

Port Policy: Are The Goss Principles Still Relevant Today?

Abstract

In 1990 Richard O. Goss wrote four seminal articles about the economic principles underlying port policies, which were published in *Maritime Policy and Management* under the title *Economic Policies and Seaports*. These explored the economic functions of seaports, the diversity of port institutions, the need for port authorities, and the strategies that ports might adopt to promote port efficiencies. Economic principles included the existence of seaports for the benefit of traders, the use of competition to maximise public welfare, the customisation of port institutions to meet local circumstances, and the need to involve all levels of government in seaport governance. This paper looks at the relevance of these principles today, taking into account changes that have occurred since 1990, and their incorporation into port reforms in various parts of the world. Finally it asks if there are any additional principles that need to be considered today.

KEYWORDS: Seaports; port policies; port reform; governance; institutions; port competition; regulation

1.0 Introduction

In 1978 Richard O. Goss was awarded a Travelling Fellowship by the UK Civil Service Department, which enabled him to visit 40 ports in 15 countries. This resulted in the seminal work *A Comparative Analysis of Seaport Management and Administration* (Goss, 1979), which strongly influenced the port classification systems we use today. The insights obtained gave rise to a series of four closely interlinked articles *Economic Policies and Seaports* published in *Maritime Policy and Management* in 1990 (Goss, 1990a, 1990b, 1990c, 1990d); these discussed the economic principles underlying government port policies at a time when ‘new public management’ principles (Hood, 1989) were just beginning to be discussed.

The articles were written at the end of a short period of rapid technological change, to develop a framework for evaluating its impact on port economics. Thirty years later, we are nearing the end of a period of substantial institutional change when it is opportune to make a similar assessment that looks at ways of exploiting its potential benefits whilst still maintaining competition.

We revisit these four papers to identify the principles put forward by Professor Goss, and to explore the impact of changes in the world of trade and shipping since then. We then examine the responses of ports over the last 25 years to see whether the policies he

analysed remain relevant today. We then draw conclusions about the appropriateness of the principles for the current port environment.

2.0 Goss' Economic Principles for Seaports

Professor Goss's believed that seaports exist primarily for the benefit of those whose trade passes through them i.e. importers and exporters. This was justified by reference to a 'classical' macro-economic model showing that improvements in port efficiency (and hence reductions in cost) would result in the expansion and diversification of trade, with knock-on effects on GDP growth in the origin and destination countries.

He was dismissive of two functions of seaports that have become increasingly important in recent years—the attraction of economic activity and the making of profits, seeing the former as no more than the transfer of economic activities from one place to another, and the latter as the capture of economic rents generated by the quasi-monopolistic characteristics of seaports that resulted from the existence of limited numbers of suitable sites.

The second strand to his thinking was a belief in the welfare-maximising effects of competition, and its effectiveness in ensuring that efficiency improvements in ports were passed along the supply chain until they reached producers and consumers at each end. He was one of the first to recognise the adverse impact of technological change on competition, dramatically reducing the number of port installations required to service a given volume of trade. Perhaps because of his civil service background, he sought to compensate for this by searching for policies that would increase contestability rather than advocating regulation.

The third important principle he put forward was the need for port reform to reflect differences in history and geography, in the structure of the economy, and in the behavioural preferences of local businesses and citizens. Whilst seeing a need for institutional reform in most of the ports he visited, he respected their diversity of objectives, activities and policies, and did not seek to optimise them. His main concern was with maximising port efficiency within whatever institutional model had been deemed appropriate for local circumstances..

Two criteria were used to divide a wide spectrum of port types into manageable groups for the purposes of economic analysis: the degree of centralisation of control, and the range of activities undertaken by the public sector. He argued that national, regional and local governments should all be involved in port management, as all had an interest in the outcome of port policies. The merits of landlord versus service ports was a question that he left open, as his comparison of Hong Kong (a landlord port) and Singapore (a service port) showed that under the right circumstances both models had the potential to achieve high

levels of efficiency. He also described the remarkable variety of intermediate positions that could be found, concluding that institutional arrangements in ports are important, and allow large improvements in economic effectiveness to be achieved with relatively little capital expenditure. This has been borne out by the improvements in port efficiency achieved since the 1990s by worldwide port reforms undertaken under various governance models.

