Manufacturing in Winnipeg & Manitoba: A Quantitative Overview

Research and Working Paper No. 6

by D. Jane Snidal

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INSTITUTE OF URBAN STUDIES
UNIVERSITY OF WINNIPEG

FOR INFORMATION:

The Institute of Urban Studies
The University of Winnipeg
599 Portage Avenue, Winnipeg
phone: 204.982.1140
fax: 204.943.4695
general email: ius@uwinnipeg.ca

Mailing Address:
The Institute of Urban Studies
The University of Winnipeg
515 Portage Avenue
Winnipeg, Manitoba, R3B 2E9

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Introduction

The primary purpose of this paper is to provide a quantitative overview of the manufacturing sector in Winnipeg and its changes over the period 1960-1977. While the rate of economic growth in Manitoba has been positive during this period, it was below the Canadian average in twelve of the seventeen years. Over the same period, business cycles in Manitoba have been less pronounced than national cycles, with fluctuations in value-added, by the manufacturing sector have tended to lag behind the national sector in an upswing, and decline less than the national sector in a downswing. The question that this study raises is: have the size, industrial mix and market orientation of the provincial manufacturing sector contributed to the relatively slow rate of economic growth and/or to the relative cyclical stability of Manitoba's economy *vis a vis* the rest of Canada and does this sector hold the key to future economic growth?

The reason for the emphasis on manufacturing lies in the strength of the relationship between manufacturing growth and growth in total output and productivity. Non-manufacturing activities which are either land-based or labour-intensive service industries tend to be characterized either by diminishing returns or surplus labour, or both. Therefore, an expansion of the manufacturing sector should, if it draws labour resources from these sectors, have a negligible effect on the output of these sectors and, by absorbing the less productive marginal employee, increase their average productivity. In addition, an expansion of industrial output automatically generates an increase in the stock of capital, and the technical progress embodied in capital accumulation results in increasing returns to the manufacturing sector, which has a large supply response to demand increases. In turn, increases in production induce more demand for other goods and services.

While the manufacturing sector in Manitoba is smaller than the national sector in terms of relative contribution to gross product, it is the third largest employer in the province and the largest employer in the goods producing industries. Second order effects suggest that one additional job in manufacturing supports two additional jobs. This is important for Manitoba where the rate of growth in employment has been below the national average in every year except 1972.

The profile which emerges from the following quantitative analysis can be summarized briefly. The manufacturing sector is smaller in Manitoba than for Canada as a whole. It is also a minuscule part of the total Canadian sector which is beginning to decline in relative importance. Winnipeg dominates the provincial sector and should continue to do so since it is well positioned both geographically and by virtue of its well-developed transportation, communication, financial and service facilities. The industrial base in Manitoba is both developed and diversified. While nearly two-thirds of manufacturing activity continues to be directly linked to the agricultural and resource sectors of the economy, the sector contains some small but important high technology industries which have growth and export potential. Population, working-age population, and the labour force have all been growing at rates below the national average. Productivity per worker is below the Canadian average. Over the past ten years, capital stock has declined steadily. Output is biased towards production of consumer rather than industrial goods and to production for provincial markets. It is against this backdrop that provincial efforts and initiatives to use the manufacturing sector as the engine for economic growth must be staged.

The following quantitative overview of the manufacturing sector in Winnipeg and/or Manitoba will focus on the present size and structure of the industry and the relative shifts that have occurred over the past two decades. Total value-added by the manufacturing sector is the unit of measurement used. This figure includes the contribution of both production and managerial employees. Loosely-speaking, value-added can be defined as the difference between the current dollar value of output produced and the cost of material inputs to production. By definition, value-added avoids double counting in measuring the value of any activity to the gross provincial product and is equal to the sum of money payments to all the factors of production involved in the production process. Implicitly, therefore, value-added figures indicate the relative importance of the activity in generating both income and employment. Conceptually, value-added is an appropriate measure of manufacturing activity since, unlike the service sector, the final output is quantifiable. Changes in the productivity of labour and in production techniques are automatically captured in the dollar figure. Unfortunately, there is a considerable time lapse in the publication of value-added data and, for this reason, more current employment figures are frequently used as the measure of manufacturing activity.[1] While the two series generally move in the same direction, the accuracy of the degree of change is often less precise when employment figures are used. For example, the decline in employment in the garment industry in Winnipeg from mid-1981 to mid-1982 shows up statistically as about 400 workers but the industry estimated unemployment at nearly 1,000 when work sharing and the decrease in overtime hours were taken into account.[2]

Consistent and comparable value-added figures are available for Winnipeg, Manitoba and Canada for most years between 1961-77. Where Winnipeg figures are not available, Manitoba figures are substituted since Winnipeg dominates the manufacturing sector to such an extent that the pattern of growth of the city and province largely coincide. A complication arises--and is noted--when data for manufacturing activity are

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1 For a detailed discussion, see Report of the Manitoba Economic Development Advisory Board. *Manufacturing Rationalization Trends in Manitoba* (September 1976), 223-252.

2 From author's conversation with members of the Garment Manufacturing Association.

disaggregated because some data are suppressed due to the confidential restrictions on Statistics Canada. Also, the Standard Industrial Classification Code was revised in 1970 and meaningful comparisons of years before and after that date are not always possible at the three and four digit level. When pre-1970 data at this level of classification are included to lend some perspective to observed changes, comparisons should be treated with caution.

Section 1

Over the past two decades, economic growth in Manitoba has been steady but slow. In fact, one might even characterize the economic performance as plodding. In terms of over-all rate of growth, Manitoba outperformed the Canadian average in only five of the eighteen years from 1961 to 1978. Estimates for 1979-81 indicate that Manitoba will continue to grow at a slower rate than the Canadian average.

TABLE 1

G D P (71 Constant $) - Real Rate of Growth

Year	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Canada	0.0	7.0	5.5	6.9	7.2	6.8	3.5	5.5	6.2	2.2
Manitoba	0.0	9.3 >	3.8	5.5	3.6	4.9	4.1 >	5.7 >	5.2	0.6

Year	1971	1972	1973	1974	1975	1976	1977	1978	Est. 1979	Est. 1980	Est. 1981
Canada	5.9	5.6	7.8	4.7	0.7	5.2	3.2	4.0	3.2	0.3	2.7
Manitoba	6.6 >	3.7	7.0	4.5	1.4 >	4.0	2.1	2.9	0.6	-2.3	2.0

Source: Conference Board of Canada. *The Provincial Economies, 1961-1978.*

Proportionate increases in population in Manitoba have also been consistently below the national average during the past twenty years, and, with the exception of 1972 when Manitoba matched the Canadian average, the rate of growth in employment has been below that of Canada as a whole.

Table 2 shows the absolute figures for value-added by the manufacturing sectors in Winnipeg, Manitoba and Canada from 1961-1977.

TABLE 2

Total Value-Added from Manufacturing
($ '000's)

1961-1977

Year	Winnipeg	Manitoba	Canada
1961	245.6	294.8	10,931.6
1962	262.9	314.5	11,986.7
1963	278.0	334.8	12,875.1
1964	293.8	357.3	14,247.2
1965	313.5	380.4	15,785.3
1966	343.1	416.9	17,260.3
1967	365.3	441.0	18,049.6
1968	382.6	463.6	19,483.6
1969	417.1	507.0	21,456.3
1970	428.1	522.7	21,417.7
1971	452.2	558.9	23,981.7
1972	518.6	629.5	25,981.7
1973	596.9	775.1	30,766.5
1974	753.3	962.6	37,654.5
1975	840.0	1,080.4	38,683.7
1976	932.7	1,156.1	42,553.3
1977	933.2	1,201.3	46,776.2

Source: *Statistics Canada,* 31-203, 31-209.

In current dollars, value-added by the manufacturing sector over this period increased approximately 3.8 times in Winnipeg, 4.1 times in Manitoba and 4.3 times in Canada. All three geographic areas showed yearly increases until 1977 when value-added from manufacturing during the year increased about ten per cent in Canada and just under 4 per cent in Manitoba. Growth in Winnipeg was negligible.

In Table 3, value-added in the manufacturing sector is calculated in percentages to indicate the relative importance of Winnipeg to Manitoba and of Manitoba to Canada.

TABLE 3

Total Value-Added in Manufacturing

Year	Winnipeg as a % of Manitoba total value-added in manufacturing	Manitoba as a % of Canadian total value-added in manufacturing
1961	83.31	2.69
1962	83.29	2.62
1963	83.61	2.6
1964	83.02	2.5
1965	82.23	2.41
1966	82.38	2.41
1967	82.30	2.44
1968	82.84	2.38
1969	82.54	2.36
1970	82.26	2.44
1971	81.91	2.41
1972	80.91	2.42
1973	82.38	2.52
1974	77.0	2.56
1975	78.25	2.79
1976	77.75	2.72
1977	77.68	2.57

The importance of Winnipeg to the province is strikingly apparent. On average, Winnipeg accounts for 80 per cent of the value-added by the manufacturing sector in Manitoba. The city clearly dominates the provincial sector. In the early 1970s, the balance of activity began to tilt slightly towards the non-metropolitan area of the province but insufficient time has elapsed to state categorically why this shift has taken place and whether it is a continuing, reversible or desirable trend. Many factors may have contributed to the abrupt change between 1973, when 82.38 per cent of value-added by manufacturing in the province was created in Winnipeg, to 1974 when the comparable figure was 77 per cent. At this time, government policy was deliberately directed towards stimulating economic activity and employment opportunities in rural Manitoba in order to stem the in-migration of provincial population to the city. Some of the shift may have been due to relative changes in the industrial mix between the city and the province, either towards growth industries subject to cyclical swings in demand or towards slower growth, consumer-oriented industries where demand is dependent on an expanding population. In any event, the proportion of value-added by manufacturing in Winnipeg has remained constant at around 78 per cent since 1974, during which time Manitoba's proportion of the total value-added by the Canadian manufacturing sector has not been increasing.

