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# Rationalizing Grain Handling and Transportation: The Brandon Area Revisited

by A. G. Wilson\*

In 1973 a detailed study of the grain handling and transportation system in what was identified as the Brandon Area was initiated under the auspices of the Canada Grains Council (1974). This area, bounded on the west by the Saskatchewan boundary, on the north by the CP Rail line passing through Minnesota and on the east by Portage la Prairie, was deemed to hold forth the prospect of "having most of the conditions which would be encountered in developing alternative transportation systems within an area". The area was served by main lines operated by CP Rail and Canadian National Railways and by light density lines on which the freight movement consisted primarily of grain.

Specifically, the study addressed elevator location and relocation, the effect of additional distance from the farm to the elevator, the road system required to service current and future needs for the truck transport of grain, the rail systems in the area and the impact of any changes on the producer, the communities and municipal governments, the elevator industry and the railways. The study was based on the 1971/72 crop year.

Several recommendations were made as a result of the study. These were that the least cost grain handling and transportation system be allowed to evolve, that the costs incurred be reflected in the charges assessed for the services provided, that producers receive compensation for any increased costs experienced and that the rights of way for rail lines abandoned be retained by the crown. These recommendations followed detailed examination of several system configurations with the one judged to be lowest in cost being where only the CP Rail and Canadian National Railways main lines and the CP Rail secondary main line were retained to service the needs of the area.

Producers, during meetings held to discuss the research, raised numerous issues. Amongst these were the impact of additional distance of haul upon producer costs and road expenditures, the effect on elevator operations and costs and the consequences for rural communities arising from rail line abandonment and elevator rationalization.

Subsequent to the study the grain dependent branch lines between the CP Rail main line and secondary main line were progressively abandoned, the Canadian Transport Commission authorizing the last of the group to be abandoned on December 30, 1980. No compensation was provided to any of the affected parties.

An assessment of the impact of the rail line abandonments and elevator rationalization which took place in the area was initiated by the University of Manitoba Transport Institute in 1987. It

was believed that the changes which occurred would be representative of those which would prevail elsewhere under similar conditions. At the same time the merit of the recommendations made in the earlier study could be judged by their results when put into practice. The area for the purposes of the assessment was extended to include the towns and municipalities served by the Rosburn Subdivision of Canadian National Railways.

In the study particular attention was given to the impact of branch line abandonment and rail rationalization upon communities in the area, and also to the impact upon the tax bases of municipal governments. Data on road and highway construction and maintenance expenditures were collected to ascertain if such expenditures were related to rail line abandonment. The additional trucking costs arising from the abandonment of the lines were calculated. Finally the impact of the rationalization which took place in the rail and elevator plant upon elevator costs were determined. The data assembled provide insights into how producers and others in the area have been affected by this rationalization.

## AREA PROFILE

The population of the Brandon area has remained relatively stable over time increasing by only 2.0 per cent between 1981 and 1986 to 118,368. The urban population in the area increased by 3.7 per cent to 72,934. Meanwhile the rural/urban population relationship declined from a proportion of 39.4/60.6 to 38.4/61.6. Population changes in the two cities, Brandon and Portage la Prairie, accounted for most of the total population increase over the period.

The average size of farm in the area in 1986 was 763 acres, the size of farm varying significantly among rural municipalities. Over half (55 per cent) of the 6,744 farms in the area had cattle and calves, the average number per farm being 81. A much smaller proportion, slightly over 11 per cent of the farms, had hogs with the average number of hogs per farm being 758. Livestock operations are therefore specialized. There are a substantial number of large farms (those of 1,120 acres and over) in the area; they account for over 21 per cent of all the farms. On average, in excess of 6 persons were on each farm. Gross sales per farm in 1986 while varying widely between farms, averaged \$79,600. The area was well supplied with trucks there being an average of 2.2 trucks per farm. The area, while having a large livestock farming component, must be considered as a spe-

cialized grain production area. There were 6,127 Wheat Board permit holders, the average quota area per holder being 660 acres. These permit holders represented 25.6 of the total number in the province and accounted for 27.5 per cent of the quota area.

