

CHANGING CURRENTS IN THE CANADIAN FERRY TRANSPORT SECTOR

Joseph Monteiro, Gerald Robertson and Darryl Anderson

I. Introduction

Ferry transportation in many parts of the world has attracted a great deal of attention. It is often an essential mode of transportation therefore safety or security issues generate public interest.[1] In other instances longstanding economic issues such as the level of any financial subsidy and service levels are the hot topics of debate. A decade ago one eminent Canadian scholar observed that government ferry subsidy policy was possibly inequitable and unable to take tough decision.[2] Those concerns did not go unnoticed by the Canadian Transportation Act Review Panel. In 2001 they recommended a reduction in ferry subsidies and commercialization. Innovation in ferry transportation has indeed evolved in that direction along with changes to safety and security procedures. Yet, further innovation may be needed as regulatory bodies respond to issues such as unfair competition, service quality, financial sustainability and asset renewal. Stagnate growth trends, the lingering effects of the recession, and environmental pressures are also shaping the future direction of the sector.

The objective of this paper is to identify and analyze some of the innovative developments that have occurred in ferry transportation in Canada. Section II begins by providing a brief overview of ferry transportation in Canada followed by a summary of the areas of operation for the major ferry operators in section III. In section IV, the results of the major changes such as the move to commercialization are assessed. We provide our opinion on the relative success of the major changes in ferry transportation policy and offer recommendations in section V. These recommendation are meant to encourage and foster innovate actions on the part of government, industry and academia.

II. An Overview of Ferry Transportation

In maritime transportation ferry service may be provided by vessels that carry passengers and/or vehicles. Most ferries operate on a schedule with return service across relatively narrow bodies of water for use by passengers or freight interests. As a result the industry is marked by technological innovations in vessel design and use. Examples include, double-ended, or side loading roll-on, roll-off ships, hydrofoils,

catamaran, cruise-ferry, fast ropax ferry and pontoon ferries, articulated or traditional style tug and barge service. Other types of ferries may offer foot passenger only service in a seabus (Vancouver) or watertaxi. Depending on the vessel type freight can be moved in trucks, containers or rail cars.

Most ferry services in Canada operate as common carriers in domestic waters on either coastal or urban routes. For example, BC Ferries has 3 major routes, 16 minor routes and 4 other routes. The La Societe de traversiers du Quebec provides 8 ferry routes on the St Lawrence and Saquenay Rivers. Translink operates the urban Seabus route. Canada United States transborder service is available in some regions of the country. Presently, the ownership in the ferry industry can be characterized as a mix of private, provincial and municipal levels of government. This marks a significant change from the early 1980's where there was more federal and provincial ownership of ferry services.

III. A Brief Description of Ferry Transportation

There are more than 200 ferry routes in Canadian waters, including domestic and transborder services. The major Canadian ferry operators carried approximately 48.3m. passengers and 18.3m. vehicles in 2008.

(i) *Area of Operation:* The size of the ferry transportation industry across the country is shown in the table below. It indicates that BC accounts for

Ferry Transportation Statistics by Province (2008)

Province	Passengers	Vehicles	Employees
1. British Columbia	32,720,250 (67.75%)	11,325,938 (61.78%)	4,043 (55.83%)
2. Quebec	5,717,000 (11.84%)	2,645,000 (14.43%)	966 (13.34%)
3. PEI/NS/NB	6,232,268 (12.90%)	2,711,000 (14.79%)	473 (6.53%)
4. Ontario	2,010,612 (4.16%)	829,236 (4.52%)	246 (3.40%)
5. Nfld & Labrador	1,176,823 (2.44%)	601,757 (3.28%)	1,443 (19.92%)
6. Manitoba	197,800 (0.41%)	85,100 (0.46%)	35 (0.48%)
7. NWT	238,587 (0.49%)	133,599 (0.73%)	36 (0.50%)
TOTAL	48,293,340	18,331,630	7,242

two-thirds of the industry's output followed by PEI-NS-NB with 13% and Quebec with 12%” Between 2006 and 2008 passenger volume and employee growth increased by 3.6% and vehicle traffic by 6.8%. However, traffic volume has declined as a result of the 2008-9 recession.

