodge the 'elusive and nebulous' national and public interest reasoning that marked port policy at the time. The interventions of economists like Heggie, Walters and Bennathan, based on the mainstream neoclassical economic principle of efficiency, thus threatened to challenge the perceived national and public interest of ports and 'protectionist' maritime policy, which would not be received lightly by port authorities and other governing bodies.

Given these political strictures, it is no surprise that the economics of marginal cost pricing for ports found a more willing ear elsewhere. Circumventing port authorities and other national policy bodies, the emerging ideas of rational port pricing found a first receptive audience at international organizations whose aims reached beyond narrowly defined national economic goals or shipping interests. As Goss noted, in the 1960s shipowners and national port authorities had been highly sceptical of economic research, since the "dissemination of scientifically-based ideas on shipping economics was a deliberate policy intended to moderate the exaggerated claims often made by interested parties" (Goss, 2002, 399).

In the 1960s and 1970s, international organizations such as UNCTAD, the World Bank, and the OECD however began building their economic research capacities in the field of transport and shipping (Stern and Ferreira, 1997). The establishment of UNCTAD in 1964 presented a first step in this direction, and international shipping was one of UNCTAD's first policy concerns (UNCTAD, 2014). The UNCTAD's Shipping Committee had begun to attract maritime economists, opening its policy advice to more rigorous economic analysis (Metaxas, 1983, 148). The committee delivered reports critical of the shipping conferences, which signalled its efforts to put maritime economics to work for promoting free trade, development, and the validity of a scientific approach (Goss, 2002, 394 and 400). In 1975, UNCTAD published a first report addressing the question of port pricing (UNCTAD, 1975).¹¹

During the 1970s the economic analysis of transport infrastructures, however, got more play at the World Bank. Stern and Ferreira

¹¹ Alternative approaches for assessing port costs and port prices, other than marginal cost pricing, were explored at the time. Bromwich (1978) suggested alternatives and UNCTAD was exploring alternative options based on the notion of fully distributed cost (quoted in Bergantino, 2002, 361, n. 14).

(1997, 531) describe how this period was characterized by an increased interest in the application of basic microeconomic principles and the role of prices, notably in the economics of transport infrastructures. One of the earliest World Bank Working Papers on transport economics was in fact Alan Walters' book-length paper on 'The Economics of Road User Charges' (1968). The World Bank's search for a more solid economic footing for its infrastructure projects is reflected in the foreword to Walters' paper by the then President of the World Bank, Robert S. McNamara:

I would like to explain why the World Bank Group does research work, and why it publishes it. We feel an obligation to look beyond the projects we help to finance towards the whole resource allocation of an economy, and the effectiveness of the use of those resources. Our major concern, in dealings with member countries, is that all scarce resources, including capital, skilled labor, enterprise and know-how, should be used to their best advantage ... Finally, we are required by our Articles, as well as by inclination, to use objective economic criteria in all our judgments. (In Walters, 1968, v)

Walters' paper on marginal cost pricing for roads had a big impact on future research on transport at the World Bank (Stern and Ferreira, 1997, 554), and continued to inform its policy recommendations (Grosdidier de Matons, 1986, 274).

It is in this context of development policy at the World Bank and the need to assess port investments where marginal cost pricing ultimately found a willing ear. As stated by Director of the Transportation Department, the World Bank sought to put its programs on a more solid economic footing:

In its operations in developing countries, the World Bank has encountered a large variety of pricing practices and widely diverse effects on efficient port operation. In the belief that there must be a systematic set of principles that would much improve port pricing, professors Esra Bennathan (of the University of Bristol) and A. A. Walters (then of the London School of Economics) were asked to undertake this study. (Foreword, Bennathan and Walters, 1979, xiv)