## COMMUNITIES

Some producers have contended that rail line abandonment leads to the demise of service centres. The Grains Council study examined the situation in detail in 1971 and provided benchmark data on the service available in towns and villages within the area. These service centres have been classified as follows: "complete" (those having more than 30 services); "full" (those with 16 to 30 services); and "minimum" (those with 15 or less services). The ten "complete" centres located on the railway lines remaining experienced, in general, an increase in the number of services offered between 1971 and 1986 with one centre being reclassified from being "full" to "complete". The number of "full" centres in 1986 was 4. The number of "minimum" service centres remained constant over the period. However, the number of services offered by these centres substantially declined. A somewhat different situation prevailed for those centres located on the abandoned rail lines. By 1986 only one of the five "complete" service centres existing on these lines remained in this category, the remainder being relegated to a "full" status. The "full" centre in 1971 had become by 1986 a "minimum" centre. The other "minimum" centres continued to exist in 1986, albeit with a reduced number of services. Much of the reduction was due to the removal of rail and elevator facilities. The data reveal that services are being concentrated in a limited number of convenience centres, four major towns in the area being in a "growth" phase with the other centres experiencing a relative decline. Rail line abandonment could not therefore be held responsible for the decline in the convenience centres on these lines, except those directly related to the railway and elevator systems. These findings are consistent with those of Stabler (1985) in his study of trade centre viability. Indeed, any decline in the convenience centres appeared related to the centralization of the school system and the greater mobility of the local population associated with an improved road system and almost universal ownership of a personal vehicle.

## ROADS AND HIGHWAYS

A comprehensive network of roads and highways exists in the Brandon area. This network services the needs of both the local rural and urban populations while providing a link with outside areas. The province assumes responsibility for the construction and maintenance of the trunk highways and roads, there being 12 of the former and 45 of the latter in the area. This network is complemented by a large number of other roads constructed and maintained by local municipal governments which include rural municipalities, cities,

towns, villages, and one government district. The trunk highways and provincial roads and also many of the municipal roads are maintained on a year round basis. Operation of the school system depends on a well maintained road system.

One of the issues raised by provincial and municipal authorities is that they must bear any additional highway and road costs associated with rail line abandonment. They continue to argue that an onerous burden is being placed on their budgets and compensation should be federally provided for the additional costs experienced. The magnitude of these costs continues to be a matter of debate since no method of establishing these costs has been agreed upon by all the affected parties.

Any additional costs arising from rail line abandonment should be reflected over time in the magnitudes of highway and road expenditures within the area in which abandonments occurred relative to other areas. The general quality of the highways and roads has improved over the period between the Grains Council study and this study as a result of upgrading and new construction. Consequently, any changes in the proportion of the construction and maintenance expenditures between the Brandon area where the abandonments primarily occurred and other parts of the province should provide insights into the effect of the abandonments on these expenditures. The expenditures incurred by the province and also by the municipal governments can be taken as indicative of those required to sustain and in many cases improve the existing highway and road network. Data were collected on these expenditures over the 1975 to 1985 period to enable a before and after rail line abandonment comparison to be made.

## Highway Construction Costs

Most of the highway construction in the Brandon area over the period was designed to expedite the flow of through rather than local traffic. Consequently, highway construction expenditures were found to have no apparent relationship with rail line abandonment. Between 1975 and 1985 the proportion of provincial highway construction expenditures in the province occurring in the Brandon area varied from the 46.8 per cent registered in 1976 to the 9.9 per cent registered in 1985, the average for all years being 23.1 per cent.

