

The Halifax Port: its Role and Prospects in the Nova Scotia economy, with special emphasis on the issue of devolution

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***Abstract:** Ports play an important role in nearly all countries. They are especially important in maritime economies. This paper investigates the role of Halifax port in the Nova Scotia economy. We consider the historical role of the port, and its natural advantages and disadvantages. We then evaluate the devolution process which led to the transformation of the port from the Port Corporation to the independent Port Authority. Based on a review of the literature and interviews with port executives, we find that devolution has increased economic efficiency, but some aspects of privatisation can hamper the government's ability to promote socially optimal outcomes.*

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I. Introduction

The Halifax port is situated in the Halifax harbour, a large natural harbour on the Atlantic Coast of Nova Scotia, Canada. The Halifax harbour is also considered to be the second largest harbour in the world following Sydney, Australia. The Halifax harbour has many advantages which would make it seem ideally situated for a port. In times past it was considered “an ideal entrepot for transshipment business and water-borne cargoes.”¹ Yet, despite its natural and strategic advantages, today the volume of traffic through the Halifax Harbour is significantly less than through large eastern seaboard ports like Montreal or New York.²

This paper will investigate the reasons for constraints to the volume of traffic through Halifax. We place this investigation in the context of benefits to the Nova Scotia economy. Section II will briefly describe the characteristics of the Port. Section III will discuss the advantages and disadvantages of the port. Section IV will evaluate logistical and administrative issues. We evaluate the evolution of these issues as a result of the creation of an independent port authority. Section V will contain our conclusions. Lastly, Section VI will contain our recommendations as well as directions for future research.

II: The Halifax Port and its Importance

a. Characteristics of the Halifax Port.

The Halifax harbour is one of the deepest and largest natural harbours in the world (AIMS, 2005). It is the first mainland port inbound to North America from Europe

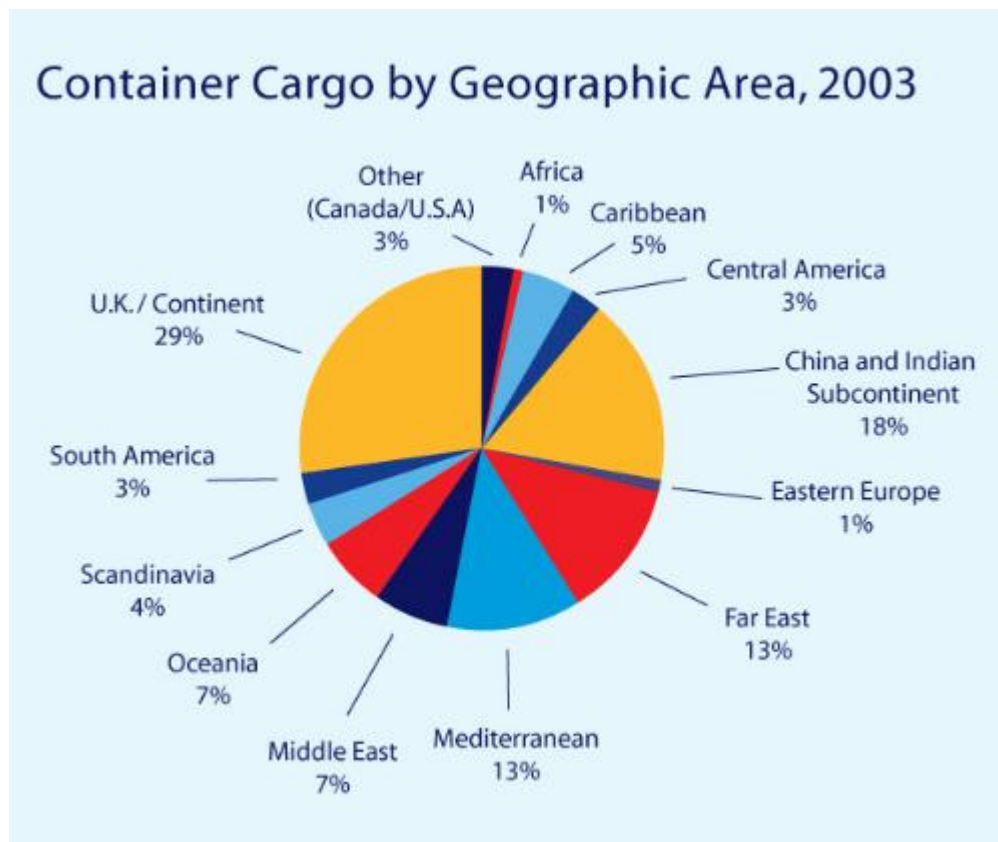
¹ Martin, Allan S. (1934)