(ii) *Ferry Operators*: Transport Canada lists sixteen major ferry operators in Canada.[3] In 2008 the market share of the top five firms account for 72% of all passengers and 85% of all vehicles transported.

(iii) *Major Ferry Operators*: [4] 1. British Columbia Ferry Services Inc. is an independent company formed on April 2, 2003 from British Columbia Ferry Corporation, a Crown Corporation formed in 1977 from BC Toll Authority Ferry System. The latter was formed in 1960, when the provincial government bought the unregulated private services (by Black Ball Line and Canadian Pacific Railway's BC Coastal Steamship Service) to put an end to a strike. In 2009/10 it carried 21.0 million passengers and 8.2 million vehicles making it the largest ferry operator in Canada and one of the largest in the world. Its total revenue was \$732.3 million (which included a ferry transportation fees \$127.4 million, federal and provincial subsidy of \$26.9 million and social program fees of \$22.1 million). Net earnings were \$3.4 million down from \$9 million in 2009 and \$37.1 in 2008 due to capital expenditures and declining traffic volume. Most of its revenue (58%) was earned on three major routes connecting Vancouver Island to the Lower Mainland. The firm's \$65.9 annual capital expenditures were split between new vessels/vessel upgrades (43%), terminal & marine structures (34%) and terminal buildings, upgraded & equipment (23%). [5] CEO David Hahn at the GreenPacific 2010 conference stated that there was a 'need to change 16 years of stagnant traffic growth'.

2. La Société des traversiers du Québec (STQ) was created in 1971 to take over the private ferry services operating between Lévis and Québec City. Since then, it has expanded to provide eight ferry services on the St. Lawrence and Saguenay River. Five of these are provided year-round and three are closed in winter. The latter are operated in partnership. STQ reports to the Québec Transport Minister. The company has a fleet of eleven ferries. It owns 19 docks, 15 waiting areas and over 50 buildings. It employs 500 persons. In 2007, it carried 5.3 million passengers and 2.7 million vehicles. It is the second largest ferry operations in Canada.

3. British Columbia's Ministry of Transportation provides ferry services through parties under contract. It serves 14 inland routes. The services it provides range from passenger vehicle ferries, cable ferries, reaction

ferries, aerial tramways as well as tugboats and barges. The vessels are leased to the operators. In 2007, 2.5m. passengers and 1.7m. vehicles were carried.

4. Atlantic Ferries Holdings Limited owns a number of ferry services in Atlantic Canada including NFL Holdings Ltd. of Charlottetown, Prince Edward Island. NFL subsidiaries are Bay Ferries Limited ("Bay") and Northumberland Ferries Limited. NFL Holdings is a private company founded in 1941. As an interprovincial ferry service, the Northumberland ferry qualifies for a federal subsidy. The last five-year agreement with Ottawa ended in March 2010. In July 2010 the federal government agreed to provide a one-year \$6 million subsidy and began an operational review of the service that will be completed in March 2011.[6]

5. Marine Atlantic Inc. (MAI), a federal crown corporation, was formed in 1986 from CN Marine. It provides a constitutionally mandated passenger and commercial marine transportation system between the Island of Newfoundland and Nova Scotia. It provides service on two routes: Port aux Basques and Labrador and North Sydney; and Argentia and North Sydney. The company owns and operates four ice-class vessels and three terminals and employs about 954 full-time persons. In 2008/09, it carried 385,046 passengers and 223,625 vehicles. Passengers volumes dropped by almost 8% vehicle traffic was remained constant.

