

**OPPORTUNITIES FOR MANUFACTURING:
PRAIRIE REGION TO 1981**

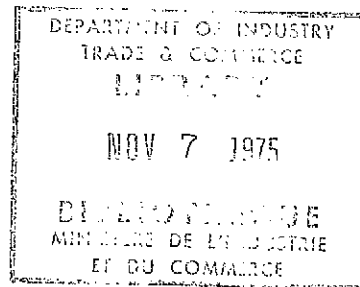
WINNIFEG TORONTO - VANCOUVER

HEDLIN MENZIES
HM
& associates LTD.

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Prepared For:

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Government of Canada



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PREFACE

The following report on opportunities for manufacturing in the prairie region, 1971-1981, has been prepared by Hedlin, Menzies and Associates Ltd. for the Department of Regional Economic Expansion, Government of Canada.

The major objective of this report is to provide an overall evaluation of manufacturing opportunities within the prairie region during the period to 1981; this evaluation is designed primarily to examine the potential impact of manufacturing upon the region's development problems over the next decade. A major part of the study's analysis focuses upon evaluation of the 140 three-digit (Standard Industrial Classification) manufacturing industries, identifying and discussing specific industries where future development energies should be focused. In addition, however, the study discusses broader questions relating to the probable impact of manufacturing upon the region's economy, and examines the various factors and strategies relevant for prairie manufacturing growth.

This study does not attempt to examine a number of particular questions relating to prairie manufacturing. Although the study is not constrained to the areas or guidelines governing D.R.E.E. industrial grants, no attempt is made to allocate manufacturing opportunities as between individual prairie provinces or individual prairie centres. Furthermore, no attempt is made to define actual development targets for prairie manufacturing. Finally, due to the

broad scope of this study, no attempt is made to provide either a "shopping list" of prospective industries or a series of detailed feasibility evaluations of specific industrial opportunities.

The terms of reference for this study do not call for analysis to be conducted on the basis of any one particular theoretical technique; input-output evaluations and regional development models in particular are neither readily available nor directly appropriate for this study. The methodology adopted involves the co-ordination of available knowledge and research, combined with the use of a wide range of standard techniques for regional economic analysis. Employment projections for individual industries represent the best judgement of the study team based on consideration of available data and available analysis.

The report is divided into three parts.

Part I (Overview and Perspective of the Prairie Economy) reviews prairie development problems and changes in prairie economic structure, focusing upon the 1951-1967 period for which appropriate data is available. Part I in particular reviews past development of prairie manufacturing, comparing its development patterns relative to development patterns in other Canadian regions.

Part II (Opportunities for Prairie Manufacturing) focuses attention upon the manufacturing sector, evaluating the various factors that affect this sector's growth, and identifying those distinct industries at the three-digit level where policy attention

appears to be warranted during the next decade.

Part III (Guidelines for Prairie Manufacturing Development) consists of two chapters examining guidelines for prairie manufacturing development: Chapter 13 provides profiles identifying problems and possible courses of action for specific manufacturing industries evaluated to offer priority development opportunities; Chapter 14 provides general conclusions and observations regarding the potential impact that prairie manufacturing growth strategies could have as regards the region's development problems.

Hedlin, Menzies and Associates Ltd. would like to acknowledge the invaluable assistance which was received throughout the study from members of the Department of Regional Economic Expansion, the Manitoba Department of Industry and Commerce, the Saskatchewan Department of Industry and Commerce, and the Alberta Department of Industry and Tourism. Members from the above federal and provincial department's participated on the co-ordinating committee directing this study; in addition to providing valuable data and reports, their assistance was greatly appreciated in reviewing the study's progress and in providing detailed commentary upon preliminary drafts of this final report. In addition, the firm would like to thank other senior officials within the provincial governments and within a number of companies located in the prairies who provided assistance from time to time during the study.

Although the assistance of many individuals is gratefully

acknowledged, Hedlin, Menzies and Associates Ltd. takes full responsibility for the analysis and conclusions presented in this report.

HEDLIN, MENZIES & ASSOCIATES LTD.
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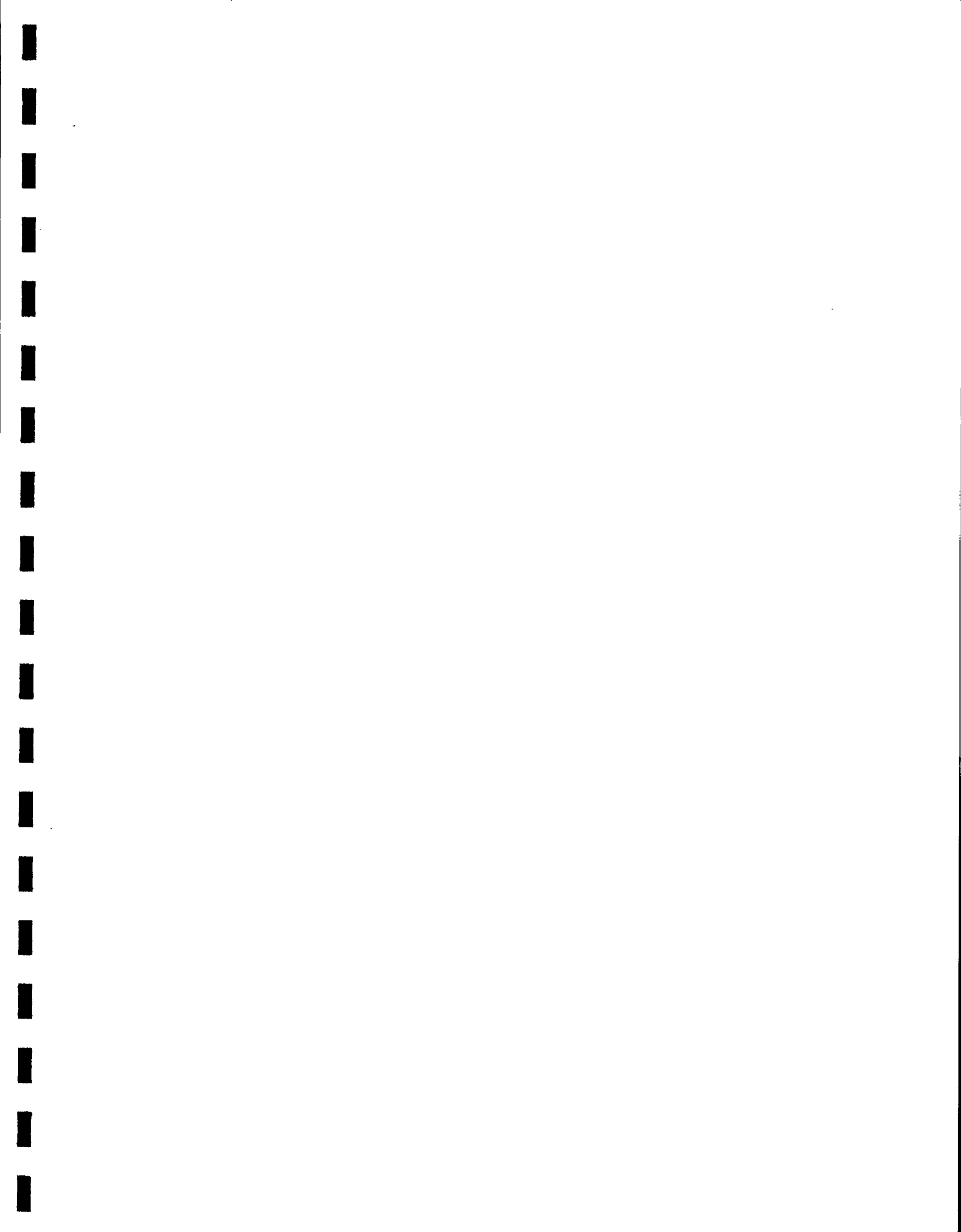


TABLE OF CONTENTS

	<u>Page</u>
PREFACE	
SUMMARY OF ANALYSIS	i - ix
<u>PART 1:</u>	
<u>OVERVIEW AND PERSPECTIVE PRAIRIE ECONOMY</u>	
CHAPTER 1	PRAIRIE ECONOMY: OVERVIEW OF PAST PERFORMANCE 1
	1. Introduction 1
	2. Overview of Prairie Economic Growth, 1951-1967 1
	3. Prairie Employment and Unemployment 10
	4. Population Density and Out-Migration 12
	5. Low Incomes and Economic Disparity Within Prairie Region 15
	6. Conclusions 23
CHAPTER 2	CHANGES IN PRAIRIE ECONOMIC STRUCTURE 27
	1. Introduction 27
	2. General Economic and Population Structures 28
	3. Prairie Industrial Structure and Growth 31
	3.1 General Review 31
	3.2 Importance of Resource Industries in Prairie Economy 33
	3.3 Limited Importance of Manufacturing in Prairie Economy 35
	3.4 Service Industry Sector Development 40
	3.5 Summary and Evaluation of Prairie Industrial Structure 41
	4. Structure and Development of Prairie Manufacturing 42
	4.1 Manufacturing Structures: Importance of Resource Industry Linkages 43
	4.2 Diversity of Prairie Manufacturing Base 45
	4.3 Domestic Market Orientation of Prairie Manufacturing 51
	4.4 Growth Patterns, Prairie Manufacturing, 1961-1967 52

	<u>Page</u>
CHAPTER 2 (continued)	
4.5 Provincial Variations, Prairie Manufacturing	55
5. Summary: Prairie Economic Structures and Patterns	58
 <u>PART II:</u> <u>OPPORTUNITIES FOR PRAIRIE MANUFACTURING</u>	
CHAPTER 3	
INTRODUCTION TO PART II: ANALYSIS OF MANUFACTURING OPPORTUNITIES	64
1. Introduction	64
2. Framework of Analysis	64
2.1 Initial Discussion of Approach	64
2.2 Adoption of Prairie Employment Potential as Criterion of Opportunity	66
2.3 Report Emphasis upon Factors Affecting Growth: Outline of Part II	71
3. Review of Methodology	73
CHAPTER 4	
DEMAND OPPORTUNITIES: DOMESTIC POPULATION, INCOME AND MARKET PROJECTIONS	77
1. Introduction	77
2. Population Projections	77
2.1 National Projections	77
2.2 Prairie Province Projections	79
3. Canadian Production and Income Projections	83
4. Conclusions	87
CHAPTER 5	
TARIFF AND FOREIGN TRADE FACTORS AFFECTING GROWTH	89
1. Introduction	89
2. General Tariff Structure	90
2.1 Export Tariffs	90
2.2 Import Tariffs	91
2.3 Evaluation of Tariff Structure Impact	93
3. Foreign Market Opportunities	96
3.1 The United States	96
3.2 Japan	99
3.3 Pacific Rim Countries	102
3.4 Europe and the United Kingdom	103
4. Conclusions	105

		<u>Page</u>
CHAPTER 6	NATURAL RESOURCE INDUSTRY FACTORS AFFECTING GROWTH	108
	1. Introduction	108
	2. Agricultural Resource Industry Factors	110
	3. Mining	117
	4. Forestry	121
	5. Fishing	124
	6. Water Resources and Energy Supplies	125
	7. Conclusions	126
CHAPTER 7	SCALE ECONOMY FACTORS AFFECTING GROWTH	129
	1. Introduction	129
	2. Internal Scale Economies of Production	130
	3. Economies of Agglomeration	135
	4. Conclusions	136
CHAPTER 8	TRANSPORTATION FACTORS AFFECTING GROWTH	141
	1. Introduction	141
	2. Rate Structures	144
	3. Impact and Importance of Transport Costs	150
	4. Conclusions	155
CHAPTER 9	CAPITAL FACTORS AFFECTING GROWTH	159
	1. Introduction	159
	2. Sources of Financing	163
	2.1 Chartered Bank	164
	2.2 Specialized Lenders	164
	2.3 The Industrial Development Bank	165
	2.4 Public Subscription	166
	2.5 Provincial Agencies	167
	2.6 Federal Incentive Grants	169
	3. Conclusions and Evaluation	171
CHAPTER 10	MANPOWER FACTORS AFFECTING GROWTH	177
	1. Introduction	177
	2. Manpower Supply, Demand and Mobility	179
	3. Training and Productivity	184
	4. Conclusions	190
CHAPTER 11	RESEARCH, DEVELOPMENT AND DESIGN FACTORS AFFECTING GROWTH	193
	1. Introduction	193
	2. Maintenance of Research Development and Design Capacity	195
	3. Prairie Manufacturing	198

	<u>Page</u>
CHAPTER 11 (continued)	
4. New Products	201
5. Conclusions	203
CHAPTER 12	
REVIEW AND CLASSIFICATION OF PRAIRIE MANUFACTURING OPPORTUNITIES	206
1. Introduction	206
2. Class 3 Industries: Marginal or Declining Growth Prospects	207
3. Class 1 Industries: Assured Growth Prospects	214
4. Class 2 Industries: Qualified Growth Prospects	221
5. Conclusions to Part II: Summary of Growth Prospects, Prairie Manufacturing	228
5.1 Class 2 Industries: Growth Opportunities Requiring Examination	228
5.2 Review of Overall Manufacturing Employment Growth Prospects	229
5.3 Potential Impact of Manufacturing Growth Opportunities on Prairie Economy	232
5.4 Evaluation of Growth Factors Affecting Prairie Manufacturing Opportunities	237
 <u>PART III:</u> <u>GUIDELINES FOR PRAIRIE MANUFACTURING</u> <u>DEVELOPMENT</u>	
CHAPTER 13	
CLASS 2 INDUSTRY PROFILES	241
1. Introduction	241
Item	
101 Slaughtering and Meat Packing	244
107 Processed Cheese Manufacturers	254
111 Fish Products Industries	255
112 Fruit and Vegetable Canners and Preservers	256
123 Feedmills	259
133 Sugar Refineries	263
135 Vegetable Oil Mills	264
143 Distilleries	266

CHAPTER 13 (continued)

	<u>Page</u>
Item	
174 Shoe Factories	268
216 Carpet Mat and Rug	270
239	
243	
244 Clothing Industries	271
245	
249	
261	
264 Furniture Industries	277
266	
271 Pulp and Paper Mills	282
274 Other Paper Converters	285
291 Iron and Steel Mills	286
292 Steel Pipe and Tube Mills	290
295 Smelting and Refining	291
311 Agricultural Implements	294
321 Aircraft and Parts Manufacturing	303
323 Motor Vehicle Manufacturers	305
356 Glass and Glass Products Manufacturers	307
372 Mixed Fertilizers	311
373. Plastics and Synthetic Resins	313
375 Paints and Varnishes	315

CHAPTER 14

CONCLUSIONS AND OBSERVATIONS REGARDING THE PLACE OF MANUFACTURING IN PRAIRIE DEVELOPMENT STRATEGIES	316
1. Introduction	316
2. Current D.R.E.E. Regional Development Goals and Strategy	319
3. Prairie Development Goals	324
3.1 Broad Priorities: Economic Growth and Quality of Life	324
3.2 Regional and Provincial Development Goals	330
3.3 The Goal of Improving Regional Employment Opportunities	330
4. Prairie Development Strategies	337
4.1 Broad Strategies: Distribution Problems and the Process of Regional Growth	337
4.2 Manufacturing Strategies for Prairie Growth	342
5. Conclusions: Impact of Manufacturing Growth Strategy	349

SUMMARY OF ANALYSISPart I: Overview and Perspective: Prairie Economy

1. Both population and total income growth in the prairies lagged behind average growth in all Canadian regions other than the Atlantic region during the 1951-1961 and 1961-1967 periods. Per capita income growth for the prairies lagged behind the national average between 1951 and 1961, but was marginally above the national average between 1961 and 1967.
2. Between 1951 and 1967, actual per capita income in the prairies went from being slightly above to being slightly below the national average.
3. Although employment growth rates have been relatively low in Manitoba and Saskatchewan, manpower utilization has tended to be relatively high throughout the prairies as compared to other Canadian regions, eg. regional unemployment rates have been the lowest in Canada, etc. Throughout recent decades, significant net population out-migration has occurred in Manitoba and Saskatchewan; in contrast, Alberta has tended to experience net population in-migration. Population density in the prairies remains below that shown by any other Canadian region.
4. Current estimates indicate that Indian and Metis represent over 6 per cent of total prairie population. The native population, which faces severe unemployment and income problems, is far more significant in size within the prairies than within any other Canadian provincial region.
5. In 1969, the incidence of low incomes within the prairies exceeded estimates for all regions other than the Atlantic region (native people living on reservations are not included in this data). Significant income disparity exists within the prairies as between rural and urban areas.
6. Economic performance has displayed wide variations as between prairie provinces. In general, the region's distinct economic problems were most significant within Saskatchewan and Manitoba, while Alberta experienced relatively rapid population and income growth.
7. The prairie region currently presents a rather unique economic structure within Canada, where a number of developed metropolitan areas exist concurrently with

major agriculturally dominated regions. Population decline has been experienced in the rural areas, while population growth has continued within areas of mineral development and within areas of urban development.

8. In common with all Canadian regions, in recent decades the economic structure of the prairie region has shifted away from commodity producing industry and towards service producing industry. Despite this trend, however, it is also clear that in recent years the service sector has been the sector where prairie employment growth rates most significantly fell below average Canadian growth rates. In 1967, the service sector accounted for some 60 per cent of the prairie labour force.
9. In total, prairie employment growth has failed to match Canadian employment growth rates since at least 1951; this result has been largely due to the structure of prairie industry, and would have occurred even if each prairie industry had succeeded in achieving average national growth rates. Industries having declining or relatively low employment growth, such as agriculture, are far more prevalent within the prairies than within other Canadian regions.
10. The economic structure of the prairie region is particularly distinctive in that the percentage contribution by manufacturing to both regional commodity value added and regional employment remains significantly lower in the prairies than in any other Canadian region.
11. Prairie manufacturing is largely oriented towards the region's resource industries. Excluding the chemical industries, manufacturing industries either processing resources or acting as major suppliers of inputs to resource industries accounted for over 64 per cent of prairie manufacturing employment in 1967; the comparable average for Canada was approximately 50 per cent.
12. Despite its orientation towards resource related industries, prairie manufacturing is not lacking in diversity as compared to manufacturing within the Atlantic region and British Columbia. In particular, the prairies show significant development in printing and publishing, clothing, and furniture. Relative to Central Canada, the greatest weaknesses in prairie manufacturing are found in primary metals, chemicals, transportation equipment, electrical products, and textiles.

13. Relative to all other Canadian regions, prairie manufacturing shows a high reliance upon domestic Canadian markets; in 1967, less than 7 per cent of prairie production went to foreign markets.
14. Within prairie manufacturing, the majority of prairie industries evaluated at the two-digit level had employment growth rates above average Canadian growth rates between 1961 and 1967. In total, however, prairie manufacturing failed to grow as rapidly as Canadian manufacturing employment; this fact resulted solely from the region's manufacturing structure which was dominated by industries having relatively slow employment growth even at the national level (eg. food and beverages., clothing, printing and publishing).
15. Many variations exist in the manufacturing structure of the three prairie provinces. In general, resource processing industries (particularly food and beverages) are most dominant in Saskatchewan, while non-resource related manufacturing is most prominent in Manitoba. The importance of different Canadian markets for manufacturing sales varies widely as between individual prairie provinces; only Saskatchewan would appear to have markets highly concentrated within the prairie region.

