

TRANSPORTATION AND REGIONAL ECONOMIC DEVELOPMENT: CHANGING DYNAMICS

MICHAEL C. IRCHA
Department of Civil Engineering
University of New Brunswick
Fredericton, NB, Canada

FRANK R. WILSON
Department of Civil Engineering
University of New Brunswick
Fredericton, NB, Canada

J.D. INNES
Department of Civil Engineering
University of New Brunswick
Fredericton, NB, Canada

Abstract

The role of transportation in the location of economic activity has frequently been used as a proxy for determining the impact of transportation on economic development. A new emerging paradigm argues that for regions to be competitive in today's global economy, they must operate in an environment which encourages and the facilitates innovation and change through competitiveness.

Classical urban economics and location theory emphasized the importance of locating industrial activities to reduce transportation costs. Freight subsidies designed to reduce transportation costs have been used as a regional economic development tool.

This paper assesses the effect of freight subsidies and transportation infrastructure on regional economic development in Atlantic Canada. More specifically, the paper focuses on whether government expenditures on freight subsidies and infrastructure improves the competitiveness of local industry.

INTRODUCTION

The role of transportation in the location of economic activity has frequently been used as a proxy for determining the impact of transportation on economic development. A new emerging paradigm argues that for regions to be competitive in today's global economy, they must operate in an environment which encourages and facilitates innovation and change through competitiveness (Porter, 1990).

Classical urban economics and location theory emphasized the importance of locating industrial activities to reduce transportation costs. Freight subsidies designed to reduce transportation costs have been used as a regional economic development tool (conceptually shifting the location of subsidized firms closer to distant markets by reducing their shipping costs). In today's globalized trading environment, competitive advantages stemming solely from low transportation costs are precarious. Such advantages are difficult to sustain when new competitors emerge or current competitors upgrade and change their approach such as sourcing materials and labour overseas in less costly centres, using advanced technology to reduce manufacturing costs, and other non-transport strategies.

This paper provides an assessment of effect of freight subsidies and publicly funded transportation infrastructure improvements on regional economic development in Atlantic Canada. More specifically, the paper focuses on whether government expenditures on freight subsidies and transportation infrastructure improvements enhances the competitiveness of local industry. This paper examines specific transportation subsidies and the changing transportation environment including: the evolution of continental free trade arrangements, the impact of the shift of national governments to competition-oriented structural adjustment programs, and the effect of transportation deregulation and regulatory reform.

SUBSIDIZING TRANSPORTATION

The past decade has witnessed considerable changes in the global trading environment and growing concerns about government debt and deficit. The Atlantic Provinces Economic Council in 1987 emphasized the importance of increasing regional exports, economic self-sufficiency, and innovation. National transport policy since the early 1980's has shifted towards greater reliance on competition and a more efficient allocation of scarce resources. The transportation environment of the Atlantic Region has reflected increases in competition, rationalization of the rail network, and restraint on government transportation expenditures. The operating environment for regional firms therefore changed significantly. The firms which survived were required to keep pace with new threats and opportunities posed by increasingly globalized trade, transportation deregulation, revolutionary technological innovations, and international political developments (shifting trading areas).

The role of transportation changed as well. Transportation has become more integrated into the production process. Timely, efficient distribution processes helped to improve customer service, increase production flexibility, enable reductions in inventories, and provide access

to diverse inputs. In the past, the development and expansion of transportation infrastructure was the primary focus of economic development. With most of the regional infrastructure now in place, rehabilitation, renewal and upgrading of existing facilities has taken on a crucial role. The effects of infrastructure investment depend on the type of investment and the economic conditions of the region. In regions with good economic growth potential, but with a relatively low standard transportation system, investment in infrastructure may promote industrial expansion. Alternatively, in high economic growth regions, transportation improvements may be used to reduce bottlenecks that retard expansion.

In light of these changes, the role of transportation in regional economic development has shifted. As transportation expenditures become more limited, the selection of appropriate transportation policy instruments is becoming increasingly important.