Walters and Esra Bennathan were asked to repeat Walters' feat on road pricing for port pricing in developing countries (Stern and Ferreira, 1997, 554-555), which resulted in *Port Pricing and Investment Policy for Developing Countries* (1979). The book provides a well-elaborated plea for marginal cost pricing. While pleased with the study, it is telling that the World Bank director remained somewhat apprehensive about the 'radical' nature of some of its proposals:

The main conclusion of *their sometimes involved discussion* is that the main basis of port tariffs should be marginal cost. But within this general conclusion, certain *rather surprising and unorthodox recommendations* emerge, such as the proposal that ports should charge congestion levies. (In Bennathan and Walters, 1979, xiv, emphasis added)

McNamara's comments underscore the wish of the World Bank to base its port policy on firm economic reasoning that goes beyond narrow national economic interests, but also highlights the relatively radical nature at the time of applying marginal cost pricing to ports.

This episode shows how the push by economists and the pull from international organizations made marginal cost pricing a tool for 'economizing' port policy. From earlier applications in transport economics and road pricing in particular, the economic principles of marginal cost pricing for ports were ready, tested and available. Because these principles ran counter to the perceived national and public interest of public port authorities and government, and the particular interests of shipping lines, economists found a first audience for their ideas among international organizations. Only there, increasingly mainstream neoclassical economic principles of pricing for efficiency could begin to challenge public interest principles, slowly embarking on a long march of global acceptance that would ultimately transform the field of port economics and port policy. In this early phase, marginal cost pricing was primarily a critical tool provided by economics and adopted by international organizations to challenge the predominant national interest principles of port policy, by putting these on a firmer economic footing. In interplay with economists, international organizations were important catalysts in promoting marginal cost pricing and the gradual 'economization' of port policy it entailed, switching it from policy based on public, national interest principles to one governed by neoclassical microeconomic principles.

2. Port Pricing enters EU Policy: Marginal Social Cost Pricing as a Tool for Integration and Competition

The legacy of the early episode of port pricing in the 1970s becomes clear when one considers the making of European Union policy on ports in the 1990s. During this period, marginal social cost pricing was turned into the cornerstone of EU policy on ports. While this episode underscores the march of marginal social cost pricing in port policy circles, it also shows that the interaction between economics and its audience took a new form.

2.1. EU Port Policy: A New Audience for Marginal Social Cost Pricing

Since the establishment of the European Coal and Steel Community in 1952, transport has been a central concern in European policy (Chlomoudis and Pallis, 2005). The signing of the Treaty of Rome in 1957 establishing the European Economic Community brought the first attention to ports (Bird, 1967), albeit with limited impact. This only changed in the 1990s, when due to further integration of the in-

ternal market and enhanced competition, a number of EU policy initiatives on transport and port policy were launched under the auspices of the Commissioner for Transport, Neil Kinnock (Chlomoudis and Pallis, 2005; Verhoeven, 2009).

The first policy document devoted to ports was the European Commission's 1997 *Green Paper on Sea Ports and Maritime Infrastructure*. It presented a first proposal for a more uniform, European framework for port pricing. It argued that the formation of an internal market and increased competition in Europe put increasing pressure on the traditional national character of ports. Because of "disappearing national (captive) hinterlands," issues of "pricing, port development and financing decisions of a particular port may have marked effects on its neighbors, nationally and internationally" (EC, 1997, 6). With increased European and international trade, differences in pricing mechanisms between European ports, and especially differences in the role of public funding, have possible distorting effect for the entire community. The Commission therefore concluded that "the 'general economic interest' argument loses weight, leading to a more commercial and universal attitude towards pricing and infrastructure funding" (ibid., 12).