Just as it is evident from Table 3 that Winnipeg manufacturing dominates the province, it is obvious that Manitoba's share of the national manufacturing sector is minuscule. The largest share was 2.79 per cent (1975), the smallest, 2.36 per cent (1969). This comparison is valid for two reasons. First, it helps to keep some perspective when discussing the importance of manufacturing to the province. Second, assuming that secondary manufacturing is to be the designated vehicle for future economic growth in the region, it is fairly obvious that Manitoba's share of the national total will have to increase substantially. Given the performance of the sector over the past twenty years and given the relatively slow overall economic performance and growth in the past ten years in particular, there is little reason to expect that a shift towards manufacturing will occur naturally or without deliberate government policy directed towards this goal.

Relatively speaking, manufacturing has never been as important to the provincial economy as the manufacturing sector has been to Canada as a whole. In value-added terms ($ 1971 constant), the contribution to gross provincial product has increased slowly but steadily from 1961 to 1978, from slightly over 12 per cent to about 14 per cent. Comparable national figures show fluctuations between 21.5 and 23.5 per cent. When yearly changes in value-added by the manufacturing sector are compared, (see Table 4), it appears that in most years Manitoba tends to lag the national sector in an upswing but decline less in a recession. Winnipeg would account for approximately 80 per cent of the provincial performance. This concurs with the evidence that Manitoba's business cycle has been more moderate than that of Canada's as a whole.

TABLE 4

Yearly Changes in Value-Added by the Manufacturing Sector as a Percentage of Gross National (Canada) or Gross Provincial (Manitoba) Product ($ 1971 constant).

Year	1961	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
Canada	-	.4	.3	.6	.4	.1	-.1	.1	.3	-.8	0	.3	.5	-.3	-1.6	.1	-.1	.8
Manitoba	-	-.4	.2	0	0	.2	-.1	-.3	.1	-.1	.9	.6	.6	.4	0.1	.1	-.9	.3

Exceptions to this general observation may be noted. In 1977, the rate of decline in provincial manufacturing activity was significantly greater than that of the nation as a whole. Statistically, this could merely reflect the return to the historical growth pattern of the pre-1970-74 "boom years" in Manitoba since there has been no real growth in the sector since 1975. An uncertain political environment cannot be ruled out as a contributing factor. More interesting is the fact that Manitoba outperformed the national sector from 1971-74 after a relatively poor performance during the 1960s. Using shift-share analysis, a study[3] by the Manitoba Economic Development Advisory Board attempted to identify how much of this difference in performance was due to the industry effect (i.e. factors which influence the whole economy) and how much to the regional or competitive effect (i.e. factors which influence only the Manitoba economy). Eighty per cent of the slow growth of manufacturing in Manitoba during the 1960s was attributed to the industry effect--more specifically, to a poor industrial mix. Despite the diversified structure of the manufacturing sector in Manitoba, the province was not participating extensively in the growth industries of Canada. Many major industries were linked closely to primary resource production and processing which depend on volatile international markets for growth. Many other major industries produced goods for local and provincial markets where increased demand is closely tied either to growth in population (which has been less than the national average) or to growth in other sectors of the provincial economy, or both. In addition, while many industries in the province appear to complement each other, the extent to which the major "export" industries of Manitoba, and more particularly Winnipeg, use provincial suppliers for inputs is probably low, either because there is no provincial supply (e.g. textiles for the garment industry) or because the province

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3 See *Manufacturing Rationalization Trends in Manitoba*, 59-64, for a description of the methodology of shift-share analysis.

does not produce the right type of product (e.g. steel for the machinery, wood for the furniture industry, fine paper for the printing and publishing industry).[4] The remaining 20 per cent of the slow growth in Manitoba during the 1960s was attributed by the EDAB to the regional or competitive effects component--the province was not competing well with other regions in Canada.

The conditions which have adversely affected or discouraged growth of manufacturing in Manitoba merit more analysis and interpretation. Transportation costs, political biases, provincial or municipal tax structures, availability of finance for research and development, and manpower resources have all been suggested as explanations why key industries[5] have not located in Manitoba. Key industries in Canada do not appear to be any more concentrated geographically than non-key industries. Empirical testing by the EDAB revealed that the concentration ratio of existing key industries did not exceed that of non-key industries and that they showed no more inclination to re-locate geographically than any other industry. They do, however, tend to grow faster in terms of employment. One reason why a smaller province such as Manitoba may shy away from promoting key industries is that they frequently tend to have high entrance barriers, to have large plants in terms of employment and capital, to be mature in organization with a few large firms dominating the market, and to have an existing marketing

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4 Winnipeg, *The Place of Greater Winnipeg in the Economy of Manitoba*, Metropolitan Corporation of Greater Winnipeg--Planning Division (January 1971), 51.

5 "Key industries are identified as those industries with a higher than normal amount of forward and backward linkage. Simply defined, an industry with high forward linkages is a major supplier to other producers; an industry with high backward linkage is a major customer to other producers." For a discussion of how key industries are identified, see *Manufacturing Rationalization Trends in Manitoba*.

system which is highly organized and stable. Smaller provinces may either lack the economic or financial capacity to attract and absorb key industries or, justifiably, be reluctant to commit too many of their limited resources to a single industry. As a result, smaller provincial governments have tended to expand into non-key industries which have lower entrance barriers.

From 1971-1974--the only period during which the manufacturing sector in Manitoba outperformed the Canadian economy--shift share analysis revealed no change in industrial mix towards key or growth industries. The superior performance during these years was attributed to an improved competitive position of existing industries (regional effect) which offset the continuing negative influence on the provincial growth rate from the industrial mix. Some of this improved performance may be explained by the fact that Manitoba's real domestic product had grown more slowly than Canada's during the 1960s--an average of 5 per cent per year compared to 7.4 per cent in real terms--so that any recovery to the national average would be statistically higher. In fact, the average rate of growth of real domestic products in Manitoba from 1971-1974 was 10.6 per cent; for Canada it was 5.6 per cent.

The improved competitive position may also be explained by labour market conditions. By the early 1970s, wage levels in Winnipeg were significantly lower than those in comparable urban areas[6] and mean family income in Winnipeg was below the national average. In addition, women

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6 By 1970--wages of full time male employees in manufacturing were 9% below national average, and Manitoba's share of total Canadian wages and salaries had declined from 5.6 per cent in 1961 to 4.1 per cent.

TABLE 5

Real Domestic Product
% yearly change

Year	Canada	Manitoba
1961	0	0
1962	9.2	6.0
1963	6.8	5.5
1964	9.6	5.1
1965	9.1	4.1
1966	7.6	6.5
1967	3.0	3.5
1968	6.1	3.1
1969	7.5	5.8
1970	-1.4	- .2
1971	5.7	14.8
1972	7.2	8.0
1973	9.9	11.5
1974	3.7	8.1
1975	-6.3	.4
1976	5.6	3.5
1977	2.8	-4.8
1978	7.8	5.5

Source: Conference Board, *Quarterly Provincial Forecast.*

accounted for almost all the increased participation rate for the entire Manitoba labour force during the 1970s. Both these factors help explain how any provincial manufacturing industries which were export-oriented and not protected from competition were able to compete more effectively. Lower wage rates become even more significant in view of the fact that between 1970-73 productivity per worker in Manitoba (measured by value-added per worker) was estimated to be 8 per cent below the Canadian average for all sectors of the economy and 11 per cent below in the manufacturing sector. For the whole period 1961-73, productivity in the secondary sector (which includes manufacturing) of Manitoba increased at an annual rate of .4 per cent per year compared with 2.9 per cent for all Canada.[7]

A comparison of the provincial manufacturing sector with other goods producing sectors (Table 6) shows it to have been consistently more stable and less subject to cyclical fluctuations. Figures are in $1971 constant with the percentage change from the previous year shown beneath. Since the figures are rounded, yearly percentages for small amounts may be overstated or understated. The total contribution of the service sector is included for perspective as it is more than twice as important to the provincial economy as the goods producing sector. The aggregate figures do, however, cover up considerable yearly fluctuations particularly in the wholesale and retail trade components. Not surprisingly, the agriculture sector exhibits the greatest cyclical fluctuation and in seven of the seventeen years shown, the rate of change from the previous year was negative. On average, this sector is only one-half as important to the provincial economy as the manufacturing sector which had turned in a steadier growth performance. The only significant negative performance by the manufacturing sector was in 1977 when the Canadian economy was experiencing a recession. As a share of the total goods sector, the contribution of manufacturing has increased steadily from about 37 per cent in the 1960s to 42-43 per cent by the late 1970s. As a percentage of the goods producing sector, the public sector in Manitoba has also grown steadily from an average contribution of 7 per cent in the 1960s to close to 12 per cent in the late 1970s.

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7 McNeil, Hildebrand and Associates, *Economic Base Study--a Background Technical Report of the Winnipeg Economic Base* (Winnipeg, 1978), 22-23.

