

COMPETITION BETWEEN CANADIAN AND UNITED STATES TRUCKING IN THE TRANSBORDER TRUCKING MARKET

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INTRODUCTION

Transborder (TB) trucking is the lifeline between Canada and the United States (U.S.), carrying two thirds of the \$197 billion (Cdn.) trade between the two countries in 1989.¹ It is estimated over 68 million tons of freight is moved by trucks in this market and revenues of for-hire carriers are around \$2.5 billion. This market is relatively small when compared to the revenues of just one of the largest U.S. less than truckload (LTL) carriers whose annual revenue would equal or exceed this total. However, the transborder truck market represents a significant traffic segment for the Canadian trucking industry which depends on international revenues to a much greater extent than U.S. carriers. This paper documents the recent changes that have occurred in the transborder market and analyzes the competitive features of the transborder trucking industry.

1. A SHORT HISTORY

Transborder trucking was primarily an interline industry until U.S. deregulation embodied in the Motor Carrier Act of 1980 permitted Canadian truckers to enter the U.S. unimpeded. Canadian carriers significantly expanded at the expense of U.S. carriers who were not granted reciprocal opportunities to enter Canada, and rapidly gained market share. Canadian carriers could offer single line service while many U.S. carriers were forced to continue to interline their freight with Canadian carriers at the border. The transborder market was very profitable as rates charged in these markets were significantly higher than those charged in comparable domestic markets. The low exchange rate for the U.S. dollar (from Canadian dollars) gave many Canadian carriers an input cost advantage. These lucrative profit margins were gradually eroded as U.S. carriers entered the market through the purchase of existing operating licenses and in a small number of cases, the approval of new operating licenses under Public Convenience and Necessity criteria. However, U.S. protests and domestic pressures led to the Motor Vehicle Transportation Act (1987) which deregulated interprovincial trucking in Canada in 1988 and opened the transborder market to new entrants from both countries under the reverse onus test.² The result has been significant new entry, price reductions and a perceived loss of transborder market share from Canadian based to U.S. based carriers. For example U.S. carriers holding operating authorities in

Canada rose from 2,987 in 1989 to 4,303 in 1990 (NTA, 1991). However Canadian carriers continue to expand into the U.S. In 1990, the number of applications (about 800) to the U.S. Interstate Commerce Commission (ICC) by Canadian carriers was four times that in 1986. Segments of the Canadian trucking industry have taken the position that U.S. carriers have significant competitive advantages due to input costs, operating environments, taxes and other factors. The established trucking interests in central Canada have made numerous presentations to policymakers in Canada to enact public policies that would "level the playing field" for Canadian based competitors. However it was the highly visible owner operator protests that finally resulted in Federal action. The Federal Transport Minister established a Task Force on Trucking Issues which commissioned a series of studies on transborder trucking which were completed in mid 1991. Ontario's Ministry of Transport also commissioned a study that was completed by the end of 1991. The result, at least at the Federal level, was a series of tax and funding measures enacted in the 1992 Canadian Federal budget.

2. RESEARCH CONCERNING THE TRANSBORDER MARKET

The findings of the Transport Canada (TC), Ontario and related studies shed considerable light on the need for further government action. The Federal study was composed of seven substudies employing a variety of research instruments and approaches to address the issues perceived as most relevant to transborder policy development. Those substudies are summarized and consolidated in the report, The Transborder Competitiveness of Canadian Trucking (June 1991).³

The Ontario study, The Competitiveness of the Ontario Transborder Trucking Industry, was conducted in three stages. The first stage established a profile of the Ontario - U.S. transborder trucking market using secondary statistics and surveys of both carriers and shippers. The second stage analyzed the comparative cost structures of Ontario versus U.S. based carriers using a deterministic model of performance which accounted for input costs, taxes and productivity. Stage three consolidated the findings of the first two stages and identified strategy and policy options to assist Ontario based transborder trucking.

The National Transportation Agency (NTA) is required to review the performance of the transportation industries annually under the National Transportation Act of 1987. In 1991 the NTA completed its third review. The NTA addressed issues of market structure, conduct and performance using primary interviews of shippers and carriers as well as primary statistics. The NTA annual reviews have specific sections concerning the transborder market.