In this paper, the term "subsidy" is limited to assistance towards the cost of the movement of freight. Gwilliam (1987) defined subsidy as "an intervention in the free market. The justification must consist of a demonstration that it is an effective counter to some failure of the market to achieve welfare optimisation, and that the benefits as obtained outweigh any undesirable side effects." A brief overview of the nature of the major freight subsidies that were available at the beginning of the deregulation era in the Atlantic Provinces is provided below.

At and East Grain and Flour Subsidy

The "At and East" subsidy was implemented in the mid-1960s to ensure that Eastern Canadian ports could compete with U.S. ports. The subsidy further ensured the ports of Saint John and Halifax would be able to effectively compete with other Canadian ports on the St. Lawrence River. The At and East subsidy compensated the railways for maintaining their freight rates at less than compensatory levels for eligible grain and flour export shipments. This subsidy was discontinued in 1989.

Maritime Freight Rates Act (MFRA) and Atlantic Region Freight Assistance Act (ARFAA)

The MFRA subsidy was first implemented in 1927. It required the railways to reduce by 20 percent certain rates on traffic within the Maritime territory and on traffic moving westbound from the region. The initial Maritime territory included the three Maritime Provinces and the region of Quebec located east of Levis and south of the St. Lawrence river. In 1949, the Island of Newfoundland became part of the MFRA territory. In 1957, the westbound subsidy was increased to 30 percent. The ARFAA subsidy was introduced in 1969. Under this subsidy program, the trucking industry was also eligible for the same assistance as railway movements on westbound traffic. This subsidy remained until 1996.

Transportation Subsidy Expenditures

Canada is a large country with its economic centres distributed widely along a narrow band lying to the north of the United States border. Transportation infrastructure was considered essential for economic development of the country and has traditionally been supported by public sector subsidies. The National Transportation Act Review Commission (NTARC, 1993) listed the federal freight-related transportation subsidies paid in 1991 as:

Maritime Freight Rates Act (railway movements subsidy ([\$11 million]),

- *Atlantic Regional Freight Assistance Act (subsidy support for the trucking industry [\$86 million]).*
- ferry assistance (subsidy support for the operation of Marine Atlantic [\$157 million]).
- *Western Grain Transportation Act (WGTA) (railway shipment of western grain to ports in British Columbia and Ontario [\$645 million]), and*
- *Air Transport services (non-cost recovered services to aviation sector [\$262 million]).*

In 1991, total federal expenditure on freight-related transportation subsidies amounted to \$1,161 million. In 1995, the federal government eliminated most of these subsidies including the contentious WGTA.

The economic development issue related to subsidies is that the transportation sector came to rely on the receipt of these funds or the flow of cargo generated by such public support. Removing a subsidy often changes the dynamics of the transportation system by enabling shippers to more freely select cost-effective routings which may differ from the formerly subsidised approach. For example, the removal of the WGTA may lead to the development of other competitive routings for Canadian grain such as shipping the commodity via barges on the Mississippi River to competitive American Gulf ports.

CHANGING TRANSPORTATION ENVIRONMENT

The continued integration of the North American economies directly affects Canada's transportation sector by encouraging a shift from the country's traditional east-west commerce to a north-south trade orientation. Most of this north-south trade is by surface mode (road and rail). In 1993, the surface mode accounted for 86 percent of the total dollar value of transportation related to transborder trade (U.S. Department of Transportation, 1994). In 1994, the United States accounted for 75 percent of Canada's total trade (exports, 82 percent and imports, 68 percent) (Regional Focus, 1995). Although Canada maintains both a multilateral trade policy (supporting the World Trade Organization [formerly GATT] as well as seeking other trade partners abroad) and a bilateral trade policy (FTA and, subsequently NAFTA), Canada's primary economic success has come from its bilateral trade with the United States.

Evolution of Canadian - American Trade

Canada's first free trading arrangement with its continental partner was between 1854 and 1866 when a "Reciprocity Treaty" was in effect. This treaty was terminated by the Americans in 1866 due to frictions between the United States and Britain during the American Civil War and the protective tariffs imposed by the Province of Canada (now Ontario and Quebec) on manufactured goods. Following Canada's confederation in 1867, the Canadian government repeatedly tried to re-establish reciprocity with the Americans. The failure to achieve free trade with the Americans led Canada to adopt a "National Policy" in 1879 establishing high tariffs to: protect domestic manufacturing, promotion of east-west commerce, and politically and economically linking Canada together. Canada's nationalist approach reinforced American protectionist sentiments which led to high tariffs between the two countries for the next seventy years.