TABLE 6

Real Domestic Product
Millions of 1971 Dollars
Province - Manitoba

Year	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Agriculture	124	207	182	220	221	211	208	223	203	198	268	227	246	203	227	255	280	298
	0.0	67.8	-12.2	20.8	0.3	-4.5	-1.3	7.0	-9.1	-2.3	35.3	-15.0	8.1	-17.6	12.2	12.2	9.7	6.6
Forestry	2	3	3	3	3	3	3	3	4	4	4	5	5	6	6	5	5	5
	0.0	20.7	-17.7	2.7	17.7	-.5	-16.1	8.5	38.0	-14.1	22.6	12.6	3.2	16.6	1.1	-23.1	2.2	5.3
Fishing	3	3	3	3	3	4	3	4	4	3	3	4	3	3	4	3	4	3
	0.0	4.8	-11.3	-8.7	9.6	21.1	-15.1	28.1	-11.9	-21.2	-.8	29.3	-12.6	3.2	10.9	-4.0	0.7	-2.8
Mining	61	93	98	98	96	94	91	99	108	128	122	111	126	122	119	107	112	89
	0.0	51.5	5.9	-.4	-1.8	-1.8	-3.2	8.2	9.4	18.4	-4.4	-9.4	13.3	-2.8	-2.7	-9.5	4.0	-20.2
Manufacturing	273	289	305	320	333	355	367	379	401	400	459	496	553	597	600	621	591	624
	0.0	6.0	5.5	5.1	4.1	6.5	3.5	3.1	5.8	-.2	14.8	8.0	11.5	8.1	0.4	3.5	-4.8	5.5
Construction	177	178	205	194	181	203	226	278	312	248	216	227	249	243	215	253	250	253
	0.0	0.4	15.6	-5.3	-7.1	12.4	11.3	23.1	12.2	-20.4	-13.2	5.3	9.6	-2.5	-11.4	17.4	-.9	1.3
Utilities	46	52	60	63	69	75	81	84	90	102	116	129	142	165	168	162	147	196
	0.0	13.9	15.1	4.1	9.7	8.6	7.9	3.9	7.5	13.7	13.4	10.8	10.0	16.5	2.1	-4.0	-9.2	33.5
Total Goods	686	826	857	901	906	945	979	1069	1121	1083	1188	1199	1323	1339	1340	1406	1389	1470
	0.0	20.4	3.7	5.2	0.6	4.3	3.6	9.2	4.8	-3.4	9.7	0.9	10.4	1.2	0.0	5.0	-1.2	5.8
Total Services	1512	1569	1625	1713	1799	1892	1978	2054	2158	2218	2330	2456	2582	2743	2801	2898	3003	3049
	0.0	3.8	3.6	5.4	5.0	5.1	4.6	3.9	5.1	2.8	5.0	5.1	5.4	6.2	2.1	3.5	3.6	1.5
All Industries	2178	2381	2471	2607	2702	2834	2951	3120	3281	3301	3518	3649	3906	4083	4140	4304	4392	4518
	0.0	9.3	3.8	5.5	3.6	4.9	4.1	5.7	5.2	0.6	6.6	3.7	7.0	4.5	1.4	4.0	2.1	2.9

Source: Conference Board of Canada, *The Provincial Economies*, Supplement to *Quarterly Provincial Forecast* (Ottawa, 1979).

The following, Table 7, indicates the relative importance of employment in the manufacturing sector for selected years.

TABLE 7

Employment in Manufacturing
('000)

Year	Winnipeg	Manitoba	Canada
1964	38.4	49.0	1,456.0
1970	41.9	53.0	1,609.0
1976	45.2	59.0	1,677.0

Source: McNeal, Hildebrand and Associates, *Economic Base Study*, 180, 181, 182.

Employment in manufacturing in Winnipeg as a proportion of provincial employment in manufacturing was 78.4 per cent (1964), 79 per cent (1970) and 76.6 per cent (1976). Manitoba employment in manufacturing as a proportion of Canadian employment was 3.4 per cent (1964), 3.3 per cent (1970) and 3.5 per cent (1976). These proportions are roughly equivalent to those shown in Table 2 using value-added figures.

Between 1957 and 1976, Winnipeg's employed labour force increased by 44 per cent as compared to a Canadian average increase of 62 per cent. From 1976 to 1999, it is estimated that total employment in Winnipeg will increase by only 21 per cent--less than one-half the yearly growth rate of 2.2 per cent in the early 1970s. Part of the explanation is demographic. The population of Winnipeg has been growing more slowly than the Canadian average, and the average rate of increase of 1.6 per cent between 1961-1976 is expected to decline by 1999 to an average annual increase of 0.7 per cent. Coupled with low birth rates nationally, Winnipeg's working age population and labour force are likely to continue to be one of the slowest growing of the major metropolitan centres in Canada. Participation rates--which reflect the entrance of large numbers of women into the work force in the early 1970s--are at historically high levels and not expected to increase significantly. However, the unemployment rate in Winnipeg and Manitoba has been consistently below the national rate.

As a proportion of total employment, the manufacturing sector has been losing ground since the late 1950s (Table 8).

TABLE 8

Employment in Manufacturing as a % of Total Employment in the Respective Geographic Area (selected years)

Year	1960	1964	1968	1972	1976	1981
Canada	22.1	21.7	21.0	19.4	17.6	15.1
Manitoba	14.2	14.5	13.7	14.1	13.8	14.7
Winnipeg	20.5	19.9	18.6	18.5	17.7	--

Source: McNeal, *Economic Base Study*, 183-5.

The decline at the national level has been greater than in Winnipeg with no substantial change for the province as a whole. Since the provincial share of value-added by the national manufacturing sector has not been increasing, the reasons why employment remains high merit further analysis. It may well be that the new jobs being created in the province are low productivity jobs due to the poor industrial mix and few growth industries. If so, high employment merely reflects lower productivity.

One basis from which to assess past performance and predict future potential of the manufacturing industry is the amount of capital investment in the sector. For the years 1971-73 when the province outperformed Canada, productivity per worker in manufacturing in Manitoba was estimated to be 11 per cent below the national average. At the same time, capital stock per worker exceeded the average for the whole economy by 8 per cent.[8] As a proportion of total Canadian investment in the manufacturing sector, Manitoba's share has never been large, but since 1971 it has declined by more than fifty per cent (Table 9). Since the value-added by the provincial sector has not changed in proportion to the national sector, and the number of workers employed has been increasing, the erosion of capital stock per worker over the past decade is alarmingly high.

Capital expenditures in manufacturing (construction, machinery and equipment, excluding repair expenditures) show wide yearly fluctuations at the national, provincial and city level with no consistent correlation emerging among geographic regions. Again, lower base figures for Manitoba and Winnipeg exaggerate the importance of yearly changes and a decision to speed up or postpone a large capital project can result in erratic statistical changes.

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8 Labour quality (measured in terms of age and education) was slightly below the national average but management, technology and other factors were estimated 18% below the national average. McNeal, *Economic Base Study*.

TABLE 9

Investment in Manufacturing

Year	1968	69	70	71	72	73	74	75	76	77	78	79	(Est) 80
Canadian I in Mfg. as % of Total Canadian Investment	14.2	15.3	18.1	14.8	13.3	13.8	15.1	14.4	12.0	13.0	12.3	12.8	14.5
Manitoba I in Mfg. as % of Total Cdn. I in manufacturing	3.7	3.1	3.4	1.9	1.7	1.9	2.1	1.6	1.4	1.3	1.4	1.5	1.3

Source: Calculated from "Public and Private Investment in Canada," *Statistics Canada,* 61-205.

TABLE 10

Percentage Yearly Change in Gross Capital Expenditures in Manufacturing

Year	1968	69	70	71	72	73	74	75	76	77	78	79	80
Canada	0	18.2	24.0	-7.1	-1.5	24.4	35.0	11.5	-1.0	11.3	1.6	20.5	27.7
Manitoba	0	18.3	30.5	-47.5	-11.4	35.0	52.7	-15.7	-14.4	6.0	9.2	31.0	7.5
Winnipeg	0	39.1	9.8	37.0	5.6	35.7	12.2	1.7	3.6	2.1	-19.9	60.6	17.2

Source: *Statistics Canada,* 61-205.

TABLE 11

Capital Expenditures

Year	1968	69	70	71	72	73	74	75	76	77	78	79	80
Manufacturing I in Manitoba as % of total Prov. I	10.0	9.3	12.5	7.0	5.2	6.0	7.6	5.8	4.1	4.2	4.3	5.6	6.2
Manufacturing I in Winnipeg as % of total Manu. I in Manitoba	19.7	26.8	22.8	59.0	70.4	70.7	52.0	62.7	75.9	73.1	53.7	65.8	71.7

Source: *Statistics Canada,* 61-205.

TABLE 12

Investment in Manufacturing in Manitoba by Sectors
(Millions)

Year	Food and Beverage	Furniture & Fixtures	Metal Fabricating	Other Manufacturing	Total
1968	15.8	0.5	2.5	63.1	81.9
1969	15.7	0.3	2.6	64.8	83.4
1970	14.9	0.2	3.2	90.5	108.8
1971	19.6	0.2	2.1	35.2	57.1
1972	13.8	include in other	1.7	35.1	50.6
1973	16.1	0.9	3.7	47.6	68.3
1974	15.6	3.8	4.3	80.6	104.3
1975	17.4	0.6	5.2	64.7	87.9
1976	20.5	1.7	3.8	49.2	75.2
1977	21.4	0.6	5.7	52.0	79.7
1978	25.2	0.7	3.2	57.9	87.0
1979	21.2	0.6	6.2	86.0	114.0
1980	21.8	1.2	5.0	94.6	122.6
1981	29.4	0.8	4.3	104.4	137.9

Source: *Statistics Canada*, 61-205.

What the capital expenditures in the provincial manufacturing sector do indicate is that since 1970 the importance of investment in manufacturing to total investment in the province has declined and that Winnipeg's share of the total has been increasing. The abrupt decline of manufacturing investment relative to total provincial investment after 1970 reflects the hydro development projects coming on stream. The quantum leap in investment expenditures in Winnipeg as a percentage of total I expenditures in Manitoba after 1971 reflects in part the demise of Churchill Forest Industries, a major provincial enterprise.

Disaggregated data of capital investment are available for the province but not for the city of Winnipeg. For reasons of confidentiality, "other manufacturing" cannot be broken down into separate industries. The relative importance of the food and beverage industry also ranks number one in total Canadian investment. When the inflation of the 1970s is taken into account, real investment in manufacturing in Manitoba has been negative between 1968 and 1978.