Part II: Opportunities for Prairie Manufacturing

16. Population projections suggest that, although exceptions may exist for specific industries, domestic consumer market opportunities for prairie manufacturing firms will not alter radically in the next decade. In a few instances, a possibility exists that prairie consumer market growth will create a market large enough to support particular industries that currently ship products into the region (see Chapter 4).
17. Given the expected relatively slow growth of many prairie markets, access to markets outside the region can be expected to be an important factor affecting prairie industrial development.
18. The United States (particularly the Midwest, and potentially the Pacific region) will continue to be major export markets for prairie manufacturers. It would appear, however, that greatly increased attention must be paid to

documenting foreign trade opportunities for prairie products, particularly export of agriculturally related products to the United States (pork), Japan (cattle, pork and feed-stuffs), other Pacific Rim countries and the EEC(cattle). In many cases, foreign and Canadian trade and tariff policies will play an important role in determining prairie exports.

19. Prairie natural resource industries will continue to act as a major impetus toward the region's manufacturing growth. Market opportunities indicate specific growth opportunities for resource based activities such as slaughtering and meat packing ,vegetable oil mills, fish products, smelting and refining, perhaps pulp and paper mills and other paper converters. Expected resource growth should generate prairie manufacturing opportunities for petroleum refineries, steel pipe and tube mills, iron and steel mills, mixed fertilizers, sawmills, industrial chemicals, etc. In many instances, however, the potential effectiveness of competition to prairie producers from large firms located outside the prairies (eg. Central Canada, Japan, etc.) must be assessed.
20. Scale economies (and the capital requirements they often imply) act in many instances to limit entry by prairie producers into particular established industries. With the exception of certain industries currently located in the prairies, scale economies appear to militate against large scale import-replacement or shift of manufacturing industries into the prairies. However, scale economies may well serve to focus prairie manufacturing development upon those industries where localization economies currently exist, or where yet-to-be captured scale economies (eg. industries yet to be developed in Canada) exist.
21. Current analysis of prairie transportation extends only to the point of indicating disparities, inconsistencies, and regional problem areas related to freight rates and current transportation policies. Analysis is not available regarding the broader and more fundamental questions (eg. the extent to which transport factors really restrict prairie manufacturing growth). Although some analysis suggests that the impact of transport factors on manufacturing growth within different Canadian regions would be minimal, this conclusion is viewed with skepticism by many government and private groups within the region.

Further research is required if a constructive consensus is to be achieved.

22. On an aggregate basis, available data indicate that prairie manufacturing has not been investing any less pro rata to its size than industry in Quebec and Ontario. Evidence suggests that capital factors have probably not acted to restrict significantly total prairie manufacturing growth, given the dominant position of large national and international firms within the region's manufacturing sector. Concern, however, is frequently expressed as regards the availability and cost of capital funds for smaller firms or firms privately owned by prairie residents. Further research seems relevant to quantify both the impact of capital factors on small firms and the impact of D.R.E.E. industrial incentives grants on total prairie manufacturing growth.
23. The impact of current manpower programmes is unclear as regards overall regional development, let alone discrete manufacturing development. Utilizing standard indicators, aggregate manpower supply and utilization in the prairies appears to be relatively high as compared to other Canadian regions, reflecting in part the results of mobility and out-migration. In some instances, the existence of highly skilled manpower currently in the prairies provides encouragement for industrial growth. However, concern is expressed as regards prairie management and entrepreneurship; further analysis in this area is warranted. Also, analysis would be relevant to evaluate the degree to which management and entrepreneurs who establish plants in the Ontario-Quebec heartland tend to examine seriously prospects in the prairie region.
24. Given increased national attention regarding the role of research and development in manufacturing growth, future research is required to evaluate the regional distribution and impact of Canada's research and development activities. At present, it is clear that research development and design are important within specific prairie industries, ranging from clothing to aircraft.
25. In total, 65 out of the 140 three-digit prairie manufacturing industries are identified as having only marginal or declining growth prospects (eg. will show less than 100 job increase between 1971 and 1981). In 1967, these industries accounted for less than 12 per cent of total prairie manufacturing employment; between 1971 and 1981,

these 65 industries are anticipated to show a total job increase ranging from zero to 3,900 (maximum increase would be 31 per cent above 1967 employment levels).

26. In total, 44 out of the 140 three-digit prairie manufacturing industries are identified as assured growth prospects (eg. direct government initiatives are unlikely to have any profound effect on growth). In 1967, these industries accounted for almost 55 per cent of total prairie manufacturing employment; between 1971 and 1981, these 44 industries are anticipated to show a total job increase ranging from 18,450 to 28,100 jobs (maximum increase would be 46 per cent above 1967 employment levels).
27. In total, 31 out of the 140 three-digit prairie manufacturing industries are identified as qualified growth prospects (eg. potential growth could, to some degree, be assisted by government policies directed at removing specific obstacles to growth). In 1967, these industries accounted for approximately 35 per cent of total prairie manufacturing employment; between 1971 and 1981, these 31 industries are anticipated (even without government policy assistance) to show a total job increase ranging from 4,100 to 15,300 jobs (maximum increase would be 39 per cent above 1967 employment levels). Possible additional employment growth of up to 33,000 jobs (84 per cent increase above 1967 employment levels) could occur if policies succeed in removing existing obstacles to growth. The estimate of 33,000 jobs represents, however, an outer limit created by adding up individual estimates for 31 separate industries; in reality, a more realistic aggregate analysis suggests that only up to 24,800 of these jobs could (in total) be achieved during the next decade.
28. Rates for total anticipated (eg. without new policy initiatives) prairie manufacturing employment growth between 1971 and 1981 presented in Part II range from 1.5 per cent per year to 3 per cent per year; independent studies of aggregate growth prospects project a range between 2.25 per cent per year and 3.9 per cent per year.
29. Even if all possibilities for prairie manufacturing growth outlined in Part II are achieved, in 1981 manufacturing will continue to account for a smaller share of the total prairie labour force than of the labour force in any other Canadian region..

30. Accomplishment of the manufacturing growth prospects outlined in Part II would be unlikely to result in even natural rates of population increase occurring in the prairie region (let alone in Manitoba and Saskatchewan, where net out-migration has consistently occurred in the past). The net impact on prairie population of the maximum potential prairie manufacturing growth discussed would at most range between 160,000 and 216,000 people over and above projected total population growth during the 1971-1981 period; however, projected prairie population growth will fall below natural population growth (eg. births less deaths) by between zero and 400,000 people during the same time period.

Part III: Guidelines for Prairie Manufacturing Development

31. The major prairie industries with qualified growth prospects are concentrated in resource-related activities (eg. slaughtering and meat packing, pulp and paper, fruit and vegetables, smelting and refining, agricultural implements). In addition, major employment potentials exist for certain other qualified growth prospects where a manpower and management base currently exists in the prairies (eg. clothing, furniture, and aircraft parts).
32. Over half of the additional possible job potential associated with qualified growth prospects will require increased penetration of non-prairie markets; over one-third of this potential will require improved penetration of foreign export markets; over 40 per cent of this potential will be directly affected by problems involving prairie resource development. Finally, problems involving research and design, management skills, scale economies, and transportation also affect a significant share of this possible additional job potential.
33. Chapter 13 outlines cases where the possibility exists for some degree of improved co-operation between prairie provincial governments, including the establishment of co-operative ventures to penetrate foreign markets.
34. Although the primacy of economic growth as a goal is under serious question throughout North America, it is unlikely that much would be gained in the prairies by an abrupt shift to a zero growth target. Rather than zero growth, it would appear that the goals of controlled and moderate

growth will be relevant for the seventies. Indicators are required to ensure that development and adjustment activities are in fact directed towards distinct and current individual needs. The basic economic and social problem is one of priorities given demonstrated needs within the region.

35. Questions currently exist regarding the federal regional development commitment; eg. as regards the relevant planning area (individual provinces versus the entire prairie region; rural versus urban areas); and, as regards the relative importance of different measures of regional employment performance (unemployment rates versus employment growth rates).
36. Choices are required regarding overall development strategies relevant to the most depressed parts of the prairies. Although manufacturing potentials could be examined for non-metropolitan areas, it would appear that alternative strategies for rural areas are probably far more relevant (eg. agriculture and other resource policies, adjustment policies, service industry growth in rural trade centres, consolidation of rural centres to create small urban centres in rural areas, etc.). Growth of manufacturing is likely to occur primarily in the region's larger centres.
37. The greatest potential for prairie manufacturing at the present time lies with industries related to the region's strong resource base; major potentials also exist within certain secondary manufacturing where a prairie base of activity already exists. In each case, a clear need exists to ensure that skills, technology, research and management are improved; increased skill and effort are required to penetrate export markets. Little potential is indicated, however, for shifting into the prairies those manufacturing industries not currently showing strength in the region.
38. Choices exist regarding strategies for prairie manufacturing growth. The fact that a large number of industries are successfully tied to local prairie market growth suggests that development policies should be selective, providing assistance only for those industries where action is indicated to be necessary in order to capture new growth opportunities for the prairie region. Furthermore, it is indicated that a wide variety of specific problems confront those industries where assistance would be relevant; this

suggests that prairie development strategy should focus upon a variety of programmes and services designed to meet the particular problems confronting particular industries (such an approach would be different than a single money or grant payment strategy).

39. It is concluded that a manufacturing growth strategy, conducted in isolation, would deal inadequately with prairie distribution and disparity problems; it would also probably not generate startling aggregate prairie growth within the next decade. Alternative strategies are therefore relevant for examination; such policies would presumably be conducted so as to complement a regional manufacturing growth strategy.
40. Major choices exist regarding the broad goals of federal regional initiatives. To the extent that action is focused to aid slow growth areas, direct relevance can be seen to Manitoba and Saskatchewan (and prairie rural areas in general). To the extent that a broader goal also exists to equalize opportunities for the creation of a balanced and sustaining industrial structure in each Canadian region, relevance can be seen to each prairie province. In addition, however, major choices regarding strategy also remain to be evaluated, assuming that broad consensus can be reached as to the appropriate goals for regional development within a large and regionally diverse federal state.

PART I

OVERVIEW AND PERSPECTIVE

PRAIRIE ECONOMY

CHAPTER 1PRAIRIE ECONOMY: OVERVIEW OF PAST PERFORMANCE1. Introduction

This chapter reviews the economic performance since 1951 of the prairies relative to other Canadian regions, highlighting the major economic problems of the prairies. The detailed analysis of the performance of individual industrial sectors, however, is presented in the following Chapter 2.

Economic performance is evaluated by means of volume factors (eg. total population, income and employment) and welfare factors (personal income per capita, unemployment).

Ideally, economic performance would be evaluated by comparing actual performance with potential performance. Given the inadequate availability of prairie data regarding regional potentials, this chapter shows prairie performance relative to the performance of other Canadian regions.

2. Overview of Prairie Economic Growth, 1951 - 1967

Prairie growth in personal income, population and per capita personal income between 1951 and 1967 is compared with growth in other Canadian regions in Tables 1.1, 1.2 and 1.3. These relative percentage changes in population, total income and per capita income are summarized in Chart 1.

Chart 1 is a relative growth chart, presenting percentage

TABLE 1.1
POPULATION - (JUNE)
(000's)

	<u>1951</u>		<u>1961</u>		<u>1967</u>		<u>1969</u>		<u>1951-1961</u>	<u>1961-1967</u>	<u>1961-1969</u>
		<u>Per</u>		<u>Per</u>		<u>Per</u>		<u>Per</u>	<u>Percentage</u>	<u>Percentage</u>	<u>Percentage</u>
		<u>Cent</u>		<u>Cent</u>		<u>Cent</u>		<u>Cent</u>	<u>Change</u>	<u>Change</u>	<u>Change</u>
Atlantic	1618	11.5	1897	10.4	1986	9.7	2012	9.6	17.2	4.7	6.1
Quebec	4056	30.0	5259	28.8	5868	28.8	5984	28.4	29.7	11.6	13.8
Ontario	4598	32.8	6236	34.2	7149	35.0	7452	35.4	35.6	14.6	19.5
Manitoba	777	5.5	922	5.1	963	4.7	979	4.6	18.7	4.4	6.2
Saskatchewan	832	5.9	925	5.1	958	4.7	959	4.6	11.2	3.6	3.7
Alberta	940	6.7	1332	7.3	1490	7.3	1561	7.4	41.7	11.9	17.2
Prairies	2548	18.2	3179	17.4	3411	16.7	3499	16.6	24.8	7.3	10.1
British Columbia	1165	8.3	1629	8.9	1947	9.5	2067	9.8	39.8	19.5	26.9
Canada	14009	100.0	18238	100.0	20405	100.0	21061	100.0	30.2	11.9	15.5

Source: Dominion Bureau of Statistics, 11-003, Volume 45-46; Canadian Census 1951 and 1961.

TABLE 1.2

PERSONAL INCOME, REGIONAL DISTRIBUTION; 1951, 1961, 1967

	<u>1951^a</u>	<u>1961^a</u>	<u>1967^a</u>	<u>1951-1961^a</u>	<u>1961-1967^a</u>
	(\$ Millions)			(Percentage Change)	
Atlantic	1,191	2,129	3,376	78.8	58.6
Quebec	3,887	7,712	13,074	98.4	69.5
Ontario	6,170	12,092	20,373	96.0	68.5
Prairies	3,024	4,982	8,106	64.7	62.7
Manitoba	884	1,496	2,323	69.2	55.3
Saskatchewan	988	1,296	2,119	31.2	63.5
Alberta	1,152	2,190	3,664	90.1	67.3
British Columbia	1,607	3,057	5,231	90.2	71.1
Canada	15,913	30,099	50,360	89.1	67.3

Source: Dominion Bureau of Statistics, Revised National Accounts, 1928-1968.

^aData shown are for three-year centered averages (i.e. 1951 represents average of 1950, 1951, 1952).

TABLE 1.3

CHANGES IN RELATIVE PER CAPITA PERSONAL INCOME, CANADIAN REGIONS, 1951-1967

Regions	Relative Per Capita Personal Income (Per Cent of Canadian Average)			Per Cent Growth, Per Capita Income	
	1951 ^a	1961 ^a	1967 ^a	1951- 1961	1961- 1967
Atlantic	64.8	68.0	68.9	+52.5	+51.5
Quebec	84.4	88.9	90.3	+53.0	+51.9
Ontario	118.1	117.5	115.5	+44.4	+46.9
Manitoba	100.2	98.3	97.7	+42.6	+48.7
Saskatchewan	104.5	84.9	89.6	+18.0	+57.9
Alberta	107.9	99.6	99.6	+34.2	+49.6
Prairies	104.5	95.0	96.3	+32.0	+51.6
British Columbia	121.4	113.7	108.9	+36.0	+43.2
Canada	100.0	100.0	100.0	+45.2	+49.5

Source: Tables 1.1 and 1.2.

^aIncome data used represent three year averages.

changes in personal income and percentage changes in population. Each region is represented by a point on the graph with co-ordinates determined by the percentage changes in population and in total personal income between the dates specified.

On the basis of Chart 1, the various combinations of increases or decreases relative to the national average are seen to be as follows:¹

¹All income data presented in Chart 1 and Tables 1.2 and 1.3 represent three year averages (as explained in Table 1.2).

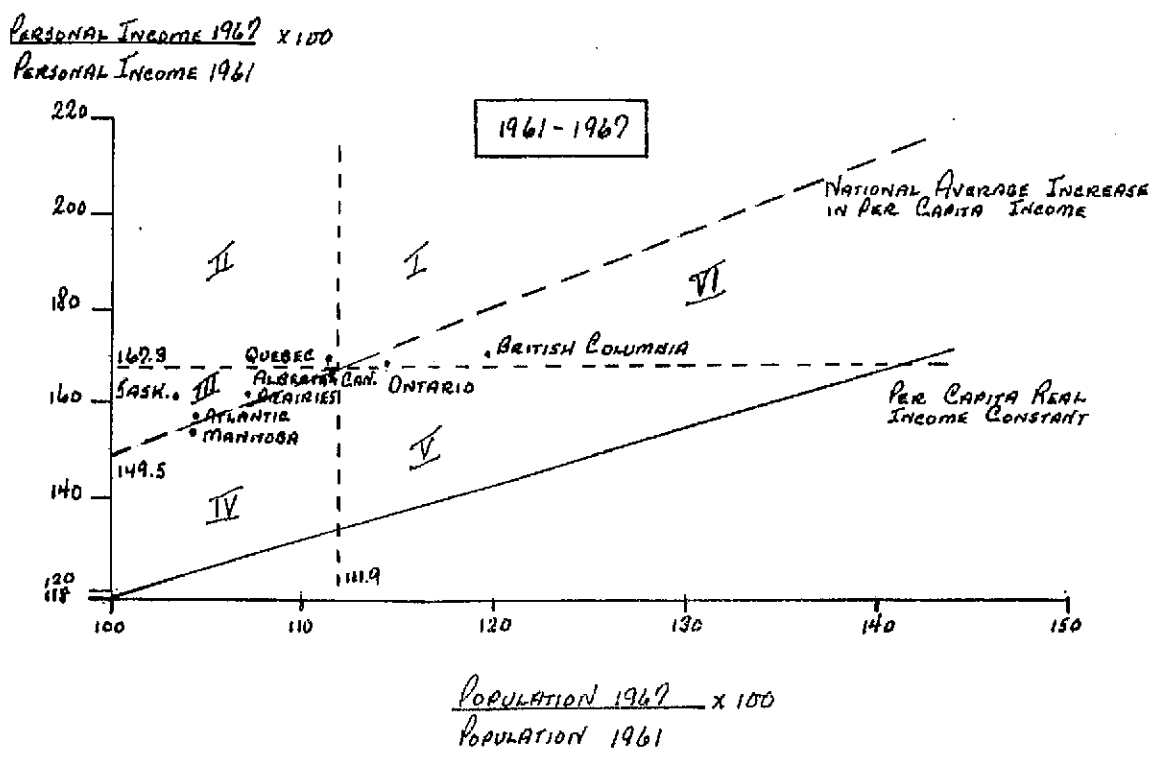
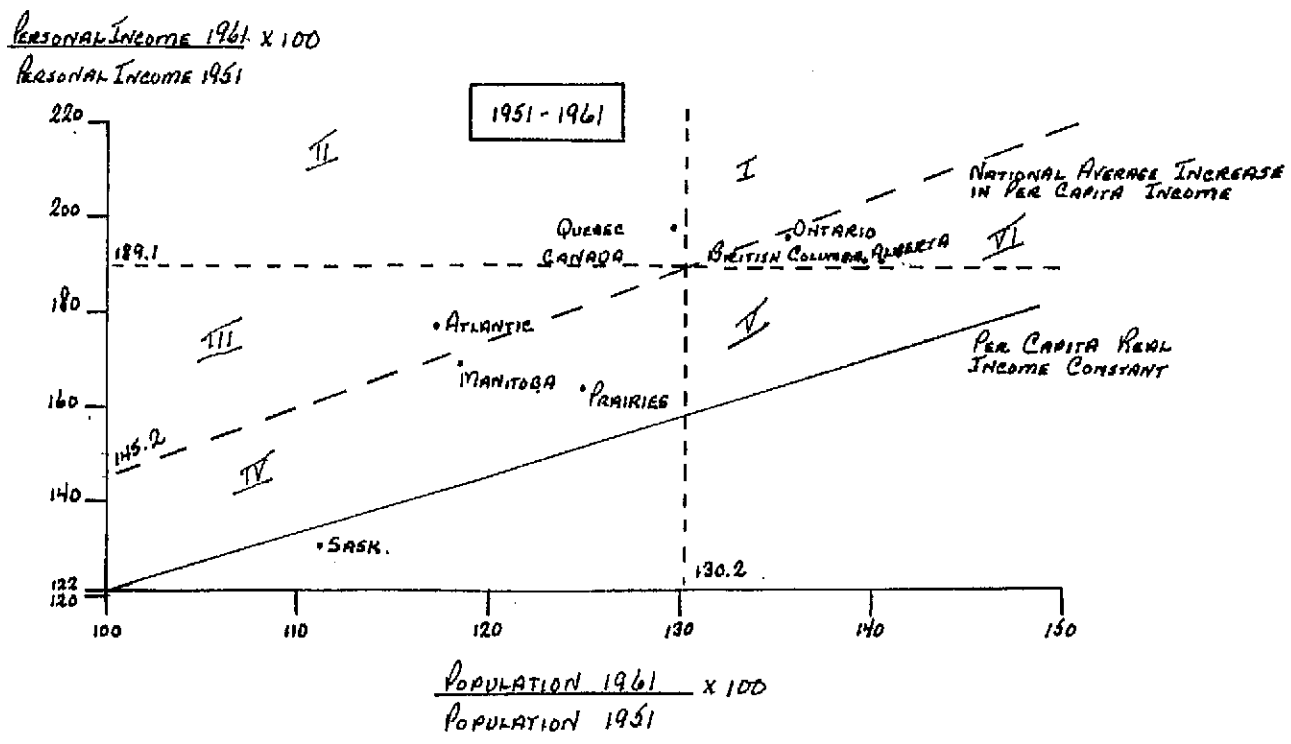
The origin of the diagram is at 100 for population, representing no change in population. The origin for personal income is selected to represent unchanged total real income (i.e. utilizing the Gross National Product deflator, an increase in total money income of 22 per cent between 1951 and 1961, and 18 per cent between 1961 and 1967, is accounted for by price increases alone, and represents an unchanged total real income). Any point to the right of the solid vertical axis represents an increase in population; any point above the solid horizontal axis represents an increase in real total personal income.