During the early 1920's and 1930's, the United States raised tariffs to unprecedented heights. The Hawley-Smoot Tariff of 1930 raised the average rate on dutiable imports to almost fifty

percent. In the early 1930's, Canada's average rate on dutiable imports rose to 28 percent. However, as shown in Table 1, despite high tariffs between 1886 and 1936, Canada-American trade remained relatively stable at about 45 percent of Canada's total external trade.

Trading relations between Canada and the United States improved with the election of President Roosevelt in 1932. His "New Deal" to tackle the Great Depression led to lowered tariffs and increased trade as a means of generating economic prosperity. The *Reciprocal Trade Agreement Act* of 1944 allowed the President to reduce tariffs and establish trade concessions in return for reciprocal actions by other nations. Canada was one of the first nations to respond to the new American initiative. In a 1935 bilateral trade agreement, Canada and the United States lowered their respective tariffs. The 1935 agreement was extended in 1938 following a second round of trade negotiations. The 1938 negotiations liberalized trade among three nations (Canada, United States and Britain), setting a pattern for the future GATT process of "multilateralisation" of bilateral agreements. These pre-war trade agreements along with other continental security arrangements during World War II initiated a long-term shift of Canada's trade away from Britain towards the United States (see Table 1). In turn, shifting towards continental trade led to a relative decline in Canadian overseas shipping and port throughput and the subsequent growth of surface transport systems.

Table 1 - Canada's Major Trading Partners (1886-1994)

| Year | %Trade with United States | % Trade with Britain | %Trade with others |
|------|---------------------------|----------------------|--------------------|
| 1886 | 44% | 44% | 12% |
| 1916 | 47% | 41% | 12% |
| 1936 | 46% | 32% | 22% |
| 1956 | 64% | 15% | 21% |
| 1976 | 66% | 5% | 29% |
| 1985 | 75% | 3% | 22% |
| 1994 | 75% | 2% | 23% |

Source: Joseph A. Meyertholen, "Reciprocity by any Other Name...The Impacts of a History of Canada/US Trade," National Defence College, Kingston, 1993; statistics Canada, *Exports by Country*, Catalogue 65-003, Statistics Canada, Ottawa, 1986, 1993 and 1995; and, Statistics Canada, *Imports by Country*, Catalogue 65-006, Statistics Canada, Ottawa, 1986, 1993 and 1995.

Facing severe economic problems in the early 1970s, the United States removed Canada's most favoured nation (MFN) status by setting a 10 percent import surcharge. This short-lived unilateral imposition of a tariff surcharge coupled with mounting criticism of American foreign and defence policies (the war in Vietnam) led Canada to reconsider its relations with the U.S. (Finlayson et al, 1992). In 1972, the Canadian Secretary of State for External Affairs enunciated three possible options for future Canadian - American relations:

- maintain the present relationships with the United States with a minimum of policy adjustments,
- move deliberately towards closer integration with the United States, or
- pursue a comprehensive long-term strategy to develop and strengthen the Canadian economy and other aspects of our national life and in the process

reduce vulnerability (Sharp, 1972).

The last alternative, the so-called "Third Option," became the foundation of Canadian policy in the 1970s and early 1980s. This approach was designed to reduce Canada's dependence on a single market. As shown in Table 1, these efforts to reduce Canada's economic dependence on the United States were unsuccessful.

Free Trade Agreements

A 1983 Royal Commission on the Economic Union and Development Prospects for Canada recommended bilateral free trade. The 1984 election of the Progressive Conservative Government which supported trade expansion with the U.S. added momentum to the free trade debate. In the U.S., the feasibility of developing free trade with Canada arose from their disappointment of the failure of the 1982 GATT Ministerial meeting in Montreal to solve pressing problems of agriculture and the growing trade in services and investments. At the time, the U.S. believed bilateral trade talks might produce more progress than the GATT's multilateral approach (Smith, 1988).