Putting its focus on port pricing, the Commission also appears to stave off a contentious discussion on the potentially distortive effects of public funding to ports, and EU rules on state aid:

Until now the Commission has not considered public funding of port infrastructure which is open to all users as aid. However, as ports are increasingly considered as terminals having mainly commercial activities with greater involvement of the private sector, and competition is strong on a Community-wide basis, a different approach could be desirable for the future. Therefore, the Commission finds that port infrastructure should be priced in such a way that users should bear the real costs of the port services and facilities they consume. (ibid., 2)

For the European Commission, harmonizing port pricing thus constituted a politically expedient measure to tackle the increasingly tenuous place of ports between public purpose and market competition. Besides a general promise of improving port efficiency, a uniform framework for port pricing would especially help the Commission "to meet the Community's responsibilities under the Treaty to ensure free and fair competition in the port sector" (ibid., 5) while at the same time steering the public involvement in ports clear from state aid concerns. The implementation of marginal social cost pricing proposed by the European Commission was hence not in the first place driven by efficiency considerations but was instead aimed at creating an internal market undistorted by state aid and other protectionist measures, forcing all ports to follow the same pricing rules.

To develop a common framework for port pricing that would overcome potential distortions, the Green Paper considers three alter-

native approaches: average cost pricing, charging for operating costs, and marginal social cost pricing. The Commission rejected the first two on the grounds that average costs would overcharge for historical sunk costs and the second would undercharge. It hence concluded: "The Commission, therefore, considers that port charges could be set in line with marginal costs, which would also take into account new investments" (ibid., 15). The Green Paper proposed that the Commission would make an inventory of existing charging practices in European ports to ultimately draw up a framework "on port tariff regimes" that, following the principle of marginal social cost pricing, would form the basis for a new Council directive.

There are few references in the Green Paper in support of the endorsement of marginal social cost pricing. The ideas, however, could be traced back to an earlier Commission Green Paper titled *Towards Fair and Efficient Pricing in Transport* (EC, 1995), also drawn up under the responsibility of Commissioner Kinnock. The central argument of this paper was that economic instruments and market-based solutions were preferred for dealing with transport externalities ranging from congestion to accidents to air pollution, and to noise: "Prices have to be right in order to get transport right" (ibid., 50). It speaks favorably of marginal social cost pricing when discussing pricing of road and rail infrastructures, and congestion for instance, taking its cues from OECD research and Walters (1968). Marginal social cost pricing found a willing ear again at another international institution, about to be made into the cornerstone of EU port policy.

In 1998 appeared a comprehensive transport White Paper, titled *Fair Payment for Infrastructure Use: A Phased Approach to a Common Transport Infrastructure Charging Framework in the EU* (EC, 1998). Building on similar arguments, it claimed that in order to avoid distortions, EU-wide competition would benefit from a comprehensive system of pricing. It insisted that "the same fundamental principles should be applied to all commercial modes of transport in each Member State of the European Union." It concluded that "the only charging approach that fully satisfies ... is marginal cost charging" (ibid., 6) and the "Commission proposes that a framework should be drawn up that would introduce the type of charging in all modes at Community level" (ibid., 8). With a great sense of ambition and urgency, then, the White Paper turns marginal social cost pricing into a general norm and tool for the EU's entire transport policy.

The successful march of marginal social cost pricing in EU port policy was short lived. The Green Paper was met with significant opposition from various directions (Pallis, 1997). In a speech at a port conference, Commissioner Kinnock (1998) relayed that the issues of port financing and the Community framework for port pricing were most contested. While most parties were in agreement with the aim of

fair competition, Kinnock tellingly summarizes the criticism as follows:

However, at the same time some have quite naturally expressed doubts as to whether the proposed Directive on charging is the right instrument for achieving these important principles. “Bureaucratic” and “theoretical” were the words most frequently used by those who raised this question.

The Commission’s proposals on port pricing were indeed striking in the bureaucratic way it attempted to apply the theoretical principles of marginal social cost pricing as an administrative tool of EU port governance. After the 1998 White Paper, marginal social cost pricing quickly receded into the background in favor of “transparency” of financing and charging practices (e.g. EC, 2001a; 2001b). The EU Regulation that was adopted in 2017 was thus titled, “establishing a framework for the provision of port services and common rules on the financial transparency of ports” (EU, 2017).