3. COMPETITIVE DIMENSIONS OF THE TRANSBORDER TRUCKING MARKET

3.1. Transborder Truck Traffic Characteristics

The market size of the TB truck market was noted previously to be 68 million tonnes of freight (for-hire and private) and \$2.5 billion of for-hire carrier revenue in 1989. Transborder revenues represented almost 18 percent of total Canadian trucking revenues and nearly 29 percent of the revenues of Canadian carriers involved in the transborder market. Although exact figures are not known, it is estimated that less than two percent of U.S. carrier revenue is earned from TB traffic.

TB trade by truck is highly concentrated in Ontario and Quebec which accounts for 64 percent of the trade by merchandise value. Ontario carriers alone accounted for 56 percent of Canadian TB revenues.

The TB market is for the most part a short haul market. For example, one fourth of the TB truck traffic of Ontario is with Michigan alone. The Ontario Commercial Vehicle Survey (1991) found that the vast majority of Ontario international movements were with states in the U.S. north central or northeast. However there has been shift towards longer distance movements in recent years, e.g less Ontario-New York, more Ontario-California.

Southbound movement by road exceeds northbound movement by between 9 and 29 % as measured by tonnes depending on the particular study looked at. The smaller southbound movement percentage is derived from merchandise value statistics which reflects the higher value of product typically moving north from the U.S. The higher southbound movement percentage derived from tonnage statistics reflects the larger percentage of resource based commodities that flow south. None the less, on either criteria the majority of the movement originated in Canada.

Overall, the Federal study found that Canadian carriers have 64 percent of the TB market as measured by tonnes. This varies across provinces. For example, in Ontario, Canadian carriers have the lowest market share of 56 percent. U.S. share is perceived to be growing and U.S. participation in the transborder market has increased significantly since deregulation of extraprovincial trucking in Canada. The number of U.S. applicants for Canadian operating licences was 1465 in 1989 and 1788 in 1990 (NTA 1991). While overall license applications decreased in 1990, U.S. applications went up by 18 percent. By 1990, U.S. carriers held 4303 Canadian operating licenses (versus 2987 in 1989). However the actual number of carriers holding these licenses is less since a carrier can hold multiple operating authority.

At the same time, large Canadian carriers continue to continentalize their operations. The NTA reports that seven of the thirteen largest Canadian carriers expanded in U.S. in 1990. Eight hundred applications for operating licences were made to the ICC in 1990 versus 200 in 1986 by Canadian carriers.

3.2. Financial Condition of Canadian and U.S. Transborder Carriers

Both Canadian and U.S. carriers involved in the TB market had poor earnings in 1988 and 1989 but this performance resulted from a blend of domestic and transborder operation. More noteworthy is the fact that Canadian carriers are generally smaller and much more leveraged than their U.S. counterparts. In the LTL segment of the industry, each of the three largest U.S. competitors earned gross revenues (\$2 to \$3 billion) which were five to ten times that of the largest Canadian competitor. In the TL sector, the largest U.S. competitors earn over \$500 million annually. The largest pure Canadian truckload carriers earn less than \$200 million annually and compete in the bulk and tanker market.

Depending on the type of carrier, Canadian carriers have debt to equity ratios that are at least twice those of U.S. carriers. This means that the Return on Equity for the highly leveraged Canadian carriers can be very high in good times and very low in recessions, a time where the risk of not being able to service debt payments is very high. The high debt to equity ratios of Canadian transborder carriers is not a recent or unique phenomenon as it has remained stable since 1978 and it is about the same as for all Canadian carriers.

3.3. Input costs of Canadian and U.S. Transborder Carriers

One hundred simulations compared costs of U.S. versus Canadian based carriers in various traffic lanes, for large and small carriers, and for different carrier types. The results of these simulations were:

A 6 percent advantage to U.S. based carriers at an exchange rate of .85,

Costs for small Canadian carriers were about 9 percent higher while large Canadian carriers had about a 3 percent disadvantage.

The cost disadvantage varies between truck sectors with greatest disadvantage to Canadians in the TL sector.

Ontario/Quebec based Canadian carriers were the least competitive while carriers in Atlantic Canada and Prairies were the most competitive. Carriers in British Columbia were in between these two extremes.