After reviewing the different types of port authority on offer, Professor Goss asked whether public sector port authorities were needed at all. He concluded they are, because of five requirements:

1. The need to manage property rights in water areas;
2. The need for planning;
3. The provision of 'public goods'—those like navigation safety with joint non-rivalrous consumption, whose producers cannot exclude those who refuse to pay, and whose users cannot avoid consumption— when these are unlikely to be provided satisfactorily by the market;
4. The need to take into account both positive and negative externalities; and
5. The need to promote efficiency in local monopolies, which have the potential to generate at best complacency, and at worst large economic rents.

The last of his four papers (Goss, 1990d) set out four alternative strategies for the organisation of port authorities relative to government. These he named as the Minimalist, Pragmatic, Public Sector and Competitive strategies.

The Minimalist strategy leaves most port operations to the private sector, with the public port authority managing water property rights, planning and the provision of public goods, and financing basic infrastructure when it can do so more cheaply than the private sector.

In the Pragmatic strategy, the port authority has a more interventionist role, with responsibility for improving port performance, but does so through persuasion, consultation and leadership, taking professional advice on all aspects of a problem (once it had arisen) before converging on the best solution.

The Public Service strategy, in which all functions are carried out by the port authority was - at the time of writing - the most common solution to the disappearance of competition, and an alternative to contestability or regulation as a means of protecting the public interest. Unfashionable today, it depends on the existence of a high quality public service culture

In the Competitive port strategy, landlord ports are charged with balancing competition against potential economies of scale, removing barriers to entry and exit, and promoting contestability through their own investment, concessioning and pricing policies.

The relationship between port authorities and government in different competitive environments is the central theme of all four papers, and one we return to in section 4.

3.0 The Changing World

Since 1990 there have been many changes in the business and political environments within which ports operate. In the shipping sector container traffic has become increasingly concentrated amongst the very largest lines, helped by the emergence of powerful Alliances. The balance of power has shifted from oligopolies (ports) to oligopsonists (shipping lines), weakening the bargaining power of ports and creating a higher risk “winner takes all” culture.

This has been exacerbated by the relentless move towards larger container ships, resulting in fewer port calls, and by the development of shipping line networks in which smaller destinations are increasingly served by transshipment. In 2012, an estimated 28% of container traffic was transhipped en route (Notteboom et al., 2014, Table 1) resulting in large volumes of highly mobile cargo for which widely spaced hub ports – some in different continents – compete.

Partly because of their control over substantial amounts of cargo, and partly through resolution of the perceived conflicts of interest that previously prevented them from competing for terminal concessions, shipping lines such as Cosco and CMA CGM have become much sought after as terminal operators.

On land, massive investments in infrastructure and reductions in collection and delivery costs have extended port hinterlands but at the same time exposed them to competition from ports thought previously out of range. US West Coast ports now compete against ports on the US East Coast as well as in Mexico and Canada, whilst ports in North West Europe face growing competition for Asian cargoes from ports in the Mediterranean.

Supply chain logistics has become a major industry, and has changed the balance in port competitiveness between cost, service quality and reliability. The large amounts of electronic data that it generates already allow ports to segment their markets more finely, and replace standardised services with more customised offerings.

Within the ports, ring-fenced terminals have gradually replaced shared common-user berths; this is a consequence partly of port reforms, but also of changes in technology that have made port operations more capital intensive, and increased the throughputs that can be handled across relatively small areas of waterfront land. Redundant port assets have opened up opportunities for urban redevelopment, taking advantage of their city centre locations.

One of the political changes affecting port governance has been the devolution of power to regional and local governments, offset by the emergence of supra-national authorities and regional trading blocs such as the EU, NAFTA and ASEAN. Whereas devolution has encouraged diversity in port policies and increased competition amongst nearby ports, supra-national authorities have tried to standardise port policies, and have increased competition from more distant ports by removing the artificial barriers created by frontiers.

The second major political change has been the widespread withdrawal of the State from the provision of port infrastructure and services, which has led to the arrival of large private investors (the international terminal operators followed more recently by Chinese operators and institutional investors such as pension funds). Long-term investment plans based on traditional port planning principles have been replaced by discrete investment decisions that respond directly to short-term market conditions. Ports and terminals have become more profit-oriented, but there have been few advances in developing better methods of regulation.