2.2. A New Role for the Economics of Marginal Social Cost Pricing in EU Port Policy

When comparing the public use of marginal social cost pricing in EU policy with its earlier public engagement in the 1970s, two aspects stand out. The first concerns the role of academic economics and the second is the function of marginal social cost pricing in policy. The ambitious plans of the European Union on port pricing had ushered in a new involvement of economists. Where economists in the 1970s used marginal social cost pricing to critique the existing policy consensus and only found a willing ear with international organizations, their role changed significantly in the 1990s. In the case of EU port policy, economists took an active role in formulating the policies in which marginal social cost pricing became the preferred standard. Economists were evidently deeply involved in introducing marginal social cost pricing as the standard for EU transport. Economists working for the Commission probably had the most direct impact. One such economist is Gert Jan Koopman, a member of Kinnock’s cabinet, who had been an outspoken advocate of market-based solutions for externalities problems in transport (Koopman, 1995). Koopman had previously worked for the Dutch Central Planning Bureau and as an economist at the DG Economic and Financial Affairs at the Commission. The 1995 Green Paper *Towards Fair and Efficient Pricing in Transport* (EC, 1995) clearly bears his influence (compare Koopman, 1995) and he appears to have been one of the Commissions’ leading voices on pricing in EU transport policy of the late 1990s. Moreover, several academic economists were regularly involved as consultants in conducting studies and drafting policies. Most visible in this respect is Hercules Haralambides, a maritime economist based at the Erasmus University Rotterdam, the Netherlands. According to his CV

he was a member of various advisory committees of the transport Commissioner, Neil Kinnock.¹² Haralambides drafted an early version of the Green Paper.¹³ He was also leading a study (ATENCO) that was conducted for the European Union as a follow up to its 1998 White Paper, in which other port economists such as Richard O. Goss and Trevor E. Heaver participated.¹⁴ In a paper summarizing his insights, Haralambides writes: “Many of the ideas developed in this paper have benefitted from numerous discussions with staff of the European Commission over the period of my involvement in the preparation of its Green Paper on Ports and Maritime Infrastructure” (2002, 342). In the paper, Haralambides defends the EU position, claiming that long-term (sic.) marginal cost pricing would provide a “powerful pricing discipline that can eliminate subsidies and establish a level playing field among ports” (2002, 341). Significantly, Haralambides underlined that marginal social cost pricing is no longer purely an academic idea, but has gained practical political importance:

The issue of port pricing in maritime economics has not arisen only out of academic interest but as a response to the need felt in the port industry itself for a self-discipline mechanism that, if consistently applied, would eventually lead to the recovery of port investments and to future investments that are largely demand driven. (Haralambides, 2002, 340)¹⁵

In another paper on EU policy, Haralambides reiterated the entanglement and emerging alignment of economic reasoning and political reason:

The paper argues that the prime goal to be pursued at a European level is to achieve a level playing field among competing commercial seaports. It reviews ... the past and present efforts of the European Commission in this area, the difficulties and challenges these efforts are faced with and, finally, it attempts to indicate the way forward; a way consistent with Europe's political thinking, priorities and realities. (Haralambides et.al., 2001, 368)

¹² http://ec.europa.eu/competition/consultations/2007_maritime_guidelines/elaa_annex3.pdf (last accessed: 1 August 2018).

¹³ Haralambides published this draft as part of a compendium of collected papers published on this website: www.assoporti.it/media/1407/port-book-incl-introduction.pdf (last accessed: 1 August 2018).

¹⁴ The academic expert group of the ATENCO study included besides Haralambides as chair: Karl-Heinz Breitzmann, Richard O. Goss, Sidney Gilman, Trevor D. Heaver, Ugo Marchese, Eddy van de Voorde.