² In 2001, the container exchange through Halifax was 413,501 TEU as opposed to 2,352,453 TEU for New York or 848,762 TEU for Montreal (O’Keefe, 2003).

and the Mediterranean, and the last mainland port outbound in the opposite direction. The port is ice-free year round. It is strategically located, approximately 100 km north of the Great Circle Route. After a recent dredging operation, the maximum depth of the port has been increased to 55 feet.

In terms of tonnage “Halifax was the 6th placed North American port on the Europe trade route and 11th on the Asia & Oceania trade route” in 2001 (O’Keefe 2003). The origin of container cargo passing through the port is shown below.

Figure 1: Container Cargo of Halifax Port by Geographic Area, 2003



Source: Halifax Port Authority, 2005a

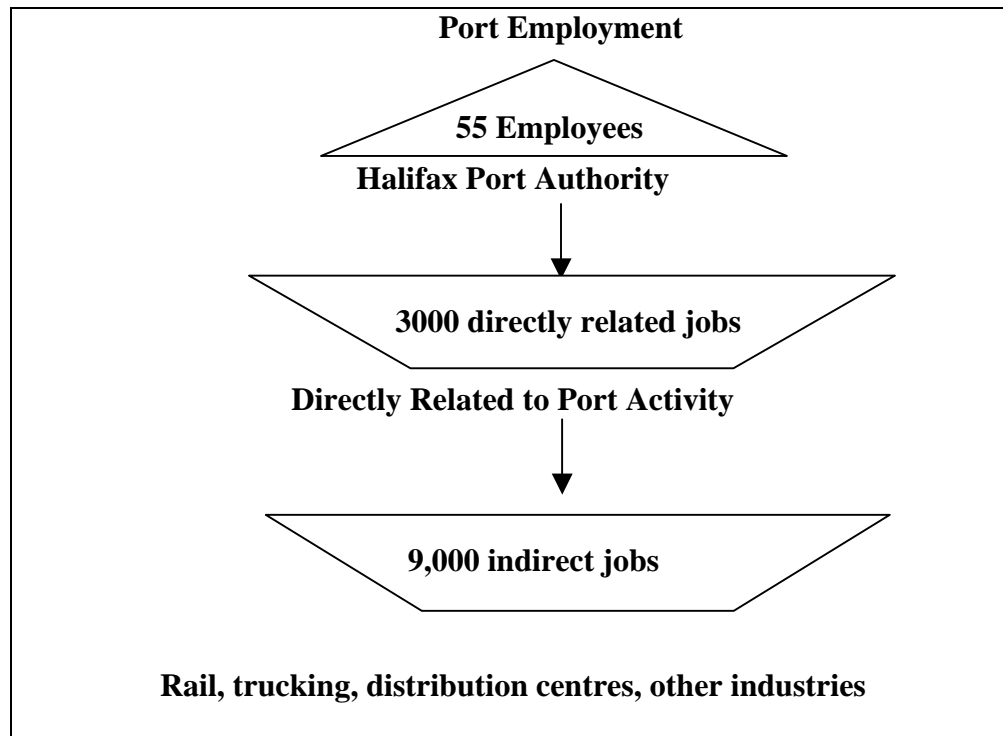
A supportive location on waterfront lands is essential for a good quality port engaged in a wide range of marine activities. In this regard, the Port of Halifax supports a

wide range of marine activities such as shipping (container, bulk, general cargo, roll-on/roll-off), shipbuilding and fabrication, defense, research, coast guard, offshore oil and gas, petroleum refining, fishing, ferry service and tourism and recreation (Gardner Pinfold Consulting Economists Ltd. *et al.*, 2004).

b. Regional Importance and Mandate

The economic impact of the port on the province of Nova Scotia has been estimated at almost \$700 million (AIMS, 2005). The port authority has 55 employees, but there are 3000 additional jobs directly related to port activity. In addition it is estimated that 9000 more jobs are indirectly related to port activity. These include jobs in the rail and trucking industries, as well as distribution centres, waterfront labour, ship fuel and provisions, technical services relating to refrigeration (Bohan, Personal Communication, 2005).