Exploratory discussions on free trade were initiated in Washington in December 1983 with the two country's leaders signing the FTA in January 1988 for implementation a year later.

The United States sought new rules to govern trade in services and investments and a resolution to nagging bilateral trade problems in energy and automobile production.

Although the FTA opened American markets over time, it was primarily a tariff elimination agreement. Some tariffs were eliminated immediately, other reductions phased in over five or ten years. Several other trade issues were encompassed in the FTA including: a dispute settlement mechanism, regularizing energy shipments, and establishing continuing bi-national committees to consider trade standardization and harmonization.

The FTA did not deal with several trade-related elements, in particular transportation. During the FTA negotiations, transportation was a matter of considerable discussion. Canadian negotiators undertook various studies to determine the nature of transportation competitiveness under the FTA (Transmode, 1987; 1987; Yee, 1987). Several transportation alternatives were discussed during the FTA negotiations including: the provision of full cabotage rights in the other country's coastal trade, cabotage rights limited to specified ports-of-call, and opening up ownership/investment opportunities in each country (Cubukgil et al, 1988). With full cabotage rights, Canadian and American vessels would have been able to carry cargo between any two ports in each other's country. The American shipping industry feared further inroads from the Canadian fleet in transborder shipping. Despite the benefits for both nations in modifying the Jones Act and other cabotage restrictions, transportation was deliberately excluded from the FTA. In fact, the final negotiations were put in jeopardy by the extensive lobbying of the American maritime industry. As suggested by one journalist during the final stages of the FTA negotiations:

Structural Adjustment

Structural adjustment reflects a neo-liberal economic philosophy emphasizing limited public sector intervention in the national economy, monetary rather than fiscal policy, and increased

commercialization and privatization of public sector enterprises. Much of the structural adjustment occurring within the transportation sector is guided by this view. The objective of these programs was to stabilize faltering national (and regional) economies and introduce specific macro-economic elements to induce sustained growth. These macro-economic reforms focus on institutional changes, reducing the state's intervention in the national economy, promoting the private sector with its perceived higher efficiencies and productivity, and restructuring public corporation (including transportation).

Essentially, structural adjustment uses economic instruments to reduce national (or regional) demand for expensive imported goods and to promote the export of domestic products and services to improve national balance of payments.

Inherent in structural adjustment is the need to reduce the government's role in the national (or regional) economy - a reversal of decades of public intervention. Reducing government intervention was predicted on the ideological belief that the private market is the most efficient means of allocating resources.

In the transportation sector, structural adjustment led to increased interest in institutional reform such as economic and trade deregulation.

Transportation Economic Deregulation and Reform

The increasing re-orientation of Canadian trade to a north-south direction is not only the result of the FTA/NAFTA. The deregulation of the American transportation industry and Canada's subsequent regulatory reform also contributed to north-south shifts in surface transportation routings.

United States Transportation Deregulation

American transportation systems are better positioned than Canadian firms to compete in a free-market continental economy because they adapted earlier to open market competition created by economic deregulation. Transportation deregulation resulted in railway rationalization including: consolidated firms, reduced labour, increased productivity, trackage reductions, introduction of new technology, development of short line railway companies, and a subsequent decrease in freight rates. From 1981 to 1991, there was a 50 percent reduction in the number of employees of American Class I railways. Today, employment compensation represents only 18 percent of rail operating expenses, compared to almost 40 percent in Canadian railways (NTARC, 1993). By the end of 1990, American railways reduced 25 percent of their 1981 railway network. By 1993, Canadian National Railway (CN) and Canadian Pacific Railway (CP) (Canada's two national rail systems) had reduced 13 percent of their 1981 network. Plant rationalization improved U.S. railway performance to 1,900 revenue ton-miles per employee hour compared to 1,400 for CP and 1,050 for CN (Edsforth, 1993).