IV. Recent Developments - The Move to Commercialization

(i) *Historical Background* - From Private to Government Ownership[7]
In Western Canada before 1960, the internal water transportation needs of British Columbia were provided by unregulated privately operated services. The *Union Steamship Company of British Columbia Ltd.* (Union) incorporated in 1889 together with *Black Ball Line* and the *Canadian Pacific Railway's BC Coastal Steamship Service* met the needs of the Province until the mid 1950s. In 1959, due to difficulties arising from competition and failure to obtain an increase in subsidies Union was forced to sell its assets to competitor *Northland Navigation*. Black Ball and Canadian Pacific's ferry also faced difficulties. A strike by Canadian Pacific led the Premier of British Columbia to announce that the government would establish its own ferry service to Vancouver.

In 1960, BC Ferries was inaugurated by the government as the BC Toll Authority Ferry System and in 1961 the government bought out Black Ball and Canadian Pacific withdrew from providing passenger service. In Eastern Canada services linking the maritime provinces of Newfoundland, Nova Scotia, Prince Edward Island and New Brunswick, as well as the State of Maine was provided by Dominion Atlantic Railway and then by Canadian Pacific Railway (CP). In 1976, the service was transferred to the Canadian National Railway (grouped under CN Marine) and ten years later was made a separate crown corporation, Marine Atlantic. In the St. Lawrence River, ferry services operating between Lévis and Québec City were provided by private operators before 1970. In 1971, La Société des traversiers du Québec (STQ) was created to take over the service provided by private operators.[8]

(ii) *Recent Developments* - The Reversal

In Western Canada, the provision of the major coastal services were returned to the private sector in 2003. How BC Ferries was governed and how decisions were made rose to the forefront after the failure of the Fast Ferry Project in 1999. Driving the change in BC Ferries was the very pressing need to deal with aging vessels and inadequate infrastructure. Analysis indicated \$2 billion was required to replace over half the fleet along with associated marine and terminal infrastructure. A variety of solutions were examined and the one that was chosen was described as “*a commercial model governed by an independent authority that meets the objective of creating a modern, safe and reliable ferry systems that will provide improved service and greater customer choice while protecting British Columbia taxpayers from further financial risk and debt burden*”. The British Columbia Ferry Commission was created to oversee the regulation of ferry fare, service levels, special decisions regarding alternative service providers and monitoring of BC Ferries public reporting. As of April 1, 2003 the Province of BC entered into a 60 year Coastal Ferry Service contract.[9] On April 1, 2008 the second performance term of the contract came into effect. These performance terms specify the service levels for each regulated route in exchange for a specified fee. The company also receives an annual amount that the federal government provides to

fulfill the obligation of providing ferry service. The BC Auditor General reviewed the new governance system in 2006 and in 2009. On April 29, 2010 the BC provincial government introduced legislation that responded to the Auditor General's report.

In Eastern Canada, ferries along the south coast of Newfoundland were transferred to the province; ferries services to and within Labrador were transferred to the government of Newfoundland and Labrador in exchange for a one-time grant of \$340 million; ferry service to Prince Edward Island was sold to a private operator and later discontinued (being made redundant by the Confederation bridge); and two Marine Atlantic ferry services were transferred to Bay Ferries Ltd. The only services provided in Atlantic Canada now by the federal government are those of Marine Atlantic Inc. Northumberland Ferries Ltd., and C.T.M.A. Traversier Ltée, also provides service but are private operators.[10]

(iii) *Considerations Behind the Reversal*

(a) Arguments in support of the Reversal

1. Policy Consideration: Leonard Roueche (1981) examines ferries in Scotland, Norway, United States, West and East Canada in the 1970s and early 1980s. He indicates that most jurisdictions have attempted to devise a formula for ferry subsidies: (a) to determine the annual level of subsidy payments automatically; (b) to allow a greater degree of certainty about future subsidy payments, and thus to facilitate financial planning by both government and management; and c) to provide incentives for management to operate the ferry system efficiently. His overall conclusion indicates that there is no single formula to match the objectives of transport subsidies. Simply setting the size of the annual subsidy is not sufficient to ensure an optimum allocation of resources – the tariff and service level (or level of output) must be determined simultaneously. Formulae for ferry subsidies do not usually allow for the fact that they are attempting to meet two completely distinct and separable objectives. One a socially optimal level of price, output and subsidy for the transport operation; and two to secure efficient day-to-day management.[11]