## Highway Maintenance Costs

Grain constitutes only one of the commodities moved on the highway system. Consequently, any additional grain movement can be expected to have only a minor proportional effect on maintenance costs. The proportion of total highway maintenance expenditures occurring within the Brandon area varied from 15.7 per cent in 1978 to 21.6 per cent in 1982 and averaged 18.1 per cent over the whole period. The expenditure pattern suggested that maintenance expenditures were influenced by factors such as weather conditions more than to any increase in the grain traffic. Indeed, this pattern had no apparent relationship to the volume of grain deliveries.

### Provincial Road Construction Expenditures

Substantial sums are spent annually on the construction of provincial roads. Expenditures within the Brandon area varied widely between 1975 and 1985. The pattern of expenditures was such as to reflect priorities other than any need for road improvement as a result of abandonment. Over the period 11.2 per cent of all provincial road construction expenditures occurred in the Brandon area this proportion varying from 6.6 per cent in 1976 to 15.3 per cent in 1977.

### Provincial Road Maintenance Expenditures

Maintenance expenditures are related to the volume of traffic carried on the roads. However, such expenditures are influenced to a greater degree by weather conditions in the winter and particularly in the spring break-up period. The increase in provincial road maintenance costs in real terms suggests a higher standard is being achieved over time. While maintenance costs in the Brandon area increased by 12.3 per cent over the period they increased by 23.5 per cent elsewhere in the province. Maintenance costs were found to bear no relationship to rail line abandonment, such expenditures as a proportion of the province as a whole being 14.8 per cent in 1975 while averaging 13.9 per cent over the data period.

### Transportation Expenditures by Municipal Governments

Expenditures on transportation constitute a major drain on the budgets of municipal governments. Rural municipalities spend nearly one quarter of their budgets on transportation. Such expenditures are required to facilitate the movement of farm products to market and the delivery of farm supplies. The consolidation of schools with its requirement for the daily busing of students nonetheless appears to be the dominant factor influencing expenditures on roads. The proximity of dwellers results in villages spending only about one sixth, and cities and towns about one eighth of their budgets on transportation. Since most of the grain traffic follows municipal roads for at least part if not all the entire journey to the elevator, any impact of rail line abandonment should be reflected in the transportation expenditures. Data for such expenditures by each level of municipal government were collected for the 1975-1985 period and assembled such that expenditures in the Brandon area where the abandonments occurred could be compared to those in other areas. Abandonment causes a change in the direction of flow and in the volume of flow to a particular location. A comparison of the expenditures by rural municipalities in the Brandon area with those in other areas, however, failed to support the premise that abandonment gave rise to higher expenditures on the road system. Furthermore, the proportion of the total expenditures of Brandon area rural municipalities absorbed by transportation remained relatively constant before and after the abandonments. Indeed, the highest proportion, 27.6 per

cent, occurred in 1976 during the pre-abandonment period while a low of 25.0 per cent was registered in 1981 after the major abandonments occurred. When expenditures of all municipalities in the Brandon area were aggregated they were found to average 10.7 per cent of those of all municipalities in the province over the period. Variations between years were relatively minor (See Table 1).

The concerns of the municipal and provincial governments with respect to abandonment giving rise to additional road expenditures appear to have been unfounded in the Brandon area. Road expenditures in the area did not increase relative to other areas in which abandonment did not occur. Grain represented only one commodity moving by truck. Other commodities moved by truck both prior to and after the abandonments. Any additional use of the roads for the movement of grain had a negligible effect on the level of road and highway construction and maintenance expenditures.

### MUNICIPAL TAXES AND BRANCH LINE ABANDONMENT

Elected municipal officials argue that their operations are significantly affected by the reduction in assessment which occurs when a rail line in their area of responsibility is abandoned. Data on municipal assessments were found not to be available over a period of years. Data are, however, maintained with respect to the taxes imposed by the various levels of municipal government, i.e. cities, towns, villages, rural municipalities and local government districts. The taxes imposed over time can be assumed to reflect the need to provide acceptable levels of services to the various groups of ratepayers. The levels of taxes imposed should therefore support any required local road upgrading and also maintenance which may arise from abandonments within the area under the jurisdiction of each municipal government. A comparison of the taxes imposed by the various levels of municipal government within the Brandon area with those outside the area should therefore yield an insight into the impact of rail line abandonment.