¹⁵ A similar confirmation of the symbiosis between economics and EU policy, can be found with Goss and Stevens (2001, 129), defending the EC's endorsement of marginal social cost pricing: “As part of this approach the EC has commissioned several studies aimed at introducing such policies into European ports' charging systems; indeed, some of the points made here have arisen from these studies. This paper is, therefore, intended to be of practical importance in the current development of policies as well as, we hope, of theoretical interest.”

These examples serve to show that by the end of the century, an intimate entanglement had emerged between economists, economic reasoning, and the policy objectives of the European Union around the topic of marginal social cost pricing in ports and port policy. In this phase of its public life, the economics of marginal social cost pricing gradually shifted from being used as an *external* principle to critique policy to become an *internal* principle serving as an instrument for policy.

This is not to claim that all economists supported the EU's use of marginal social cost pricing. Unlike Haralambides, Goss, and Verbeke who were involved in EU policy making, there were also some who took a much more distant and critical stance (notably Bergantino, 2002; Rothengarther, 2003; Abbes, 2007; Acciaro, 2013). In general, the critiques were conceptually inspired, but empirical questions played a role as well. William Vickrey famously stated in 1948 that average cost "can be measured but cannot be defined" non-arbitrarily while marginal cost "can be defined but cannot be measured" (Vickrey, 1948, 232). In their review of EU policy, Abbes (2007) and Acciaro (2013) note that empirical studies on port pricing were a rarity when compared to, for example, the rail sector. Others pointed out that marginal social cost pricing posed the problem of cost recovery when marginal cost falls below average cost. The diversity of charging practices and institutional settings among EU ports and member states was also seen as a hindrance which could cause unintended effects when marginal social cost pricing was applied across European ports. And the argument was made that marginal social cost pricing and free and fair competition were two fundamentally incompatible goals.

The intimate entanglement between economics and EU policy thus affected the use of the concept of marginal social cost pricing in policy. In the 1970s, marginal cost pricing functioned as a critical tool developed by economists that used an economic rationale to challenge reigning public and national interest notions of ports. In the hands of economists consulting for the EU, this function was expanded, adding a specifically European, namely *integration* rationale. As it was employed in EU policy, the function of marginal social cost pricing was not only to promote economic efficiency, but also intra-European port competition ("to ensure free and fair competition in the port sector", EC, 1997, 6) while simultaneously staving off concerns about state aid rules. Even though policy documents have generally tended to use vague yet appealing phrases such as 'level playing field', the aims of EU port policy were fairly clear. The implementation of marginal social cost pricing proposed by the European Commission was directed at creating a market undistorted by state aid or other protectionist behaviour, demanding that all ports follow the same pricing rules. At this point in its public life, marginal social cost pricing had

been reworked by economists consulting for the Commission into a political tool for European integration (and may have acted as a unifying idea in this emerging and heterogeneous institutional context, cf. Jabko, 2006).

Kinnock's summary of the criticism of EU port policy neatly illustrated the instrumentalized use of marginal social cost pricing that considered it both "theoretical" and "bureaucratic." The EU's port policy was indeed using the theoretical concept of marginal social cost pricing in a bureaucratic way, as an administrative instrument to achieve the political objectives of the EU. In the hands of consultant economists, the academic concept of marginal social cost pricing was put to a new political use, which was to further European integration by leveling the playing field between Member States and ports. While with hindsight it seems that the Commission's economists overestimated the political and practical applicability of their theoretical concepts, they nonetheless contributed to a further 'economization' of port policy discourse.