The solid diagonal line drawn through the origin represents all points on the chart for which per capita income in current dollars increased at the same rate as prices, or for which per capita real income remained unchanged. Any point above this line represents an increase in per capital real income.

In addition to the solid lines, dashed lines are shown. The origin of these dashed lines is the Canadian average increase (i.e. 30 per cent for population, 89 per cent for total personal increase in current prices, and 45 per cent for per capita income in current prices between 1951 and 1961). Any point to the right of the dashed vertical axis represents a population increase greater than the national average; any point above the dashed horizontal axis is an income increase greater than the national average; any point above the dashed diagonal axis is a per capita income increase greater than the national average.

CHART 1

PERCENTAGE CHANGE IN POPULATION & TOTAL PERSONAL INCOME, BY REGION 1951-1967



- I. Above average increases in population, total income and per capita income: No Canadian region was in this category during either the 1951 - 1961 or 1961 - 1967 periods.
- II. Above average increases in total and per capita income; below average increases in population: Quebec was the only region within this category during both the 1951 - 1961 and 1961 - 1967 periods.
- III. Above average increases in per capita income; below average increases in population and total income: Between 1951 and 1961, the Atlantic region was the only region in this category. Between 1961 and 1967, the category included the Atlantic and Prairie regions, and Saskatchewan.
- IV. Below average increases in per capita income, population and total income: Manitoba was within this category for both periods examined, although Manitoba's per capita income growth consistently was just slightly below the national average. Between 1951 and 1961, the Prairie region and Saskatchewan also were within this category; Saskatchewan actually showed a drop in real per capita income. (Saskatchewan growth estimates, despite averaging, are influenced by the very low farm income occurring in 1961.)
- V. Below average increases in per capita income, and total income; above average increases in population: No Canadian region was in this category during either of the periods examined.
- VI. Below average increases in per capita income; above average increases in population and total income: British Columbia and Ontario were within this category for both periods; Alberta was also in this category during the 1951 - 1961 period. (During the 1961 - 1967 period, Alberta's growth performance was virtually identical to the Canadian average for population, total income and per capita income.)

It is clear from Chart 1 that population and total income growth in the prairies both lagged behind the national average during the 1951 - 1961 and 1961 - 1967 periods. Per capita income growth for the prairies lagged behind the national average between 1951 and 1961, but

was marginally above the national average between 1961 and 1967.

Manitoba and Saskatchewan along with the Atlantic region clearly show the lowest population and personal income growth rates in Canada for both periods. In contrast, Alberta showed above average population and income growth between 1951 and 1961, and equalled the national average between 1961 and 1967. In reality, therefore, the prairie average figures in Chart 1 tend to obscure the wide differences in population and income growth between Alberta and the other two prairie provinces.

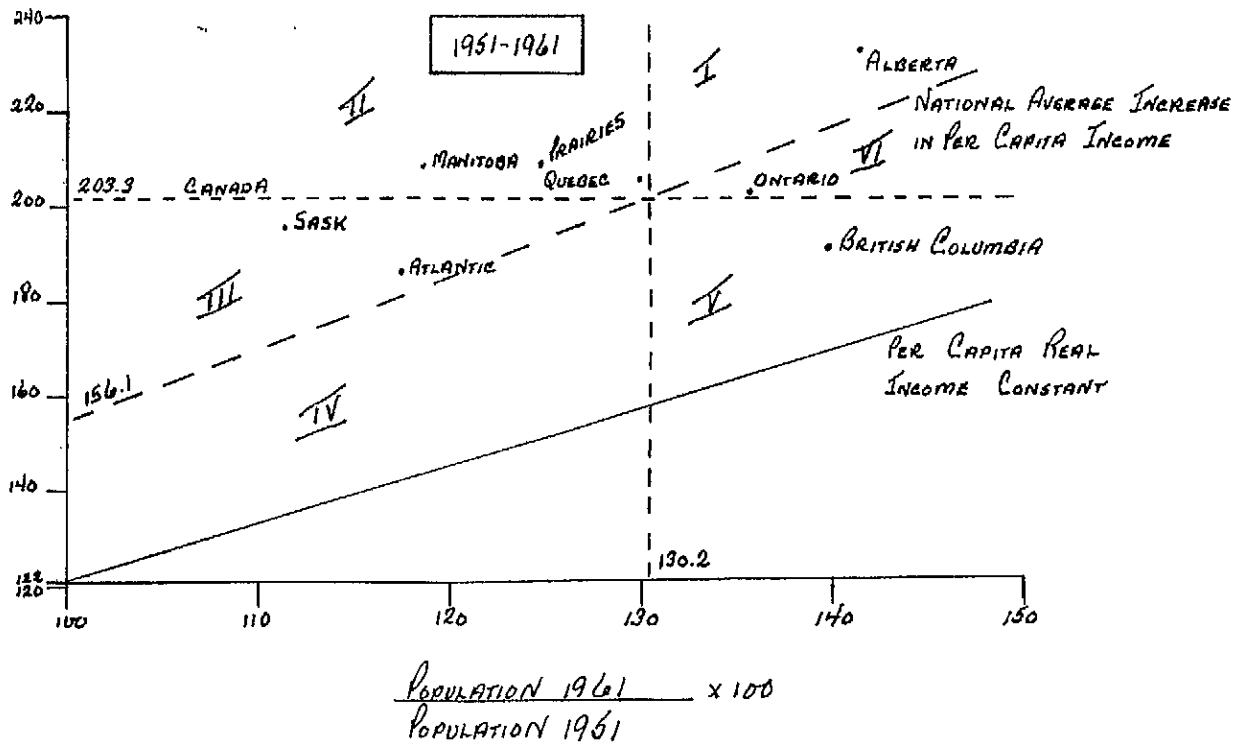
Prairie regional income is influenced by fluctuating farm incomes to an extent unparalleled in other Canadian regions -- this influence was particularly noticeable in 1961 when prairie farm incomes were extremely low.

Chart 2 presents the same comparative analysis as Chart 1, except that the effect of net income from farm operators is excluded. No significant difference emerges between Charts 1 and 2 for the 1961-1967 period; however, relative income growth for all three prairie provinces shows major improvement for the 1951-1961 period in Chart 2 when the farm income component is excluded (eg. per capita non-farm income growth exceeded the national average in each prairie province; total prairie non-farm income growth exceed the national average).

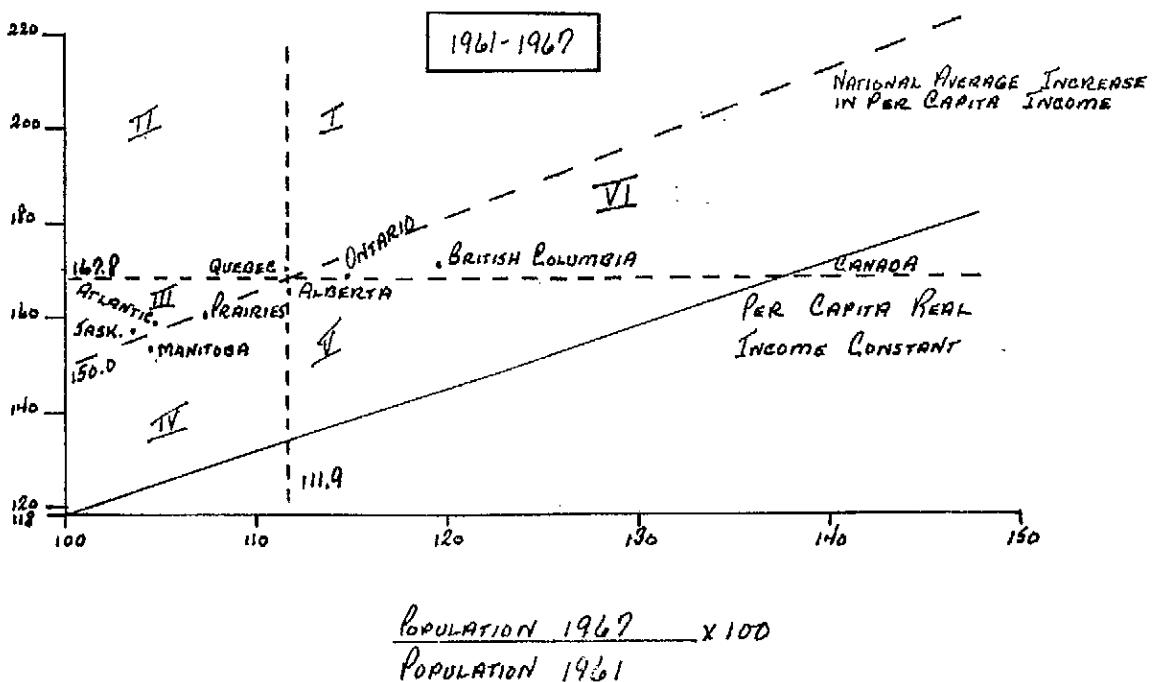
Chart 1 indicates that income per capita growth rates have tended to lag behind the national average in the regions

PERCENTAGE CHANGE IN POPULATION & TOTAL PERSONAL INCOME EXCLUDING NET INCOME FROM FARM OPERATORS, BY REGIONS, 1951-1967

$\frac{\text{TOTAL NON FARM INCOME 1961} \times 100}{\text{TOTAL NON FARM INCOME 1951}}$



$\frac{\text{TOTAL NON FARM INCOME 1967} \times 100}{\text{TOTAL NON FARM INCOME 1961}}$



experiencing the fastest growth in total income and population. In contrast, income per capita growth rates have tended to exceed or equal the national average in the Atlantic and Prairie regions. Table 1.3 compares the actual levels of per capita incomes in the different regions during 1951, 1961 and 1967, documenting the established facts of regional disparity within Canada. Despite relatively rapid per capita income growth, levels of per capita income in the Atlantic and Quebec regions remained significantly below the national average between 1951 and 1967. During this period, levels of per capita income in the prairies went from being slightly above to being slightly below the national average; this drop was most significant in Saskatchewan.

Most of the above observations regarding relative growth in the prairies also held true during the latter half of the 1960's, although the problems of the wheat economy severely influenced the region. Alberta tended to sustain population and total income growth rates exceeding the national average, while population growth in Saskatchewan and Manitoba tended to be far below the national average (actual population decline occurred in Saskatchewan during 1969 and 1970). Resulting income per capita growth tended to parallel the national average in Alberta, exceed the national average in Manitoba, and fall below the national average in Saskatchewan.

3. Prairie Employment and Unemployment

Detailed labour force and employment data are available

on a provincial basis only since 1966; for this reason, extensive analysis of prairie performance relative to other regions is not conducted in this study.

During the 1966-1970 period, average monthly employment growth rates for Manitoba and Saskatchewan were well below the Canadian average; in fact, employment growth rates for the Manitoba-Saskatchewan area were only slightly higher than growth rates for the Atlantic region. In contrast, Alberta employment growth rates exceeded the Canadian average, approximating growth rates shown for Ontario.

AVERAGE MONTHLY EMPLOYMENT

	Total 1966 <u>('000)</u>	Growth Rate 1966-1970 <u>(Per Cent)</u>
Atlantic	586	3.6
Saskatchewan	324	3.1
Manitoba	348	4.6
Quebec	2,016	6.4
Prairies	1,222	8.0
Ontario	2,651	13.0
Alberta	550	13.1
British Columbia	678	19.6
Canada	7,153	10.1

Source: Dominion Bureau of Statistics, 71-001.

Despite the fact that employment growth rates have been relatively low in Manitoba and Saskatchewan, existing studies have demonstrated that manpower utilization tends to be relatively high throughout the prairie region as compared to other Canadian regions

(i.e. total employment represents a relatively high proportion of the region's population; civilian labour force participation rates tend to be relatively high, etc.).² In particular, unemployment rates tend to be relatively low in the prairies (eg. between 1961 and 1968 prairie unemployment rates averaged only 63 per cent of the Canadian rate, lower than any other region).³ The combined display of low employment growth rates and low unemployment rates suggests that out-migration has played an important role in areas such as Manitoba and Saskatchewan (see below).

4. Population Density and Out-Migration

The prairie region is characterized by a relatively low population density. In 1970, for example, prairie population density was only 5.2 persons per square mile of land area. This was below the population density for Canada (including the Yukon and Territories) of 6.0 persons per square mile; British Columbia (5.9); the Atlantic region (10.4); Quebec (11.5); and Ontario (22.2).

²See Denton, F.T. An Analysis of Interregional Differences in Manpower Utilization and Earnings; Economic Council of Canada Staff Study No. 15, 1966; pp. 3 - 8.

³Systems Research Group; Canada Economic Projections to the Year 2000; 1970; p. 101. See also F.T. denton, op. cit.; Table 5 shows estimated regional unemployment rates expected at different levels of Canadian unemployment; p. 6. See also Dominion Bureau of Statistics Special Labour Force Survey No. 8., 71-513, which estimates that prairie labour force underutilization rates are also relatively low. Two factors however, call into question the meaningfulness of existing studies: a) the problem of evaluating underemployment within the region's relatively large farm sector; b) the fact that manpower problems for the relatively large native community are not evaluated by existing data.

Low population densities can be responsible for relatively high transportation, communication and other costs within a region; similarly, such a situation combined with low population growth rates and slightly below average income levels creates restrictions on consumer market opportunities within a region. For these and other reasons, concern has been expressed about low population growth rates in the prairie provinces of Manitoba and Saskatchewan.

Table 1.4 presents estimated net interprovincial migration for each prairie province between 1959 and 1970. Table 1.4 shows that significant net out-migration has occurred for Manitoba and Saskatchewan throughout the period; Alberta experienced net in-migration, except between 1963 and 1967.⁴

Net out-migration has clearly created low population growth rates in Manitoba and Saskatchewan. Considerable debate exists concerning the net economic impact of such net migration losses; while out-migration has contributed to reducing regional unemployment rates and increasing regional per capita incomes, concern is expressed that out-migration tends to be selective (i.e. concentrating on a region's skilled and working age population, thereby reducing regional

⁴The Atlantic region and the Manitoba-Saskatchewan region have roughly the same number of people. Available data indicate more net migration out of Manitoba-Saskatchewan than out of the Atlantic.

TABLE 1.4

ESTIMATED NET INTERPROVINCIAL MIGRATION, PRAIRIE PROVINCES; 1959-1970.

<u>Census Year</u> ^a	<u>Manitoba</u>	<u>Saskatchewan</u>	<u>Alberta</u>
1959-1960	-2,100	-9,700	+6,200
1960-1961	-1,200	-7,700	+6,000
1961-1962	-1,600	-10,300	+6,300
1962-1963	-2,200	-11,700	+3,600
1963-1964	-5,000	-6,500	-2,900
1964-1965	-8,400	-3,800	-7,500
1965-1966	-15,600	-8,200	-13,300
1966-1967	-13,908	-9,850	-2,300
1967-1968	-8,500	-8,200	+4,600
1968-1969	-7,600	-13,400	+6,800
1969-1970	-10,600	-27,000	+6,600

Source: Dominion Bureau of Statistics Population Estimates, Based on Family Allowance data.

^aCensus years (from June 1 to May 31).

capacity for growth).⁵

5. Low Incomes and Economic Disparity within Prairie Region

Table 1.5 presents estimates of the incidence of low incomes in the prairies and other Canadian regions during 1967 and 1969, based on criteria established by the Economic Council of Canada. In 1969, 24 per cent of prairie families and 40 per cent of prairie unattached individuals had low incomes -- this incidence exceeded that estimated for all other regions except the Atlantic region. Furthermore, the prairies was the only Canadian region that failed to show a drop in low income incidence between 1967 and 1969.

It is clear that the problem of low incomes is particularly significant within the prairie region. In 1969, the prairies accounted for 23.3 per cent of Canada's low income families (comparable percentages were 27.2 per cent for Quebec, 26 per cent of Ontario, 14.9 per cent for Atlantic region, 8.5 per cent for British Columbia). By contrast, the prairie share of all Canadian families was only 16.8 per cent in 1969.

The problems faced by the relatively large rural community in the prairies are a major factor responsible for low incomes and income disparity within the prairie region. In 1961, rural non-farm family incomes were significantly below urban incomes in the prairies

⁵See Manitoba Economic Consultative Board; Third Annual Report; March, 1966; Chapter 4; Also, Manitoba Targets for Economic Development to 1980; Royal Commission Report, March, 1969; p. 20.

TABLE 1.5

LOW INCOME INCIDENCE, CANADIAN REGIONS; 1967, 1969

	<u>Families</u>		<u>Unattached Individuals</u>	
	<u>1967</u>	<u>1969</u>	<u>1967</u>	<u>1969</u>
	(Per Cent of Regional Total)			
Atlantic	33.7	29.7	52.5	49.7
Quebec	20.3	17.5	42.5	36.2
Ontario	12.4	12.1	32.5	30.0
Prairies	23.0	24.0	39.8	40.0
British Columbia	16.2	14.2	40.5	34.5
Canada	18.6	17.3	39.0	35.5

Source: Dominion Bureau of Statistics, 13-542.