2. The Benefits of Privatisation: Professor S. Hanke in making a case for privatization argues that superior results are achieved when goods are privately produced, because property rights are less attenuated - that is

less reduced or weakened in force - compared with those cases where rights are more attenuated or are public. With private property rights, individuals have the greatest incentive to take all benefits and costs into account, bear the full consequences of their decisions and use resources effectively. What distinguishes public and private enterprises is the fact that public assets are not “owned” since they cannot be effectively transferred. This lack in transferability means that decisions taken by public bureaucrats and employees do not readily translate into changes in the market price of the firm’s assets, and the “owner” has little incentive to monitor public manager’s and employee’s behaviour. Weaker monitoring which leads to greater discretionary behaviour (eg. choice of rationing by non-price means or for administrative convenience) rather than responsiveness to demand and supply, will force public enterprise to operate at higher costs for any given level of output.[12] In other words, the level of costs will be a driving factor for firms to be privatized. Similarly, E.S. Savas is in favour of privatization because the services of public monopolies do not change with the needs of the consumer resulting in poor quality, lack of variety and choice. Their vast management and personnel structure leads to inefficiency and the resulting loss and debt is a principal impetus to privatize.

3. Government philosophy: In contrast to earlier policy, current governments have adopted a different approach to the ownership of government services. In 1994, Transport Minister Douglas Young “set out the Liberal government’s vision of transportation ... to commercialize and bring Canadian transportation into the 21st century.” He indicated that much of Canada’s marine system is overbuilt and overly dependent on government subsidization and that it must be responsive to the needs of users. He laid down the objectives of a national marine policy. It reflected throughout the principle of commercialization, which includes divesting ports and services based on the concept of user pay and eliminating unnecessary regulation and outdated legislation.

(b) Studies on Ferry issues in Canada

1. Canadian Transportation Act Review Panel: In 2001, the Panel considered ferries under federal government jurisdiction. It examined: trends and current status, the industry structure and made one

recommendation. It indicated that since 1997, the government has been able to reduce subsidies substantially while maintaining service to travellers. The remaining subsidies are for services for which it has a constitutional obligation. It found that there were likely opportunities to inject further entrepreneurship and innovation into these services as well. Not surprisingly, its recommendation endorsed initiatives to reduce subsidies to ferry services and recommended that commercialization and divestiture of responsibility for local service decisions to other levels of government continue.[13]

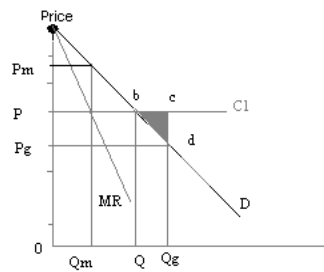
2. IBI Group: The IBI Group published at least three technical reports. One was entitled *Price Elasticity Study: Technical Report (1997)*, another was entitled *Minor Routes: Elasticities of Services Technical Report (1998)* and a third was *B.C. Ferry Benefits and their Distribution (199?)*. The first constructed demand curves for several BC Ferry routes related to the introduction of the new Fast Ferries. The second estimated price, travel time, frequency and access time elasticities for BC Ferry minor routes. The third outlined the economic principles associated with valuing the net economic benefit associated with a service; applied the economic principles to BC Ferry minor routes; and explored issues in reconsidering BC Ferry cost of production (i.e, the costs that can be reduced, the impact of providing minor route service on total costs, etc). Their work complements or is further summarized by Prof. Waters II.[14]