### Taxes Imposed

A review of the taxes collected by Brandon area cities, towns and villages and those by similar municipal governments in other parts of the province indicates that the level of these taxes increased significantly in all areas over the data period. Municipal governments in the area accounted for 10.3 per cent on average of all the taxes imposed by municipal governments in the province. This proportion was remarkably constant by year, the proportion falling slightly during the years in which the abandonments occurred and rising at the end of the period. During this time, cities accounted for 44.2 per cent, rural municipalities 40.7 per cent, towns 11.3 per cent and villages 3.0 per cent of the total taxes imposed within the

**TABLE 1**  
**Proportional Transportation Expenditures by Municipal Governments within Years by Area, Manitoba, 1975 to 1985**

Area	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	All Years
	per cent											
Rural Municip. Brandon Study	26.9	27.6	25.2	27.0	26.3	25.9	25.0	26.0	26.2	25.3	25.8	26.1
Other Province	73.1	72.4	74.8	73.0	73.7	74.1	75.0	74.0	73.8	74.7	74.2	73.9
Cities Brandon Study	4.4	5.6	4.9	6.2	4.7	5.1	5.3	5.6	5.1	3.9	5.5	5.0
Other Province	95.6	94.4	95.1	93.8	95.3	94.9	94.7	94.4	94.9	96.1	94.5	95.0
Towns Brandon Study	18.8	20.8	18.3	17.4	17.3	17.6	18.3	18.3	16.4	18.9	15.8	17.9
Other Province	81.2	79.2	81.7	82.6	82.7	82.4	81.7	81.7	83.6	81.1	84.2	82.1
Villages Brandon Study	22.9	23.7	18.3	15.2	13.7	18.5	13.7	15.2	16.8	15.8	24.2	18.0
Other Province	77.1	76.3	81.7	84.8	86.3	81.5	86.3	84.8	83.2	84.2	75.8	82.0
L.G.D. Brandon Study	1.9	2.2	3.0	3.3	3.7	2.2	2.3	3.2	5.5	3.4	2.7	3.0
Other Province	98.1	97.8	97.0	96.7	96.3	97.8	97.7	96.8	94.5	96.6	97.3	97.0
A.M.G. Brandon Study	10.6	12.5	10.7	11.9	10.6	10.6	10.7	11.0	10.8	8.5	11.0	10.7
Other Province	89.4	87.5	89.3	88.1	89.4	89.4	89.3	89.0	89.2	91.5	89.0	89.3

L.G.D. = Local Government District  
A.M.G. = All Municipal Governments  
Source: *Statistical Information, Annual*, Department of Municipal Affairs, Manitoba.

Brandon area, the one local government district accounting for the remainder.

The data indicate that rail line abandonment has had a negligible effect on the level of taxes imposed. Any impact of rail line abandonment should be reflected in the level of taxes imposed in view of the significant share of municipal expenditures represented by transportation.

#### Taxes Paid by Elevator and Railroad Companies

Municipal governments contend that rail line abandonments within their area of jurisdiction affect their tax base. Since taxes are imposed on railroad property and on elevator facilities, abandonment of a rail line and the subsequent closure of any elevators on that line reduce the tax base of the affected municipal government. Data on the taxes paid by elevator and railway companies on facilities within the Brandon area were therefore collected to ascertain the impact of abandonment on the tax bases of the various levels of municipal government over the abandonment period 1978-1986 (See Table 2). It was recognized that there would be differential impacts on the respective tax bases since for towns and villages abandonment could be completed while for rural municipalities traffic from the abandonment line could be diverted to another line within the same municipality, thereby giving rise to an increased assessment on the remaining facilities.