Some indication of the size of establishments in Winnipeg can be seen from Table 13. Almost 87 per cent of establishments in Winnipeg employed fewer than 100 people and 75 per cent employed fewer than 50 people in 1977. The manufacturing industry consists of a preponderance of small scale firms.

The two-digit classification of the manufacturing industry by Statistics Canada identifies twenty separate groups. These are summarized in Table 14 into seven major groups for Winnipeg for 1971 and 1977. The flat profile of the manufacturing sector illustrates the diversity of industrial mix in the city. This is typical of a mature and developed economy. As a province, Manitoba ranks third in diversification of manufacturing after Ontario and Quebec. As a city, Winnipeg is the most diversified secondary manufacturing city in Canada and the

TABLE 13

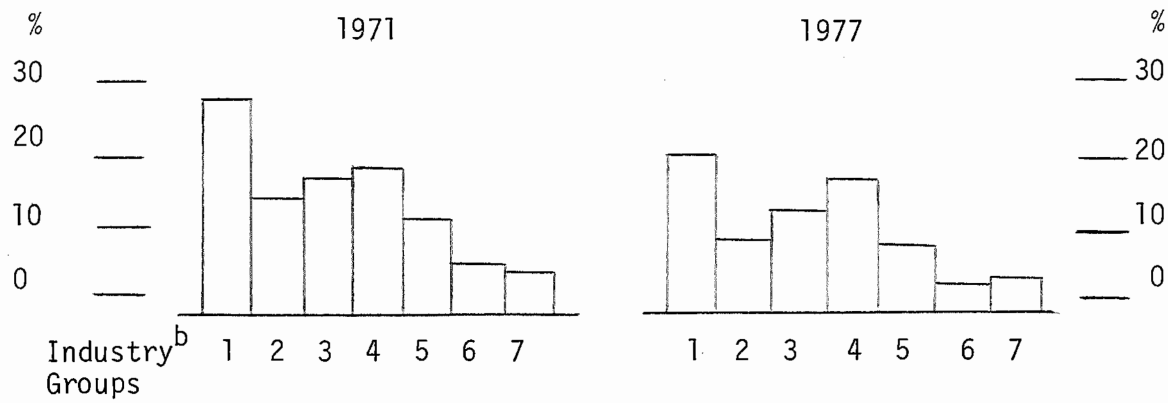
Number of Establishments in Winnipeg by
Employment Size Range - 1977

# of Employees	# of Establishments	% of Total
0 - 4	154	19.5
5 - 9	130	16.4
10 - 19	132	16.7
20 - 49	175	22.1
50 - 99	93	11.8
100 - 199	75	9.5
200 - 499	21	2.6
500 - 999	7	.9
1000+	4	.5
Total	791	

Source: *Statistics Canada,* 31-209.

TABLE 14

Economic Activity[a] by Industry Grouping in Winnipeg



Source: *Statistics Canada,* 31-209.

[a]Industry activity based on the average of the percentage shares of the value of shipments of goods of own manufacture, total value-added and total number of employees.

[b]Industry Groupings:

1. Food, Beverage and Tobacco Products.
2. Leather, Textiles, Knitting Mills and Clothing.
3. Wood, Furniture and Fixtures, Paper and Allied and Printing and Publishing and Allied Industries.
4. Machinery, Transportation Equipment and Electrical Products.
5. Primary Metal and Metal Fabricating.
6. Rubber and Plastic Products, Petroleum and Coal Products, Chemicals.
7. Non-metallic Mineral Products and Miscellaneous Manufacturing.

most important secondary manufacturing centre in Western Canada.

Table 15 shows the proportion of value-added to the manufacturing sector in Winnipeg by each group as well as the ranking of each group in the sector. Some shifting has occurred, with groups 1 and 3 declining in importance relative to groups 4 and 5. However, a Spearman rank correlation test of the data yielded co-efficients higher than .8571, significant at a .05 level. This indicates that from 1964 to 1977 there has been no real change in the relative importance of the industry groups. These four groups of industries have consistently contributed about 70 per cent of the value-added in the manufacturing sector.

As a proportion of national output, these industry groups in Manitoba are insignificant to national output (see Table 16). In 1977, group 1 was most important, at slightly more than 4 per cent of the Canadian food, beverage and tobacco industry. Group 2--which in Manitoba would consist of the garment and leather industry--comprised 3.2 per cent of the Canadian sector, group 5 (primary metals & metal fabricating) and group 7 (non metallic mineral products) 2.7 per cent each, group 4 (machinery, transportation equipment and electrical products) 2.3 per cent, and group 3 (wood, etc.) 2.2 per cent. Over 90 per cent of the machinery, transportation and electrical products industry was located in Winnipeg in 1977, about 85 per cent of the garment and leather industry, 75 per cent of the food and beverage industry and almost 60 per cent of the wood and furniture and printing/publishing industry and the primary metal and metal fabricating industry.

A more detailed picture of the manufacturing industry can be obtained by looking at the twenty groups identified in the Standard Industrial Classification (SIC) used by Statistics Canada since 1970. In Table 17, value-added by each group of industries is expressed as a proportion of value-added by the entire manufacturing sector for Winnipeg,

TABLE 15

Proportion of Value-Added to the Manufacturing Sector by Industry Group

Industry Group	% of value-added by each industry group to total value-added by manufacturing sector in Winnipeg			Rank		
	1964	1970	1977	1964	1970	1977
Food, Beverage and Tobacco Products	30	24.4	22.4	1	1	2
Leathers, Textiles, Knitting Mills and Clothing	9.8	9.5	9.6	4	5	5
Wood, Furniture & Fixtures, Paper & Allied, Printing Publishing, and Allied	17.5	14.5	13.6	2	3	3
Machinery, Transportation Equipment & Electrical Products	13.4	18.8	23.8	3	2	1
Primary Metal and Metal Fabricating	9.5	13.6	12.8	5	4	4
Rubber & Plastic Products, Petroleum, Coal, Chemicals	3.4	2.6	2.4	7	7	7
Non-metallic Mineral Products & Misc. Manufacturing	7.4	4.7*	7.4	6	6	6
Other Major Groups	5.2	11.8	7.8			

Source: *Statistics Canada,* 31-209.

*For 1970, miscellaneous manufacturing was not shown separately but was included in other major groups.

TABLE 16

Ratio of Value-Added by Industry Sector and Region
(expressed as percentage)

Industry Group	1964		1970		1977	
	Wpg/Can[a]	Man/Can[b]	Wpg/Can[a]	Man/Can[b]	Wpg/Can[a]	Man/Can[b]
1. Food, Beverage and Tobacco Products	3.8	4.5	3.1	4.1	3.0	4.1
2. Leathers, Textiles, Knitting Mills and Clothing	2.2	2.6	2.3	2.9	2.7	3.2
3. Wood, Furniture & Fixtures Paper & Allied & Printing & Publishing and Allied Industries	1.2	2.4	1.5	2.4	1.3	2.2
4. Machinery, Transportation Equipment & Electrical Products	1.3	1.4	1.67	1.74	2.1	2.3
5. Primary Metal and Metal Fabricating	1.2	1.3	1.6	2.4	1.6	2.7
6. Rubber & Plastic Products, Petroleum & Coal Products, Chemicals	.7	1.7	.5	.8	.4	.7
7. Non-metallic Mineral Products	2.1	2.4	1.4	1.6	2.3	2.7

[a] $\frac{\text{Wpg}}{\text{Can}} = \frac{\text{Winnipeg}}{\text{Canada}}$

[b] $\frac{\text{Man}}{\text{Can}} = \frac{\text{Manitoba}}{\text{Canada}}$

TABLE 17

Value-Added in Manufacturing by Major Group as a % of Total Value-Added by Geographic Area[a]

	1970			1977		
	Wpg[b]	Man[c]	Can[d]	Wpg[b]	Man[c]	Can[d]
Food & Beverage	24.4	26.8	14.6	22.5	22.3	14
Tobacco Products	-	-	1	-	-	1
Rubber & Plastic	-	-	2.8	-	-	2.8
Leather	-	1	1	1.3	1	1
Textiles	1.0	1	3.3	-	1	2.8
Knitting Mills	-	-	1	-	-	.5
Clothing	8.5	7.5	3.1	8.3	6.7	2.9
Wood Industries	1.4	1.9	3.7	2.3	3.0	5.9
Furniture & Fixtures	3.4	2.9	1.8	3.1	2.5	1.6
Paper & Allied Products	-	5.2	8.5	-	5.3	8.6
Printing & Publishing	9.7	8.6	4.9	8.3	7.2	4.9
Primary Metals	1.3	6.5	8.4	1.4	5.0	7.8
Metal Fabricating	12.3	10.3	8.3	11.5	11.7	7.9
Machinery	5.5	4.8	5.7	10.3	8.6	4.8
Transportation Equipment	10.1	8.4	10.2	9.6	8.2	11.7
Electrical Products	3.3	2.9	6.6	4.0	3.6	6.1
Non-metallic Minerals	4.7	4.2	3.5	5.4	5.2	3.5
Petroleum & Coal	-	-	1.7	-	-	2.8
Chemicals	2.6	3.3	7.0	2.5	3.2	6.7
Miscellaneous Manufacturing and other Major Groups	11.8	NA	3.0	9.8	1.6	2.9

Source: *Statistics Canada,* 31-203, 31-207, 31-209.