The American trucking industry reported similar results. The major effect of the *Motor Carrier Act* of 1980 was to ease entry and exit conditions for trucking firms. In a deregulated environment, existing and new firms had only to demonstrate that they were "fit, willing and able" to obtain licenses to operate commercial services. Changes in entry requirements permitted Canadian trucking firms to more easily access American markets (although, initially, the reverse was not true). Despite start-up problems (primarily related to the safety records of new entrants in the truck-load market), there has been significant consolidation of smaller

trucking firms into larger, more efficient "mega-carriers" and the development of extensive "hub and spoke" distribution systems (for less-than-truck load commodities) and triangular route operations, especially in the truck load commodity sector.

Deregulation forced a major restructuring of the American trucking industry leading to rationalization in fleet size and use, improved management, greater economies of scale, and enhanced productivity leading to lower operating costs. Increased operating revenues and a lower debt to equity ratio (American trucking firms have about half the debt of Canadian firms) enabled the United States trucking industry to weather the 1991 recession better than Canadian firms (NTA, 1992). Deregulation in the American trucking industry led to a more efficient system; allowing it to compete effectively in the integrated continental market.

Canadian Regulatory Reform

Continental competitive pressures forced the Canadian transportation system to follow the American lead. Canada modified its domestic and international air services in 1984, and adopted reformed regulations in 1987 with the passage of the National Transportation Act (NTA), the Motor Vehicle Transportation Act, and the Shipping Conference Exemption Act (SCEA). Unlike the American approach of changing rapidly to the deregulated environment, Canada took a more moderate initial step into deregulation. Canadian regulatory reform followed a slower, more incremental process leading towards full deregulation allowing the country's transportation industry to adapt over time.

Significant changes were made to Canadian railways to enable them to compete with other modes and services including those in the United States. In addition, entry limitations in the trucking industry were initially eased and fully removed after a five year period (allowing American trucking firms to readily enter Canadian markets). The SCEA enabled shippers to negotiate contracts directly with conference shipping lines.

The 1987 NTA was designed to introduce a market responsive environment for the Canadian transportation industry, particularly the railway sector. The NTA included mechanisms to encourage both intermodal and intramodal competition. Government sanctioned collective rate making (published tariffs) was eliminated, confidential contract and competitive access provisions introduced and rail rationalization (abandonment of excess trackage) facilitated. The majority of non-grain rail freight now travels under confidential contract relating both to price and level of service being provided. In 1988, the first year confidential contracts were permitted to be filed, 1,223 contracts were registered with the National Transportation Agency. This amount increased to 5,996 in 1994 with 70 percent of Canadian non-grain railway traffic moving under confidential contract (NTA, 1994).

Railway regulatory reform "resulted in generally reduced transportation costs to the users The most significant result... has been the reduction in freight rates by way of confidential contracts, as well as new services being offered by the transportation industry, notably intermodal services" (ACOA, 1992). The combined operating revenues of CN/CP increased by 9.4 percent from 1990 to 1994 despite the effects of the economic recession during this period.

In the 13 year period from 1980 to 1992, north-south tonnage grew by 15 percent compared to a mere 1.4 percent increase in total Canadian railway tonnage (see Table 2). The importance of north-south rail movements is more apparent to the FTA period (1989 to 1992) when north-south rail tonnage grew by more than 20 percent while overall Canadian tonnage

remained constant.

The significance of north-south trade has been reflected in the investment decisions of the two major Canadian railways. CN consolidated its U.S. subsidiaries (the Grand Trunk Western, the Duluth, Winnipeg and Pacific Railway and the Central Vermont Railway) into a fully integrated continental CN North America. Similarly, CP consolidated its American subsidiaries (the Soo Line and the Delaware and Hudson Railway) into its CP Rail Systems.

Table 2 Canada - U.S. Trade by Rail (mil tonnes)

| Year | Canadian exports to U.S. | Canadian imports from U.S. | Total north-south tonnage | Total CN/CP tonnage | North-south as % of CN/CP |
|-----------------|--------------------------|----------------------------|---------------------------|---------------------|---------------------------|
| 1980 | 30.8 | 8.9 | 39.7 | 191.5 | 22% |
| 1986 | 29.3 | 11.5 | 40.8 | 182.9 | 22% |
| 1990 | 35.0 | 13.0 | 48.0 | 184.4 | 26% |
| 1992 | 40.2 | 14.0 | 54.2 | 184.1 | 29% |
| %change 1980-92 | 31% | 57% | 15% | 1.4% | |
| %change 1989-92 | 22% | 16 [^] | 20% | (0.3%) | |

Source: National Transportation Agency, *Annual Review*, 1991 and 1992, Minister of Supply and Services, Ottawa, 1991 and 1992.