Generally total driver costs were lower in Canada while repairs and maintenance costs were lower in the U.S.

Canadian carriers in the TB market depend on owner operators (34 percent of operating costs) more than U.S. carriers (8 percent) by a wide margin. The use of

owner operators is highest in the TL sector as expected. The higher use of owner operators in Canada may reflect their inability to obtain capital to purchase owned capacity. At the same time this may be an explicit strategy to offset financial and business risk by employing capacity that can be increased or decreased simply by not using them.

The comparisons are highly dependent on the exchange rate. Obviously a higher exchange rate will further disadvantage the Canadian carrier and vice versa. For example an exchange rate of slightly under .80 would equalize total input costs for carriers based on either side of the border.

The Ontario study confirmed these cost comparisons. In addition that study cites equipment costs are a major disadvantage for Ontario carriers.

3.4. Tax Burdens of Canadian and U.S. carriers in the Transborder Market.

The tax burden on Canadian versus U.S. carriers is higher or lower depending on how you compare them. The overall approach taken in the Federal study was to determine tax burden on similar types of carriers in both jurisdictions. The substudy recognized three types of carrier distinctions (large versus small, LTL versus TL, owner operator versus employee), and five geographic corridors resulting in 40 pairs of comparisons.

The "apple to apples comparison" compared a Canadian business as if it was taxed in Canada with the same business as it would be taxed in the U.S. Similar calculations would be conducted for the U.S. carrier in the two tax environments. When all cases are averaged, the carriers that domicile themselves in the U.S. had a very small tax burden advantage of Canadian domiciled carriers, 7.72 versus 7.97 percent of operating revenue. This result was heavily weighted by the Ontario - U.S. TL sector. In fact all forms of carriers in Quebec and British Columbia have a tax advantage, and all Canadian LTL carriers irrespective of tax domicile has a tax advantage over their U.S. counterparts. In short, it is primarily the Ontario TL carrier that is disadvantaged with respect to taxes.

The "apples to oranges" comparison compared the actual tax a Canadian firm pays in the Canadian setting with what the U.S. firms pay given the rules of the U.S. setting. This is more realistic but only applicable to the particular operating circumstances used. For example these comparisons show that the Canadian tax burden is only 6.94 percent versus 8.60 for U.S. carriers but this is due in part to the lower earnings and size of the Canadian versus the U.S. carriers. A breakdown of the tax components is:

the effective Federal income tax rate is lower in Canada, 12.84 versus 27.21 percent,

payroll taxes for benefits and excise taxes on vehicles are lower or non existent

for Canadian TB operation.

provincial tax rates are higher in Canada than state tax rates, 13.5 versus 7.1 percent.

depreciation allowances are much more liberal in the U.S. where ninety percent of the value of a vehicle can be depreciated within 3 years versus nine years (now seven) in Canada.

The Ontario study contradicts the Federal report's findings with respect to Ontario. That study concluded that Ontario based carriers appear to be at a marginal tax advantage when all major Federal and state/provincial taxes are considered. These tax comparisons show that any overall tax advantage or disadvantage for carriers domiciled on either side of the border is marginal. The results vary by provincial and state location and carrier type with the greatest burden possibly falling on TL carriers domiciled in Ontario.

3.5. Productivity of Canadian and U.S. Transborder carriers?

The studies also differ significantly on this issue. The claim is that Canadian carriers are less productive as they are unable to utilize their vehicles as effectively as U.S. based drivers and vehicles because of cabotage, state regulations and the spatial distribution of demand north and south of the border.

The Ontario study found (from their carrier survey) that U.S. carriers achieve higher tractor utilization and therefore have an advantage in being able to recover fixed costs more effectively. The study attributes this however to the large size of the U.S. carriers relative to Canadian carriers. No evidence is available concerning how well the vehicles are loaded. The TC substudy did address the latter question and it found that Canadian carriers had higher capacity utilization on all southbound lanes studied for Ontario and two of the four Ontario inbound lanes. Overall Canadian for-hire carriers had a capacity utilization of 66 percent versus 59 percent for U.S. carriers. However no data was produced by the TC study on annual power unit utilization.