4.0 Ports' Responses to Change

Maritime economics has advanced considerably since Professor Goss's ground-breaking work, but there have been few international surveys of similar breadth to *A Comparative Analysis of Seaport Administration and Management* (1979). This section uses a comprehensive recent survey of port governance reform (Brooks et al., 2017) to identify some of the ways in which ports have responded to recent changes, asking why they have responded as they have and what, if anything, this says about whether the Professor Goss' principles are still valid.

The examples are arranged in a way that ties them back to the four original *Maritime Policy & Management* articles, dealing with the economic functions of seaports, the diversity of institutional structures, the need for port authorities, and strategies for their governance. At the end of each discussion, we draw conclusions about these issues today.

4.1 The economic functions of seaports

The first Maritime Policy & Management paper (Goss, 1990a) looked at the economic functions of seaports and concluded that their primary purpose was to facilitate trade.

Today's literature, which is focused more on the role of port authorities, identifies eight main functions: operator, landlord, conservator, regulator, trade facilitator, cluster leader, regional development agency and entrepreneur (Verhoeven, 2010). Some are increasing in importance, whilst others are static or being transferred from port authorities to other entities.

The trend from port operator to landlord port has been well-documented elsewhere (Van der Lugt et al., 2015; Brooks & Pallis, 2011) whilst the role of conservator has been strengthened by increased public interest in the environment, safety and security, and waterfront access rights. Because of its technical requirements, low profitability and focus on 'public goods', conservancy is a port function that is difficult to dispose of except to another specialist agency. Along with technical regulation, it has remained a core port authority function, increasing in relative importance as other functions have been stripped away.

Economic regulation of seaports varies from country to country; it is sometimes non-existent, and sometimes delegated to port authorities as a part of the concessioning process, in spite of the conflicts of interest this causes in landlord port authorities. This has led for calls for the economic regulation of seaports to be transferred to an independent agency (De Langen & Van der Lugt, 2017). Independent regulation has probably developed furthest in South Africa (Havenga et al., 2017), but the model has not yet been widely adopted elsewhere.

The trade facilitation role of ports has been expanding in line with port community IT systems, generating information that can identify opportunities for economic development. Panama is using its maritime infrastructure to exert more control over logistics chains, and is one of the first countries to have a ministry-level agency devoted solely to logistics (Rodrigue 2017).

As governments search for development opportunities outside of national boundaries in the currently fashionable Blue Economy, the role of ports as the leaders of marine clusters becomes more important (de Langen, 2004). This is apparent in the almost obligatory attachment of Special Economic Zones to new greenfield ports, and the use of ports to spearhead industrial investment in emerging markets, giving ports a larger role in regional development than perhaps they had 30 years ago.

Few ports have been comfortable in a more entrepreneurial role. Those that have include large international terminal operators such as PSA and DP World, who have invested heavily

in developing networks of terminal concessions spread across the globe; Chinese “national champions” such as Cosco and China Merchants Holdings (International) Co. Ltd, whose overseas commercial objectives are embedded in the geo-political strategy of the Chinese government via the One Belt One Road initiative (Notteboom & Yang, 2017); and ports like Rotterdam and Amsterdam that demonstrate entrepreneurship more selectively through the acquisition of equity stakes in suitable overseas ports overseas or upstream/downstream businesses at home (De Langen & Van der Lugt, 2017).

The ports that have moved in this direction are mostly located in small countries, which see their ports as significant contributors to GDP. China is the exception and has chosen to move overseas through other entities with an international outlook and large balance sheets, rather than through large locally-governed seaports.

The main changes in seaport functions since the 1990s are summarised in Table 1:

Table 1: Recent Changes in Port Authority Functions

| Function | Trend |
|--|--|
| Switch from port operations to landlord port | Widespread change, largely but not wholly completed |
| Conservancy/technical regulation | Global increase in port authority responsibilities |
| Economic regulation | New responsibilities arising from concessioning (not always appropriate) |
| Trade documentation/logistics support | Use of IT to promote port-centric distribution systems, but progress limited by data confidentiality and conflicts of interest |
| Cluster leadership | More hype than reality, but with opportunities for further development |
| Entrepreneur | Conservative response from most ports, but with high success rate in a small number of cases |

Source: Authors

We conclude that there has been a significant increase in the functions that port authorities can be called upon to undertake, although not all of them do so. Like many organisations, ports now have environmental, social and governance (ESG) obligations, in addition to their responsibility for the promotion of trade. Environmental responsibilities (including mitigation measures) have led to greater involvement in coastal planning, the management of inland traffic flows, and urban land use planning. Social responsibilities have increased concerns about distribution of the costs and benefits of port development, and the existence of multiple stakeholders is leading to gradual changes in port governance arrangements and the way in which decisions are made.