Figure 2. Employment generated by the Port of Halifax, 2005.



Section III: Advantages and Disadvantages of the Halifax Port.

The port of Halifax has both natural and structural advantages. Halifax has a most favorable harbour which combines high water depth, low tidal range, flat land, uniform geology and good soil depth. Infrastructural issues include good road and rail access, coupled with proximity to markets and trade routes.

With a maximum depth of 55 ft, the Halifax harbour is the deepest harbour on the east coast of North America (AIMS 2005.). While ships currently coming through the harbour are of the order of 5000 TEU, the port is already equipped to handle the 10,000 TEU ships expected in the future³. Because of its proximity to the Great Circle route, it can be used as a First In Last Out port, or FILO (Cirtwell *et al.*, 2001). Thus ships heading for the east coast of North America can dock first in Halifax to lighten their loads

³ These ships have already been introduced on Asian and Pacific routes.

and avoid channel draft problems; similarly they can top up loads on the outbound route (*ibid.*, Bohan, Personal Communication, 2005).

Halifax enjoys an advantage over Montreal in that it is ice-free year round. Historically, this made Halifax a high traffic port in the winter months (Allen, 1934). However, with the introduction of ice-breaking technology in 1966, the St. Lawrence River became passable in winter (Norcliffe, 1980). Thus the Halifax advantage was reduced, as traversing frozen water is now less expensive than land transport.

In recent years, increased trade has caused congestion at large ports, leading to increased utilization of surplus capacity at smaller ports. This is proving advantageous for Halifax; in recent months there has been an increase in cargo carrying in Halifax due to congestion at other ports (Bohan, Personal Communication, 2005).

Geographically, the port of Halifax has both advantages and disadvantages. Geography helps the port of Halifax in two ways. Firstly, when container vessels are crossing the Atlantic between the U.S. and Europe, the Middle East and the Far East (via Suez), Halifax is an easy stop due to its strategic location to the Great Circle Shipping Route. Secondly, Halifax is at least one day closer by sea to major North American markets, facilitating easy transshipment by rail⁴.

The major natural disadvantage is the distance from target markets. Due to the relatively high cost of land transport, it will be more economical to direct discretionary cargos to ports closer to target markets.

⁴ See Gardner Pinfold Consulting Economists Ltd. *et al.*, 2004. It should be remembered, however, that this constitutes an advantage only when cost or capacity do not constrain rail or road transshipment. This is not necessarily the case in Halifax, as is explored below.

Halifax is served by only one Class One Railway,⁵ CN Rail. This is in contrast to the situation in several other North American ports. New York has three Class One rail services, Montreal has two, and Vancouver has two to three, depending on the method of evaluation (Bohan, Personal Communication, 2005). Thus in Halifax, CN can use its “market leverage” to charge higher prices, and in fact can test to see what the highest price is the market will tolerate. The rail monopoly also has little incentive to minimise dwell times (See Section III a). The high price and dwell times disadvantage Halifax as a port for freight forwarding.

Section IV: Logistical and Administrative issues.

a. Logistical problems

The railway business model utilized by CN is based on “balanced trains.” I.e., trains are run only on a schedule which can ensure full cargos in both directions. In the case of Halifax, exports are usually greater than imports. The result is that when ships deliver a bundle of cargo for delivery, the cargo tends to accumulate in the port until the regularly scheduled trains arrive. This problem is accentuated by the cyclical nature of ship docking – ships tend to arrive on Thursdays, Fridays, Saturdays and Sundays while Monday to Thursday is a period of low traffic. Thus minimizing ‘dwell time’ is a major concern for clients. As a virtual rail monopoly with excess demand, CN has little incentive to reduce dwell times from Halifax. Thus discretionary cargoes arriving in Halifax may be disadvantaged relative to, for example, Montreal. While cargoes arriving

⁵ The six largest rail carriers in North America are referred to as Class One railways.

in Montreal may face some of the same problems vis-à-vis dwell time, this is mitigated by the options of trucking, and choice of rail lines.