3. Waters II et al: Prof. W.G. Waters II provides a critical review of ferry operation in British Columbia and an in-depth review of one ferry route. He explores the following questions: a) does the economic benefit or benefits of a subsidized ferry service justify the costs?; b) does the size of the subsidy affect the net benefits of the ferry service?; and c) does the group or groups to which the benefits of the ferry accrue call for a re-distribution? First, he finds that the overall value of the services to society of B.C. Ferries is positive even though it is operating at a financial loss. There were also other benefits of a political nature besides promoting tourism in the longrun. Second, the subsidy affects the net benefit and if it is reduced, it is likely that the nets benefits would be higher. Third, the benefits are partly capitalized in higher land values and are paid to the land owner instead of the ferry corporation. Based on these findings or observations, Prof Waters II makes a economic case suggesting that a

private company would cut service (through use of smaller ferries or fewer number of sailings) in order to reach the profit maximizing price and quantity. It would result in a smaller quantity of service being consumed and a higher price. This case is further supported given the nature of government operations and its governance where decisions are not made purely on the basis of optimizing economic variables.[15]

4) Theory: Is there any theoretical support for the initial government nationalization and then the reversal? Apparently, there is - first because of the net benefits to

society and later on because of concerns about the increase in the level of costs and the possibility of increasing net benefits. Suppose the ferry service is supplied by a government monopolist at a price below costs (subsidized) as illustrated by P_g in Figure 1.



It results in lower prices and larger quantities consumed. The value of the additional output to consumers is area $QbdQ_g$ and the costs are $QbcdQ_g$. The area bcd is the loss (though a case could be made for continuation of the subsidy which is smaller as the financial cost is $PcdP_g$ which provided the case for the initial nationalization and subsidy). If prices were raised to P the loss would disappear. If the services were privatised to be supplied by a monopolist the quantity supplied Q_m of service would be much lower and it would not incur any loss and if the service was provided under competition it too would be at Q lower than that provided by the subsidized gov. monopolist. [16]

The real theoretical reason for the reversal apart from the above is the belief that $C1$ is too high. Several reasons have been provided for this: unionized public enterprises are rarely considered to be efficient, the government structure is not conducive to cost-minimization, prices are not set to maximize profits, firms tend to concentrate on service delivery and smooth operations, investments are made to facilitate operations

and relieve congestion and not judged by the return on investment and there is a tendency for fare increases which may result in the demise of service on some routes. If the government monopoly is privatized some of these problems are likely to disappear.

V. The Impact of Changes over the Last Decade

We examine the impact of the governance shift, the need for subsidies and fleet renewal and operating outcomes in terms of service and safety.

(i) Governance Shift – From Government Monopoly to Private Monopoly Over the last decade the major ferry services in Western Canada have been returned to the private sector. In Eastern Canada, this has largely occurred or has been transferred to the provincial government, except in Quebec. The governance shift now includes independent, business-oriented boards of directors, the ability to invest in vessels and terminals with private sector bond financing and independent regulatory framework rather than status as a Crown Corporation.[17]

Arthur L. Smith examined *Privatization of Water Transportation Systems*. A key finding of his work indicates that privatization, by itself, does not guarantee performance improvement or significant economic benefit; competition is required. A privately-operated monopoly, without competition, will require strict regulation or contractual incentives to optimize efficiency, make capital investments, or minimize prices. In addition, there are certain legal and political prerequisites for success. The privatization must have a clear, unambiguous legal basis, and property rights must be legally enforceable in the national court system.[18]