The empirical findings of the Transport Canada study confirm the conclusions of Chow and McRae (1991) who suggested that non-tariff trade barriers such as state regulation and cabotage on drivers and equipment have had a minor impact on the competitiveness of the Canadian carriers in most geographic markets. Many Canadian carriers have adapted their operations to minimize such barriers. The nature of LTL operations require that terminals, drivers and equipment be locally domiciled in each country if effective service is to be provided. This effectively eliminates most cabotage restrictions although it does increase the complexity of managing a mixed driver and equipment fleet. However, Canadian carriers do not have the financial strength (overleveraged) or size to expand their LTL coverage across North America. Thus

Canadian LTL carriers cannot provide the geographic coverage required in long distance market except in selected dense traffic lanes. The result is that the long distance TB market is dominated by U.S. LTL giants. Fortunately, the bulk of the TB market is short haul so that Canadian based LTL carriers have the same potential to capture this market as their U.S. based competitors.

Cabotage restrictions on drivers and equipment prevent Canadian domiciled drivers and equipment from transporting domestic U.S. freight and vice versa. This provides a potential advantage to U.S. domiciled competitors in long distance TB markets since the majority of the movement is in the U.S. A U.S. based driver and vehicle would most likely deliver freight at a location in Canada that is not far from the U.S. border. The U.S. driver/vehicle could transport an international movement back to its origin in the U.S. or travel a short distance back to the U.S. and pick up domestic U.S. freight. In contrast, a Canadian based driver and vehicle would deliver deep in the U.S. but would be limited to picking up international freight until it reaches the Canadian border. The U.S. carrier has the opportunity to compete for both domestic and international backhaul movements over a longer portion of the backhaul movement in any transborder market.

Canadian TL carriers have resorted to concentrating on dense traffic lanes where international hauls are likely to be obtained or triangulation to increase their load factor utilization. Triangulation is most readily observed for Canadian carriers domiciled east or west of Quebec and Ontario. The strategy is as follows. Canadian carriers making southbound hauls from the Maritimes (east) or Manitoba (or further west) can either return home empty (feasible for short haul), wait for a backhaul (feasible in some markets) or triangulate. Triangulation occurs when the Canadian carrier successfully obtains a TB haul back to Ontario or Quebec since it cannot pick up any domestic U.S. freight. Once the vehicle delivers in one of these two provinces it will look for a haul back to its origin. Since Ontario/Quebec outbound flows to the Maritimes or to Manitoba is generally a fronthaul of high value goods, it is much easier to obtain a haul with reasonable revenue yield. One example is a Maritime carrier transporting farm products to the U.S. Northeast from eastern Canada, picking up parts destined for Ontario, then general freight from Ontario back to the Maritimes. Another example was given of an Alberta carrier moving red meat to California, fresh produce from California to Ontario and general freight to Alberta. In the short distance TL market, cabotage is not as important since the shorter distance typically reduces the U.S. portion of the haul, equalizing the domestic backhaul opportunities.

3.6. Service Quality of Canadian and U.S. Transborder carriers

Only the Ontario study addressed the issue of service quality. Its shipper survey revealed that Ontario carriers were strong on on-time delivery, safety, and claims but weak on tracing, equipment condition, and market coverage. The study's overall service assessment was that Ontario carriers were weak in service. This is

supported somewhat by a recent Arthur Anderson survey which asked shippers (mostly U.S.) to rate the progressiveness of U.S. and Canadian based transportation at implementing and introducing services for free trade and intercountry transportation. U.S. motor carriers were rated by 50 percent of the respondents as effective or very effective and by 87 percent as at least somewhat effective. In contrast, Canadian carriers were only rated by 31 percent of the respondents as effective and 61 percent as very effective. This may reflect however, lack of marketing presence of Canadian carriers as much as dissatisfaction with Canadian carriers, on the part of U.S. shippers.

Significantly, the Ontario study observed that Ontario carriers' incorrectly perceive market expectations. For example, Ontario carriers do not emphasize tracing in its marketing, but shippers have placed medium importance to this dimension of service and rated Ontario carriers as weak in providing it. Ontario carriers place low emphasis on equipment condition but shippers value this aspect of service highly and rate Ontario carriers as weak in providing equipment in good condition.