Whilst Professor Goss recognised the need to include externalities in cost-benefit analysis, little significant progress has been made in valuing them, or developing mechanisms for compensating the losers. As non-trade related stakeholders become more powerful, ports have become subject to the ‘not in my backyard’ attitudes that have affected other types of transport investment. This is an area where more academic research is required.

4.2 Institutional diversity

The second Maritime Policy & Management paper (Goss, 1990b) looked at institutional diversity, focusing on two main issues: the balance between national, regional and local control of seaports, and the boundaries between public and private sector involvement. It concluded there was no “one size fits all” solution, but put forward criteria that could be used to select governance arrangements appropriate for local circumstances.

4.2.1 *Centralisation versus decentralisation*

There have been three main trends in this area:

- More differentiation in port governance structures, with ports of national significance remaining under central government control and devolution of local and regional ports;
- Increased central government support for large globally competitive ports;
- Local co-operation between previously competing ports.

Canada and France provide varied examples of the implementation of first trend.

Under the 1998 Canada Marine Act, the government began divesting or devolving the management of all but its remote ports. After deproclaiming or abandoning ports deemed to

be of no importance within Transport Canada's 1998 inventory of 549 ports, and merging others, Canada now has three models of port governance:

- 18 ports of national importance, called Canada Port Authorities (CPAs). These are locally-managed non-share capital corporations with their own Boards of Directors, and land assets are leased from the federal government via a charge against gross revenues.
- 306 local and regional ports, mostly divested from Transport Canada. By 2015, 66 ports had been transferred to other government departments and 42 ports to the Provinces, whilst 148 were being managed by other local bodies. 50 small ports were still being administered by Transport Canada as their divestiture had not been completed (the process has taken much longer than expected).
- 21 remote ports deliberately retained by Transport Canada for social policy reasons. (Brooks, 2017).

CPAs have access to funding of landside projects deemed to be of 'gateway' and therefore national trade significance, in addition to any financing they would acquire due to their own bond ratings.

In France, devolution began quite early, with the divestment for more than 500 small trading and fishing ports and marinas in 1983. This was followed in 2004 by the transfer to local authorities/regional groupings of the ownership, development and management rights for 17 ports of 'national interest,' accounting for 20% of freight and almost 80% of passengers. In this model, local authorities became the concessioning bodies and local Chambers of Commerce and Industry the concessionaires. Although the concessions can be opened up to private competition, by 2013 Cherbourg was the only port with a private operator (Debie et al., 2017).

In 2008, however, the State tightened its grip on France's seven Large Maritime Ports (LMP's) after a period of some autonomy. It increased its stake in their Supervisory Boards from 11.5% to 29.4% at the expense of local authorities and cargo handling companies, and required approval of each port's Five Year Strategic Plan by the Ministry of Transport. These form the basis for multi-year contracts between the LMPs, the State and the relevant local authorities.

In 2011 Japan's 'International Strategic Port' policy concentrated investment on two port complexes - Keihin Port (Tokyo/Kawasaki/ Yokohama) and Hanshin Port (Osaka/Kobe) -

designed to attract mega-container vessels. The objective was to ship national trade directly rather than via foreign ports like Busan. A network of subsidised domestic feeder services is used to attract cargo to these 'gateway' ports from the smaller Japanese ports, which have been directed to stop granting incentives for cargo transshipment at Busan, intended to increase their international ship calls. However the geography of Japan makes it difficult to configure trade based on such a small number of hub ports, especially as cabotage laws make domestic feeder services within Japan more expensive than foreign-flag feeder services to Busan. Although the concentration of investment on a small number of ports may reduce capital expenditure requirements and keep Japan in the global mega-carrier network, it comes at a high cost in terms of cabotage subsidies and reduces the international competitiveness of regions served by small-medium sized ports (Shinohara, 2017).

The decentralisation of control over smaller ports and tighter State control over larger ones are quite common trends. The third approach – increased cooperation between ports without the need for State intervention or national planning – is more recent, triggered by the increased bargaining power of large shipping lines and high investment costs for facilities to serve ultra-large container vessels.