[a]Figures may not add to 100 due to rounding.
[b]Wpg = Winnipeg
[c]Man = Manitoba
[d]Can = Canada

Manitoba and Canada in 1970 and 1977.[9] It should be noted that data for any two selected years will only indicate relative performance at two particular points in time and will not reveal whether particular industries are at different stages of cyclical activity nor will it necessarily identify trends. However, the direction of over-all change in both Manitoba and Canada was the same for both years since value-added from manufacturing as a proportion of gross product was less than the previous year. Compared to 1969, value-added as a percentage of gross product in 1970 changed from .3 to -.8 nationally and from .1 to -.1 provincially. Between 1976 and 1977, the respective change was from .1 to -.1 nationally and from -.1 to -.9 provincially.

Several broad differences between the regional and national manufacturing sectors might be noted. In all three geographic areas, the relative importance of the major consumer goods sector (food, beverage, textiles and clothing) has declined. Trended figures show that this industry has been declining at a faster rate in Winnipeg and Manitoba than in Canada. However, in 1977, these industrial groups still accounted for 30.8 per cent of value-added in Winnipeg, 30 per cent in Manitoba and over 20 per cent in Canada. The loss in 1977 of a major meat-packing firm from Winnipeg is significant, as the meat and poultry industries have consistently contributed over one-third of the total value-added by the food and beverage sector in Manitoba. Both the regional transportation equipment industry and the printing and publishing industry were performing poorly against the national economy in 1977. Three industries in both the city and the province--machinery, electrical products and non-metallic minerals--were outperforming the Canadian economy in 1977.

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9 Years prior to 1970 are not available using this Standard Industrial Classification.

TABLE 18

Manitoba Industry Group to Total Value-Added
by Manufacturing Sector

	Industry	Percentage
1.	Food and Beverage	22.3
2.	Metal Fabricating	11.7
3.	Machinery	8.6
4.	Transportation Equipment	8.2
5.	Printing and Publishing	7.2
6.	Clothing	6.7
7.	Paper & Allied Products	5.3
8.	Non-metallic Minerals	5.2
	Total	75.2%

If the 1977 data for Manitoba are listed in order of the importance of each industry group to total value-added by the manufacturing sector, eight industries contributed over 75 per cent of the total (See Table 18). The important provincial industries are identical with those of Winnipeg, with the exception that none of the paper and allied products industry is located in the metropolitan area and almost all the miscellaneous manufacturing is located there.

Performance of the twenty industries of the SIC classification was assessed in terms of relative growth and size for the period 1961-69 by the Manitoba Economic Development Boards.[10] Table 19 summarizes their results for the eight most important industries of Manitoba and Winnipeg.

TABLE 19

Manufacturing Group Performance 1961-1969

Group	Canada	Manitoba
Food & Beverage	Large & Slow Growth	Large & Slow Growth
Metal Fabricating	Large & Fast Growth	Large & Fast Growth
Machinery	Small & Fast Growth	Small & Fast Growth
Transportation Equipment	Large & Fast Growth	Large & Fast Growth
Printing & Publishing	Large & Slow Growth	Large & Slow Growth
Clothing	Large & Slow Growth	Large & Slow Growth
Paper & Allied Products (Manitoba only)	Large & Average Growth	Small & Slow Growth
Non-metallic Minerals	Small & Slow Growth	Small & Slow Growth
Miscellaneous Manufacturing (Winnipeg only)	Small & Fast Growth	Small & Slow Growth

A manufacturing group was defined as fast growth if it grew faster than the national average from 1961-69. Employment was used as the measure of performance. Value-added yields the same results although the ranking may vary. The relative importance of an industry within the province is significant since an industry which is large and fast growing will have more impact on the regional economy--at least in the shortrun--than an industry which is either large but slow growing or fast growing but small. Two industries--metal fabricating and transportation and equipment--were identified as large and fast growth nationally and provincially. In value-added terms, metal fabricating in 1977 was relatively more important to

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10 *Manufacturing Rationalization Trends in Manitoba,* 196.

the city and the provincial economy than to the national economy but remained only one-half as important in all regions as the food and beverage industry which was the single largest industry but also a slow growth industry.[11] In 1977 the transportation and equipment industry was 37 per cent as important to Manitoba, 42 per cent as important to Winnipeg and 84 per cent as important to Canada as the food and beverage industry. The machinery industry (small and fast growing nationally and provincially) ranked third in importance in Winnipeg and Manitoba (46 per cent and 39 per cent, respectively, as important as the food and beverage industry) as compared to ninth in Canada (and 34 per cent). The electrical products industry--identified as large and fast growth in Canada and small and fast growth in Manitoba--was marginally more important to both Winnipeg and Manitoba in 1977 than in 1970. In 1977, it ranked seventh in Canada (and 44 per cent as important as the food and beverage industry), ninth in Winnipeg (10 per cent as important) and tenth in Manitoba (16 per cent as important). Despite the diversity of the manufacturing sector in Manitoba, the resource-based food and beverage industry remains relatively more important to the city and the province than to Canada as a whole. It is also the largest employer both provincially and nationally. This biases the industry mix towards non-growth versus growth industries and exerts downward pressure on the over-all provincial growth rate.

Another indicator of the significance of various industries in the Winnipeg economy is provided by a measure called the co-efficient of localization. An index is calculated which relates regional proportions in any industry to national proportions. If the resultant co-efficient or ratio is greater than one, it indicates that the

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11 See Table 17. In 1977, the food and beverage industry accounted for 14% of the value-added by the manufacturing sector in Canada, and over 22% in both Manitoba and Winnipeg.

Winnipeg industry is an export industry, producing more than is required for the population of Winnipeg. If the proportion is less than one, it means that the industry is not producing enough to supply local needs and own production must presumably be supplemented by imports. The usual base for calculating the index is employment, with the somewhat unrealistic assumption that the rate of productivity per worker remains constant. Using value-added figures as the base, the index[12] shows that between 1961 and 1978 the importance of the manufacturing sector for Manitoba as a whole was well below its importance to Canada as a whole. In 1961, it was 58 per cent as important to Manitoba as to Canada, declined to a low of 53.9 in 1965 and increased gradually in importance to almost 61 per cent in 1978. However, other important changes also took place during this time. As noted earlier, Manitoba's share of the national sector has not been increasing and the industrial mix in the province is still exerting a negative effect on economic growth. Moreover, in terms of value-added, the relative importance of the manufacturing sector nationally is declining, and, in terms of employment, the share of provincial employment in manufacturing is less than its share of national employment. In other words, although Manitoba is becoming less important within a division which is declining nationally in relative size, that division, manufacturing, is becoming relatively more important in Manitoba.[13] This may have longer term implications for the economic growth of the province.

Figures on destination of shipments of goods of own manufacture are only published occasionally. The latest published figures are for 1974 and give some idea of the direction and strength of trade in Manitoba's manufacturing sector. A summary form of the data is shown

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[12] McNeil, *Economic Base Study*, 47 and author's calculations.

[13] *Manufacturing Rationalization Trends in Manitoba*, 487.

in Table 20, with industries ranked according to their importance to value-added by the manufacturing sector in 1977. If industries are not listed (e.g. paper and allied products, miscellaneous manufacturing, leather and textiles), this indicates that the destination of shipments was not identifiable. Of the shipments which could be identified, about one-half of the value of output was consumed in Manitoba, 11.6 per cent went to Ontario, 11.5 per cent to Saskatchewan and Alberta and less than 10 per cent was destined for international trade. Preliminary figures for 1979 indicate that the proportion of output consumed provincially has declined to 41 per cent, shipments to Saskatchewan and Alberta have increased to over 16 per cent and 13 per cent went to Ontario.

In Table 21, the co-efficients of localization have been calculated on a value-added base for manufacturing industries in Winnipeg for the years 1964, 1970, and 1977. A similar index for important manufacturing industries in "the rest of Manitoba" is also given for 1977.

Ranked in order of importance, five of the eight export industries in Winnipeg produce output for final consumption. The co-efficient for the machinery industry almost doubled between 1964 and 1977 and it was the second most important export industry in the province. As noted, it is a small and fast growing industry in Canada and Manitoba. In 1977, machinery accounted for 10 per cent of the value-added by the manufacturing sector in Winnipeg and almost 10 per cent of employment in the sector. It also appears that Winnipeg industries producing potential industrial inputs have relatively low co-efficients which suggests that they are primarily local suppliers. In some instances, the co-efficients of potential suppliers for Winnipeg industry--wood, paper and primary metals--are higher in the rest of Manitoba. Again, as was noted earlier, there is no reason to assume that these industries necessarily produce the type of input

TABLE 20

Destination of Shipments of Goods of Own Manufacture, by Industry Group, Manitoba, 1974

	Percentage Destined for						
Industry Group	Manitoba	Ontario	Sask. & Alberta	Rest of Canada	Outside Canada	Custom & Repair	Unallocated
Food & Beverage[a]	55.5	15.3	6.7	15.6	4.7	X	X
Metal Fabricating[b]	56.7	7.3	14.0	X	1.6	4.3	13.1
Machinery[c]	19.8	5.6	27.9	6.0	33.4	X	7.0
Transportation Equipment[d]	16.8	11.1	10.7	5.7	29.8	19.4	3.6
Printing & Publishing[e]	60.4	7.9	7.4	3.6	1.8	X	17.9
Clothing[f]	24.5	17.5	13.9	20.3	7.1	3.2	13.4
Non-metallic Minerals	82.7	5.4	4.6	X	3.9	X	1.9
Primary Metals	30.7	9.2	4.7	3.0	2.4	X	X
Electrical Products[g]	26.9	15.1	18.2	13.7	X	X	X
Chemicals	49.5	3.4	11.3	X	20.7	X	X
Wood Industries	59.0	7.3	18.1	X	X	X	6.2
Furniture & Fixtures	33.2	7.3	3.0	X	X	X	X

Source: *Statistics Canada*, 31-522 (Occasional).

[a] Slaughtering and meat processors (SIC 1011) accounted for 44 per cent of the total shipments of this industry group.

[b] Metal stamping and pressing (SIC 3042) accounted for 26.5 per cent of the total shipments of this industry group.