3.7. Conclusions Regarding the Competitiveness of Canadian versus U.S. Based Transborder Carriers

Overall, Canadian carriers are at a cost disadvantage of around six percent and a tax disadvantage of less than one half percent. Canadian carriers are generally smaller and more highly leveraged than their U.S. counterparts. Canadian carriers are viewed as unable to provide market coverage according to the Ontario study. This is likely to be caused by the small size of Canadian LTL carriers and the need to concentrate on dense traffic lanes on the part of TL carriers. Yet Canadian carriers seem to get better vehicle utilization and there is a marketing advantage from being domiciled at the source of the majority of the traffic. More importantly, these advantages or disadvantages for Canadian carriers vary with the region, type of carrier and product market. The British Columbia LTL carrier has costs that are only one percent higher than a comparable U.S. carriers but tax burdens that are almost two cents per dollar of revenue less, and better load factor (vehicle utilization) as well. This pattern is also observed in Ontario and Quebec for LTL carriers. Though Canadian carriers do not have the coverage of the large U.S. LTLs in the long haul market, it could obtain it in selected short haul markets. The situation for many Canadian carriers is similar to the environment encountered by many regional carriers in the U.S. who have carved out regional markets that the LTL giants cannot serve effectively from their long haul oriented operations network. Realistically Canadian carriers were only in the long haul movement of LTL as interline carriers and that traffic has already been lost to the large U.S. carriers.

Conclusions for the TL sector are naturally more mixed due to the heterogeneity of that segment of trucking. TL carriers in all provinces generally have higher input costs but the disadvantage is least in British Columbia, higher in Quebec and Ontario. Overall vehicle utilization favors Canadian carriers but Ontario have a smaller

advantage than their U.S. counterparts. Tax burdens for TL carriers favor Canadian carriers in Quebec and British Columbia but unfavorably in Ontario.

4. POLICY AND MANAGERIAL CHANGES

The competitive assessment suggests that LTL carriers in short haul markets are marginally disadvantaged if at all, and in the TL sector, carriers in Quebec but especially Ontario are disadvantaged. Do Canadian carriers have a future?

4.1. Policy Initiatives

As one would expect than, the Ontario and to a lesser degree Quebec carrier interests, are the most concerned about U.S. competition. This evidence and the usual desire to placate visible constituents such as owner operators apparently was enough to justify some policy remedies. The Federal government enacted a series of measures to help the Canadian trucking industry in the Federal budget announced in February 1992. The main components of this program are:

A temporary loss offset program that will provide cash flow benefits to carriers by allowing them to elect to receive a 3 cent per litre excise tax rebate on eligible fuel. However for every \$1 rebated, these carriers must reduce income tax losses by \$10. Obviously only carriers with losses to declare can take advantage of this program. This will help carriers by immediately increasing their cash flow but decrease their tax shield in future years as tax loss carryforwards are lost.

The capital cost allowance (CCA or depreciation) is increased from 30 to 40 percent for heavy trucks and tractors. This reduces from 10 to less than 7 years, the time it takes to depreciate vehicles 90 percent. However it still only takes three years to write off 90 percent of a vehicle in U.S.

The Federal government will contribute \$3 million over five years to the trucking industry as startup funding for a Trucking Research institute.

The Federal government will provide \$2.7 million to set up an owner operator buyers' cooperative which will provide training and assistance and pool buying power.

The Federal governments' estimate of the tax benefits suggest that the tax changes will have a small impact in the short or long run. The other two measures have more potential for a long run and lasting impact because they affect how the carrier is run and subsequently both input costs and productivity.

It was suggested in the Federal study that provinces could follow the example of Quebec which has integrated the collection and calculation of the Federal Goods and Services Tax (GST) with its Provincial Sales Tax (PST). According to the Federal study this would reduce the Ontario tax burden from over 7 percent to about 6 percent. In B.C., the reduction would be from 6.7 to 5.7 percent. Combined with the acceleration in the depreciation allowance, any tax advantage to locating in the U.S. should be minimal if any.