Taxes collected by towns and villages from railway and elevator companies represent a minor but significant share of the total. For those towns and villages in the Brandon area where elevator and railway facilities were removed approximately 5.83 per cent of the tax base was lost. This had a negative impact on their municipal governments and for those towns and villages could only intensify their declining ability to service the needs of their communities, such communities already tending to suffer from the trend to consolidation of service centres in the area. For those towns and villages in which abandonment did not occur, taxes on railway and elevator property represented 4.48 per cent of total taxes in 1978, this proportion falling to 3.91 per cent in 1986. The two cities in the area were not affected by the abandonments, rail and elevator taxes representing only 1.59 per cent of the total in 1978, this proportion dropping to 1.23 per cent at the end of the period. Those rural municipalities affected by abandonment received a larger share of their taxes from railway and elevator property in 1978 than other rural municipalities, 3.95 per cent as compared to 3.72 per cent, these proportions decreasing to 2.57 per cent and 2.71 per cent, respectively, in 1986. Those rural municipalities where abandonments occurred tended to have excess railway and elevator facilities initially, the loss of some of these being offset by increased use of those remaining and/or those upgraded. Data for towns and villages and also the rural municipalities serviced by the Canadian National Railways Roseburn Subdivision (an area included in the Brandon area for the purposes of this study) were also collected. Rural municipalities in the subdivision collected 4.23 per cent of their taxes from

railway and elevator property in 1978 with this proportion falling to 3.61 per cent in 1986. The towns and villages on this subdivision received 9.24 per cent of their property taxes from railway and elevator facilities in 1978 but this proportion fell to 5.48 per cent by 1986.

The data indicate that the taxes paid by railways and elevator property constitute a significant but declining share of the total collected (see Table 2). Abandonment affects the tax base of the towns and villages relatively more than rural municipalities. In the case of the latter, removal of the redundant facilities tended to be offset by greater use of those remaining, many of these being upgraded. Furthermore, any loss of the tax base of the affected towns and villages was onerous in view of the continuing consolidation of service centres. Towns, villages and rural municipalities have a greater dependence on railway and elevator property as a source of taxes than the cities of the Brandon area. The rural municipalities which obtain the major share of their revenue from taxes on farm property are in a better position than towns and villages with respect to abandonment. In some cases, producers may indeed reap overall benefits from consolidation and therefore be in a position to offset the tax losses arising from abandonment.

#### ABANDONMENT AND PRODUCER HAULING COST

Rail line abandonment and elevator closures give rise to greater hauling distances on the part of the affected grain producers. The impact of such abandonment and closures upon producers hauling costs were therefore estimated (See Table 3). The imputed extra distance of haul from the closed delivery point to the nearest remaining elevator point was calculated and multiplied by the average deliveries to the closed elevator point over the previous ten years to obtain an indication of the extra hauling requirements. This was in turn multiplied by the formulae developed by Meyer and Sparks (1987) to obtain an estimate of the additional hauling costs associated with the closures. The abandonment of rail lines in the Brandon area gave rise to additional producer hauling costs of approximately \$345,000 in 1986 under the assumption they used 2 axle farm trucks for delivery. If 3 axle trucks were used the costs would fall to \$271,600. The first figure can be considered a maximum and the latter a minimum. Closure of elevator points on the remaining lines also give rise to additional hauling costs. These were estimated as being about \$56,500 using 2 axle trucks and \$44,450 using 3 axle trucks in 1986. The total additional trucking costs associated with rail and elevator rationalization were therefore estimated to lie within a maximum of \$401,600 and a minimum of \$316,000 in 1986.