Shipping lines and freight forwarders may also choose to transload the goods in Halifax and truck them, or truck the containers directly. Both these options are rarely exercised due to their high cost; however the year 2005 saw an increase in trucking of goods, as the capacity of the rail is nearly maximised (Bohan, Personal Communication,, 2005).

b. Administrative issues and transition to Port Authority.

Over the past decade, many ports around the world were privatised through various forms of concession or lease agreements. In most cases, public policy was to encourage private participation in ports for efficiency gains through the introduction of competition, attracting increased foreign investment and ensuring cost-effective port services. In developing countries, the result of such policies was to create private natural monopolies, because of the high cost of investment in structure of ports (Van Niekerk, 2005). However, this is not the case in more economically developed countries because of the size of the markets, and competition with adjacent foreign and domestic ports. Hence operations of ports in economically developed countries can be competitive under private authority.

In Canada, as part of the devolution in transport support industries, governments deliberately devolved responsibility from the public to the private sector through the

implementation of the 1995 *National Marine Policy* (NMP) under the *Canada Marine Act*, 1998. The intention of such devolution was to secure the benefits of commercially driven business decision-making in organizations previously run by government, and at the same time, to secure compensation for prior investments by taxpayers (Baltazar and Brooks [2001], O’Keefe [2005]). Thus although Halifax port is self-sufficient in terms of funding and investment, it is situated on land which continues to be owned by the Department of Transport.

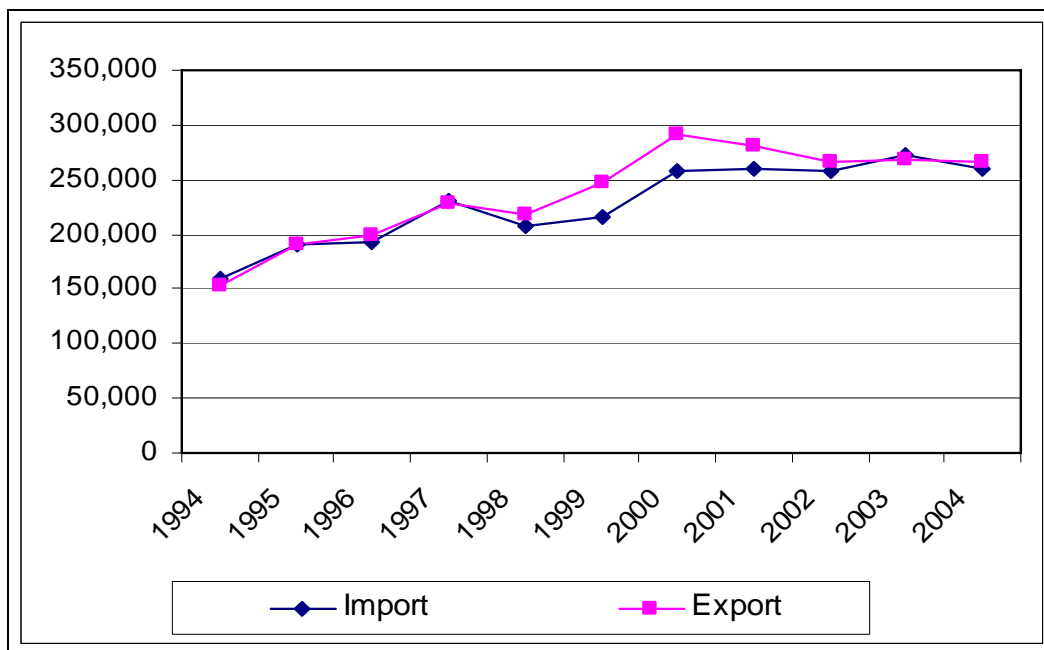
The devolution process was chosen over full privatization in Canada “to invoke community responsiveness through the creation of not-for-profit stakeholder-focused entities” (Baltazar and Brooks, 2001). As part of the process, the new port authorities were to be run by a community selected board of governors. However, while community input is now actively sought in Board selection, the (federal) Minister of Transport retains the right to approve candidates. Baltazar and Brooks (2001) find that “the Minister decided on his choice of candidates and was able to reject candidates put forward by local interests.” They thus conclude that “true devolution did not happen for Canadian ports.” Sources within the Port Authority agree that the devolution is “an incomplete process,” but counter that the five directors employed by the Minister in consultation with port users are all credible business people. Because they are required to have no conflict of interest, they tend to be drawn from a wide variety of business backgrounds, and their independent views form a real contribution to port governance (Bohan, Personal Communication, 2005).