4.2 Environment Changes

The input cost disadvantage is highly dependent on the exchange rate which ranged from a low of .72 to a high of .89 in the 1980 to 1990 decade. If the exchange rate goes down to .80 (a figure estimated by a number of economists as reflective of strength of each economy), Canadian input costs could be equal to or lower than those in U.S. The question arises as to whether policy initiatives are needed to level a playing field that is continuously fluctuating with the exchange rate.

The Free Trade Agreement (FTA) and North American Free Trade Agreement (NAFTA) will increase the importance of transborder trade between all three countries. These trade pacts will also reduce the prices paid in Canada for equipment and supplies especially for maintenance and repair as duties and taxes are reduced on U.S. imports of these inputs. This will reduce the input cost disadvantage observed for equipment, maintenance and repairs of Canadian domicile carriers. Equipment cabotage may also be less constraining as customs duties are eliminated on vehicles used in international service.

4.3 Industry Changes

Many of the problems of the Canadian trucking industry arise from the problems in the domestic sector, although it could be argued that the solution to the problem is in capturing more of the international market. In fact the type of market rationalization that occurred in the U.S. after deregulation is still occurring in Canada. Full deregulation occurred in Canada eight years after the same event occurred in the U.S. Chow and Caravan (1991) observe that between 1981 and 1988 there was a trend towards more concentration in the LTL and TL sectors, and that rates are generally lower in markets with higher concentration and for carriers with higher market shares. They suggest that higher market shares and concentration led to better capacity utilization and subsequently lower costs and rates. These conclusions are consistent with the Ontario study findings that increasing the scale of operations would improve Ontario carrier performance significantly and recent studies on economies of scale.

Tax breaks or even tax equalization will help equalize competitive advantage but it won't hide the long run inefficiencies resulting from a less than optimal design of a transportation system. Perhaps the biggest barriers to such rationalization is the belief that a Canadian company is one which employs Canadian drivers and drives Canadian domiciled trucks. In a multinational, global environment, the multinational manufacturer seeks the best combination of world sourcing, production and assembly. Shipping lines are the epitome of the multinational in transportation. A shipping line may have its management operations base in the Caribbean, its ships registered in Hong Kong, its crew from several countries, its maintenance contracted somewhere else. Similarly, the multinational trucking company of North America may be owned by Canadian interests, it may have its tax domicile in Quebec, a mix of equipment

registered in both the U.S. and Canada, its employee drivers in the U.S. and its owner operators in Canada. Many Canadian carriers are continentalizing their operations today and many more will have to do so in the future.

5. CONCLUSION

The recent research evidence indicates that Canadian based carriers have effectively competed in the transborder market in the past and control a majority of the market share at the present time. Input cost advantages favor U.S. carriers but this is dependent on the exchange rate and tax differences are marginal. None the less some sectors of the Canadian trucking industry are less competitive than their U.S. counterparts and these sectors need to continue to rationalize their operations, relocate assets where required and make managerial improvements.

The FTA and now the NAFTA are a product of recognition of global markets and global competition. If North American industry does not rationalize, it will not be competitive with industry in other mega-trading areas. Transportation is a means and not an end to itself. The objectives of the FTA should supersede sectoral objectives such as the stability of an industry or maintaining a Canadian identity. Any further protection of the Canadian trucking industry will just delay the inevitable change required because of global competition.

Therefore the seed money being provided to strengthen research on trucking issues may be the most beneficial of the Federal initiatives recently enacted, especially if it focuses on developing solutions to common problems of the Canadian trucking industry and promotes development of management talent. This is not the first time such assistance has been given to the trucking industry. The Federal and Quebec governments jointly funded with the Quebec Trucking Association, the development of costing models to improve the ability of Quebec carriers to cost out their operations and products. Canadian carriers will need to adapt to a new continental and global trucking market and need to use the newest managerial and technological tools available. Applied and fundamental research plays a significant role in the identification, development and dissemination of innovative ideas.

ENDNOTES

1. All monetary figures are in Canadian dollars unless indicated otherwise.
2. See Chow (1991) for a complete discussion of U.S. and Canadian motor carrier regulatory policy.
3. All of the studies conducted for the Federal Minister's Task Force are referred to as the "Federal" study in this paper. A one page summary of these studies is available on request from the author.

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