Collaboration between ports can take many different forms, depending on the nature of the competition they are exposed to, the objectives of their owners, and local regulatory regimes. It ranges from very loose arrangements, such as the West Coast Port Collaborative Group in the US set up to lobby for tax changes and protection against competition from Canadian and Mexican ports, to full scale mergers such as Copenhagen-Malmö (de Langen & Nijdam, 2009), and Ghent-Zeeland (Van de Voorde & Verhoeven, 2017), both of which show that competitive advantage can now over-ride national boundaries.

In China seven port clusters— Liaoning, Jin-Ji (Hebei and Tianjin), Shandong, Zhejiang, Fujian, Guangdong and Guangxi Beibu Gulf—use different forms of collaboration ranging from provincial planning committees set up to coordinate port investments through local and provincial government sponsorship of multiple ports to various types of joint venture and interlocking share ownership structures (Notteboom & Yang, 2017).

One of the most interesting forms of collaboration has been the partial merger between the ports of Seattle and Tacoma. Rather than a complete merger, the two seaports created a third corporate entity—the Pacific Northwest Seaport Alliance—to which they licensed their cargo handling operations. To achieve parity within the new organisation, the two ports contributed usufruct rights to assets of equal business value: Seattle's contribution was limited to its container business and some warehouses, whereas Tacoma included not only

its container terminal but also its breakbulk, log, automotive, and intermodal businesses. The majority of port operations at Tacoma are therefore inside the Alliance whilst the majority at Seattle remains outside of it (Knatz, 2017).

4.2.2 Private sector participation

Private sector participation in seaports has been growing rapidly, reaching its furthest extent in Australia, which since 2010 has been selling long-term, whole port leases. The disposal of existing public assets to fund new ones has been driven by the Australian Government's 'Asset Recycling Initiative' of 2014 as well as individual State Governments' desire to reduce their debts (Chen et al., 2017).

In this model, adopted by Brisbane, Port Botany, Port Kembla, Newcastle, Darwin, and Melbourne, the State Government transfers most port assets excluding land into a state-owned holding company, whose shares are sold through a competitive tendering process. Port land is leased to the company holding the assets, and can only be transferred or sold to another private party under pre-specified conditions. However the land can be sub-leased to other companies, and shares in the private port company owning the lease can be traded freely. This effectively creates private sector landlord ports.

Because of a desire to maximise the sale price achieved for the holding company, regulatory systems have not been put in place that would encourage private landlord ports to act in the public interest, expose them to competition, or prevent them from exploiting conflicts of interest. On the contrary, to reduce competition the New South Wales government bundled together the leases for Port Botany and Port Kembla and added a clause offering compensation should a competing container terminal at Newcastle receive the go-ahead. At Melbourne, the buyers have been similarly protected against a second container port being built in the State of Victoria within the next 15 years.

The Australian model has also been used in Greece, where the IMF insisted on selling the remaining shares in the corporatised ports of Piraeus and Thessaloniki as part of the post-2010 bail-out plan, in spite of opposition from the European Commission and European Central Bank. The resulting port governance model is motivated by macro-economic objectives far removed from the promotion of port efficiency and trade (Pallis & Vaggelas, 2017).

4.2.3 Conclusions on institutional diversity

Since Professor Goss first concluded that there could be no 'one size fits all' approach to port governance, the need for institutional diversity tailored to local circumstances has been reinforced by not only by decentralisation and privatisation, but also by the need for increased accountability and competitiveness, be this in local or global markets.

Achieving an appropriate balance between government, port operators (public and private) and citizens has become one of the key challenges in port governance. While he argued that all levels of government have a stake in port policy, the countries that have succeeded most are those where there is clarity about who determines each port's overall direction and role, how the scope for 'public interest' regulation is defined, and the way in which local interests are incorporated into the planning process.

In order to reach this position, Baltazar and Brooks (2001) proposed an approach they called the Matching Framework, based on the idea that it was not the institutional structure itself that was important but the fit between the business environment and the strategy chosen by the port authority. This is discussed further in section 4.4.

4.3 The need for public port authorities

The increased role of the private sector in seaports, and a swing towards regarding ports as commercial businesses rather than strategic assets, raises the question of whether public port authorities are needed at all, an issue examined in the third Maritime Policy & Management paper (Goss, 1990c).