Section V: Conclusions

While critics have charged that the reforms in the nascent port authorities were incomplete or non-existent, there have been significant changes in the management and perceptions of the Halifax Port Authority (see above). The reforms are akin to those recommended by Baird (2000), in that competition within the port has been created and the port authority has been revitalized.⁶

One effect of the devolution is a significant increase in total revenue and profit margins. Total revenue approximately doubled since 1998, the last year before devolution. While container traffic has show a marked increase as well (see Figure 2 below), this increase is not sufficient to explain increased revenue. This suggests the revenue increase have been largely due to cost cutting and the generation of non-cargo based revenue.

Figure 3: Container Traffic in Halifax Port (in TEUs).



⁶ The reforms are also along the lines of the recommendations of the “Task Force on the Future of the Port of Halifax.” This is salient as the Task Force recommendations were delivered several years before the National Marine Policy (1995) and the Canada Marine Act (1998).

Source: Compiled for data provided by the Halifax Port Authority (Unpublished).

Profits have enabled the port to be self sufficient, and still have the financial resources for major investments, such as the current ongoing dredging operations. However, the capital available from profits pales in comparison to the ability of American ports such as New York/New Jersey, whose operations are funded by state and federal governments (O’Keefe, 2003). It remains to be seen whether capital constraints will impede Canadian competitiveness in the future, or whether revenue flows will be sufficient to make the necessary investments. While devolution or privatisation has not been found to be negative per se, we are inclined to suggest there is ample scope for further collaborative efforts between various port stakeholders. In some ways, a lack of co-ordination between various branches is exacerbated by privatisation. For instance, the Task Force commissioned by the Province included recommendations for CN to operate routes at less than full compensation (Regan 1993). Such a scenario would be difficult if not impossible with the current private CN Rail.

The devolution experience of the Halifax Port is representative of the complexity surrounding privatisation and decentralisation issues. Many aspects seem to indicate that devolution was economically efficient. Container traffic has increased; in addition, the requirement of self-sufficiency ensures that the port will not be a drain on the government budget (where government includes federal, provincial, and municipal levels of governance).

However, when the entire inter-modal transport system is considered, it can be seen that the outcome is not socially optimal. In a private rail monopoly, prices do not reflect marginal costs; rather they tend to reflect the maximum price the market will bear

(Baum and Tolbert, 1985). In Halifax, CN railways prices are based on this strategy. The market response has been a diversification of land transport options, with a shift towards containers trucking, and shipping smaller cargo units after transloading at source (in or around Halifax). Currently, this has been a relatively minor shift (Bohan, Personal Communication, 2005). But as current rail capacity is saturated, the increase in road transport may become more substantial. As road infrastructure is almost invariably maintained by the state, this will again result in a drain on the public purse.

Solutions to continuing problems of transport (as well as several other sectors) cannot be based on the old dogmas of 'State' vs. 'Private Corporation'. Rather, they must make use of innovative methods and involve all business interests as well as relevant regional authorities. This is discussed further below.

Section VI: Recommendations and Future Research.