Note: Table excludes families on Indian reserves.
 Following criteria define income cut-offs for low income families (based on criteria established by Economic Council of Canada in Fifth Annual Review, 1968, Chapter 6):

	<u>1967</u>	<u>1969</u>
1 person unit	\$1,740	\$1,890
2 person unit	2,900	3,157
3 person unit	3,480	3,788
4 person unit	4,060	4,420
5+ person unit	4,640	5,051

(eg. 63 per cent of urban income levels in Manitoba; 66 per cent of urban income levels in Saskatchewan; 71 per cent of urban income levels in Alberta). Within the prairie region, a high degree of regional disparity exists reflecting a sharp distinction between income levels in metropolitan areas and in many rural agricultural regions.⁶ In addition to the problems of the farm community, major economic losses confront many families living in the multitude of small prairie centres which are experiencing population and income decline.

Table 1.6 provides an indication of the economic disparity between metropolitan and non-metropolitan areas in the prairies during 1967. Income per taxpayer in the region equalled 100 per cent of the Canadian average in metropolitan areas, but only 90 per cent of the Canadian average in non-metropolitan areas. Only 23 per cent of the region's non-metropolitan population paid income tax as compared to 40 per cent of the population in metropolitan areas.

Average family income in the prairie region is estimated to have been \$6,908. in 1967 (Dominion Bureau of Statistics, 13-534). Within the prairies, however, estimated average family incomes steadily declined as the size of centre declined:

⁶ See Manitoba Targets for Economic Development to 1980; pp. 415 - 422; also Part Six, Chapter 2.

TABLE 1.6

ECONOMIC DISPARITY BETWEEN METROPOLITAN AND NON-METROPOLITAN AREAS,
PRAIRIE PROVINCES, 1967

	Declared Income Per Taxpayer (Per Cent of <u>Canadian Average</u>)	Taxpayers as Per Cent of Regional <u>Population</u>
Manitoba		
Metropolitan Areas	96.4	39.7
Non-Metropolitan Areas	84.8	22.3
Saskatchewan		
Metropolitan Areas	98.7	39.4
Non-Metropolitan Areas	91.8	24.0
Alberta		
Metropolitan Areas	103.4	39.8
Non-Metropolitan Areas	91.7	23.7
Prairie Region		
Metropolitan Areas ^a	100.3	39.7
Non-Metropolitan Areas	90.2	23.4

Source: Department of National Revenue; Taxation Statistics, 1969
edition; Canada Year Book, 1969.

^aMetropolitan areas include Winnipeg, Regina, Saskatoon, Calgary and Edmonton.

	<u>Average family income, 1967</u>
Centres of 30,000+	\$ 8,210.
Centres 15,000 - 29,999	6,950.
Centres 1,000 - 14,999	6,304.
Rural Areas	4,919.

Average family incomes in prairie rural areas in 1967 were only 60 per cent the size of average family incomes in urban centres with a population of 30,000 and over.

Regional development experience throughout Canada indicates that average incomes normally decline as the size of centre declines; in 1967, average incomes in Canadian rural areas were only 63 per cent of the size of average family incomes in Canadian urban centres with a population of 30,000 and over. As indicated below, however, prairie median family incomes were consistently below the Canadian average in 1967 for each rural-urban classification:

	<u>Median family incomes, 1967:</u> <u>Region as a Per Cent of Canada</u>		
	<u>Prairies</u>	<u>Atlantic</u> (Per Cent)	<u>Quebec</u>
Centres of 30,000+	98.2	82.7	95.9
Centres 15,000 - 29,999	98.2	86.3	96.4
Centres 1,000 - 14,999	95.8	84.7	93.4
Rural Areas	87.8	88.0	97.0
Total Region	92.5	75.3	96.1

Source: Dominion Bureau of Statistics, 13-534, Income Distribution by Size in Canada, 1967.

Prairie median family incomes for urban centres (i.e. 1,000 population and above) were marginally below median Canadian family incomes; this pattern was similar to the Quebec experience, but considerably

more favourable than the pattern shown in the Atlantic provinces. In rural areas, prairie family incomes were identical to those experienced in the Atlantic region where median family incomes were 12 per cent lower than median incomes for all Canadian rural areas. This last observation, however, is somewhat misleading: average rural family size is lower in the prairies than in the other two regions. If average family size estimates for 1966 are assumed for 1967, average incomes per rural family member would compare as follows (shown as per cent of Canadian average):

Prairies	94 per cent
Atlantic	84 per cent
Quebec	83 per cent

Average regional incomes are clearly influenced by the relative importance of a region's rural and small town population. In 1967, rural families accounted for more than 28 per cent of all prairie families; comparable percentages for the Atlantic region and Quebec were 45 per cent and 18 per cent.

Disparities in average incomes as between different areas of regions provide a strong indication of economic disparity in living standards; however, firm conclusions cannot be reached without extensive analysis of expenditure patterns. For example, the hypothesis is frequently advanced that farm families require less income than urban families eg. farm families are presumed to require less funds for food and housing. Furthermore, variations

in regional average family expenditures could in some instances be explained by variations in regional average family characteristics (eg. average age, family size, asset values, education, etc.) which imply different expenditure needs.

Unfortunately, little research is available regarding comparative regional expenditure patterns (particularly for farm and rural groups). It is probable, for example, that low income rural residents do in fact have a better opportunity than urban residents to produce their own food. However, this in itself does not prove that rural families require less income than urban families. Numerous additional points require evaluation: a) for some expenditures items, rural costs may exceed urban costs; b) rural expenditures may simply reflect lower quality purchases relative to urban purchases (eg. housing, cars, clothing, etc.); c) in the case of farm families, a lower cost of living relative to urban families must be balanced against the fact that farm family marginal and average propensities to consume are lower than for urban families (eg. forced saving or investment is required for the farm firm); d) the problem of evaluating different work-leisure patterns must be evaluated (eg. to what extent are lower farm expenditure counterbalanced by reduced leisure time).

At this time no conclusions can be provided on the issue of expenditure needs for different regional groups; further research is

required in this area.⁷

Another area in which average income (and unemployment) comparisons between the prairies and other Canadian regions suffers is in the actual groups covered. Current regional incomes and unemployment data exclude, for example, Indian people living on reservations; this excluded group is acknowledged to face severe disparity problems, and in fact constitutes a relatively major element within the prairie community.

Although only 17 per cent of Canada's total population lived in the prairies in 1967, 39.5 per cent of Canada's Indian population lived in this region. This proportion represented an increase over the comparable 1961 estimate of 37.5 per cent. Between 1961 and 1967, Indian population increases averaged 26.8 per cent in the prairies; by comparison, the total prairie population increased only 7.3 per cent during this period.

Current estimates indicate that native peoples (Indian and Metis) represent over 6 per cent of the total prairie population;

⁷See MacMillan and Loyns, "A Cross-Section Analysis of Farm Household Expenditures" in Canadian Journal of Agricultural Economics, Vol. 17, No. 2, July, 1969. Also, J.A. MacMillan has recently completed extended research on rural, farm and urban expenditures in the Interlake. Also Report of the Special Committee on Farm Income in Ontario, Challenge of Abundance (Toronto: 1969), p. 3 which concluded for Ontario: "For food and housing of comparable quality, the cost in rural communities is equal to or greater than the average cost for the province."

in Manitoba and Saskatchewan, native people represent over 7 per cent of the provincial population. In no other Canadian provincial region is the relative size of the native population even remotely comparable. The existence of such a large and significant native population within the prairies adds another major dimension to the problem of low incomes and disparity within the region.

6. Conclusions

Both population and total income growth in the prairies lagged behind average growth in all Canadian regions other than the Atlantic region during the 1951-1961 and 1961-1967 periods. Per capita income growth for the prairies lagged behind the national average between 1951 and 1961, but was marginally above the national average between 1961 and 1967.

Between 1951 and 1967, actual per capita income in the prairies went from being slightly above to being slightly below the national average. Throughout the 1951-1967 period, prairie regional income was influenced by fluctuating farm incomes to an extent unparalleled in any other Canadian region.

Although employment growth rates have been relatively low in Manitoba and Saskatchewan, manpower utilization has tended to be relatively high throughout the prairies as compared to other Canadian regions, i.e. regional unemployment rates have been the lowest in Canada; total employment has represented a high proportion of the region's population; civilian labour force participation rates have been relatively high.

Population density in the prairie region has remained below that shown by any other Canadian region. Throughout recent decades, significant net population out-migration has occurred in Manitoba and Saskatchewan. In contrast, Alberta has tended to experience net population in-migration. Although out-migration has contributed to reducing regional unemployment rates and raising regional per capita incomes, concern has been expressed that out-migration has tended to reduce the region's growth capacity by attrition of the region's skilled and working age population.

Estimates of prairie regional incomes and unemployment exclude native people living on reservations; despite the lack of precise estimates, it is acknowledged that unemployment and income problems are particularly severe within this group. Current estimates indicate that Indian and Metis people represent over 6 per cent of the total prairie population. The native population, which is experiencing relatively rapid growth, is far more significant in size within the prairies than within any other Canadian provincial region.

In 1969, the incidence of low incomes within the prairies exceeded estimates for all regions other than the Atlantic region; in total, the prairies accounted for 23 per cent of Canada's low income families (native people living on reservations are not included in this data).

Significant income disparity exists within the prairie

region as between rural and urban areas -- this rural-urban disparity, which is common throughout Canada, partially explains the unusual combination of a relatively high average income with a relatively high incidence of low income in the prairie region. In addition, however, within both rural and urban areas prairie median family incomes in 1967 were below Canadian median family incomes, only ranking higher than median family incomes in the Quebec and the Atlantic regions. Detailed data are not available to show interprovincial differences within the prairies as regards recent rural and urban income levels.

In short, the prairie region has faced distinct economic problems in recent years: slow population and income growth; low population density; significant out-migration; significant rural-urban income disparity; low incomes and high unemployment within a significant and growing native community. In two areas -- average regional income and unemployment levels -- the prairies have, however, performed relatively well as compared with Canadian averages.

Within the prairies, economic performance has displayed wide variations. In general, the region's distinct economic problems were most significant within Saskatchewan and Manitoba, while Alberta experienced relatively rapid population and income growth.

Although this chapter has provided a broad survey of available indicators of prairie regional economic performance, many of the questions relevant for complete evaluation remain unexplored.

For example, a high incidence of low incomes in a region may reflect only the relative immobility of low income groups; programmes designed to provide new jobs and industries might act both to raise average incomes and to reduce the incidence of low incomes, yet this development could reflect only migration into the region of high skill and high income groups (eg. there could be little relative improvement for the region's low income groups). Aside from a more detailed examination of the realities hidden under regional averages, this chapter also does not evaluate actual regional performance by comparison with potential regional performance. Furthermore, this chapter does not examine regional differences in expenditures or costs of living; such analyses is relevant for proper evaluation of the adequacy of different regional incomes. Although relevant, the above questions are not examined in this report due to lack of available data and analysis.

CHAPTER 2CHANGES IN PRAIRIE ECONOMIC STRUCTURE1. Introduction

Throughout Canada, a close relationship has been observed between national economic development and urban growth, particularly the growth of leading metropolitan areas. Early sequences of raw material export expansion created the necessary framework for urban growth; urban development itself acted to transform economic structures. Whereas in 1870 over half of Canada's economic activity was primary (i.e. non-urban), this proportion had fallen to one-quarter by the 1920's, and currently it stands at just over one-tenth.¹ Changing economic structure has seen the role of staple resource production diminish in relative importance, with self-generating urban growth increasing in relative importance.

This chapter examines changes in prairie economic structure within the framework of the general trends in the Canadian economy outlined above. Successive sections review population changes and urban growth, general changes in economic structure, major prairie primary industry, and the structure and performance of prairie manufacturing. This chapter represents a summary of more detailed and descriptive analysis presented in Appendix G.²

¹Lithwick, N.H.; Urban Canada, Problems and Prospects; Central Mortgage and Housing Corporation; Ottawa; 1970; p. 73.

²For a general review of prairie development, also see Report of the Royal Commission on Consumer Problems and Inflation, Prairie Provinces Cost Study Commission (Saskatoon: 1968), Chapter 19.

2. General Economic and Population Structures

Development of the modern prairie economy was founded initially on the export of farm products. More recently, exports of oil, gas and mining commodities have provided a strong stimulus to counter-balance declines in farm labour needs. throughout the last century, related activities such as railway transportation, resource processing, pipeline construction, farm and mine machinery construction, and a variety of service industries have evolved from the base provided by the major resource industries. In addition, population concentration in the Winnipeg area created certain non-resource related manufacturing activities, particularly in the clothing and furniture industries.

During the 1951 to 1966 period, the Canadian prairies experienced significant urban growth; This growth was accompanied by changes in consumer demands, economic needs, communication systems, and general social values. Whereas in 1951 the prairie region was Canada's least urbanized provincial region (only 44 per cent of the region's population lived in centres having at least 1,000 people), by 1966 almost two-thirds of the prairie population lived in urban centres. By comparison, in 1966 a smaller percentage of the Atlantic region's population (54 per cent) lived in urban centres, while in Ontario, Quebec and British Columbia over 75 per cent of the people lived in urban centres.

Within the prairies, five metropolitan areas (Winnipeg, Regina, Saskatoon, Edmonton, Calgary) currently have populations exceeding 100,000; together, these centres account for almost half (47 per cent) of the region's population. By comparison, a significantly smaller percentage of the Atlantic region's population (21 per cent) lives in metropolitan areas having at least 100,000 people. In Ontario, Quebec and British Columbia, between 50 per cent and 56 per cent of the population live in metropolitan areas.

Even though major urban growth has occurred, however, the prairie region remains as the only Canadian region where the farm population (approximately one-fifth of the total population) constitutes a significant share of the total population. Rural population continues to account for a relatively large share of total population in both the Atlantic and prairie regions. In the Atlantic region, however, less than 15 per cent of the rural population lives on farms; by comparison, over 50 per cent of the prairie rural population lives on farms.

Given the impact of technological changes, particularly reduced farm labour needs, the prairie rural population has experienced a process of adjustment. Between 1951 and 1966, the prairie rural population showed an actual decline of some 154,000 people; Quebec was the only other Canadian region to share this experience of

rural population decline.

In summary, the prairies currently present a rather unique economic structure within Canada, where a number of developed metropolitan areas exist concurrently with major agriculturally dominated rural areas. Population decline has been experienced in the rural agricultural regions of the prairies, while population growth has continued within mineral regions and within the urban areas. Communication systems, consumer demands and general social values in the prairies have experienced major changes in recent years, partly as a result of the process whereby urban located populations have become dominant within the region.

Within the general analysis outlined above, major variations exist between the three prairie provinces. Manitoba and Alberta show similar degrees of urban population development while Saskatchewan remains relatively less urbanized (in the demographic sense). Variations in the size and number of metropolitan centres in each prairie province appear to be explained by broad factors influencing the growth of Canada's urban system.³ Available research does not permit conclusive evaluation of shifts in influence for major metropolitan centres (eg. Vancouver, Toronto, Montreal, as well as prairie centres) within

³See Lithwick, op. cit.; Part II, Chapter 2.

the prairie region.⁴

3. Prairie Industrial Structure and Growth

3.1 General Review

The general economic structure of the Canadian prairies shows broad similarities to the economic structure of the adjacent Upper Midwest region in the United States. Agriculture and minerals, however, are relatively more important in the Canadian prairies, while manufacturing is relatively more important in the United States Upper Midwest.

In common with all other Canadian regions, in recent decades the economic structure of the prairie region has shifted away from commodity producing industry and towards service producing industry. Relative to total employment, the importance of primary resource industry as a source of employment has shown steady predictable decline associated with the region's increasing economic maturity; the importance of service industry employment has dramatically increased to the point where this industry group currently accounts for some 60 per cent of the region's labour force (this percentage being fairly uniform for all major Canadian regions). Throughout the last two decades, the relative importance

⁴Ibid; pp. 96 - 100.

of manufacturing as an employment source has remained relatively unchanged in the prairies while declining slightly in other Canadian regions.

Even though the relative importance of primary employment has declined steadily, prairie employment growth rates for primary industries have generally exceeded average Canadian growth rates for primary industries since 1951. In the case of the prairie manufacturing sector, performance has varied; prairie growth rates exceeded Canadian growth rates between 1951 and 1961, while falling marginally behind national growth rates between 1961 and 1969. Prairie employment growth rates lagged behind the Canadian average most significantly in the case of the large service sector. Although service industry employment has dramatically increased in the prairies, it is clear that in recent years the service sector has been the sector where prairie employment growth rates significantly fell below average Canadian growth rates.

Prairie employment growth would have failed to match Canadian employment growth during recent decades, however, even if each prairie industry had succeeded in achieving average national growth rates. The fact remains that industrial structure in the prairie creates considerable constraints upon the region's employment growth; industries having declining or relatively low employment growth rates are far more prevalent within the prairies than within other Canadian regions.

3.2 Importance of Resource Industries in Prairie Economy

Despite changes in prairie economic structure, the prairie region remains distinct within Canada as being uniquely dependent upon the primary resource sector; in 1967 the prairies remained as the only Canadian region where value added and employment were greater in the primary sector than in the total secondary sector (i.e. manufacturing and construction). In particular, prairie agriculture accounted for a larger share of the region's commodity value added and labour force in 1967 than was the case in any other Canadian region even sixteen years earlier (i.e. 1951). The prairie economy also continues to show specialization, relative to other Canadian regions, in the mineral sector.

Development of new resources within the prairies has clearly created new employment growth, both in resource industries and in manufacturing and service industries related to resources (see Appendix G). However, the fact that the prairies remains uniquely dependent upon the primary resource sector (eg. the fact that other sectors, particularly manufacturing, remain relatively less important) has a major influence upon the region's total employment growth relative to other regions.

PERCENTAGE CONTRIBUTION OF AGRICULTURE, MINERALS,
AND TOTAL PRIMARY INDUSTRY TO LABOUR FORCE,
CANADA AND MAJOR CANADIAN REGIONS, 1969

	<u>Agriculture</u>	<u>Minerals</u> (Per Cent)	<u>Total Primary Industry</u>
Prairies	18.4	2.6	21.6
Atlantic	4.1	2.5	11.6
British Columbia	2.8	1.5	7.9
Québec	4.8	1.2	7.7
Ontario	4.6	1.1	6.3
Canada	6.7	1.5	9.8

Source: Table G.5

By the nature of its capital intensity, the primary sector tends to display either declining or relatively slow employment growth as compared to other industrial sectors. This factor, rather than the competitive performance of primary industries in the prairies as compared to other Canadian regions, has consistently constrained and limited total labour force growth in the prairies relative to other Canadian regions since at least 1951. In particular, regional employment growth has been limited by the prairie region's major specialization in agriculture (a resource industry with low income levels and declining employment). The region's high dependence upon the primary resource sector has also undoubtedly reduced opportunities for employment growth within the prairie service industry sector.

Resource specialization varies as between the three prairie provinces: agriculture and non-metallic mining are more prominent in Saskatchewan than in Alberta and Manitoba; oil and gas are most prominent in Alberta; metal mining is most prominent in Manitoba. These variations have, of course, helped to create different development patterns throughout the region.

3.3 Limited Importance of Manufacturing in Prairie Economy

The economic structure of the prairie region is also distinctive in that the percentage contribution by manufacturing to both regional commodity value added and regional employment remains significantly lower in the prairies than in any other Canadian region. In total, the manufacturing sector's significance within the prairie region remains less than half of its average significance within Canada. If analysis is restricted to only the non-agriculture sectors, manufacturing continues to show less significance in the prairies than in any other Canadian region.