In addition, CP Rail Systems established a joint service with Conrail to move containers between Montreal and Toronto and the Port of New York and New Jersey, entered into a seven year agreement with Norfolk Southern to service a Buffalo to Chicago route, and established a joint container service with Burlington Northern Railroad between Montreal and Toronto and markets in the American Midwest and South. CN also established alliances with American and Mexican railways (NTA, 1992). During this period, both of the major Canadian railways divested part of their infrastructure to a number of privately owned short line railway companies - a trend which commenced in 1997-98. These new short line railways have been generally successful and in most cases feed traffic to the mainline railways.

TRANSPORTATION FACTORS IN ATLANTIC CANADA

Two longitudinal studies of transportation in economic development conducted by the UNB Transportation Group provide information about the importance of transportation subsidies and

infrastructure to the region. In 1982, Holyoke examined the "Impact of Transportation of Industrial Development in the Atlantic Provinces." He examined 95 firms in four manufacturing sub-sectors in the region and found that the proximity of raw materials, location of residence of the owner or manager, and proximity to markets were the three most important reasons for locating plants in the region. In terms of transportation, access to road transportation was identified as being the next most important factor. Access to other modes ranked lower. The existence of subsidized transportation rates was ranked twelfth out of thirteen factors. This led to the conclusion that transportation was not the only nor the primary factor which attracted industry to the region. Holyoke's findings indicated that once a sufficient level of infrastructure is in place, expansion of the transportation system is unlikely to attract new industry. Instead, public expenditure should be used to maintain and manage existing infrastructure, especially highways.

A more recent study conducted by the UNB Transportation Group (Bisson *et al*, 1992) collected information relative to the importance of transportation factors to the competitive position of firms in the four Atlantic Provinces in five goods-producing sectors: fisheries (fish processors), mining, agriculture, primary forestry, and manufacturing. The research used a comprehensive questionnaire administered through extensive telephone interviews from a sample of 188 firms located in the region.

To allow a comparison of results by sector, a minimum sample of ten firms in each sector were targeted in each province. In addition, firms within each sector were also categorized by size so that large firms which have a significant impact on the economy, as well as those representing the "average" firm, would be equally represented. To determine the significance of transportation factors in terms of the competitiveness of firms, the importance of fourteen competitive factors were rated by each sampled firm. Six transportation factors were included among the competitive factors.

Supplementary information was also gathered concerning origins and destinations of shipments, transportation costs, relative importance of transportation costs to the profitability of regional firms, and significance of regional freight subsidies provided as a government financial assistance program. A selection of the study's major findings are outlined below.

Location of Inputs and Outputs

The Atlantic Region was the primary immediate destination of shipments by regional firms. Export markets in the United States and overseas were the second and third most common destination. Central Canadian markets ranked fourth, followed by Western Canada. These market areas represented the immediate destination of shipments. The Atlantic Region was the predominant source of inputs.

This information contradicts the perception that regional producers are primarily dependent on Central Canadian and other external markets. In fact, the Atlantic Region is well situated to serve American and overseas markets and as the trading environment becomes increasingly globalized, these markets should continue to grow in importance to the region.

Modal Choice

Truck is the predominant mode of transportation for input and outputs and the largest component of intermodal transportation. Water was second most common with rail, air, and

pipeline following. The growing importance of truck transportation reflects: trends in distribution practices favouring timeliness, maintenance of high produce quality, flexibility, and high levels of service. The effects of extensive regional rail line abandonment also contributed to the emergence of trucking as the predominant mode choice. The importance of maintaining roads supporting high service demands, and heavier commodities once carried by rail, has emerged as a serious regional concern relative to the provision and maintenance of transportation infrastructure.