A paper on ‘public and private monopolies what are the positive and negative effects on the consumer’ indicates that monopolies, public or private, both aim to provide services to the consumers by creating products and services that they need and want. However, it is the approach which differs. A public monopoly achieves consumer welfare objectives but tends towards waste whereas a private monopoly achieves efficiency but restricts output. It can improve performance if there are no external regulations to seal its operation. However, it is more subject to competitive erosion than a public monopoly but both drive out

competition. This type of outcome is perhaps at the heart of the unfair competition debate between Seaspac Coastal Intermodal, Van Isle Barge Service and BC Ferries after BC Ferries entry into the drop-trailer freight service. The BC government passed new legislation in 2010 that gave the BC Ferry Commission authority to investigate such private sector claims and industry observers will not doubt look with interest to the outcome of the 2010 review.[19]

“Overall, it can be concluded that monopolies whether private or public need to be regulated.”[20] In other words, privatizing a government monopoly would continue to need regulations, competition could develop but is unlikely.

ii) *The Level of Subsidy/Fleet Renewal*

With commercialization, one would expect the level of subsidy to fall together with the replacement of ferries that are new or more appropriate. There is some evidence that this may have happened. By the end of the second performance term in 2010, the major routes of BC Ferries received zero subsidy. This does not imply that it does not receive any subsidy. In fact, BC Ferries’ 2010 subsidies were estimated to be \$153m., which is 32% higher (14% in constant \$) than in 2003, when the changes were made. However, all the increase in the subsidy has been directed to the northern routes. In addition, the other route groups which are dependent on taxpayer support could become self-sufficient. It is also important to note that BC Ferries has been able to complete the most significant portion of their fleet and asset renewal program when they were initially faced with an average age of their assets as being one of the oldest of major ferry operators. This was achieved because customers on major routes faced fares that are projected to be 20% higher in real terms in 2012 than in 2003, and on other route groups faced fares that are 40% to 50% higher.[21]

However, a September 2010 federal order-in-council decision to issue an excise rebate for import duties BC Ferries paid on new ships built in Germany will result in a 2% fare rebate.[22] BC Ferries efforts are different than portions of the European ferry market where Private Equity Funds (PEF) have been active. Professor Baird’s 2009 study concluded that ‘once a PEF has made a significant investment in the

acquisition of a ferry operator, it is not keen to spend further large amounts of money on new assets. Hence there is less focus in buying new ships, or making expensive outlays in terminal upgrades, or in the start-up of new routes'.

In contrast to the progress made with the BC Ferry Service, the situation at Marine Atlantic Inc. could not be more different. The 2009 Special Examination Report by the Office of the Auditor General of Canada indicated that the company is at risk of being unable to deliver the service it is responsible for due to the challenges of an aging and unreliable ferry fleet and shore based assets, difficulties ensuring that capacity is sufficient to meet the traffic demand and failure to meet cost recovery targets. In the 2007/08 fiscal-year the federal government provided \$76m. in funding to Marine Atlantic. The company has estimated that it will need capital funding for vessels in the range of \$800m. to \$1.4b. over a 25 year period and \$150m. for shore-base assets.[23] On July 5, 2010, the government invested \$521m. in Marine Atlantic to renew its fleet and shore facilities, and improve the quality and reliability of its services. The investment in ferry services in Eastern Canada was extended further on Nov. 29, 2010.

iii) *Service Quality*

The economic theories that support the move towards the commercialization of ferry service indicate that public monopolies are slow to meet customer needs, have issues with service quality and that private monopolies would cut service in order to reach profit maximizing price and quantity. Based on these outcomes one could reasonably expect that the respective governance arrangements covering each of the ferry service would all contain provisions dealing with such issues. However, this is not the case in Canada. For example, the Marine Atlantic and Government of Canada bilateral agreement from 1987 established performance expectations limited to the number of trips each route was to carry out per month. It does not address service quality or customer satisfaction issues. Thus, it is perhaps not surprising that the Federal Minister of Transport requested changes in the company's plans after the firm experienced a high level of customer dissatisfaction. In contrast, the Coastal Ferry Services Contract between BC Ferries and the Government of BC contains level of service and