PERCENTAGE CONTRIBUTION OF MANUFACTURING TO NON-AGRICULTURAL AND TOTAL LABOUR FORCE, CANADA AND MAJOR CANADIAN REGIONS, 1969

	<u>Non-Agriculture Labour Force</u>	<u>Total Labour Force</u>
	(Per Cent)	
Prairies	11.3	9.2
Atlantic	14.9	14.3
British Columbia	17.4	16.9
Quebec	25.9	24.7
Ontario	27.4	26.2
Canada	22.5	21.0

Source: Table G.5.

Available data indicate that manufacturing is particularly undeveloped in the rural areas and the smaller urban centres of the prairies. In 1961, manufacturing accounted for only 7 per cent of the prairies non-agricultural labour force located outside of the region's five major metropolitan areas; the contribution of manufacturing to the non-metropolitan labour force was significantly higher in all other Canadian regions (16 per cent in the Atlantic region; between 24 per cent and 28 per cent in Ontario, Quebec and British Columbia). In 1961, the labour force located outside metropolitan centres was larger in the prairies than in either the Atlantic region or British Columbia; despite this fact, the actual number of workers engaged in manufacturing was significantly smaller in the prairies than in either the Atlantic region or British Columbia.

PERCENTAGE CONTRIBUTION OF MANUFACTURING TO
NON-AGRICULTURAL LABOUR FORCE RURAL AND
URBAN AREAS, CANADA AND MAJOR
CANADIAN REGIONS, 1961^a

	<u>Rural^b</u> <u>Areas</u>	<u>Urban^b</u> <u>Areas</u>	<u>Metropolitan</u> <u>Areas^c</u> (Per Cent)	<u>Non-Metropolitan</u> <u>Areas</u>
Prairies	5.5	13.6	15.1	7.3
Atlantic	15.4	14.4	12.5	15.6
British Columbia	23.2	19.6	18.4	23.7
Quebec	20.1	30.1	30.1	26.4
Ontario	23.6	29.8	29.2	28.5
Canada	18.0	25.5	25.4	22.4

Source: Dominion Bureau of Statistics, 94-522, 94-519.

^a Percentages shown are not meant to add; each percentage represents the contribution of manufacturing employment to the total non-agricultural labour force in the particular group shown (eg. prairie rural areas; prairie metropolitan areas; etc.).

^b Urban areas are centres having a population of 1,000 or more; rural areas are all non-urban areas.

^c Metropolitan areas are as defined in the census (census metropolitan areas).

With the exception of Ontario, in each Canadian region the manufacturing sector's labour force significance varied as between metropolitan and non-metropolitan areas in 1961; however, the greatest variation was displayed by the prairie region. In Ontario and Quebec, manufacturing was marginally more significant within the metropolitan areas than within the non-metropolitan areas; the reverse situation occurred in British Columbia and the Atlantic region. In the prairie region, however, manufacturing was far more significant within the metropolitan areas than within the non-metropolitan areas. Within the metropolitan areas, manufacturing accounted for 15 per cent of the prairie non-agricultural labour force in 1961; comparable percentages were lower for the Atlantic region (12 per cent) and higher for British Columbia (18 per cent), Quebec (30 per cent) and Ontario (30 per cent).⁵

Given the history and geography of Canada, the current status of manufacturing within prairie metropolitan areas is not surprising. As will be noted below, the breadth of the manufacturing

⁵ Within the three largest prairie metropolitan centres, transportation, trade and public administration and defence sectors in 1961 had slightly larger shares of employment than was typical for non-prairie metropolitan centres. In Edmonton and Calgary, oil industry related employment was relatively prominent, along with the employment in the construction sector. Manufacturing sector employment was most significant in Winnipeg (20 per cent of labour force); in all other prairie metropolitan centres, the manufacturing share of the labour force was less than 14 per cent.

sector within prairie metropolitan areas (particularly within Winnipeg) is perhaps greater than might be expected.

At first glance, the relatively poor growth performance of prairie manufacturing outside the metropolitan areas is unusual, given the region's level of population and income. This lack of development may result partly from the region's major specialization in agriculture. In addition, the relatively recent settlement of the prairies as compared with the Atlantic region, Ontario and Quebec probably resulted in reduced opportunity for rural-small town manufacturing to develop in the region prior to the emergence of modern technology. Relatively low population densities and the high costs of operating a dispersed transportation system could be additional factors responsible for the prairie development pattern. Conclusive analysis, however, is not available, and further research would appear to be warranted in this area.

Within the broad Canadian economy, manufacturing employment has recently grown at a slightly slower rate than total employment growth. Within the prairie economy, however, manufacturing has acted as an employment growth sector, along with mining, construction and the service industries. The overall relevance and significance of manufacturing to prairie development problems is lessened by the sector's small relative share (regardless of factors selected for measurement) of the regional economy; clearly, if the sector had a considerably greater share of the total prairie economy

manufacturing growth impact could be greater.

It has been argued that limited manufacturing development, particularly limited development of secondary (i.e. non-resource related) manufacturing, acts as a major cause of limited total economic development within a region (for example, see the 1971 Atlantic Development Council report, A Strategy for the Economic Development of the Atlantic Region, 1971 - 1981, Chapters 2 and 9).

On the basis of this hypothesis, manufacturing development is viewed as a major generator of growth in other sectors of the region (particularly the service sector). This report can neither support nor refute the relevance of this analysis for prairie development. To the extent that this approach is valid, however, overall economic growth in the prairies -- and particularly service sector growth -- would have been severely restricted by the fact that the region's manufacturing sector has remained relatively smaller than the manufacturing sectors located in each other Canadian region.

In reality, the employment size of the prairie manufacturing sector is only one factor influencing prairie growth. If, for example, the prairie manufacturing sector had been double its actual size (i.e. an additional 104,000 labour force) at the start of the 1961-1967 period (eg. in 1961), direct growth (assuming average national rates for manufacturing) generated between 1961 and 1967 by the manufacturing sector would have approximated only 23,000

more workers than actually occurred. Total prairie labour force growth, however, would still not have been equivalent to even the Canadian average; in fact, over 90,000 additional labour force members would be required between 1961 and 1967 if prairie labour force growth rates were to approximate average Canadian rates. It is very unlikely that the additional manufacturing growth assumed would generate almost four times as much growth in other sectors of the prairie economy.

3.4 Service Industry Sector Development

Aside from the obvious factors noted concerning industrial structure (i.e. the relatively large importance of primary industries, and the relatively small importance of manufacturing), prairie growth has also been influenced by other factors which have affected service industry development (eg. service industries accounted for some 60 per cent of prairie labour force in 1967). Geography alone clearly affects growth: the St. Lawrence and Fraser River valleys both have acted as funnels, each stretching into the continent and out to separate parts of the world. British Columbia, Ontario and Quebec service industry growth has been increased by this factor, as well as by proximity to major population concentrations within the United States. Timing also affects growth: the fact that Canadian development moved from east to west clearly enhanced service growth in Ontario and Quebec, the region where banking, insurance, finance, transportation and other service industries (as well as the federal government)

established head offices and centres of power. Furthermore, service industry growth has been affected by rates of primary resource growth -- as demonstrated throughout the history of western Canada, regional service industry growth has been significant during periods of major resource expansion.

It is not possible, on the basis of available research, to evaluate the major factors governing prairie service sector growth (eg. in addition to the above factors, linkages between different industries require evaluation). Given this sector's dominant size, plus the fact that it is in this sector where prairie employment growth rates have most significantly failed to match average Canadian growth rates, further research appears warranted.

3.5 Summary and Evaluation of Prairie Industrial Structure

In summary, even though major changes have occurred in recent decades, the current industrial structure within the prairie region limits the region's growth. The predominance of agriculture and other resource industries, and the relatively small importance of manufacturing, act to reduce labour force growth rates relative to Canadian average growth rates. Furthermore, Canada's general industrial structure and historical development pattern probably also act to reduce prairie growth. These observations, however, relate only to past development, without evaluating future potential. Except for shifts of emphasis and growth within the resource industries, examination of past prairie development does not indicate

any evidence of major changes in the region's development pattern during the next decade (assuming that no major events or efforts occur to alter historic trends).

Within the prairie region, differences can be demonstrated between the three provincial economies. Although these provinces face common problems related to their economies (eg. as regards agricultural, northern and rural areas), it has frequently been claimed that the provinces are mutually competitive in many of their development activities (eg. in their attempts to develop secondary manufacturing and various service activities within their respective metropolitan centres). In reality, many complementary functions exist within the economic structures of the prairie metropolitan centres; to the extent that growth occurs within the region, rather than outside the region, it would appear that all major centres benefit. A final evaluation, however, as to whether the prairie region in fact represents one cohesive industrial structure, three separate structures, or some combination between these extremes is beyond the scope of this study. Given its terms of reference, this report evaluates the prairies as a single unit.

4. Structure and Development of Prairie Manufacturing

In 1967, the prairie region, with 16.7 per cent of Canada's population, accounted for 7 per cent of Canada's manufacturing labour force; approximately 44 per cent of the prairie manufacturing labour

force was located in Alberta, 42 per cent in Manitoba and only 14 per cent in Saskatchewan.

As could be expected, prairie manufacturing is largely concentrated in the region's major centres. Together, the region's five metropolitan areas accounted for 71 per cent of prairie manufacturing employment in 1967. No clear trend, however, is indicated toward increased manufacturing concentration in major prairie centres.⁶

Concentration of prairie manufacturing within a few large establishments is significant, although this concentration is below the Canadian average. Prairie manufacturing concentration within larger plants (eg. annual sales over \$500,000., or more than 100 employees) increased during the 1960's. In 1967, approximately 20 per cent of the region's manufacturing establishments (i.e. establishments having annual sales over \$500,000.) accounted for almost three-quarters of the region's manufacturing employment.

4.1 Manufacturing Structures: Importance of Resource Industry Linkages

Given the high relative importance of primary industries within the prairie economy, it is to be expected that the region's

⁶ Available data for the 1961-1967 period provide no evidence of increasing concentration of manufacturing employment in the region's major centres; in fact, the percentage of prairie manufacturing employment concentrated in metropolitan centres decreased from 72.8 per cent in 1961 to 71.0 per cent in 1967 (the decrease occurred primarily in the 1961-1964 period; since 1964 no clear trend occurred). Throughout the period, the percentage of prairie manufacturing employment located in non-metropolitan centres having a 1966 population over 25,000 was relatively constant at about 6.6 per cent.

manufacturing structure would be strongly oriented towards resource processing industries. In 1967, manufacturing related to primary resource processing accounted for over 65 per cent of manufacturing shipments and over 49 per cent of manufacturing employment in the prairie region; comparable averages for Canada were only 45 per cent and 37 per cent respectively. Within the prairies, food and beverage industries alone accounted for 28 per cent of manufacturing employment; wood industries for 6 per cent; non-metallic mineral products industries for 5 per cent; petroleum and coal products industries for only 2 per cent.

Despite the fact that primary related manufacturing is relatively more important within the prairies than within Canada, the actual concentration of Canadian resource processing within the prairies is not particularly high. In 1967, 17 per cent of Canada's population lived in the prairies; by comparison, 18 per cent of Canada's petroleum and coal manufacturing shipments value originated in the prairies; 17 per cent of Canada's food and beverage manufacturing; 14 per cent of Canada's non-metallic manufacturing. In all other two-digit manufacturing industries, less than 10 per cent of Canada's manufacturing shipments originated in the prairies.

In addition to resource processing, prairie manufacturing also displays concentration upon fabricating industries supplying inputs to the resource sector. Within this category fall the steel pipe industries, the metal fabricating industries, and non-electrical machinery industries (particularly the agricultural implements industries). In Alberta, the the chemical and allied products industries also are relatively

important, acting both as resource processors and as suppliers of inputs to the region's resource industries. Excluding the chemical industries, manufacturing industries either processing resources or acting as major suppliers of inputs to resource industries accounted for over 64 per cent of manufacturing employment in the prairies in 1967; the comparable average for Canada was 50 per cent.

4.2 Diversity of Prairie Manufacturing Base

Despite the fact that prairie manufacturing shows a strong orientation towards resource related industries, it cannot be concluded that secondary manufacturing activity (eg. non-resource related activity) has not developed in the region. In reality, almost all manufacturing industries are represented in the prairies. Relative to Central Canada prairie manufacturing is, of course, both small and lacking in diversity. Relative to the Atlantic Region and British Columbia, however, prairie manufacturing displays a diverse base of activity.

Table 2.1 provides an overview of the relative degrees of manufacturing specialization within Canada's different regions in 1967. It is apparent that resource related industries were important in the Atlantic, British Columbia, prairie and Quebec regions. However, aside from resource-related development, little manufacturing specialization is shown for the Atlantic and British Columbia regions; in the Atlantic region, the region's apparent specialization in transportation equipment has traditionally been related to shipbuilding and repair. In contrast, the prairie region (relative to the size

TABLE 2.1

DIVERSITY OF REGIONAL MANUFACTURING LABOUR FORCE WITHIN CANADIAN REGIONS, 1967^a

A. Regional Manufacturing where Location Quotient Exceeds 1.0 for Total Manufacturing Labour Force^b

<u>Atlantic</u>	<u>British Columbia</u>	<u>Prairies</u>	<u>Ontario</u>	<u>Quebec</u>
*Food and Beverage	*Food and Beverage	*Food and Beverage	Rubber	Tobacco
*Wood Industries	*Wood Industries	Non-Metallic Minerals	Printing and Publishing	Leather
*Paper and Allied Products	*Paper and Allied	*Printing and Publishing	Primary Metals	*Textiles
*Transportation Equipment	products	*Clothing	*Metal Fabricating	Knitting Mills
Knitting Mills	Petroleum and Coal	*Metal Fabricating	Machinery	*Clothing
Petroleum and Coal		Wood Industries	*Transportation Equipment	Furniture and
		Machinery	*Electrical Products	Fixtures
		(except electrical)	Non-Metallic Minerals	*Paper and Allied
		Furniture and Fixtures	Chemicals	Products
		Petroleum and Coal	Petroleum and Coal	Chemicals
			Miscellaneous	

B. Per Cent of Manufacturing Labour Force in Four Largest Employing Industries, 1967

<u>Atlantic</u>	<u>British Columbia</u>	<u>Prairies</u>	<u>Ontario</u>	<u>Quebec</u>
67	66	53	43	40

Source: Dominion Bureau of Statistics, 31-207; See Appendix G, Section 5.

^a Employment shown represents total manufacturing activity plus working owners and partners.

^b A location quotient exceeding 1.0 indicates that, in terms of manufacturing employment, a particular industry is more important within the region than within Canada as a whole.

* One of region's four largest employing manufacturing industries.

of its manufacturing labour force) shows special emphasis and development in printing and publishing, clothing, metal fabricating machinery, and furniture and fixtures. Quebec displays specialization in textiles, knitting mills, clothing, furniture and fixtures, and chemicals. Ontario shows the most diversified base, with relative specialization in heavy industry (primary metals, metal fabricating, machinery, transport equipment) as well as chemicals, electric products, rubber, publishing and printing.

Degrees of manufacturing diversity can also be roughly indicated by the extent to which each region's manufacturing labour force is concentrated into a few large industries. Examination of the percentage of the manufacturing labour force concentrated within a region's four largest industries indicates that prairie manufacturing is more diversified than the British Columbia and Atlantic regions, and less diversified than the Central Canadian region:

	Per Cent of Manufacturing Labour Force in Four Largest Employing Industries, 1967
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> (Per Cent)
Atlantic	67
British Columbia	66
Prairies	53
Ontario	43
Quebec	40

Table 2.2 indicates that, relative to Central Canada, the greatest weaknesses in the prairie manufacturing sector are found in primary metals, chemicals, transportation equipment, electrical

TABLE 2.2

RELATIVE CONTRIBUTION OF SELECTED MANUFACTURING
INDUSTRIES TO REGIONAL NON-AGRICULTURAL LABOUR FORCE,
CENTRAL CANADA AND PRAIRIES, 1967

<u>Manufacturing Industries</u>	<u>Manufacturing Employment per 1,000 Members of Non-Farm Labour Force</u>		
	<u>Prairies</u>	<u>Central Canada</u>	<u>Prairies As Per Cent Central Canada</u>
Food and Beverages	31.1	32.0	97.2
Petroleum and Coal Products	2.3	2.4	95.5
Wood	7.4	8.1	91.1
Non-Metallic Minerals	5.9	8.5	70.3
Printing and Publishing	8.9	13.8	64.1
Metal Fabricating	11.4	24.3	47.1
Clothing	8.5	18.2	46.8
Furniture and Fixtures	3.1	7.9	39.8
Machinery	5.7	14.5	39.5
Primary Metals	6.6 ^a	19.9	33.4
Chemicals	3.8	14.1	26.9
Miscellaneous	3.5 ^b	13.3	25.8
Transportation Equipment	6.3	27.3	23.1
Leather	0.8	6.3	13.1
Electrical Products	2.6	25.0	10.6
Textiles	1.6 ^a	15.5	10.0

Source: Dominion Bureau of Statistics, 31-203.

^a Estimate applies to Manitoba and Alberta only, since Saskatchewan data confidential. It is expected that actual prairie ratio would be lower than the estimate shown.

^b Alberta data estimated.

products, and textiles. More detailed examination than that presented in Table 2.2 reveals that:

- Textiles are heavily concentrated in Quebec.
- Primary metal manufacturing has major iron and steel production concentration in Ontario.
- Transportation equipment specialization in Central Canada represents motor vehicles and parts in Ontario, aircraft and parts in Quebec and Ontario, and ship building and repair in Quebec.
- Electrical products manufacturing is heavily concentrated in Ontario (represents communications equipment, electrical industrial equipment, major appliances, etc.).
- Chemicals manufacturing is based in both Ontario and Quebec (includes soaps, industrial chemicals, etc.).

In some instances, lack of manufacturing growth in the prairies can be explained by geography, including the relative scarcity of necessary resources (eg. tobacco processing, ship building and repair). In other instances, it is necessary to examine a variety of factors that influenced early Canadian manufacturing growth (eg. tariff policies, early settlement patterns, proximity to United States industrial growth, shifts in world demand patterns, national transportation policies, etc.) in order to attempt explanation for the lack of prairie manufacturing growth. Certainly, the policies and patterns of early Canadian development (eg. prior to the depression) aided manufacturing, commercial and service industry growth in Central Canada. Protective tariffs directed

export incomes to available domestic production, particularly iron and steel, machinery, electrical equipment, chemicals; western settlement combined with national railway and branch line expansion acted to increase domestic demand for manufacturing production. Furthermore, the relatively severe impact of the depression upon the prairies probably acted to increase the relative manufacturing dominance of Central Canada.

It is beyond the scope of this report to attempt comprehensive examination of the factors directing previous manufacturing growth within Canada's different regions. After reviewing the immediate past, this report must turn to evaluate the current factors influencing present day growth (see Part II). Among other considerations, current Central Canadian manufacturing growth is apparently influenced by capital intensive export industries rather than by labour intensive domestic industries.⁷ It is clear that this factor, as well as the established dominance of Central Canadian manufacturing, must be considered when future opportunities to further diversify the prairie manufacturing base are evaluated.