Competitive Factors

The importance of transportation factors to firms in the Atlantic region was examined by having firms rate the six major transportation factors among fourteen factors which affect competitiveness. The results indicated that competitive transportation rates were important to the competitiveness of regional firms. Availability of highway transportation was also important. Water, rail and air modes were less important. Freight subsidies ranked high in overall importance in only two economic sectors: agriculture and forestry.

The results suggest that in the period since regulatory reform, the competitive position of firms has benefited from their ability to negotiate competitive rates. As distribution practices change, and rail line abandonment continues, access to highway transportation has increased in importance to the competitiveness of firms.

Government Financial Assistance Programs

Firms were asked to rank the MFRA and ARFAA subsidy programs in relation to their importance among government financial assistance strategies. The results indicated that, overall, although the MFRA/ARFAA subsidies may be among the only sources of financial assistance, they were not perceived to be the most important form of financial assistance for regional firms. An exception is the forestry sector in which subsidies were perceived to be a very important source of assistance by the majority of firms.

Overall the 1992 study found that the provision of transportation subsidies to various firms in the Atlantic Region could have had the detrimental effect of causing those firms to defer logistical and transportation innovations that had been adopted elsewhere. Further, such transportation subsidies might actually impede the long term competitiveness of the Atlantic Region by diverting federal funds from other essential transportation investments such as highway improvements. Such highway investments would remove transportation bottlenecks which could encourage productivity improvements among regional firms and improve their access to Canadian and American markets.

TRANSPORTATION SUBSIDY ELIMINATION

During the past several years the federal government has undertaken a number of studies that directly or indirectly consider the effect on the economy of transportation studies. The 1992 Royal Commission on National Passenger Transportation argued:

We believe that, unless our transportation system is made efficient now, Canadians will pay dearly later for adjustments needed to survive the global marketplace....transportation should be provided through a system supported and maintained by its users and not through government departments and central controls (Royal Commission, 1992).

In 1993 National Transportation Act Review Commission (NTARC) echoed these remarks by recommending the elimination of unjustified subsidies. The NTARC also recommended subsidies be paid directly to recipients (eg. Prairie wheat farmers) rather than through budgetary allocations to the transportation industry (eg. WGTA subsidies to the railways). Providing user-side subsidies increase the efficiency of the services being provided by the recipients.

In its attempt to reduce the public deficit and debt, in 1995, the federal government:

- eliminated AFRAA, MFRA, and WGTA (the Feed Grain Assistance subsidy had been eliminated in 1989),
- privatized CN Rail,
- reduced public support to Marine Atlantic Ferry Services, and
- transferred departmentally operated major commercial airports and the national air navigation system to non-profit corporations.

Creating a free transportation marketplace without the distorting effects of public subsidies means Canadian transportation systems have had to become increasingly efficient and competitive to retain and increase their traffic in the increasingly integrated North American continental transportation system.

CONCLUSIONS AND POLICY IMPLICATIONS

The government's transportation subsidy programs appeared to conflict with contemporary neo-liberal priorities concerning economic development in Atlantic Canada. Through their reliance on subsidies, firms did not have sufficient pressure to innovate and compete. Also, continuing transportation subsidy programs could have interfered with government initiatives aimed at encouraging trade with the United States. Providing incentives to support a Central Canadian market orientation appeared to conflict with the need to stimulate north-south trade (as reflected in the NAFTA Accord). Such transportation subsidies may also have been seen by Canada's trading partners (United States and Mexico) as providing unfair advantages to local firms.

In the face of increasingly scarce government financial resources, the need for the regional industry to become more self-sufficient has increased in importance. A transportation subsidy program is not harmonious with the promotion of self-sufficiency. Many of the firms studied did not perceive subsidies as being as important to the competitive position of regional industry. It could be argued that the subsidy levels were not sufficiently high to improve the regional industries competitive position. However, the findings of the 1992 UNB Transportation Group study (Bisson *et al*) suggested that an increase in transportation subsidies could produce the detrimental effect of deferring logistical and transportation innovation in the region. Innovation is a key factor in the drive for competitiveness.