Such additional costs gave rise to the contention that producers should be paid for the additional costs experienced. Such arguments are based on the assumption that the original configuration of the system was ideal and should be effectively perpetuated even though some producers may have been receiving an unjustified consumer surplus based on that configuration. The arguments of pro-

**TABLE 2**  
**Taxes Paid by Elevator and Railway Companies to Cities, Towns, Villages and Rural Municipalities<sup>1</sup> Classified by Abandonment Status in Relation to Total Tax Imposition, 1978-1986**

	1978	1979	1980	1981	1982	1983	1984	1985	1986
	3.95	3.05	2.96	2.83	2.75	2.60	2.56	2.57	2.57
Rural Municipalities Affected by Abandonment	5.97	5.20	4.74	1.51	1.26	0.81	0.46	0.24	0.14
Towns and Villages Where Abandonment Complete	3.72	3.29	3.12	3.09	2.92	3.00	2.91	2.81	2.71
Rural Municipalities not Affected by Abandonment	1.59	1.50	1.41	1.39	1.32	1.36	1.36	1.32	1.23
Cities Not Affected by Abandonment	4.48	4.30	4.19	4.26	4.14	4.02	3.98	3.97	3.91
Towns and Villages Not Affected by Abandonment									
Rosburn Subdivision Rural Municipalities	4.23	3.96	3.71	3.90	4.16	3.74	3.66	3.58	3.61
Rosburn Subdivision Towns and Villages	9.24	6.32	6.21	6.34	5.95	5.68	5.85	5.82	5.48
Park Local Government District	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>1</sup> Author's calculations based on data from railway files and *Statistical Information, Manitoba Municipal Affairs*.



**TABLE 3**  
**Additional Producer Hauling Costs Associated with Rail Line Abandonment and Elevator Rationalization, 1986<sup>1</sup>**

	Two Axle Trucks	Three Axle Trucks
	dollars	
<b>Remaining Lines</b>		
Main Lines	37,994.00	29,905.36
Rosburn Subdivision	18,482.75	14,547.91
<b>Total</b>	<b>56,476.76</b>	<b>44,453.27</b>
<b>Abandoned Lines</b>		
Mineota Subdivision	114,466.00	90,097.04
Lenore Subdivision	58,322.00	45,905.68
Varcoe Subdivision	36,300.00	28,572.00
Neepawa Subdivision	8,349.00	6,571.56
RapidCity Subdivision	127,642.75	100,454.39
<b>Total</b>	<b>345,079.75</b>	<b>271,600.67</b>
<b>Total All Lines</b>	<b>401,556.50</b>	<b>316,053.94</b>

<sup>1</sup>Calculated using Meyer and Sparks formulae

ducers are directed more towards the change affected by rail line abandonment than to the continuing consolidation of the elevator system even though the latter accounted for 14.1 per cent of the total additional hauling costs in 1986. The data presented are aggregate data, individual producers experiencing a greater, equal or lesser impact on their hauling costs according to location.

#### ELEVATOR COSTS

Substantial consolidation of the elevator system has occurred since the time of the Brandon area study. There were 92 elevator points at which grain was received during the 1973/74 crop year. By the 1985/86 crop year the number had declined to 62. Of the points lost 27 were located on rail lines which were abandoned during the interval. There was a net loss of three points located on the remaining lines, elevator consolidation giving rise to additional point closures, some of which were offset by elevators constructed at new delivery points.

Grain deliveries greatly increased during the 1973/74 to 1985/86 period, being 830,100 tonnes in the former year and 1,728,000 tonnes in the latter year, an increase of 108.2 per cent. Over the same period elevator capacity in aggregate declined from 341,070 tonnes to 288,170 tonnes, a decline of 15.5 percent. Branch line abandonment gave rise to a reduction in elevator capacity of 43,530 tonnes or 82.3 per cent of the overall reduction of 52,900 tonnes. The remainder of the reduction, 9,370 tonnes or 17.7 per cent, was associated with elevator rationalization along the remaining rail lines.