⁷For review of past regional development trends in manufacturing see: W.A. Mackintosh, The Economic Background of Dominion-Provincial Relations (Appendix III of the Royal Commission Report on Dominion-Provincial Relations; Queen's Printer, Ottawa: 1939); H. A. Innes, Essays in Canadian Economic History (University of Toronto Press: 1956); also A. Raynauld, The Canadian Economic System (MacMillan: 1967) Chapter 3.

4.3 Domestic Market Orientation of Prairie Manufacturing

Relative to all other Canadian regions, prairie manufacturing shows a high reliance upon domestic Canadian markets. Over 70 per cent of prairie production in 1967 was marketed within the region. Markets in Ontario and Quebec absorbed 14 per cent of prairie manufacturing production, while the British Columbia market received 6.5 per cent of prairie production. As compared to all other Canadian regions, an extremely low proportion (less than 7 per cent) of prairie manufacturers production went to foreign markets.

MARKETS FOR REGIONAL CANADIAN MANUFACTURING SHIPMENTS, MAJOR CANADIAN REGIONS, 1967

<u>Origin</u>	<u>Destination</u>		
	<u>Within Region of Origin</u>	<u>Other Canadian Regions</u>	<u>Foreign Markets</u>
	<u>(Per Cent of Region's Production)</u>		
Prairie Region	70.8	21.9	6.7
Atlantic Region	55.4	18.4	25.8
Ontario-Quebec Region	71.9	13.2	14.8
British Columbia	48.3	15.0	36.4

Source: Table G.19.

A significant proportion of prairie consumption of Canadian manufactured goods is supplied by imports from other Canadian provinces. Imports from other provinces represented 51 per cent of prairie consumption in 1967. By comparison, imports from other provinces represented 60 per cent of Canadian manufacturing consumption in the Atlantic region, 45 per cent in British Columbia, and only 4 per cent

in the Ontario-Quebec region. In 1967, there were only seven industry groups where prairie manufacturer's production exceeded the value of imports from other provinces: food and beverages, petroleum and coal products, paper and allied, non-metallic mineral products, furniture and fixtures, printing and publishing and metal fabricating.

4.4 Growth Patterns, Prairie Manufacturing 1961-1967

Between 1961 and 1967, the prairie manufacturing sector continued to mature. Evaluated at the two digit level (Standard Industrial Classification), the majority of prairie manufacturing industries had employment growth rates above average Canadian growth rates (see Table 2.3); in many instances absolute increases were limited by the small size of the industry in the prairies in 1961 (eg. transport equipment, electrical products, etc.). Wood industries, non-electrical machinery manufacturing, and clothing industries experienced major employment gains relative to other Canadian regions. In addition, however, employment growth rates were above the national average in many of the rapid growth industries (eg. transportation equipment, electrical products, metal fabricating, primary metals, chemicals). Only six industries failed to grow as rapidly as national average growth rates: food and beverages, non-metallic minerals, furniture and fixtures, miscellaneous manufacturing, textiles, and paper and allied industries (the paper industries have experienced major growth in the prairies since 1967). Three of these slower growth industries (the first three listed) were

TABLE 2.3

COMPARATIVE EMPLOYMENT GROWTH, SELECTED MANUFACTURING
INDUSTRIES, PRAIRIES AND CANADA: 1961-1967

<u>Manufacturing Industries</u>	<u>Canadian Growth</u>		<u>Prairie Growth</u>	
	<u>('000)</u>	<u>Per Cent</u>	<u>('000)</u>	<u>Per Cent</u>
Transportation Equipment	50.9	51.3	2.0 ^a	> 51.3
Electrical Products	38.2	42.7	1.0 ^a	> 42.7
Metal Fabricating	38.2	37.8	3.6	45.7
Machinery	28.5	56.3	3.4	138.3
Primary Metals	23.0	25.6	1.2 ^a	> 25.6
Paper and Allied Products	20.4	20.7	x	x
Food and Beverages	18.0	8.5	1.0	3.3
Miscellaneous	16.4	31.0	x	x
Textiles	12.4	19.1	x	x
Chemicals	11.9	18.7	0.9	30.4
Furniture and Fixtures	10.4	31.1	0.6	22.7
Wood	9.8	12.2	2.0	36.5
Printing and Publishing	8.4	11.2	1.1	13.5
Non-Metallic Minerals	8.0	18.4	0.6	10.1
Rubber	5.1	23.3	x	x
Clothing	5.0	5.3	1.2	15.3
All Manufacturing	300.2	22.2	19.2	20.1

Source: Dominion Bureau of Statistics, 31-203.

^a Estimate is provided, based on analysis in Dominion Bureau of Statistics, 31-505. Actual growth exceeded estimates.

x = Data Confidential.

already well developed in the prairie region in 1961.

In total, however, prairie manufacturing employment failed to grow as rapidly as Canadian manufacturing employment between 1961 and 1967. This fact resulted solely from the structure of prairie manufacturing relative to Canadian manufacturing. Prairie manufacturing was dominated by resource processing (including food processing) industries; at the national level, these industries showed employment growth rates below the average for all manufacturing industries. In addition, other slow growth industries such as clothing and printing and publishing remained relatively important within the prairie structure. Only three rapid growth industries (metal fabricating, non-electrical machinery, and furniture and fixtures) were relatively significant within the region's manufacturing structure.⁸

Prairie manufacturing has been slightly more reliant upon material inputs and slightly less reliant upon labour inputs than Canadian manufacturing.⁹ The two industries having the highest materials-intensity are of particular importance within prairie

⁸See Appendix G, Section 5.3 for more detailed analysis. It is estimated that the structure of prairie manufacturing resulted in a downward shift for prairie manufacturing employment (relative to overall Canadian manufacturing employment) equal to approximately 6 per cent of prairie manufacturing employment in 1961.

⁹See Appendix G, Section 5.5, and Canada Yearbook, 1968; pp. 689 - 694.

manufacturing (eg. food and beverages, petroleum and coal products). Similarly, the relative importance of capital intensive resource processing industries within the prairies has caused the region's manufacturing sector to be marginally more capital intensive than average Canadian manufacturing. Within individual manufacturing industries, however, no clear and consistent bias toward any particular inputs is displayed relative to Canadian manufacturing.

4.5 Provincial Variations, Prairie Manufacturing

Major variations exist in the manufacturing structure of the three prairie provinces. Resource processing industries (particularly food and beverages) tend to be most dominant in Saskatchewan; secondary related manufacturing is clearly most important in Manitoba. In Manitoba, four out of seventeen manufacturing industry groups (evaluated at the two-digit level) showed net exports in 1967 (i.e. provincial production exceeding provincial consumption of Canadian manufacturers): food and beverages, clothing, printing and publishing, and non-electrical machinery. In Alberta, three out of seventeen manufacturing industry groups showed net exports: food and beverages, non-metallic mineral products, and petroleum and coal products. In Saskatchewan, within the manufacturing sector the petroleum and coal products industry alone showed net exports. Between 1961 and 1967, Alberta was the only prairie province where manufacturing employment increased at a

faster rate than the Canadian average.¹⁰

Given the relatively small size of prairie manufacturing, it might be expected that markets for prairie products in other Canadian regions would demonstrate specialization in only a few industry groups. This is not the case, however, since prairie shipments to other parts of Canada involve a wide variety of industry products being shipped to a variety of markets. Approximately equivalent dollar amounts and percentages of the region's overall shipments go to Quebec, to Ontario and to British Columbia.

The importance of different Canadian markets varies as between individual prairie provinces; in fact, the degree of variation calls into question the degree to which the prairie provinces are indeed one market. Manitoba, for example, ships a larger share of its manufacturing to Ontario than to Alberta and Saskatchewan combined. Alberta ships a larger share of its manufacturing to British Columbia (and to Central Canada) than to Manitoba and

¹⁰On the basis of analysis presented in Appendix G, Section 5.3, it would appear that Alberta's manufacturing structure offered better growth prospects than existed in Saskatchewan (eg. less dependence on food and beverages). Relative to Manitoba, Alberta experienced far better employment growth in a number of industries, particularly wood industries, primary metals, printing and publishing, clothing, furniture and fixtures. To some extent, Alberta employment gains appeared to represent a process of broadening the provinces manufacturing base; in some sectors, this process occurred at an earlier stage in Manitoba.

Saskatchewan combined. Saskatchewan markets alone are highly concentrated within the prairie region.

MARKETS FOR INDIVIDUAL PRAIRIE PROVINCES,
CANADIAN MANUFACTURING SHIPMENTS, 1967

<u>Origin</u>	<u>Destination</u>				
	<u>Within Province of Origin</u>	<u>Other Prairie Provinces</u>	<u>Central Canada</u>	<u>British Columbia</u>	<u>Other Markets</u>
	(Per Cent)				
Manitoba	56.6	13.8	19.2	3.2	7.1
Saskatchewan	73.7	9.8	9.2	1.5	5.7
Alberta	57.9	9.4	12.7	10.4	8.9

Source: Table A.2.4.

In general, to the extent that manufacturing growth occurs within rather than outside the prairie region, it would appear that benefits are shared by each of the three prairie provinces. To the extent that each province strives to develop its own balanced manufacturing sector, however, manufacturing growth within the prairies has been competitive -- particularly given overall regional population and income growth. Interprovincial competition has been constrained in some instances by the fact that particular industries (eg. breweries) are by nature designed to meet consumer demands only within limited sub-regional markets. In other instances, interprovincial competition could be constrained by the fact that common growth opportunities exist in penetrating markets outside the prairie region (eg. the sale of processed food products).

5. Summary: Prairie Economic Structures and Patterns of Growth

The prairie region currently presents a rather unique economic structure within Canada, where a number of developed metropolitan areas exist concurrently with major agriculturally dominated regions. Population decline has been experienced in the rural areas, while population growth has continued within areas of mineral development and within areas of urban development. Communication systems, consumer demands and general social values in the prairies have experienced major changes in recent years, partly as a result of the process whereby urban populations have become dominant within the region.

In common with all other Canadian regions, in recent decades the economic structure of the prairie region has shifted away from commodity producing industry and towards service producing industry. Despite this trend, however, it is also clear that in recent years the service sector has been the sector where prairie employment growth rates most significantly fell below average Canadian growth rates.

In total, prairie employment growth has failed to match Canadian employment growth since at least 1951; this result has been largely due to the structure of prairie industry, and would have occurred even if each prairie industry had succeeded in achieving average national growth rates. The economic structure of the prairies creates considerable constraints upon the region's employment growth,

since industries having declining or relatively low employment growth rates (eg. agriculture, other resource industries) are far more prevalent within the prairies than within other Canadian regions.

The economic structure of the prairie region is particularly distinctive in that the percentage contribution by manufacturing to both regional commodity value added and regional employment remains significantly lower in the prairies than in any other Canadian region. In particular, prairie manufacturing remains very undeveloped in the region's non-metropolitan areas.

Within the broad Canadian economy, manufacturing employment has recently grown at a slightly slower rate than total employment growth. Within the prairie economy, however, manufacturing has acted as an employment growth sector, along with new mining development, construction and the service industries.

In 1967, the service sector accounted for some 60 per cent of the prairie labour force. Service industry growth is presumably constrained by the importance of primary industries, by declines in agricultural employment, and by the relatively small size of the manufacturing sector. It is not possible, however, on the basis of available research, to evaluate the extent to which other factors have caused the prairie service sector to grow at a rate well below the Canadian average.

Given the nature of this report, this Chapter focused attention particularly upon the manufacturing sector.

Prairie manufacturing is largely concentrated within the region's major centres and within a few large establishments (although the latter concentration is below the Canadian average). In total, only 7 per cent of Canada's manufacturing labour force is located in the prairies, even though the region contains some 16.7 per cent of Canada's population.

Prairie manufacturing is largely oriented towards the region's resource industries. Excluding the chemical industries, manufacturing industries either processing resources or acting as major suppliers of inputs to resource industries accounted for over 64 per cent of prairie manufacturing employment in 1967; the comparable average for Canada was approximately 50 per cent.

Despite its orientation towards resource related industries, prairie manufacturing is not lacking in diversity. Relative to Central Canada, prairie manufacturing is both small and relatively narrow based. Relative to the Atlantic region and British Columbia, however, prairie manufacturing displays diversity. In particular, the prairies show (relative to the size of its manufacturing labour force) significant development in printing and publishing, clothing, and furniture and fixtures.

Relative to Central Canada, the greatest weaknesses in the prairie manufacturing sector are found in primary metals, chemicals, transportation equipment, electrical products, and textiles. The factors responsible for weaknesses within particular prairie

manufacturing sectors appear to relate largely to the patterns and policies of early Canadian development. Current Central Canadian manufacturing growth, however, is apparently influenced by new forces (eg. attempts to gain export markets); these new forces, as well as the current dominance of Central Canadian manufacturing, must be considered when future opportunities to further diversify the prairie manufacturing base are evaluated (see Part II).

Relative to all other Canadian regions, prairie manufacturing shows a high reliance upon domestic Canadian markets; in 1967, less than 7 per cent of prairie production went to foreign markets.

Within prairie manufacturing, the majority of prairie industries (evaluated at the two-digit level, Standard Industrial Classification) had employment growth rates above average Canadian growth rates between 1961 and 1967. In total, however, prairie manufacturing failed to grow as rapidly as Canadian manufacturing employment; this fact resulted solely from the region's manufacturing structure which was dominated by industries having relatively slow employment growth even at the national level (eg. food and beverages, clothing, printing and publishing).

This chapter reviewed the many variations which exist in the manufacturing structure of the three prairie provinces. In general, resource processing industries (particularly food and beverages) are most dominant in Saskatchewan, while non-resource related manufacturing is most prominent in Manitoba. The importance

of different Canadian markets varies widely as between individual prairie provinces; only Saskatchewan would appear to have markets highly concentrated within the prairie region.

General conclusions are difficult to state regarding prairie manufacturing. On the surface, prairie industries do not experience major unemployment problems; unlike the Maritime coal and steel industry, major problems of long-run viability are not apparent. However, actual manufacturing employment growth in the prairies has lagged behind national growth rates. Furthermore, given the problems outlined in Chapter 1, it is apparent that manufacturing has not performed a major role in improving overall prairie employment growth.

To the extent that accelerated growth is desired in manufacturing, it could be argued that the region's manufacturing structure should be broadened in order to provide the prairies with a more significant share of Canada's major growth industries. Alternatively, given the significance of resources within the prairies, it could be argued that accelerated resource development should be combined with attempts to further develop and concentrate Canadian resource-related manufacturing within the prairies.

Examination of the past development pattern of prairie manufacturing provides only a description of the region's development relative to other parts of Canada. Evaluation of possible alternative courses of future development must be based upon an

examination of manufacturing potentials and the factors which will affect future growth. This examination is conducted in the next section of this study (Part II).

PART II

OPPORTUNITIES FOR PRAIRIE MANUFACTURING

CHAPTER 3INTRODUCTION TO PART II: ANALYSIS
OF MANUFACTURING OPPORTUNITIES1. Introduction

Part I reviewed the past performance and changes in economic structure within the prairies. Part II focuses attention upon the manufacturing sector, evaluating the various factors that affect this sector's growth, and identifying those distinct manufacturing industries at the three digit level (Standard Industrial Classification) where policy attention appears to be warranted during the next decade.

As an introduction to Part II, this chapter briefly reviews the framework and approach adopted.

2. Framework of Analysis2.1 Initial Discussion of Approach

The Preface to this report states the major objective of the study to be an overall evaluation of manufacturing opportunities within the prairies aimed to evaluate the relevance of this sector during the next decade to the region's development problems. From the outset, it is acknowledged that such a task, given the time and budget constraints of this study, cannot be done in an exhaustive manner. No attempt is made, for example, to develop a regional economic model or to conduct an inter-industry

input-output evaluation. The objective is far more limited, namely to co-ordinate available knowledge and research in order to gain a preliminary view of appropriate development priorities during the decade of the 1970's.

The above objectives and constraints are fundamental to the approach adopted in Part II where opportunities are evaluated in some 140 different prairie manufacturing industries.

Initial discussions with numerous staff members within each prairie provincial department of industry revealed a common concern that a study such as this one could degenerate into becoming "just another shopping list" of industries. Given the fact that each province has a full time staff working within special industrial fields, such a study would serve only to duplicate existing efforts. Furthermore, given the fact that any one of the 140 manufacturing industries to be examined could itself be the subject of a detailed feasibility study (eg. a study requiring a time and budget virtually equivalent to that provided for this report), a real danger would exist that the final result would be a gross misuse of resources.

Discussion with provincial officials also revealed a common concern that any study of prairie manufacturing opportunities should be certain to examine the various factors which affect growth eg. the transport system, the resource structure, capital availability, foreign trade and tariffs, manpower, etc. While

study of any one of these factors could by itself be the subject of a complete report, it was commonly felt that, at the present time, a very real need existed to synthesize available knowledge about these factors within one report focused upon determining prairie manufacturing opportunities. At times the view was expressed that these factors, representing basic problem and strength areas affecting prairie manufacturing, represented a more fruitful line of preliminary inquiry than a detailed review of 140 different industries.

The final approach adopted reflects the above concerns, and is explained in detail below.

2.2 Adoption of Prairie Employment Potential as Criterion of Opportunity

Evaluation of prairie manufacturing opportunities in this study is based primarily on the criterion of total direct job growth potential within the prairie region. This criterion was adopted because of the real constraints upon the feasible scope of the study, and not because of a viewpoint that total prairie employment growth represents the sole goal for prairie regional development.

Chapter I outlined a variety of distinct prairie economic problems: slow population and income growth; low population density and out-migration; disparities in growth as between the region's different provinces; major rural-urban income disparity; low incomes with the large and growing native community.

At first glance, it would appear relevant to examine the potential role that manufacturing opportunities could perform in resolving each of the above problems. However, the study in fact evaluates only the potential role that manufacturing opportunities could play in expanding total prairie manufacturing employment during the 1971-1981 period.

It is useful to review briefly, therefore, the aspects that are not evaluated.

Chapter 1 suggested that the problem of stimulating economic development in rural areas is important in each prairie province. At present, however, relatively little consensus exists regarding the most appropriate policy approach for meeting this issue. The relative costs and benefits of industrial centralization versus decentralization, let alone the potential role that different industries could perform, all remain undefined. The effects, and possible increased potentials, generated by changing technology within urban and rural communities are extremely unclear. Furthermore, application of growth centre strategies to the prairie region represent a major area of analysis that requires further examination (eg. evaluation of the potentially different roles that could be played by regional metropolitan centres and smaller growth centres).

Considering all of the above, it was agreed that examination of the potential role of manufacturing in stimulating rural

growth would extend this study far beyond its practical scope.¹

Clearly, this problem represents an area for future research.

On a slightly different subject, it can be readily acknowledged that prairie development should take place in a manner which protects and improves the quality of life and the environment. Broad evaluation, however, of the relative attractiveness to the prairies of different manufacturing industries on the basis of their respective "quality of life" or pollution aspects represents an area of analysis beyond the feasible scope of this study.² Among other considerations, such a discussion would require examination of relevant national policy frameworks. For similar reasons, analysis is not conducted of the potential impact of prairie manufacturing opportunities upon provincial or federal tax revenues.