In recent years there have been few changes to water property rights, which in some countries are enshrined in the Constitution. However, as port activities move away from congested urban areas, more port developments are taking place outside of traditional port boundaries, where the allocation of water rights is often a matter for negotiation with central government.

Enthusiasm for port planning has varied both geographically and cyclically over time. Some countries like Italy and Mexico put a lot of emphasis on port master plans, whilst others like the UK leave decisions on port development largely to the market, intervening only when there are significant externalities to be taken into account. The need to integrate port and urban planning is becoming more widely recognised, but relatively few cities have managed to set up permanent procedures for achieving this.

Public goods such as maritime safety and dredging can be provided in various ways. In Australia the emergence of private landlord ports has led to functions such as navigation safety and environmental management being shifted from statutory port authorities to other public agencies. A new organisation, the Port Authority of New South Wales, has been set up to fill the gaps left by the privatisation of Port Botany, Port Kembla and Newcastle. At Brisbane, responsibility for issues like channel navigation has been transferred to the Queensland Department of Transport and Main Roads, whilst at Darwin public interest issues like maritime safety, environment protection, pilotage, and port access are overseen by the Northern Territory Government (Chen et al., 2017). It is perhaps too early to say whether these less specialist agencies will be able to provide the necessary services to the same standard.

Because port authorities have rarely been held responsible for externalities such as urban traffic congestion, visual impacts, or port-related industry, these are increasingly being dealt with outside of the port. The changing balance of power in favour of private terminal operators has further increased support for municipal intervention, sometimes at the expense of a proper evaluation of trade-offs (Dooms and Farrell, 2017).

The performance of most landlord port authorities in promoting competition and/or contestability has been disappointing, whether as a result of conflicts of interest, a preference for familiar partners, or the transfer of decision-making powers to a higher level of government. Acting to increasing competition often involves significant financial risks, particularly if the port authority is required to build additional infrastructure or lower cargo handling charges to attract business.

As noted earlier, there have been instances in Australia where State governments have deliberately reduced competition in order to increase the value of their port assets, although these remain a small minority (Chen et al., 2017).

We therefore conclude that although the need for port authorities remains, their nature will depend on the competitive environment in which they operate, and the strategies adopted for dealing with competition. These are discussed in the next section.

4.4 Strategies for port authorities

The fourth paper (Goss, 1990d) explored the different approaches to port governance (he called them strategies) that could be used when faced with differing levels of competition. There are many different forms of competition: intra-port, inter-port, international, inter-coastal, intermodal, and between different corridors and supply chains. Different port

activities can be exposed to different types of competition, whilst some have to deal with more than one type. Whilst tenants are competing for port facilities and cargo, port authorities themselves are increasingly competing for tenants, particularly those with the ability to bring in extra cargo. Consequently competition has become much more complex since Professor Goss wrote this paper.

In contrast to the period that preceded the Maritime Policy & Management articles (1970-1990), the last 25 years have seen a significant increase in port competition. Intra-port competition has become more common as a result of rapid traffic growth caused by trade liberalisation measures (now mostly achieved). Port hinterlands increasingly overlap as a result of land transport improvements. International competition has been growing as governments like Malaysia intervene to protect and promote national ports, and supranational authorities like the EU impose fair competition rules. As speed and punctuality have become more important, sea transport faces more competition from road, rail and air, particularly for high value goods.

A great deal has changed since Professor Goss developed the four governance strategies shown in Table 2.

Table 2: Allocation of Responsibilities by Goss' 'Strategy'

| Issue | Minimalist | Pragmatic | Competitive | Public Service |
|-----------------------|---|---|---|--|
| Competition | High | Medium | Medium | Low |
| Governance philosophy | Public support for private sector with limited direction | Intervention only in cases of market failure | Deliberate action to create competition | Comprehensive public sector control |
| Public sector role | Water access, planning, public goods, some finance for infrastructure | Passive landlord, with responsibility for port efficiency delegated to private sector | Proactive landlord, using assets & PPP contracts reach desired outcomes | Responsible for port efficiency and alignment with public policy |
| Private sector role | Most port investment, and | Port operations, with varying | Port operations, with varying | Very limited |

| | | | | |
|--|------------------------------|--------------------------|--------------------------|--|
| | all operations management | amounts of investment | amounts of investment | |
|--|------------------------------|--------------------------|--------------------------|--|