3. Conclusion: The Public Life of Marginal Social Cost Pricing for Ports

This paper examined the public life of the idea of marginal social cost pricing for ports. It did so by tracing the ways in which economics interacted with its audiences in two different historical episodes. The contrast between the two episodes in the history of marginal social cost pricing in ports and port policy is significant. The first episode revolved around the emergence of marginal social cost pricing for ports in the 1970s. The project of marginal cost pricing of the 1970s effectively undermined the prevailing principle of national public interest in port policy by replacing it with the neoclassical principle of economic efficiency. It was shown that the drive towards using the principle of economic efficiency in port policy originated neither from calls from port authorities, nor from the demands of large shipping interests. Marginal cost pricing in ports was largely pushed by economists, who were plying their well-established conceptual tools from other areas of transport economics to ports as a new area of study. The idea could however only become successful if it would find a willing audience for these conceptual innovations. When international organizations such as UNCTAD, the OECD and especially the World Bank, took an interest in marginal cost pricing for ports, they created a fertile context in which these ideas could be developed, disseminated, and brought to political fruition.

The second episode took place in the 1990s. At the time, marginal social cost pricing was emphatically embraced by another international institution, the European Union. The European Union had adopted marginal social cost pricing as the cornerstone of its budding

port policy to serve as an active tool to promote a level playing field and increase competition in Europe. Between the 1970s and the late 1990s, the relation between economics and its audience had undergone a major shift. As an international institution, the European Union was no longer merely a receptive audience of the economics of marginal social cost pricing, but manifested itself as an ardent promoter of marginal social cost pricing in port policy. With the European Union's embrace of marginal social cost pricing, the relationship of economists and their audience had changed accordingly. It was shown that economists had either adopted the role of intellectual defender and even author of the Union's policies, or were forced to become modestly critical interlocuters of marginal social cost pricing for ports.

The two episodes provide an interesting insight into the remarkable twists and turns in the history of port pricing. They contain at least three lessons with a broader significance. First, they underscore the role played by economists in advancing marginal social cost pricing and the 'economization' and transformation of the public control over ports and other utilities. Backed by the growing dominance of neoclassical economics, the ascendance of marginal social cost pricing was first advanced as a tool to make port pricing more rational and to wean it away from strictly public or 'political' considerations; later, marginal social cost pricing became the core principle of EU port policy. Secondly, the two episodes highlight the changing role of economics and its relation to its various audiences. In the first episode, economics was in the lead in developing and adjusting the ideas of marginal cost pricing to the context of ports and port policy. In this phase, economists were actively in search of an audience to demonstrate their theoretical prowess. The second episode illustrated how these roles had shifted significantly. No longer merely a receptive audience, the European Union showed itself a very active promoter of the idea of marginal social cost pricing, with academic economists either lending their expertise in favour of EU port policy or forced to take the role of critical bystander. As such, it is a telling illustration of the historically intricate and variable interactions between economic and public reason.

The paper thus showed how the emerging field of port economics may have contributed to the 'economization' of ports and port policy, and how it interacted with some of its publics. Thirdly then, our findings about how port economics contributed to the 'economization' of port policy, provide some much-needed substance to claims that economics was not merely a passive onlooker within the broader shift of what has been labelled liberalization, deregulation and marketization that took place from the 1970s to 2000s. The two episodes in port economics demonstrate that economists played a leading role in one aspect of the economization of port policy, but could only do so

through their engagement with some of their audiences. In their research on ports, economists such as Alan Walters, Richard Goss and Hercules Haralambides, promoted a distinct policy agenda. The paper has thus offered a novel contribution to a more detailed understanding of the involvement of economics in the micropolitics of deregulation, liberalization, and privatization that has swept the world since 1970. It has shown that 'small' and applied economic interventions were equally important in forging such new political projects as were the more visible ideological battles. Alan Walters is sometimes called 'Europe's Milton Friedman', due to his role as chief economic advisor to the Thatcher government and his guidance of its monetary and fiscal policy.¹⁶ As this paper shows, his contributions to transport economics on road pricing and his forays in port economics may however have been equally important in earning that sobriquet.

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¹⁶ This description was given by John Blundell in an obituary delivered at the Mont Pelèrin Society in Sydney on 15 October 2010. See: <https://iea.org.uk/blog/obituary-%E2%80%93-professor-sir-alan-walters> (last accessed: 4 May 2017).

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