[c] The agricultural implement industry (SIC 311) was 75 per cent of the total for this industry group.

[d] Aircraft and aircraft parts manufacturers accounted for 33.9 per cent of the total shipments of this industry group. Over 65 per cent of the industry total was custom and repair work.

[e] Commercial printing (SIC 286) and publishing and printing (SIC 289) each accounted for almost 50 per cent of the total shipments of this industry group.

[f] Women's clothing factories (SIC 2441) accounted for over 35 per cent of the total shipments of this industry group.

[g] Communications equipment manufacturers (SIC 335) accounted for 18.6 per cent of the total shipments of this industry group.

TABLE 21

Co-efficients of Localization

Year	Winnipeg 1964	Winnipeg 1970	Winnipeg 1977	Rest of Manitoba 1977
Food & Beverages	2.06	1.99	1.90	2.30
Leather	-	-	1.83[a]	-
Textiles	0.38	0.35	-	0.10
Knitting	-	-	-	0.52
Clothing	2.44	2.77	2.84	-
Wood	0.22	0.28	0.33	1.17
Furniture	1.99	2.00	1.93	-
Paper	0.51	-	-	3.05
Printing	1.75	1.84	1.75	0.78
Primary Metals	0.15	0.12	0.15	1.80
Metal Fabricating	1.15	1.12	1.30	1.18
Machinery	1.25	1.38	2.38	0.56
Transportation & Equipment	0.39	0.58	0.50	0.26
Electrical	0.44	0.53	0.78	-
Non-metallic Minerals	1.24	1.07	1.43	1.11
Chemicals	0.43	0.30	0.34	0.98
Miscellaneous & Other Major Groups[b]	3.77	6.14	6.65	-

Source:

[a]Leather was included in miscellaneous for 1964 and 1970.

[b]The miscellaneous category for Winnipeg includes other major groups in which there is no Winnipeg production.

required by Winnipeg manufacturers or that an adequate domestic supply of factor inputs explains why these industries locate in Winnipeg. Indeed, in the case of the clothing industry which is the most important export industry, all raw material inputs must be imported. One possible explanation why this industry remains in Winnipeg is that it is a family industry which has for historic reasons chosen to stay.

A comparison of Winnipeg's most important industries for 1977 in terms of value-added to the manufacturing sector, employment in the sector, and importance to the export sector provides an overview of the whole industry. It also reveals the complexity of the problem of using manufacturing as the engine for economic growth in Manitoba. High productivity in terms of value-added does not necessarily correlate with high employment. The policy priority--mere job creation or greater productivity--will determine which industries should be encouraged. It has been suggested that import replacement is a relatively easy way to create jobs but these are likely to be low productivity jobs since the domestic market is not large enough, nor is the population growing quickly enough to permit production at an efficient scale. If Manitoba is to grow from an industrial base and if economies of scale and specialization are to be realized, export markets are essential. The industries listed in Table 22 comprise over 97 per cent of the manufacturing sector in Winnipeg.

In addition to being an important export industry, the food and beverage industry is almost twice as important as any other industry in terms of both value-added and employment. This is hardly surprising considering the agricultural base of the provincial economy. The industry is large and growing slowly but steadily. It provides a cushion in cyclical economic downswings but not much momentum for rapid growth unless population increases or new markets are found. The

TABLE 22

Manufacturing Industries in Winnipeg - 1977

Industry Group	Value-Added		Employment		Co-efficient of Localization	
	Rank	% of total value-added to manufacturing sector	Rank	% of total employment in manufacturing sector	Rank	Co-efficient of Localization
Food & Beverage	1	22.5	1	19.8	5	1.90
Clothing	7	8.3	2	13.4	2	2.84
Wood Industries	12	2.3	11	2.5	12	0.33
Furniture & Fixtures	10	3.1	8	4.4	4	1.93
Printing & Publishing	6	8.3	7	9.0	6	1.75
Metal Fabricating	2	11.5	4	10.5	8	1.30
Machinery	3	10.3	6	9.6	3	2.38
Transportation & Equip.	5	9.6	3	10.7	10	0.50
Electrical Products	9	4.0	9	3.3	9	0.78
Non-metallic Mineral	8	5.4	10	3.0	7	1.43
Chemicals	11	2.5	12	1.3	11	0.34
Miscellaneous & Other	4	9.8	5	9.8	1	6.65
		97.6% of $933,186,000.		97.3% of 40,184.		

clothing industry ranks second as a source of employment and in terms of export importance but only seventh in terms of generating income--about one-third as important as the food and beverage industry. Metal fabricating is about one-half as important as the food and beverage industry in terms of value-added and employment and ranks eighth as a major exporter. Metal fabricating has been identified as a large and fast growth industry in both Canada and Manitoba. From 1970-73--the "boom years" in Manitoba--value-added by this group of industries to the provincial manufacturing sector declined from 12.3 per cent to 10.2 per cent. By 1976, the comparable proportion was 14.4; in 1977, 11.5. Employment, after declining between 1970 and 1971 from 11.4 per cent of employment in the manufacturing sector to 10.7 per cent, has remained fairly constant at the lower figure. One explanation offered is that Manitoba's metal fabricating industry acts as a reservoir for excess demand for the rest of Canada and quickly loses these export markets in a period of reduced demand--a "heartland-hinterland" thesis. Miscellaneous manufacturing is the most important export group but only half as important as the food and beverage industry in relation to value-added and employment. The machinery industry is an important export industry, third in value-added but only sixth in terms of employment. Agricultural implements account for over three-quarters of the output of this industry.

The census of manufacturing disaggregates data at the three and four digit level so that discrete industries within industrial groups are identifiable. It is then possible to get some idea of the relative importance of specific industries. However, for reasons of confidentiality, single industries are not always reported separately in consecutive years. For example, in 1977, the 35 establishments in the machinery industrial group were only reported at the two digit level. In that year they contributed 10.3 per cent of total value-added by the manufacturing division in Winnipeg. This figure gives no information on firm size--whether there are 35 firms of roughly similar size or one or a few large firms which could be identified if data were disaggregated--nor any breakdown of type of output. In this instance, extrapolation could be cautiously attempted since, in 1976, eleven firms producing agricultural implements (SIC 311) produced about 80 per cent of the output of this group of industries. Calculated on this basis, the agricultural implement industry was the second most important industry in Winnipeg in 1977. Similarly, publishing and printing and commercial printing appear about equally important in generating 95 per cent of value-added by this industry. With some other industries, particular groups of activity are less easily identified.

In Table 23, the top ten industries at the three and four digit level are identified for Winnipeg, Manitoba and Canada for the years 1964, 1970 and 1977. They are ranked in descending order of importance to total value-added by the manufacturing sector in the respective geographic area. As noted previously, the classification of industries was revised in 1970 so 1964 figures, which are included for historical perspective, may not be strictly comparable.

Two things are observed. One is the importance to manufacturing in Winnipeg and Manitoba of resource-based consumption goods. By contrast, the top ten Canadian industries are almost exclusively intermediate and capital goods including almost all the motor vehicle industry and a resource-based pulp and paper industry which was one-third larger than the next largest Canadian industry in 1977. Second, with the exception of printing and publishing (which had slipped to eleventh place in Canada in 1977), none of the top ten industries in Winnipeg or Manitoba have ever appeared on the Canadian list. If the top twenty industries in Canada are ranked according to value-added to the manufacturing sector, the city and province fare somewhat better. In 1977 in Canada, printing and publishing ranked eleventh, slaughtering and meat processing twelfth, metal stamping and pressing thirteenth, men's clothing seventeenth, and miscellaneous metal fabricating twentieth.

TABLE 23

Year 1964

Value-Added by Top Ten Industries as a Percentage of Total Value-Added by the Manufacturing Sector in Each Geographic Area

Industry	Winnipeg-1964	Industry	Manitoba-1964	Industry	Canada-1964
Slaughtering & Meat Packing	7.7	Slaughtering & Meat Packing	6.3	Pulp & Paper Mills	7.1
Printing & Publishing	4.5	Printing & Publishing	4.3	Iron & Steel Mills	4.0
Men's Clothing	4.4	Petroleum Refineries	4.1	Motor Vehicle Manufacturing	3.8
Commercial Printing	4.3	Men's Clothing	3.9	Miscellaneous Machinery & Equipment Manufacturing	2.8
Breweries	4.2	Commercial Printing	3.6	Sawmills - Planing	2.6
Miscellaneous Food Manufacturing	3.5	Breweries	3.5	Smelting & Refining	2.6
Agricultural Implements	3.2	Dairy Factories	3.4	Manufactories of Industrial Chemicals	2.4
Women's Clothing	2.8	Bakeries	3.0	Printing & Publishing	2.1
Dairy Factories	2.8	Miscellaneous Food Manufacturing	2.9	Motor Vehicle Parts & Accessories	2.0
Metal Stamping, Pressing & Casting	2.6	Agricultural Implement Industry	2.9	Commercial Printing	1.9
Total	40.1	Total	37.9	Total	31.4

Continued on next page

TABLE 23 *continued*

Year 1970

Value-Added by Top Ten Industries as a Percentage of Total Value-Added by the Manufacturing Sector in Each Geographic Area