Certainly, the low rating overall of transportation subsidies as a competitive factor in the 1992 UNB Transportation Group study does not suggest that such subsidies are "vital" to regional competitiveness. According to the analysis of competitive factors, subsidies were perceived to be less important to firms (except in the agriculture sector) than highways in terms of competitiveness. Continued subsidies could actually impede long term competitiveness in the

region by diverting funds from other essential investments such as highway improvements which in turn would reduce transportation bottlenecks encouraging productivity growth and improved access to certain markets.

In summary, the transportation sector, like other sectors, has a limited pool of financial resources. Transportation expenditures should be considered in terms of their cost effectiveness to ensure that there are not other ways to achieve a greater impact for the same effort. The results of 1992 UNB Transportation Group study (Bisson *et al*) provided evidence that in the face of necessary trade-offs between upgrading infrastructure or subsidizing transportation rates, the importance of infrastructure to regional competitiveness is paramount.

REFERENCES

ACOA - Atlantic Canada Opportunities Agency (1992), "**Presentation to the National Transportation Act Review Commission**", Ottawa.

Bisson, B.G., Brander, J., Ircha, M.C., and Palin, J. (1992), **Regional Economic Development and Transportation: Transportation as a Competitive Factor in Atlantic Canada**, Economic Research, Transport Canada, Ottawa.

Edsforth, J. (1993), "**Consultant Perspectives on Transportation Policy**", *Proceedings*, National Transportation Policy Workshop, The Van Horne Institute, University of Calgary, pp. 63-74.

Finlayson, S. And Bertasi, S. (1992), "**Evolution of Canadian Postwar International Trade Policy**", Chapter 1 in A.C. Cutler and M. W. Zacher (eds.), *Canadian Foreign Policy and International Economic Regimes*, UBC Press, Vancouver BC, pp. 19-46.

Gwilliam, J. (1987), "Market Failures, Subsidy and Welfare Maximisation", in S. Glaister (ed.), **Transport Subsidy**, Policy Journals, Bristol, pp. 6-25.

Holyoke T.R. (1982), "**The Impact of Transportation on Industrial Development in Atlantic Canada - An Empirical Analysis Using Location Factor Preferences Indices Model**", MScE Thesis, The Transportation Group, University of New Brunswick, Fredericton, N.B.

NTA - National Transportation Agency (1992), **Annual Review - 1991**, Minister of Supply and Services, Ottawa.

NTA - National Transportation Agency (1993), **Annual Review - 1992**, Minister of Supply and Services, Ottawa.

NTA - National Transportation Agency (1994), **Transportation Trends & Issues - 1994 Review**, Minister of Supply and Services, Ottawa.

NTARC - National Transportation Act Review Commission (1993), **Competition in Transportation: Policy and Legislation in Review**, vol. I, Ottawa.

Porter, M.E. (1990), **The Competitive Advantage of Nations**, The Free Press, New York.

"**Regional Focus - North America - Trade Statistics**" (1995), *Containerization International*,

November.

Royal Commission on National Passenger Transportation (1992), **Directions: The Final Report of the Royal Commission on National Passenger Transportation**, Minister of Supply and Services, Ottawa.

Sharp, Hon. M. (1972), "Canada-U.S. Relations: Options for the Future", *International Perspectives*, October, pp. 1-24.

Smith, M.G. (1988), **The Free Trade Agreement in Context: A Canadian Perspective**", in J.J. Schott and M.G. Smith (eds.), *The Canada-United States Free Trade Agreement: The Global Impact*, Institute for International Economics, Washington, DC, pp. 37-64.

Transmode (1987), **A Study of the Competitiveness of Canadian and U.S. Transportation under Free Trade**, Transport Canada, Ottawa.

U.S. Department of Transportation (1994) , **Assessment of Border Crossings and Transportation Corridors for North American Trade: A Report to Congress**, Federal Highway Administration, No. FHWA-PL-94-009.

Yee, P. (1987), **The Competitive Position of Canadian and U.S. Coastal Fleets in a Free Trade Environment**, International Shipping Policy Branch, Transport Canada, Ottawa.