customer satisfaction provisions along with pro-competitive regulations. Service quality as it relates to safety is dealt with by obliging the companies to comply with the relevant Transport Canada safety and security legislation. BC Ferries 2009 Customer Satisfaction results indicated that ratings have improved among virtually all passenger segments and the company received an overall score of 4.3 on a five point scale. However, customer satisfaction ratings were relatively lower for factors such as the timing of the last ferry, value for money and sailing frequency. The above results suggest that some of the problems identified with ferry monopolies have indeed been experienced by Canadian passengers.[24] In Sept. 2010 the BC Ferry Commission acting on new legislative powers instructed BC Ferries to “identify the process that it intends to use to deal with customer complaints”.[25]

The issue of service quality and customer satisfaction in the Canadian approach to ferry service does not appear to be fully developed. This is perhaps surprising given the importance that these topics have had in the marketing literature over the last 20 years. In 2009, BC Ferry Commission expressed the opinion that service quality was hard to regulate for such issues as punctuality, reliability, comfort and convenience to customers, or other quality attributes. In comparison, the Norwegian government sponsored a study that acknowledged that if a transport authority’s goal is to improve the service quality for a given market segment they have to find out how this group of customers answers questions on both the importance of specific service attributes and satisfaction with the current quality of the service and then make adjustments based on this information.[26]

VI. Conclusion

Before the 1960’s, the major ferry services in Western and Eastern Canada were provided by the private operators. Financial difficulties, competition, strikes and constitutional commitments led to government operation and ownership of the major ferry services. Innovation in governance has led to the current situation predicted by Waters II et al when they stated that “the eventual outcome will probably be for governance to cap the subsidy and to turn the operation over to private or at least completely “arms-length’ entity to provide ferry service and

thus distance the government from further political lobbying”.

We believe that there are several reasons for these innovations over the last decade: (1) multiple policy objectives (no single formula can match objectives to a specific level of transport subsidy); (2) demonstrable benefits of privatization (greater efficiency, independent business oriented governance rather than political; (3) shifts in public opinion and attitude that support ongoing changes by regulatory authorities (increased importance of public sector debt management, acceptance of user pay, safety and security).

In terms of outcomes our review of the research literature reveals that subsidy caps and privatization do not guarantee performance or an appropriate balance of economic and social benefits. Public monopolies achieve consumer welfare benefits but tend towards waste whereas a private monopoly achieves efficiency but restricts output. Further, a private monopoly is more subject to competitive erosion than a public monopoly but both drive our competition. Our review of the Canadian experience indicates there remains a concern about competition (at least in the freight sector). There was also evidence that the level of subsidy has fallen and that some operators have been very successful in terms of fleet and terminal renewal as a result of commercialization. In terms of service quality, the facts suggest that overall customer satisfaction improved. Innovations in certain critical area of service quality, approaches to passenger safety and security have been introduced more recently as in response to regulatory changes. It is too early to know the full impact of on service quality of the January 2010 - Transport Canada Domestic Ferries Security Regulations. Greater public transparency of safety issues by ferry operators should be encouraged.

The major policy blanks put in place over the last decade in the ferry sector appear to have generated significant benefits. Yet, innovative research is still needed on the best way to fine-tune and implement regulatory frameworks or design contractual incentives that optimize efficiency, enhance service quality and safety, promote capital reinvestment in vessels/terminals and address the issue of consumer affordability for ferry dependent communities. While the challenges ahead will benefit from fresh thinking by governments, industry and

academics it is our belief that a continuation of the current evolutionary trends would be more beneficial than an abrupt change in direction. Further research is required to explore whether separating the ownership of vessels and terminals would improve market contestability and increase service innovation? Should changes be made to Canadian shipping and financial regulations to encourage a greater range of capital markets for ferry operators (Private Equity Funds, bonds etc) to either encourage the adoption of new technologies, or increase the competitiveness of Canadian shipyards repairing and building ferries.