Source: Authors

Over the last 25 years, the **Minimalist** strategy has found favour in the highly competitive UK market, and also in Australia (for different reasons) but not in many other countries. Instead there has been a move from the Public Service to the **Pragmatic** strategy where market forces do the baseload work in creating a competitive environment, with only occasional public sector interventions. Many landlord ports have implicitly adopted the Pragmatic strategy, although the proactive **Competitive** strategy is more suitable for situations with limited competition. This is not surprising as most ports are now facing higher levels of competition than envisaged by Professor Goss. However, it may not hold in the future if slower traffic growth combines with another burst of technological change (like artificial intelligence) to produce further terminal concentration. Finally, the **Public Sector** strategy is no longer fashionable but in the right environment (Dubai, Singapore) can result in high levels of port efficiency. It is often the preferred alternative to regulation when competition is absent, or small ports that are not financially viable meet important social needs.

We conclude that, like institutional structures, port strategies vary geographically and over time, and will become more diverse as the four basic models are modified to meet local needs. Whichever models are appropriate now need to consider more than just competition and regulation. As noted previously, effective governance models need to assess the institutional structures within a context set by the economic, business and regulatory environment and the likely responses to be made by the port management. As an example, Wilmsmeier & Sanchez (2017) used the Matching Framework as a vehicle for discussing the effectiveness of the ports of Valpariso and San Antonio in Chile over the period 1992-2015. They made it clear that the evolution of the ports from centralized decision-making with mechanistic procedures in periods of low uncertainty (and one might argue low competition) in the 1990s to a more organic structure in the more uncertain period after 2011 was hampered by the failure of government to develop a national port policy that supported the development of much needed infrastructure. The loss of fit between the ports' strategies and the government's setting of national policy was noticeable as the government had abdicated its responsibility to terminal operators.

5.0 Conclusions: The Relevance of Goss' Economic Principles Today

Throughout the four articles, Professor Goss was concerned about the rationale for particular port policies and the way that governments and markets intersect. In this section we ask what he got right, what he failed to anticipate, and whether his principles have been overtaken by events. We conclude by looking at the future research required to develop his principles further.

Professor Goss would have been pleased to see that trade interests are, for many countries, now driving the port policy agenda, a point very much in line with his thinking about the purpose of a port authority. This was recently confirmed for Canada in a Council of Canadian Academies (2017) study, which concluded that the value of the shipping industry was not just about shipping and port employment, but also in serving trade interests. The role trading interests play in 'gateway' port development is further affirmation of his philosophy.

He was correct in his assertion that 'one size does not fit all', whether in terms of institutional structures or port strategies. In fact, he would have been surprised at how many models have been tried over the last 25 years and how few have been found to be wholly satisfactory. The functions of seaports, and the objectives that government set for them, have definitely become more varied. There is more exchange of information about the policies adopted in different countries than was the case in 1990, and more confidence in experimenting with new ideas, even though policy changes these days appear incremental compared with the sweeping changes of the 1980s and 1990s.

What Professor Goss would have deplored is the lack of follow-up monitoring and evaluation work allowing us to learn from these changes. This has been caused partly by private sector insistence on commercial confidentiality and public sector desire to avoid scrutiny, but also reflects the lack of a rigorous intellectual framework for the analysis of policy changes, failing to take advantage of the large strides made recently in behavioural economics.

The second thing Professor Goss got right was seeing competition as one of the main tools for improving port efficiency. The current lack of interest in port regulation suggests that competition and/or contestability within and between ports has generally been maintained at acceptable levels. Only where market failure has been sufficiently large to inflict economic damage, for example in South Africa (Farrell & Levin, 2014) have new regulatory institutions been set up.

As a civil servant, Professor Goss was well aware of the shortcomings of regulation, caused by uncertainty about its objectives, information asymmetries, and the difficulty of balancing

the interests of different stakeholders. However as we look to the future, the need for regulation may re-emerge, driven by the move towards populism and trade regulation in the United States and elsewhere, and concerns about the market power exercised by large shipping companies and international terminal operators.

Whereas Professor Goss saw technological change as the main threat to competition, increases in ship size and container line consolidation are now the main challenges facing the port industry. Ports wishing to retain their status as global hubs have had to make massive investments just to keep up. Overcapacity in shipping has driven down container freight rates, and terminal handling charges now appear to be following suit, with importers and exporters the principal beneficiaries of economies of scale in both industries. It is ironic that Professor Goss' first conclusion—that ports are mainly for the benefit of traders—is now being brought about by uncontrollable market forces rather than by deliberate port policies.