¹In Appendix C, where each manufacturing industry is examined in detail, comments are made when relevant about the fact that a given industry might well locate outside the metropolitan areas. However, within the report itself, no commentary is made about such opportunities.

²Problems of disparity in opportunity for different groups (eg. native peoples) probably represent a major concern regarding overall quality of prairie life. As noted in Chapter 10, there is no automatic guarantee that manufacturing growth will provide jobs and incomes for those most in need. However, study of strategies for resolving this problem is beyond the scope of this report.

Finally, the study team was directed to focus upon regional manufacturing opportunities; evaluation of how these opportunities would be distributed between the three provinces was explicitly placed outside this report's terms of reference.

Part II of this report, therefore, examines explicitly only the potential provided by each manufacturing industry to increase prairie manufacturing jobs. Analysis focuses upon only direct job increases within the given manufacturing industry being evaluated. Although potential jobs generated by linkages with other regional industry (eg. with input suppliers, etc.) are commented upon when this is relevant and possible, it was not feasible (given available data) to quantify accurately the different indirect impacts generated by different industries.

Utilizing the methodology outlined below, the potential range of employment increase between 1971 and 1981 was estimated for each three digit prairie manufacturing industry. Given the criterion of total employment growth, industrial opportunities were evaluated on the basis of absolute rather than percentage potential job growth. Particular industries were noted where major sales growth is possible even though major job growth is unlikely; however, systematic quantification of potential sales growth was not conducted.

Although the analysis adopted results in estimates of job growth for each manufacturing industry, it must be emphasized

that the objective was not, strictly speaking, to predict or project prairie manufacturing job growth. Rather, the objectives specifically were:

1. To identify manufacturing industries which offer potential for significant employment growth (arbitrarily defined to be an increase of more than 100 jobs between 1971 and 1981) as compared to industries lacking such potential;
2. To identify industries where policy attention appears to be warranted during the next decade (eg. industries where employment potential would probably not be achieved unless specified problems are resolved), as compared to growing industries where employment potential will probably be achieved on the basis of projected existing growth;
3. To provide a basis for approximate comparison of employment potential as between different manufacturing industries in order that broad classes (eg. relatively major, medium and relatively minor potential) could be distinguished.

Given the feasible scope of this study, as well as the reservations expressed by provincial officials noted earlier, the above approach was adopted as offering the greatest potential relevance to all concerned. Furthermore, it was considered that this approach, which focuses upon orders of magnitude (eg. potential job ranges) rather than finite estimates, best complements the broader study objective of evaluating the overall relevance of manufacturing opportunities to prairie problems during the next decade. Even if finite projections of 140 different industries could be meaningfully estimated on the basis of existing data,

the relevance of the extra work required would be highly questionable.

2.3 Report Emphasis upon Factors Affecting Growth: Outline of Part II

It was noted earlier that a common concern was initially expressed for this study to examine specifically the various factors which affect manufacturing growth (eg. transportation, capital, tariffs, etc.). This concern was an important consideration leading to adoption of the approach outlined above for evaluating individual manufacturing opportunities (eg. the analysis focuses upon those industries where growth is constrained by specified problems).

Aside from influencing the detailed analysis of distinct industries, however, concern for a synthesis of available knowledge about the major factors affecting manufacturing growth has influenced the entire emphasis adopted in Part II of this report.

The study team was in fact faced with two alternatives for report presentation: 1) the following chapters could be divided on the basis of major industry groups, with analysis proceeding on an industry-by-industry basis; 2) the following chapters could be divided on the basis of major growth factors, with each chapter assessing the impact of a particular growth factor upon relevant manufacturing industries.

After discussion, it was agreed that the industry-by-industry approach would generate the undesirable features of a "shopping list" discussion, failing to emphasize the broader problem themes considered relevant for policy evaluation. Detailed

industry-by-industry examinations were conducted; however, these evaluations were allocated to Appendix C for reference. The report itself only serves to summarize (Chapter 12) the major conclusions of this analysis.

Throughout Part II of the report, discussion proceeds on the basis of distinct factors affecting prairie manufacturing growth. Separate chapters examine separate factors eg. domestic demand growth (Chapter 4), foreign trade and tariffs (Chapter 5), natural resource factors (Chapter 6), scale economy factors (Chapter 7), transportation factors (Chapter 8), capital factors (Chapter 9), manpower factors (Chapter 10) and research and development factors (Chapter 11). Throughout this analysis, of course, specific industry examples are taken from Appendix C to demonstrate a given factor's impact upon specific prairie manufacturing industries.

Part II is concluded by Chapter 12 which identifies and classifies distinct prairie manufacturing opportunities, and summarizes the impact of the various growth factors upon prairie manufacturing industries. In effect, Chapter 12 summarizes the major conclusions of the detailed industry-by-industry analysis contained in Appendix C, as well as reviewing the analysis contained in Chapters 4 to 11. Chapter 12 distinguishes two major classes of three digit manufacturing industries: Class 1 industries that are expected to develop largely on the basis of existing growth

forces; and Class 2 industries where development is restricted by clearly identified problems potentially capable of being ameliorated by policy initiatives. All remaining industries are allocated to Class 3, eg. manufacturing industries that do not appear to have potential for employment growth of more than 100 jobs during the next decade.

The approach adopted has many limitations. As Chapters 4 to 11 quickly demonstrate, it is not possible on the basis of existing material to quantify the impact of different growth factors upon prairie manufacturing. Furthermore, although factors are examined separately, it is clear that in most cases development is influenced by a combination of factors, eg. transportation and scale factors frequently interact. It is considered, however, that this approach best meets the overall objectives and constraints of this study. Provided that the limitations are realized, the approach serves to provide the type of preliminary evaluation appropriate for the selection of priority areas for future more detailed research.

3. Review of Methodology

Part II of this report is based largely on available analysis, data and reports. In all areas, assistance provided by provincial departments was of major importance. In certain cases, assistance was also obtained from relevant industry personnel. The very real constraints inherent in an evaluation of 140 industries,

as well as examination of different growth factors, preclude detailed original research. Reliance must be placed upon available data and available reports.

Appendix C provides a detailed review of the data and approach adopted for the industry-by-industry analysis. This material will not be reviewed in detail here.

To some extent, the final approach adopted in Appendix C represents a change from that anticipated in the Terms of Reference. Initially, it was considered that a two stage reduction process would be used to identify separate manufacturing opportunities. The first stage reduction would identify industries having opportunities in any one of the following areas: import replacement, additional processing, export markets, domestic markets external to the prairies. The second stage reduction would subject the industries identified by the first reduction to a locational cost analysis, market size and plant size comparison, availability of critical inputs, and problems of entry and competition from established industry.

The final approach adopted in Appendix C includes analysis of all the above relevant factors, eg. import replacement, processing potential, export markets, locational cost analysis, etc. The process of a formal two stage reduction, however, was discovered to be too restrictive. Each industry was in fact examined to discover if any reasonable potential existed to generate 100 jobs during the next decade; however, many industries were subjected

to a more detailed analysis than would have occurred if a formal two stage reduction process had been adopted.

As anticipated in the original Terms of Reference, growth prospects for individual industries were not estimated on the basis of standard formulas or regional development models. Mere extrapolations of previous trends would perhaps represent a lengthy process of calculation and data gathering; however, the existence of a past trend need not imply a future trend, particularly in the case of specific regional industries. Lack of acceptable input-output tables for the prairies, let alone comprehensive regional growth models, prevent any attempt at sophisticated projections which incorporate inter-industry relationships.

In the final analysis, therefore, all employment projections represent the best judgement of the study team based on consideration of available data and available analysis. Throughout the course of the study, the analysis and projections were provided to each provincial government for review and commentary.

As noted earlier, all employment projections are presented as ranges rather than single-value estimates. Future research might well concentrate upon assigning probabilities to different segments of the estimated ranges (eg. the high has a probability of 10 per cent, etc.). However, the study team could provide no basis (other than heroic judgement, coupled with many qualifying assumptions) for extending the analysis in this direction. Among

other considerations, such analysis would in most cases do little to further the overall objectives of this study.

CHAPTER 4

DEMAND OPPORTUNITIES: DOMESTIC POPULATION, INCOME AND MARKET PROJECTIONS

1. Introduction

Chapter 2 of Part I traced changes that have occurred in the prairie economic structure since 1951. In large measure, these changes may be attributable to such factors as the process of urbanization, the impact of technological change (especially in agriculture) and northern resource development. The aim of this particular chapter is to provide some indication of overall changes that may occur in the prairies and other regions to 1981. Such an analysis provides a framework for evaluating market opportunities for different prairie manufacturing industries. In undertaking such a task, the objective has not been to prepare independent projections; rather, recourse has been made to available studies for estimates.

Given that these projections have usually been formulated in terms of population, gross domestic product and/or personal disposable income, however, they must necessarily be accepted more as proxies than as direct indicators of market opportunities. Furthermore, it should be stressed that these forecasts are not in themselves immutable, but can indeed be subject to some policy manipulation.

2. Population Projections

2.1 National Projections

The usual procedure employed in undertaking population

projections at the national (and sub-national) level involves the use of assumptions concerning rates of fertility, mortality and net migration; this technique is known as the "cohort survival" method of forecasting.

The Economic Council of Canada (ECC) for example, by assuming further (but moderating) declines in fertility from the low 1965 levels, further moderate declines in mortality and average annual volumes of 150,000 immigrants and 80,000 emigrants, arrived at a "medium" projection of 25.11 million as the population of Canada in 1980.¹ A similar technique employed by Hedlin, Menzies and Associates Ltd. (assuming, however, that net annual Canadian immigration would approximate 94,000 per year) resulted in a population forecast of 25.37 million people in 1981.² This estimate was in accord with that made by the Systems Research Group (SRG) which, utilizing assumptions of medium fertility, a declining mortality rate over time, and net migration as the average of 1961-1966 rates, obtained a "preferred" estimate of

¹Economic Council of Canada, The Canadian Economy From the 1960's to the 1970's, Fourth Annual Review (Ottawa: 1967), p. 57

²Hedlin, Menzies and Associates Ltd., Canadian Natural Gas Demand Forecast 1970 to 1999 (Vancouver: 1969) pp. 32 - 33

25.36 million people.³

A reasonable expectation of population in Canada in 1981 would, therefore, appear to be 25.2 to 25.4 million people.

2.2 Prairie Province Projections

While the rate of natural increase of population does tend to vary over space,⁴ it is obvious that the most significant factor affecting population at the provincial level relates to the rate of migration, both internal and international. This factor is, however, most difficult to predict accurately; the population estimates contained in Table 4.1 attached, for example, deviate from one another primarily on the basis of assumptions regarding the rate of migration. Thus, the Hedlin, Menzies and Associates Ltd. report assumed that Manitoba, Saskatchewan and Alberta would experience net annual provincial migration rates of -8,000, -7,000 and zero persons respectively, while the SRG preferred projection utilized the 1961-1966 rate of net migration -- which in absolute terms was higher for Saskatchewan and Alberta, but lower for

³Systems Research Group, Canada: Population Projections to the Year 2000 (Toronto: 1970), pp. 6 - 14.

⁴Fertility rates in Alberta, for example, have historically been higher than the average rates for Canada.

TABLE 4.1

ESTIMATES OF POPULATION IN
THE PRAIRIE PROVINCES, 1981
(000)

	<u>Manitoba</u>	<u>Saskatchewan</u>	<u>Alberta</u>	<u>Prairie Provinces</u>
Hedlin, Menzies	1,009	1,017	1,816	3,842
SRG:				
Preferred	1,040	988	1,841	3,869
Alternate	1,092	993	2,064	4,149
Shell Canada ^a	1,100	1,080	1,840	4,020
British Columbia Research Council	N/A	1,153	2,362	N/A
Targets for Economic Development Commission	1,128 (Projected)	N/A	N/A	N/A
	1,063 (Alternate)			
Alberta:				
Department of Municipal Affairs	N/A	N/A	1,928	N/A
Bureau of Statistics	N/A	N/A	1,981	N/A
Oil and Gas Conser- vation Board	N/A	N/A	1,917 ^b 2,128 ^c	N/A

Source: Hedlin, Menzies and Associates Ltd., Canadian Natural Gas Demand Forecast 1970 to 1999 (Vancouver: 1969); Systems Research Group, Canada: Population Projections to the Year 2000 (Toronto: 1970); Province of Alberta Department of Municipal Affairs Population 1 - Trends (Edmonton: 1967); Province of Alberta, Bureau of Statistics Population Forecast 1971 - 1986 (Edmonton: April, 1968); Oil and Gas Conservation Board, submission dated June, 1970 entitled In the Matter of the Gas Resources Preservation Act, 1956.

^a1980

^b1979

^c1984

Manitoba. Had the less severe 1951-1966 net migration rates been used (i.e. the SRG alternate projection), however, higher provincial population forecasts would have been registered.

An approach to population forecasting radically different from the cohort survival technique emphasized above involves the assumption that population flows are much more sensitive to changes in demand factors over space. A recent exponent of such a technique has been N.H. Lithwick, who has argued that a more valid population model for Canada would employ just such a labour-adjusting feature.⁵

Unfortunately, Lithwick did not provide estimates of provincial populations in 1981, but rather restricted himself to forecasts of populations of metropolitan centres in 2001. These projections can, however, be compared with the SRG projections of the same year;⁶ indeed, if Lithwick's methodology and projections are valid, then it follows that concentration of population growth in the larger prairie urban centres will substantially exceed those envisioned by the Systems Research Group. The consequences of this

⁵Lithwick, N.H., Urban Canada: Problems and Prospects (Ottawa: 1970) pp. 127 - 130.

⁶Ibid, p. 133.

event are that while some urban population growth may take place at the expense of rural areas,⁷ the population of the prairie provinces will be higher than might otherwise have been expected. Estimates in 1981 of 1.0 to 1.15 million people in Manitoba, 0.9 to 1.0 million in Saskatchewan, 1.8 to 1.95 million in Alberta, and 3.7 to 4.1 million in the entire prairie region would therefore seem reasonable in these circumstances.⁸

The specific implications of these forecasts with respect to prairie manufacturing relate to the effect that higher population and higher regional incomes (see below, Table 4.3) will have on opportunities for expansion of this sector. Thus, endeavours serving regional and sub-regional markets -- for example, breweries, soft drink manufacturers, concrete products -- will doubtless expand and, in addition, greater potential will also exist for import replacement. This latter item is particularly pertinent with respect to such undertakings as tire and tube production, wire

⁷The Systems Research Group estimated urbanization ratios in 1981 of 79.3 per cent for Manitoba, 69.5 per cent for Saskatchewan and 84.4 per cent for Alberta.

⁸Projections for Saskatchewan shown in Table 4.1 were made prior to 1971. The fact, however, that Saskatchewan experienced actual population decline during the 1969-1971 period has been considered in arriving at the projection range for 1981 of 0.9 to 1.0 million population for this province.

and wire products (where market threshold size is important⁹) and paints and varnishes, as well as fruit and vegetable canning and preserving.

3. Canadian Production and Income Projections

Three studies have been selected to illustrate Canadian production and income projections to 1981. To begin with, estimates relating to Gross National Product and Gross Domestic Product are provided in Table 4.2 attached. In order to facilitate comparison, all figures are given in 1961 constant dollars (using the implicit Gross National Product deflator¹⁰).

Once again substantial variations in these economic indicators are noticeable. However, with reference to Gross Domestic Product (the more relevant statistic in examining Canadian economic growth), a value of 85 to 95 billion (1961) dollars would not seem an unreasonable expectation of the economy's minimum

⁹Market threshold size refers to the size of market required in a region in order for production to occur. Until threshold size is achieved, it remains less costly for a firm to produce outside the region (achieving certain economies of scale) and transport the product into the region. After threshold size is reached, possible economies of scale for a plant located within the region become significant such that it is less costly for a firm to produce within the region.

¹⁰Systems Research Group, Canada: Economic Projections to the Year 2000 (Toronto: 1967), p. 105.

TABLE 4.2

ESTIMATES OF GROSS NATIONAL PRODUCT
AND GROSS DOMESTIC PRODUCT IN CANADA IN 1981
 (billions of 1961 constant dollars)

	<u>Gross National Product</u>	<u>Gross Domestic Product</u>
SRG		
Extrapolation	103.8 (Minimum) 117.7 (Maximum)	92.5 (Minimum) 104.9 (Maximum)
Productivity	99.2 (Minimum) 114.2 (Maximum)	88.3 (Minimum) 101.8 (Maximum)
BROWN		
P1	90.8	92.0
P2	91.6	92.7
SHELL CANADA ^a	93.7	77.4

Source: Systems Research Group Canada: Economic Projections
to the Year 2000 (Toronto: 1970)

^a1980

performance in 1981.

Only two forecasts of real personal disposable income in Canada were available:

- (1) The Systems Research Group anticipated that real personal disposable income would grow by 55 per cent in the period 1967-1980, while real per capita personal disposable income would increase by 29 per cent.¹¹
- (2) Shell Canada prepared forecasts (in current dollars) of personal disposable income in Canada by province and by region. These estimates are of course very helpful in the sense that the distribution of the domestic market for manufactured goods is influenced by the spatial distribution of personal disposable income. The relevant data are presented in Table 4.3 below.

TABLE 4.3

ESTIMATES OF PERSONAL DISPOSABLE INCOME
IN 1980 BY REGION AND/OR PROVINCE
(millions of current dollars)

	<u>1967</u>	<u>1980^a</u>	<u>Per Cent Increase</u>
Atlantic (including Newfoundland)	2,947	6,180	109.7
Quebec	11,350	24,000	111.5
Ontario	17,027	34,600	103.2
Prairies	6,867	13,800	101.0
Manitoba	2,010	3,800	89.1
Saskatchewan	1,735	3,620	108.6
Alberta	3,122	6,380	104.4
British Columbia	4,442	9,650	117.2
Canada	42,792	88,230	106.2

Source: Shell Canada; Government of Canada, CANSIM.

^a Estimates are based on trends projected from data for the 1950-1964 period; it is not considered that estimates for certain provinces (eg. Manitoba and Saskatchewan) adequately reflect events since 1964.

¹¹ Systems Research Group, Ibid, p. 21.

Table 4.3 clearly demonstrates the degree of consumer market concentration that exists within Canada; for example, the combined prairie and British Columbia markets are not equivalent to the Quebec market, let alone the Quebec and Ontario markets combined. In addition, Table 4.3 projects that British Columbia and Quebec will represent the two most rapidly growing markets during the next decade. Chapter 2 outlined the importance to prairie manufacturing of the Central Canada and British Columbia markets; continued growth in these markets therefore is important to prairie manufacturers eg. in 1967, over 14 per cent of prairie manufacturing sales were in Central Canada, and over 6 per cent in British Columbia. Conversely, however, the continued concentration of Canada's consumer market within the Quebec-Ontario region implies that concentration of certain consumer industries within the Quebec-Ontario region (eg. industries that are strongly market oriented, such as sporting goods, breakfast cereals, etc.) will continue during the next decade.

Table 4.3 does not provide any indication, however, of Canada's market for industrial or producer goods. In 1967 the prairie region accounted for 16.7 per cent of Canada's population. However, due to the region's specialization in resource industries such as mining, oil and farm production, distinct market concentrations exist in the prairies, reflecting special regional demands for industrial products. Conversely, prairie markets are notably small

for certain goods which tend to be associated with industries that are not significant within the prairies. Examples of prairie market concentration for Canadian produced manufactures (1967) are steel pipe and tube mills (40 per cent of Canadian market) and agricultural implements (53 per cent of Canadian market); in contrast, prairie markets were relatively small for motor vehicle parts (3.6 per cent of Canadian market) and textile dyeing and finishing (0.1 per cent of Canadian market).