Jeffrey (1985) made a major study of the structure of elevator costs in the prairie provinces. He developed formulas for estimating elevator costs by province based on elevator receipts and the turnover ratio (receipts/capacity). His cost formula for Manitoba elevators was used to estimate elevator costs by delivery point for each year over the 1973/74 to 1985/86 period. Since Jeffrey's formula was based on the calendar year 1984, the costs estimated were subsequently adjusted to 1986 using the G.N.E. implicit price index. The costs were aggregated for all delivery points by year. On the basis of 1986 dollars, for all elevators in aggregate, the estimated costs of operation were \$10,891,730 in 1973/74 and \$11,571,510 in 1985/86 and varied from a low of \$9,413,853 in 1980/81 to a high of \$11,571,510 in 1985/86.

When the total estimated elevator costs are divided by the receipts of the elevators in aggregate the average cost per tonne handled is obtained. On the basis of 1986 dollars the cost per tonne declined from \$13.12 during 1973/74 to \$6.70 in 1985/85 (See Figure 1). This decline was associated with the decline in total elevator capacity and the increase in average receipts per elevator. It should be noted that the cost per tonne as calculated in this manner does not reflect any improvement in elevator efficiency which may have occurred prior to and after 1984. Since improvement in efficiency has no doubt arisen as some elevators have been upgraded and new construction has also taken place the true cost per tonne would therefore have been higher than indicated for 1973/74 and lower than indicated for 1985/86.

The relationship between elevator cost per tonne handled and elevator capacity and receipts was explored using regression analysis. The relation-

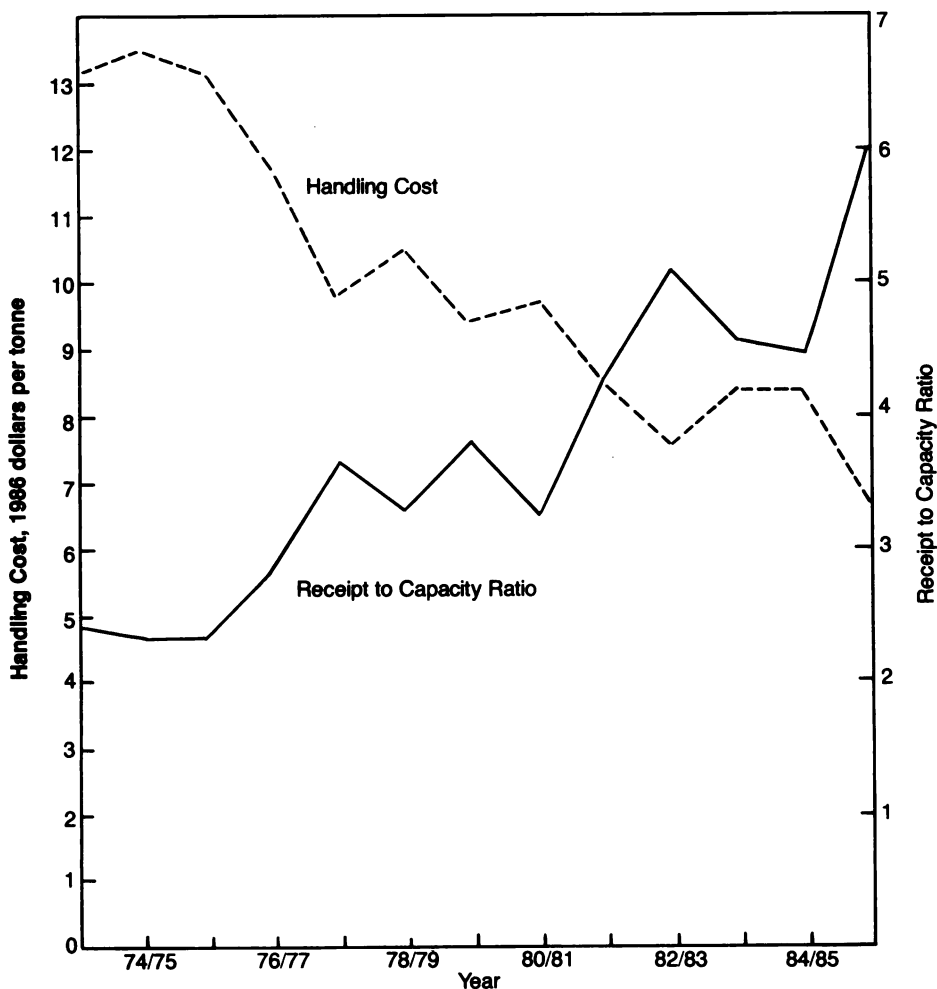


FIGURE 1:  
Elevator Handling Costs and Receipt to Capacity Ratio, Brandon Area

ship was found to be linear in logarithms, the estimating formulas derived expressed in logarithms being