The current high levels of port investment needed to maintain competition may not be commercially sustainable, resulting in a call for capital subsidies. Although Professor Goss did not talk about subsidies in his four port policy papers, it was a subject he wrote about extensively (Goss, 1986) at a time when operating costs as well as capital expenditures were often subsidised. Although he dismissed the need for subsidies on economic grounds, he ignored their political and social importance, and would perhaps have been surprised by their use today as a tool for increasing competition.

What Professor Goss failed to foresee was the explosive growth of environmental, social and governance concerns, and the way in which this would change the balance between economics and politics in port policy-making, particularly in relation to investment decisions. The impact on port governance structures is just beginning to be felt, but will increase in future as the rise of social media allows populist movements within local communities to push independently for change.

Whilst he generally approved of anything that increased transparency, accountability, and the exposure of inconvenient facts, Professor Goss would have been deeply concerned about the scope for abuse of media power, the rise of 'fake news', and the lack of proper mechanisms for rationalising and harnessing social debate.

The second thing that he did not fully foresee was the evolution of global supply chains. More powerful shipping lines are now confronted by more powerful customers concerned not only about their bottom-line door-to-door transport costs, but also about service quality and reliability, and their ability to control the flow of their own goods. This has created a 'winner

takes all' situation for shipping lines, in which the benefits of port efficiency and competitiveness have become more blurred. Even the most efficient port will fail to attract business if other (perhaps more important) links in the supply chains to which it belongs are not themselves performing well, or are seeking excessive economic rents.

There is also the question of the minimum critical mass of traffic needed to attract ship calls, which has been increasing over time. Whilst ports that efficient but small can still attract regional traffic, efficiency without scale no longer provides an entry card to direct global trade.

The third major change since 1990 has been the rise of transshipment hubs, which give shipping lines more flexibility in routeing cargo through their networks. Transshipment hubs compete against each other globally: cargo from Asia to Europe can be transhipped at any one of several major hubs en route, resulting in unprecedented levels of cargo mobility with routeing patterns determined by location, spare capacity and price (access to low cost assets) as well as port efficiency. Transshipment hubs, and the feeder networks than radiate from them, partially offset the effects of economies of scale and shipping line concentration, allowing efficient smaller ports to co-exist alongside large global gateways. The result is a hierarchy of different scales and types of container port, requiring further nuances to be built into the four port strategies put forward by Professor Goss.

So while he got much of it right, and most of the principles still hold true, what should be the focus of future research?

Valuing the benefits of competition is a neglected area of academic research that is only now becoming possible as a result of the big data generated by supply chain participants. If it is to become more than a theoretical concept to which everyone pays lip service then subsequently ignores, some new ideas are needed about the nature of competition and the distribution of its benefits in order to help port authorities to come to better management decisions. The challenge is that many supply chains are not port-centric, so the ability of port authorities to act as research partners will be hindered if terminal manager, shipping lines and traders are unwilling to share their data. This area of research needs comparative work to examine best practices in cooperative data management and what information governments need to obtain from industry.

There is also a need for academic thought to be given to developing a family of regulatory models that are appropriate for different circumstances. In large ports, for example, the primary objective of regulation might be to ensure that enough infrastructure is available in

advance of demand to facilitate access for potential competitors rather than controlling the prices charged by incumbents. In smaller ports with overlapping hinterlands, the objective might be to ensure non-discriminatory treatment of customers, so that those who have no choice do not pay more than those with alternatives. In other ports, the objective might be to ensure that increases in charges can be economically justified whilst preventing terminal operators from introducing new charges that allow them to evade tariff regulation, such as the new port access charge introduced at Brisbane in 2012 (Chen et al., 2017).

Finally, there is a need for more empirical research into the outcomes of port governance changes and their economic impacts on different groups of stakeholders.

In September 2017, Professor Goss' *Maritime Policy & Management* articles on port policy showed up in Google Scholar as his four most cited works. They laid the foundations for subsequent research by many other scholars, but still hold within them unanswered questions. With today's mathematical tools and the large amounts of empirical data that have appeared since they were written, they still provide a valuable starting point for new academic research.

6.0 References

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