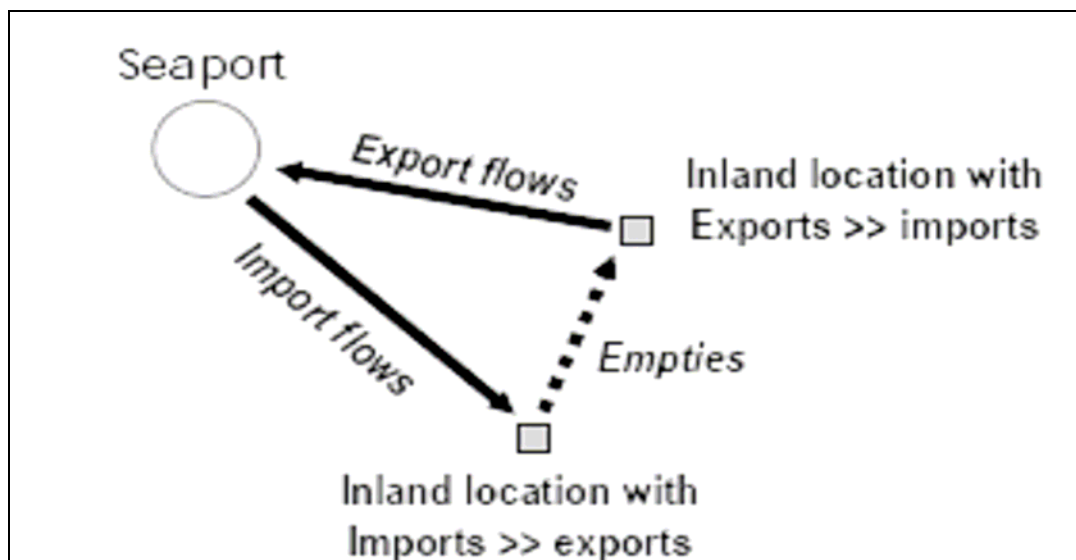
a. Recommendations

The near-monopoly in land transport inbound from Halifax is having an adverse impact on the ports traffic potential. Following Noteboom and Rodrigue (2005), we believe the port authority should be more actively involved in proposing distribution alternatives.

They argue that the port authority should act as 'facilitators' in transport chains by constantly rethinking to improve the efficiency of the port. In this regard, proactive port governance is a key issue when all the interest groups of the port such as carriers, shippers, transport operators, labour and government bodies will work together to identify problems and address issues affecting logistic performance of port (*ibid.*). Port

authorities should promote an inter-modal transport system in order to use the cargo efficiently within a limited time framework. In this regard, the port authorities might develop strategic relationships with other transport nodes. Networking strategy between port authority and other transport nodes and strategic cooperation among them could help port authorities to develop new resources and capabilities and help them to maximise efficient use of existing resources.

Figure 4: An example of streamlining inland box logistics



Source: Noteboom and Rodrigue, 2005, p. 14

Figure 3 depicts a recommended co-ordination among import-dominated locations and export dominated locations for efficient use of containers. Port authorities and other interest groups such as market parties can jointly work to better streamline container

flows and reduce empty hauls. Noteboom and Rodrigue suggest regional authorities and ‘market parties’ could co-ordinate efforts such that “one solution could be to develop intermodal services between import-dominated locations in the hinterland and export-dominated locations as to create a loop system resulting in shorter distances and considerable savings in costs due to the reduction of empty hauls” (*ibid.*). Such a system could also alleviate dwell times without the need for the current “balanced trains model.” Alternative solutions would be the promotion of small vessel traffic, or increased feeder rail lines. A limited time subsidy for certain CN rail routes is another option. If the volume of traffic increased as a result of reduced dwell times, the routes would eventually become profit making and the subsidy could be removed.

b. Future Research

While the effects of devolution on port profits and traffic have been considered heuristically, we have performed no rigorous tests for these. One reason for this is the difficulty in obtaining detailed monthly or quarterly data that would enable econometric analyses. If such data were readily obtainable, it would be interesting to test for a structural break in profit, cargo tonnage, or other variables as a result of the transition to Port Authority.

We have considered the employment generated by the port. However, the impact of further port expansion on job creation remains unclear. Future development could include estimating job creation as a function of port expansion.

We have not included analyses of non-cargo port activities. Such analyses could be included in our future research. (cruise ships, waterfront development etc.).

Another project would be to set up a game theoretic model to analyse the interaction of CN rail with the Port Authority. This may deliver insights into ways to arrive at Pareto superior alternatives without significant changes to existing infrastructure.

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