Endnotes/Bibliography

1. Seymour, J. 'New rules make ferry passengers safer', Vancouver Sun, Oct. 27, 2010.
2. Statistics compiled from the Annual Report 2008, Canadian Ferry Operators Association (CFOA).
3. Transportation in Canada 2009, Table M17 in the Addendum.
4. See CFOA website.
5. Data Source 2009/10 Annual Reports BC Ferry Service Inc. and BC Ferry Authority.
6. Data source NFL web site accessed Aug. 19, 2010, CBC and <http://www.theguardian.pe.ca/News/Local/2010-07-15/article-1569779/Ottawa-extends-Northumberland-Ferries-Ltd.-subsidy/1>
7. BC Ferry, www.bcferrycommission.com
8. *Vision and Balance*, Canada Transportation Act Review, June 2001, pp. 200-1.
9. BC Ferry, www.bcferrycommission.com and Website of CFOA. Also see Coastal Ferry Service Contract, Changing Direction for British Columbia's Coastal Ferry System, Office of the Auditor General of British Columbia, December 2006 and Follow-up Report: Updates on the implementation of recommendations from recent report, Office of the Auditor General of British Columbia, April 2009 and the British Columbia Ferry Commission Annual Report, March 31, 2010, July 31, 2010.
10. *Vision and Balance*, Canada Transportation Act Review, June 2001, pp. 200-1.
11. Roueche, L., Notes of Government Subsidisation of Ferry Transport, *JTEP*, Sept. 1981, pp. 233-242.
12. Hanke, Steve H., The Theory of Privatization, 1985.
13. *Vision and Balance*, Canada Transportation Act Review, June 2001, pp. 200-1.
14. IBI Group and Transportation Economics and Management Systems, B.C. Ferry Benefits and Their Distribution, pp. 8-32, www.google.ca
15. W. G. Waters II, Adrift! – Subsidies, Economic Benefits and the Impasse in Policy Reform for B.C. Ferries, *CTRF Proceedings 1999*, pp 408-422.
16. In a study of the B.C. ferries, it was indicated that since the quantity of service supplied by the government is larger its quality is likely to be much better (greater frequency and use of larger ships). This has two effects, first the demand for its service would be more; second, its costs are likely to be higher as the monopolist would likely use smaller ferry ships which means that its cost would decline.
17. David Hahn, BC Ferries Presentation to the GreenPacific 2010 Conf., Sept. 21, 2010.
18. Arthur L. Smith, Privatization of Water Transportation Systems.
19. BC Ferry Services Inc. Filing with the British Columbia Ferries Commissioner Regarding Section 45.1(1) of the Coastal Ferry Act and Drop Trailer Service. August 31, 2010.
20. Public and private monopolies what are the positive and negative effects on the consumer.
21. Data: BCFC Annual Report to March 31, 2010 and the BC Ferry Service Inc. Annual Report 09/10.
22. Canada Privy Council, Order in Council 2010-1163, Ferry-Boats, Tankers and Cargo Vessel Remission Order, 2010. September 23, 2010.
23. Data source. MAI. Special Examinations Report– 2009, Office of the Auditor General of Canada.
24. MAI. Special Examination Report–2009 & Customer Satisfaction Tracking Annual Report 2009, BCFS.
25. BC Ferry Commission Memorandum 38. Sept 9, 2010.
26. BC Ferry Commission and the paper by Mathisen, T.A., Solvoll, G. (2010), 'Service Quality in Ferry Passenger Transport –Examples from Norway', *EJTIR*, Issue 10(2), June 2010. pp. 142-157.
27. I - 95 Corridor Coalition - An Overview of Ferry Services, www.google.ca
28. Weston, Andrew, BC Ferries: Panacea or Pain? www.google.ca
29. Types of Ferries, www.wikipedia.org
30. Savas, E. S., *Privatization and Public-Private Partnerships*, Chatham House, NY, 2000.