Industry	Winnipeg-1970	Industry	Manitoba-1970	Industry	Canada-1970
Meat & Poultry Products	7.0	Slaughtering & Meat Packing	5.9	Pulp & Paper Mills	6.2
Aircraft & Aircraft Parts	5.8	Aircraft & Aircraft Parts	4.7	Motor Vehicle Manufacturers	4.1
Men's Clothing	4.7	Printing & Publishing	4.3	Iron & Steel Mills	3.9
Printing & Publishing	4.6	Men's Clothing	4.1	Miscellaneous Machinery & Equip. Manufacturing	3.3
Commercial Printing	4.1	Commercial Printing	3.4	Smelting & Refining	2.7
Fabricated Structural Metal	3.6	Fabricated Structural Metal	3.0	Motor Vehicle Parts & Accessories	2.6
Breweries	3.2	Dairy Products	2.7	Communications Equipment	2.2
Agricultural Implements	2.7	Breweries	2.6	Sawmills & Planing Mills	2.0
Soft Drink Manufacturers	1.9	Miscellaneous Food Processors	2.6	Printing & Publishing	2.0
Dairy Products	1.9	Fruit & Vegetable	2.6	Commercial Printing	2.0
Total	39.4	Total	35.9	Total	31.1

Continued on next page

TABLE 23 *continued*

Year 1977

Value-Added by Top Ten Industries as a Percentage of Total Value-Added by the Manufacturing Sector in Each Geographic Area

Industry	Winnipeg-1977	Industry	Manitoba-1977	Industry	Canada-1977
Meat & Poultry Products	8.2	Agricultural Implements	6.4	Pulp & Paper Mills	6.6
Aircraft & Aircraft Parts	4.5	Slaughtering & Meat Packing	6.2	Motor Vehicle Manufacturers	4.9
Printing & Publishing	4.1	Metal Stamping, Pressing & Casting	4.8	Motor Vehicle Parts & Accessories	3.7
Metal Stamping, Pressing & Casting	3.5	Printing & Publishing	3.9	Sawmills & Planing Mills	3.7
Women's Clothing	3.3	Aircraft & Aircraft Parts	3.5	Iron & Steel Mills	3.6
Furniture & Fixtures	3.1	Men's Clothing	3.4	Miscellaneous Machinery & Equip. Manufacturing	3.3
Breweries	2.0	Miscellaneous Food Processors	3.2	Petroleum Refineries	2.6
Dairy Products	2.0	Commercial Printing	2.8	Smelting & Refining	2.5
Sash, Door & Other Millwork Plants	1.9	Fabricated Structural Metal	2.8	Industrial Chemicals	2.3
Bakeries	1.6	Women's Clothing	2.5	Communications Equip.	2.2
Total	34.3	Total	39.5	Total	35.4

However, to keep some sense of perspective, printing and publishing was only one-quarter as important to Canada as pulp and paper mills and less than one-half as important as the second, third, fourth and fifth ranking Canadian industries. Miscellaneous metal fabricating industries were less than 17 per cent as important to the Canadian manufacturing sector as the pulp and paper industry and contributed only 2 per cent of total value-added by the division.

Table 24 illustrates the picture for 1977 when the ten most important industries at the three and four digit level in Winnipeg are ranked along with those industries classified only at the two digit level, and when "other" groups are treated as a single industry (an heroic assumption!). In total, these industries accounted for over 57 per cent of value-added by the manufacturing sector. With this regrouping, only three of the top ten leading Winnipeg industries at the three and four digit level are still included in the list and their relative importance has shifted.

If these ten are combined into a two digit classification, the ranking changes again, as shown in Table 25. The figures in brackets indicate the number of firms in the combined group out of the total industry. The three next most important industries in Winnipeg in 1977 at the three and four digit level were metal stamping and pressing, "other" non-metallic minerals, and women's clothing. Including these industries in Table 25, a clearer picture of the industrial base of Winnipeg manufacturing emerges. The industries listed in Table 26 generated over two-thirds of the value-added by the manufacturing sector in Winnipeg in 1977. It now appears that over one-half of the output of the major industries has an industrial orientation. Future growth will thus depend on total industrial production rather than consumer consumption. The machinery industry (small and fast growth in Manitoba) was fifth in importance in Canada in 1977. Provincially, it is heavily concentrated in the production of agricultural equipment which makes it

TABLE 24

Ten Most Important Industries Classified at
Two, Three or Four Digit Level and Ranked According to Value-Added
to Manufacturing in City of Winnipeg

	Category	Value-Added ($'000)
1.	Machinery Industries (35 establishments)	96,133
2.	Meat and Poultry Products (21 out of 110 establishments)	77,010
3.	Other Food and Beverage Industries (28 out of 110 establishments)	66,194
4.	Other Metal Fabricating Industries (39 out of 104 establishments)	55,257
5.	Other Transportation and Equipment Industries (23 out of 28 establishments)	46,966
6.	Aircraft and Aircraft Parts Manufacturers (5 out of 28 establishments)	42,378
7.	Other Clothing Industries (44 out of 81 establishments)	41,676
8.	Publishing and Printing (14 out of 105 establishments)	38,257
9.	Electrical Products Industries (21 establishments)	37,178
10.	Other Printing, Publishing & Allied Industries (78 out of 105 establishments)	35,283
		536,322

TABLE 25

Consolidation of Table 24 into a Two Digit Classification

Meat, Poultry & "Other" Food and Beverage	$143,204,000.	(49 out of 110)
Machinery Industries	96,133,000.	(35 out of 35)
"Other" Transportation & Equip. & Aircraft	89,344,000.	(28 out of 28)
Printing, Publishing & "Other"	73,540,000.	(92 out of 105)
"Other" Metal Fabricating	55,257,000.	(39 out of 104)
"Other" Clothing	41,676,000.	(44 out of 81)
Electrical Products	37,178,000.	(21 out of 21)
	$536,332,000.	(308 out of 791)

TABLE 26

Industry Groups Which Contribute Two-thirds of Value-Added by Manufacturing Sector in Winnipeg

# of Firms	Industry	Value-Added ($'000)	% of Value-Added to whole industry
49 of 110	Meat, Poultry & "Other" Food and Beverage	143,204.	68
35 of 35	Machinery Industry	96,133.	100
28 of 28	Aircraft, "Other" Transportation & Equip.	89,344.	100
63 of 104	Metal Stamping & Pressing, "Other" Metal Fabricating	88,064.	82
92 of 105	Publishing, Printing and "Other"	73,810.	96
63 of 81	Women's Clothing and "Other"	72,231.	92
21 of 21	Electrical Products	37,178.	100
11 of 20	"Other" Non-metallic Minerals	31,327.	61
362 of 791		631,291.	

very sensitive to both interest and exchange rate fluctuations. Metal fabricating and transportation equipment are both large and fast growth industries in Manitoba but have a cyclical performance record. The aerospace industry (about 50% of the industrial group in 1977) is very dependent on national policies but fortunately the rest of the industry is well diversified. Electrical products industries are small and fast growing and there appears to be room for import substitution.

Table 27 was compiled by the Winnipeg Business Development Corporation[14] and compares average rate of growth (1978-81) in major industries in Winnipeg with the Canadian average.

During the past twenty years, the manufacturing industry in Winnipeg has tended to shift location from the downtown and inner city to the new suburban industrial areas. The geographic shift does not reflect a change in industrial mix. While employment in manufacturing is not directly linked with location of dwelling units, a population shift between 1941 and 1976 of -38 per cent from the inner city and +180 per cent to the outer city cannot be ignored. There is (1981) no shortage of developed industrial land available in Winnipeg and the level of vacancies in existing modern industrial buildings is high. The service sector is the largest employer in the city (27.6%), followed by the trade sector (19.7%) and manufacturing (17.7%). The manufacturing sector is almost twice as important as an employer as the transportation and public administration sectors which rank fourth and fifth, respectively. Any shift in Winnipeg's economic base towards the service sector which is far less land consumptive than the manufacturing sector means slow demand for developed industrial sites.

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14 Winnipeg Business Development Corporation, *Winnipeg - Where the New West Begins* (Winnipeg, 1982).

TABLE 27

Average Growth Rate (1978-1981) of Major Winnipeg Industries Compared to Canadian Average

	Average Growth Rate	
	Winnipeg	Canada
Machinery	20.5%	18.8%
Other Major Groups	20.1	16.5
Primary Metal	18.1	15.1
Electrical	17.3	15.1
Metal Fabricating	16.9	14.8
Total Manufacturing	15.0	14.7
Transportation Equipment	14.6	10.8
Wood	10.4	9.7
Industries where the 1978 average growth rate in Winnipeg exceeded inflation (10.2%) but was lower than the average Canadian growth rate:		
Furniture and Fixtures	14.9%	16.2%
Printing and Publishing	13.8	15.6
Miscellaneous Products	13.5	16.7
Food and Beverages	11.3	14.3
Chemicals	11.3	18.6

Source: *Statistics Canada* and WBDC estimates.

The manufacturing sector of both Winnipeg and Manitoba can be summarized briefly. It is a small part of a Canadian sector which is declining in relative importance to the whole econony. Winnipeg dominates the provincial sector. Industry scale tends to be small. Industrial mix is diversified. Winnipeg is well-positioned geographically to capitalize on this developed and diverse industrial base by expanding markets into Saskatchewan and Alberta who are experiencing strong primary sector growth. Productivity per worker in Manitoba is below the Canadian Average. Capital stock has deteriorated steadily during the last decade. Population, working-age population and labour force growth have been below the national average and are estimated to increase at a lower than average rate. Average weekly earnings are below the national mean for the manufacturing sector. Nearly two-thirds of manufacturing activity is dominated by primary activities, particularly agriculture. The sector contains some important but small high technology and science-based industries with growth and export potential. A large part of the output is consumed domestically (i.e. within the province) but the population is not large enough nor growing quickly enough to support expansion of industries producing primarily for local consumption if these industries are to be of efficient scale.