$$C = -3.965135 + 1.176442X_1 - 0.620018X_2$$

where: C = cost per tonne handled  
 $X_1$  = elevator capacity in tonnes  
 $X_2$  = elevator receipts in tonnes.

Over 99 per cent of the variation in cost was accounted for by variations in capacity and receipts,  $R^2 = 0.9906$ . Since the formula is in logarithmic form the "b" coefficients represent elasticities. In other words, a one per cent increase in elevator capacity will increase average elevator handling cost by 1.176442 per cent and a one per cent increase in elevator receipts will decrease average costs by 0.620018 per cent.

Under the elevator cost regime arising from rail line abandonment in combination with elevator consolidation the savings in aggregate were significant. If the same volume of grain had been handled in 1973/74 as in 1985/86 total elevator handling cost would have been \$22,671,360 as compared \$11,571,510, a saving of \$11,099,850 or 49.0 per cent. Based on the regression formulas 53.5 per cent of the saving or \$5,938,420 arose from the reduction in elevator capacity and 46.5 per cent or \$5,161,430 from the increase in elevator receipts. Since 82.3 per cent of the reduction in elevator capacity occurred as a result of branch line abandonment savings in elevator costs arising from this source were \$4,887,320. The estimated additional producer hauling costs using two axle trucks were approximately \$345,079.75 or 7.1 per cent of these savings. While the calculation may be

somewhat tenuous it is apparent that the savings in elevator costs far exceed any additional hauling costs to the producer. The saving arising from the consolidation of the elevator system along the remaining lines of \$1,051,100 is approximately 11.86 times the aggregate additional producer hauling cost.

### ASSESSMENT

A study of the Brandon area yields important insights into the effect of rail line abandonment upon an area largely dependent upon the rural community for support. The area is becoming increasingly urban in nature as farm size continues to increase. Grain production remains the prominent type of agricultural abandonment endeavour though this is supplemented by a specialized livestock component. Concentration of the convenience centres serving the area remains underway as also is the case in other parts of the province. Rail line abandonment cannot be held as primarily responsible for the decline in several of these centres, consolidation of the centres being underway previously.

Any additional traffic arising from the flow of grain or greater hauling distances appears to have had little impact on provincial highway and road construction expenditures. The same situation appears essentially true for highway and road maintenance. The proportion of total rural municipal government expenditures on transportation in the province represented by those municipalities in the Brandon area remained essentially constant during the abandonment period.

A comparison of the municipal taxes imposed in the Brandon area with those in other areas revealed little difference between these areas, there being no indication that taxes were positively influenced by abandonment. Taxes paid by elevator and railway companies were found to represent a limited but significant source of municipal revenue. Losses in tax revenue from this source had more impact on towns and villages than on rural municipalities, many of the losses of the latter being offset by additional taxes paid by remaining elevators

and rail lines. The proportion of the total taxes collected by all municipalities received from elevator and railway companies declined over the period.

Producers experienced additional trucking costs as a result of rail line abandonment in the Brandon area. Such costs, however, represented only a very small share of the gains from the elevator consolidation associated with abandonment. Elevator costs as a result of this consolidation fell markedly.

The study reveals that many of the concerns expressed by producers during the Grains Council discussions were unfounded. Rail line abandonment has given rise to major savings in aggregate. These savings have not been equally shared by those affected. This continues to be reflected in local attitudes toward the changes which have occurred.

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### ENDNOTE

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