While over-all economic growth in the province over the past two decades has been below the Canadian average and Winnipeg has been a slow growth city in comparison with other major metropolitan areas, the regional manufacturing sector has turned in a better than average performance compared with the national sector. Its relative size, its diversity and the high proportion of output destined for local consumption have all helped to protect the manufacturing sector from extreme cyclical fluctuations in national economic activity and to shelter it from outside competition. This has guaranteed slow but steady growth which has not been reversible--and this is encouraging. What is less encouraging is that Canadian manufacturing has been declining in relative importance to total economic activity, and that the province has barely maintained its historically small share of a relatively slow growth national sector. Moreover, the better than average performance of the relatively small provincial manufacturing sector, brought in part, by lower wages, lower productivity and disinvestment, has tended to camouflage some underlying weaknesses in the Manitoba economy. In Table 28, some major economic indicators for the city and province are tabulated against Canadian averages. Extreme performances were given positive and negative signs and significant negative or positive deviations were given two signs instead of one. During this same period, annual average growth in manufacturing (unadjusted value-added) was 13.4 per cent in Canada and 17.7 per cent in Manitoba. Manitoba ranked fifth in growth among the ten provinces, within a range of 22 per cent (Alberta) and 12.3 per cent (Quebec).

While the future prospects for Winnipeg are linked to those of Manitoba and Canada, "reinforcing the role played by Winnipeg in a Manitoba and western context is important to the future of the provincial economy and the balance of economic development in western Canada."[15] If manufacturing, because of its higher order multiplier effects, is to be the engine for future economic growth, the relative size of the sector will have to be increased within the province and the provincial share of the national sector will have to be expanded. In addition, the industrial mix will have to be consciously changed to reinforce and promote potential growth industries, particularly those where the region may have a comparative advantage. The province has a good geographic position to exploit and expand markets in western Canada and mid-west U.S.A. Climatic factors, such as clean air for testing aircraft and low humidity for electronic industries, are natural advantages. The

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15 *Canada/Manitoba Subsidiary Agreement on Industrial Development* (April 1978), 15.

TABLE 28

Economic Performance of Manitoba and Winnipeg Between 1966-1976

	Manitoba 1966-1976	Winnipeg 1966-1976
Population	-	+
Labour Force	--	--
Participation Rate	+	+
Total Employment	--	--
Gross Domestic Product	-	na
Private Investment (per capita)	-	na
Public Investment (per capita)	++	na
Primary Investment	+	na
Secondary Investment	--	na
Personal Disposable Income (per capita)	+	--
Retail Sales	--	-
Industrial Investment (per capita)	na	
Commercial Investment (per capita)	na	
Government Investment (per capita)	na	
Number of Manufacturing Establishments	-	-
Employment in Manufacturing	+	-
Value-Added by Manufacturing	+	-

Source: C.M.H.C., *Effect of Incentive Programs to Industry on the Migratory Patterns of the Canadian Economy* (December, 1978), 52A.

province already has a skilled and mature labour force with a good work record. Between 1975-79, Manitoba was the second lowest province in terms of man days lost per 1000 workers (32 as against the Canadian average of 88), and was 63 per cent below the Canadian average in terms of work stoppages. Many industries will, naturally and of necessity, remain specifically tied to the province's resource base, namely, the food industry and the farm implement industry. Many family industries will choose to remain in the province for historic reasons and should not be discouraged. Many other industries--including key industries--appear to have no natural affinity for a particular geographic area and positive macro policies must be undertaken to attract them to locate in Manitoba. Labour cost advantages are not an attractive method for promoting industry in the short run, nor are they likely to be sustainable in the long run. What is needed is a business climate favourable to industry location. One problem is that "business climate" is an evolutionary process which reflects a continuum of social, political and economic forces. However, government policy can be an important component in creating this climate.

The provincial government of Manitoba has consistently used incentive programs to induce import substitution and resource development. In 1958, it created the Manitoba Development Fund. In 1970, the Manitoba Development Corporation was founded. In 1974, the Manitoba Trading Corporation was established. Between 1966 and 1976, the province spent an annual average of over $32 million or $32 per capita for this purpose. Of that total, 40 per cent went to wood products, 26 per cent to metal fabricating, and 16 per cent to the food and beverage industry. On a per capita basis, Manitoba has been the highest spender of all the provinces over the period even though the amount has been declining since 1973 due to some rather questionable results with some of the projects. The type of assistance has varied from loans to outright association between the public and private sectors.

The report published in 1976 by the Manitoba Economic Development Advisory Board was intended to "lay some groundwork for historically based long term planning by outlining the realities of Manitoba's economic profile."[16] The report analyses criteria which could be used to identify key industries--i.e. those with significant forward or backward linkage. The problem then is to determine why these industries do not locate in Winnipeg or Manitoba, and how to design government policies to remove any perceived impediments. The report also hints at what may be an even more important consideration, namely, how does a government identify the "public interest" on which to base policy let alone determine what is "*in* the public interest"? Does the public want to encourage growth industries which are potentially more volatile in their performance? Growth industries will have to be export-oriented and this will expose more of the provincial economy to outside competition and reduce some of its present protective insulation from national and international swings in economic activity. Trade-offs between quantity of growth and quality of life are not inconsequential.

Specifically, the EDAB recommended that: "The Government's policy for the development of manufacturing within the province should consist of a series of complementary policies to promote the development of a certain few key industries and the cluster of industries associated with each of the selected key industries.... The selection of a key industry and its cluster of industries should be made on the basis of a thorough examination of the potential for growth and long run viability of such a cluster and of the repercussions of such growth on the quality of life in Manitoba.... Government policy should not create the cluster of industries, but rather should create the environment that would allow the existing political-economic system to create the desired cluster."[17]

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16 *Manufacturing Rationalization Trends in Manitoba,* preface.

17 *Ibid.,* 56.

In the spirit of this recommendation, on April 21, 1978, Manitoba signed a five year agreement for Industrial Development with the Federal Government. The two levels of government agreed to co-operate jointly "to encourage industrial activities which are closely linked through backward, forward and final demand linkages to other economic activities; to develop industries in which Manitoba has a comparative advantage to other areas; to support high-wage industries and industries which provide stable long-term employment."[18] Funding of $42 million is provided, 60 per cent by the Federal Government and 40 per cent by the province. About 13 per cent of the fund is to help the private sector develop new industrial initiatives in the manufacturing sector. A more selective approach has been adopted as compared to previous government assistance programs. The following six industry sectors or clusters of industries were identified as having significant economic growth potential:

1. Aerospace--because it has "a record of stability in employment and production, a history of innovation and a core of skilled personnel and sophisticated facilities." The aircraft and parts industry was not a growth industry in Canada up to 1973[19] and, while it has grown quickly in Manitoba, the pattern of growth has been cyclical since the major markets are international. In 1977, the industry was over four times as important to the manufacturing sector in Manitoba as it was to Canada. The industry requires large inputs of research and development expenditures which may be beyond the capacity of the province to

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18 *Canada/Manitoba subsidiary Agreement on Industrial Development* (April 21, 1978), 1.

19 *Manufacturing Rationalization Trends in Manitoba,* 177.

generate. Federal assistance to establish an institute in Winnipeg for training aerospace workers which might have given the province a comparative advantage in this industry has been withdrawn. However, a new Technology Institute has been founded at the University of Manitoba although it is as yet uncertain how the results are to be marketed. Future growth in the industry depends more on national policy than provincial initiatives. The largest Winnipeg industry in this field has already diversified into the electronics industry.

2. Electronics--because it has "an increasing rate of growth, availability of manpower and numerous marketing opportunities." This is the high technology industry widely hailed as the basis of the next industrial revolution. It has a high priority nationally. It has already been identified as fast-growing in both Canada and Manitoba but it is still small in the province. Winnipeg now has some fifty companies producing in this area. Many are small, locally-owned enterprises but branch plants of three multi-nationals are also located in Winnipeg. Transportation costs of the finished product are reasonable. However, the industry is highly competitive nationally and internationally and every major community in Canada is vying for a share of the industry.

3. Food and Beverage--because it "complements the province's agricultural base, has a skilled manpower pool and a wide range of existing support industries." This industry is the most important Canadian and provincial industry, and relatively more important to the Manitoba manufacturing

sector than to the national sector. It is also an industry that has been declining in relative importance both provincially and nationally and declining relatively more rapidly at the provincial level.

4. Health-care Products--because of "existing high-technology capabilities, high potential for import replacement in all of Canada and a freight-insensitive finished product."

5. Machinery--because of "potential for import replacement and demand levels in international markets." In Manitoba, this industry is the agricultural machinery industry and therefore very sensitive to conditions in the primary sector domestically as well as foreign exchange rates and interest rates.

6. Transportation Equipment--because of "import replacement and international sales opportunities." Between 1970 and 1977, this industry at the provincial level performed poorly in comparison with the national sector. One positive factor is that the Winnipeg industry is not concentrated in the recession-prone auto industry.

The agreement has two thrusts: to encourage resource-based industries *and* higher technology industries that are not solely reliant on the resource base. Manitoba, and Winnipeg in particular, already has an in-place manufacturing infrastructure for future development. Proximity to Prairie and mid-western U.S.A. markets and abundant and fixed energy costs should put the region in a favourable position to attract industry. A management assistance program has been established to develop and improve managerial skills. While balanced provincial growth is to be encouraged, the dominant position of Winnipeg is likely to be reinforced if the program is successful. If Winnipeg should become a free-trade zone in Canada, its position would be further enhanced by making it more attractive to manufacture goods in Winnipeg rather than continue to use the city as a warehouse and distribution centre for output manufactured elsewhere.

The program is feasible and geared to produce an "economic excitement" in the province. Results in terms of employment and income should be positive. The manufacturing sector would acquire depth in areas where it has a comparative advantage in resources or geographic location as well as breadth in potential growth areas. Over the past years the existing industrial mix, industrial structure and market-orientation have slowed economic growth. However, these same factors have also contributed to a more stable economic performance by cushioning the province from declines in national economic activity. Greater reliance on cyclical industries with high export potential will expose more of the provincial manufacturing sector to national and international events and competition. The potential risks may be as high as the potential rewards.

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