Markets for prairie industrial goods are not discussed in this chapter (see Chapter 6 which evaluates growth of resource industries and industrial opportunities associated with this growth). Detailed discussion of each three digit prairie manufacturing industry including review of each industry's 1967 markets and 1961-1967 growth, are presented in Appendix C.

4. Conclusions

By 1981, it is anticipated that the population of Canada will have increased by 23.5 per cent to 24.5 per cent since 1967. In the case of the prairie provinces, population growth in the same period will be on the order of 8.5 per cent to 20.2 per cent, with the most significant increases occurring in Alberta (20.8 per cent to 30.9 per cent), followed by Manitoba and Saskatchewan.

Real Gross Domestic Product in Canada, it is forecast, will increase in the range of 74.9 per cent to 95.5 per cent during this same time interval, while personal disposable income in current

terms will more than double. Growth in the latter economic indicator will, however, be somewhat slower in the prairie provinces, especially in Manitoba.

The above projections do give credence to the observation that (although exceptions may exist for specific industries) domestic consumer market opportunities over space for prairie manufacturing firms will not alter radically in the next decade. In a few instances, a possibility exists that prairie consumer market growth will create a market large enough to support particular industries that currently ship products into the region. Technological change, of course, could also alter a given situation (eg. by permitting economic opportunities for smaller scale plants in a region; or by causing the minimum economic scale of production to become still larger). General trends, however, in the technology of production are not evaluated in this report. (See Chapter 7 on economies of scale.)

This chapter has not evaluated prospects for prairie goods in foreign markets (see Chapter 5), or prospects for prairie manufacturing related to the region's strong resource base (see Chapter 6).

Finally, this chapter has not examined the possibility that prairie producers could overcome cost, manpower, or other possible problems of efficiency relative to other regions, and thereby gain greater market penetration of Canada's domestic markets. (see Chapters 8 to 11).

CHAPTER 5TARIFF AND FOREIGN TRADE FACTORS
AFFECTING GROWTH1. Introduction

Historically, Canada has always been dependent upon foreign trade to sustain and improve its economic performance, in particular relying heavily upon export shipments of raw materials and/or lightly processed industrial goods. In recent years, however, highly manufactured products have been increasing their share of total Canadian exports and by 1969 such products constituted one-third of all exports. The prairie region has, however, apparently not been as successful as other regions in exporting its manufactured products; whereas in 1967 Canada as a whole exported 16.3 per cent of its total manufacturing output (measured in dollar terms), the prairies exported only 6.7 per cent of its total output.

This section will discuss the opportunities for prairie manufacturers to expand and develop export markets. International or foreign markets that could be served by prairie manufacturers will be examined, as will the role that tariffs play in hindering or developing manufacturing opportunities. The latter item will be discussed first.

2. General Tariff Structure

Generally speaking, most countries of the world (including Canada) have high, protective tariffs on manufactured goods and relatively low tariffs or no tariffs at all on primary products and lightly processed goods. Foreign and domestic tariff levels, moreover, vary with the commodity and the country under discussion, obviously making for commodity and regional biases. The prairie region, for example, may have a comparative advantage in the production of a particular product but be denied export markets because of high tariff walls, or else be subject to considerable foreign competition in the domestic market through low import tariffs. High import tariffs, on the other hand, could well protect prairie secondary manufacturing activity in a similar manner.

2.1 Export Tariffs

The lowering of tariff walls may be the "breakthrough" an industry needs to become of major importance both nationally and internationally. Little work has been done on this topic, especially from a prairie point of view. Hedlin, Menzies and Associates Ltd. did, however, examine the Kennedy Round of tariff negotiations (which resulted in lower general tariffs for most products of industrialized nations) and their impact on the Manitoba economy.¹ The conclusions were, in part, that tariff reductions

¹Hedlin, Menzies and Associates Ltd. The Kennedy Round and the Manitoba Economy prepared for the Department of Industry and Commerce, Manitoba, 1968.

would not in themselves provide Manitoba manufacturing industries with an easy entry into the United States Midwest. The effect, moreover, would likely be limited to specific products, such as furniture and aircraft parts manufacturing.

Similar observations seem to apply with respect to the automotive free trade agreement between Canada and the United States. Although this agreement is credited with improving Canada's balance of trade, increasing employment and generally developing the Canadian economy, most of these benefits accrued to central Canada. Only in the case of farm machinery and (to some extent) bus manufacturing has free trade appeared to have given the prairie manufacturing sector a substantial boost.

It is quite possible that the lowering of export tariff barriers could improve the position of still other selected prairie manufacturers. However, tariff reductions of this nature usually result only after prolonged bilateral (or multilateral) negotiations, with concessions from the Canadian side often being necessary. There can be no guarantee, therefore, that regional interests will always be protected in such circumstances.

2.2 Import Tariffs

Besides being of importance in the development of manufacturing opportunities for export, tariffs can also be of importance in import trade. A traditional economic development theory has been that high import tariffs on manufactured goods provide a

protective wall behind which domestic industry (particularly the manufacturing industry) can develop. It is difficult to quantify the impact that a national tariff has on manufacturing activity among regions, but it is quite clear that the original National Policy, for example, was intended to encourage some degree of interregional economic specialization, with manufacturing in particular being concentrated in Central Canada. Import tariffs have not had the same effect in the prairie region as elsewhere, largely as a result of factors such as small markets, transport costs and abundant natural resources.

One other effect of tariffs on imports worthy of mention relates to the cost of imported goods. To the extent that imported materials are used in the production process, domestic tariffs give the final product a higher price than without tariffs. To quote the Economic Council of Canada on this subject:

"All Canadian consumers and producers share in the cash cost of the tariff to the extent that tariffs affect the price of the goods they buy. But the impediments the tariffs impose to access to some cheaper sources of supply in adjacent areas of the United States tend to result in a somewhat larger cash cost in the Atlantic region and the western provinces than in Central Canada.²"

²Economic Council of Canada, The Challenge of Growth and Change Fifth Annual Review (Ottawa: 1968) p. 155. (Underlining added.)

Recently, the Task Force on Agriculture made recommendations in this area, namely that import duties should be removed on farm inputs and on inputs used in the agricultural processing industries.³ Presumably import duties on other inputs used within prairie industry should be examined in order to evaluate their net effect on prairie competitive ability. Detailed research in this complex area, however, is beyond the scope of this report.⁴

2.3 Evaluation of Tariff Structure Impact

The prairie region has historically expressed major concern over Canada's tariff structure, alleging that this structure inflicts particular penalties upon prairie residents who sell resources in competitive world markets, yet purchase Canadian manufactures from Central Canada that are protected by tariffs. This report cannot comment meaningfully upon this broad issue.⁵

³Federal Task Force on Agriculture, Canadian Agriculture in the Seventies (Ottawa: 1969), pp. 59-61.

⁴See Melvin, J. and B. Wilkinson, Effective Protection in The Canadian Economy, Economic Council of Canada, Special Study No. 9 (Ottawa: 1968), particularly Table 3 which would indicate that import tariffs reduce effective protection in particular for feed manufacturers and mixed fertilizers.

⁵See Royal Commission on Consumer Problems and Inflation; Prairie Provinces Cost Study Commission (1968) Chapter 7 which apparently dismisses the above traditional argument and argues for continued tariff reduction. However, in a leading work, W. MacKintosh, The Economic Background of Dominion-Provincial Relations (McClelland and Stewart: 1964; originally printed 1939) Chapter 7, it is argued that Canada's tariff structure reduced potential population and real income growth in the prairies (although low freight costs for grain represented a compensating factor).

As regards the specific impact of general tariff structures upon prairie manufacturing opportunities, research beyond the scope of this report would appear relevant. It does not appear that direct reduction of any particular Canadian tariff would dramatically adjust prairie manufacturing opportunities. However, Canadian tariff negotiations with other countries could increase export potentials. For example, frequent emphasis is placed upon growing market opportunities in Japan -- yet Japanese tariff and quota restrictions are important in many agricultural and manufacturing areas. A more favourable tariff structure that permitted increased Canadian exports could increase prairie manufacturing sales both directly (eg. slaughtering and meat packing exports) and indirectly, (increased prairie manufacturing sales to prairie agricultural industry).

In this regard, action along the above lines was recently recommended by the Federal Task Force on Agriculture. Yet, this report also noted:

"Government must be willing to subject other sectors of the Canadian economy to increased foreign competition. For example, the so-called 'voluntary quotas' on Japanese textiles and other manufacturers adversely affect the willingness and ability of the Japanese to purchase Canadian grains and meat." (p. 59)

In short, inter-regional and inter-industry effects of tariff structures require careful evaluation. At one time, for example, increased foreign competition (eg. removal of tariffs) in textiles would have adversely affected the prairie clothing industry,

even though such a strategy might have increased opportunities for farm exports (and, presumably, for growth of certain farm related manufacturing). Today, it is not clear to what extent increased concentration by prairie clothing firms upon the specialized North American fashion trade has reduced the potential impact of increased Japanese and Pacific Rim competition.

Finally, it must be noted that the unpredictable and sweeping nature of sudden changes in international tariff structures was underlined during the course of this study by the imposition in August by the United States of a 10 per cent surcharge on imports. Most discussion, projections and analysis contained in this report would require re-evaluation if this surcharge was to be retained. The Manitoba government, for example, has estimated that this one measure could amount to an annual loss of \$33 million in Manitoba export sales and 2,500 less Manitoba jobs. It is interesting to note that only 15 per cent of the sales loss would be in direct exports to the United States; 12 per cent would be in reduced sales to the rest of Canada for re-export to the United States; and over 72 per cent would result from lower Canadian incomes due to Canada's decline in exports to the American market.

Without in any way attempting to predict the outcome of current world monetary and trade discussions, this report is forced to remain within its original framework, namely the world trading environment prior to the imposition of the United States import surcharge. Clearly, research on the regional implications for prairie manufacturing will be required if current negotiations result in a significantly changed tariff and monetary structure.

3. Foreign Market Opportunities

3.1 The United States

The most obvious and most important foreign market for Canada and the prairie provinces is the United States. It has a distinct advantage as far as prairie exports are concerned due to its proximity to the prairie region. The Upper Midwest region (defined as the states of Montana, North and South Dakota, Minnesota, Northwest Wisconsin and Upper Michigan) has traditionally been the most important export market for prairie manufactured goods. Primary products such as cattle, some food products (beef and fish), grains, lumber and other wood products, some chemicals and petroleum products (especially fertilizers) and base metals are the major Upper Midwestern imports of Canadian products. Some secondary manufactured products are also exported in volume. These are largely restricted to agricultural equipment, non-agricultural tractors, trucks and bus bodies, and air and space craft parts.

The Upper Midwest region is a likely prospect for increased penetration by prairie manufacturers in the next decade. It is estimated, for example, that this area will contain a population of 7.02 million by 1975, with 60 per cent residing in urban communities. In 1965 personal income in the region was already some fourteen billion dollars.⁶

⁶P.S. Ross and Partners, Export Opportunities in the Upper Midwest United States for Manitoba Manufactured Products, 1968.

Table 5.1, however, indicates that examination of manufacturing export opportunities should not be limited to the Upper Midwest alone. For example, Census Sub-Division 91 (Washington, Oregon, Alaska) has represented an important market for petroleum and coal products, fertilizers, meat, certain non-metallic minerals, prefabricated building and structures. Census Sub-Division 92 (California, Hawaii) contains major⁷ and growing markets and has represented an important market for meat and aircraft. Similarly, regions east from the Upper Midwest have represented major markets for prairie minerals, forest products, meat, aircraft, distilled alcoholic beverages, outerwear, and fish. Analysis of distinct opportunities within these markets is limited by lack of available analysis; future research (particularly regarding the potential of the California market) is required.

In the particular area of farm product manufacturing export opportunities, it would appear that market growth rates and American farm production limit opportunities for prairie exports primarily to meat products. Opportunities for beef products are not thought to be significant, given current Canadian costs and United States tariffs and quotas. Opportunities for exporting

⁷For example, in 1967 total California personal income was almost 40 per cent greater than total personal income within all of Canada.

TABLE 5.1

MAJOR PRAIRIE EXPORTS TO SELECTED UNITED STATES REGIONS, 1970

Commodity	United States Regions ^a								Total To United States ^b
	20	31	32	41	42	81	91	92	
	(\$ Millions)								
Other Crude Bituminous Substances	74.49	112.59	91.83	142.99	-	55.09	273.33	15.16	765.48
Fertilizers and Fertilizer Material	4.11	9.43	28.65	34.94	10.64	8.83	8.20	1.20	119.92
Nickel and Alloys	13.86	2.55	-	-	-	-	-	0.64	73.56
Wood Pulp and Similar Pulp	10.66	8.38	12.52	4.39	-	-	1.07	2.31	54.16
Other Petroleum and Coal Products	0.05	1.04	4.36	9.35	0.14	2.82	7.82	1.55	27.81
Meat, Fresh, Chilled or Frozen	11.98	0.08	1.68	5.55	0.15	0.30	1.32	2.85	24.08
Lumber	1.91	3.10	6.50	1.85	3.31	-	0.20	-	23.00
Other Vehicle Parts and Accessories	0.02	0.16	0.09	15.16	0.16	0.02	0.20	0.01	15.96
Other Crude Non-Metallic Minerals	0.64	2.28	4.37	-	2.12	2.09	2.07	1.14	15.43
Haying, Harvesting Machinery	0.03	0.07	0.13	9.02	0.92	1.57	0.15	0.03	12.27
Cattle	0.15	0.10	1.21	1.82	0.91	1.59	3.22	0.09	10.70
Paper for Printing	0.56	0.34	4.22	2.52	2.86	-	-	-	10.57
Aircraft	0.08	1.77	0.12	0.09	0.14	0.37	0.20	2.17	9.97
Distilled Alcoholic Beverages	0.02	7.92	-	-	-	-	-	-	7.99
Tractors	0.08	0.32	0.27	3.52	0.83	1.57	0.32	0.34	7.92
Outerwear (except Knitted)	2.94	0.37	0.64	1.87	0.18	0.04	0.26	0.42	7.51
Seeds for Sowing	0.97	1.04	1.13	2.03	0.68	0.16	0.55	0.27	7.23
Zinc, Including Alloys	0.54	1.05	2.85	0.21	0.40	-	-	-	5.73
Fish, Whole or Dressed	1.31	1.61	2.15	0.15	0.03	-	-	0.03	5.30
Prefabricated Buildings and Structures	0.01	0.01	-	0.59	-	0.17	4.01	0.12	5.20

Source: Dominion Bureau of Statistics, "Domestic Export to U.S.A., Commodity Group, By U.S. Census Sub-Division, by Region of Lading in Canada, January to December, 1970."

^aThe United States Regions include the following states:

20 - New York, New Jersey, Pennsylvania	42 - Nebraska, Iowa, Kansas, Missouri
31 - Michigan, Ohio	81 - Montana, Idaho, Wyoming
32 - Illinois, Indiana, Wisconsin	91 - Washington, Alaska, Oregon
41 - Minnesota, South Dakota, North Dakota	92 - California, Hawaii

^bIn many cases, the regions shown do not add to the United States total eg. significant exports were shipped to regions excluded from the table.

pork products are thought to be significant, however, due to a variety of factors (eg. a quality preference for Canadian pork, a stable export demand, a relatively less significant United States tariff on pork, and the absence of quotas on pork).⁸ As was pointed out in a dissenting view (Dr. D. MacFarlane) to the Federal Task Force on Agriculture, continental free trade in hogs (Canada vs. the United States and Eastern vs. Western Canada) should offer additional stimulus to prairie hog products; among other factors, it can be noted that Alberta is as close to the rapidly expanding Pacific Coast market as much of the United States corn belt. (See Chapter 6 for discussion of other factors.)

3.2 Japan

Available projections estimate that the per capita Gross National Product of Japan will equal that of western Europe by 1975; it will surpass that of Canada's before the end of the 1970's, and the overall Gross National Product in 1975 will be equal to one-half that of the whole European Economic Community.⁹ It is estimated that,

⁸ See Urwick, Currie, A Study of the Ways and Means of Improving Profitability of Member Companies of the Manitoba Livestock Processors Association (Manitoba: 1970) Chapter 5. Also Federal Task Force on Agriculture, op. cit., pp. 166-172.

⁹ Caldwell, C.D., "Agriculture Abroad," as quoted in Canadian Journal of Agricultural Economics, Workshop, 1970, p. 162.

by 1975, Japan is likely to be Canada's second most important trading partner.¹⁰

The most significant area of potential prairie manufacturing exports to Japan is in agricultural products, particularly meats, vegetables and vegetable oils, and animal feed-stuffs.

In the late 1960's Japan produced some 84 per cent of its meat requirements; official policy expressed the desire to raise this to 94 per cent by 1977. However, consumer demand is expected to jump by 250 per cent during the 1970's, and major imports of meat products are projected for Japan.¹¹ Imports of beef and swine are still on restricted import lists for Japan. In beef, the 1969 quota was 24,000 metric tons; in addition, beef imports are subject to a 25 per cent import duty. There is little likelihood that import restrictions will be completely removed; however, increased liberalization could generate major export benefits for Canadian exports.¹²

¹⁰ Hay, K., Japan: Challenge and Opportunity for Canadian Industry (Private Planning Association: 1971).

¹¹ Canada - Japan Trade Council Newsletter, April, 1970.

¹² Caldwell, op. cit.

Aside from increased Japanese demand for beef, discussion with agricultural officials suggests that major opportunities will exist for Canadian exports of pork products (given low prairie feed grain costs, Canada may have a major competitive advantage in hog products; Canada's competitive advantage in beef products, however, is less clear).¹³

Finally, significant potential could exist for increased prairie exports of animal feed to Japan. In 1970, for example, Interprovincial Co-operatives Ltd. received an invitation from Unicoopjapan to submit a tender on 100,000 metric tons of animal feed to be delivered over a one-year period. Increased research is required, however, in this area to document export demand as well as prairie competitive ability.¹⁴

Prairie competitive agricultural ability is discussed in Chapter 6; however, aside from increased market demand, prairie opportunities in the above area are based upon the acknowledged

¹³FAO Agricultural Commodities - Projections for 1975 and 1985 (Rome: 1967) pp. 151 and 153 document large increases in Japanese beef and pig meat imports. Also, see Federal Task Force on Agriculture, op. cit.

¹⁴Hedlin, Menzies has previously evaluated, in a confidential study, problems associated with the above tender.

competitive low cost of prairie feed grains, Japanese markets are by no means assured. The point made is that these markets represent a major area worthy of detailed examination.

3.3 Pacific Rim Countries

Recently Canada has been attempting to increase its exports, particularly of manufactured goods, to Pacific Rim countries other than Japan. Again the products in which the prairie region can effectively compete are lightly processed goods, and again tariffs will probably play an important role in limiting exports to these countries. In Korea, for example, raw hides have a 25 per cent tariff rate while leather products have rates between 60 and 100 per cent. Soya bean oil in Korea has a 60 per cent tariff charge, in Thailand 22 per cent and in Malaysia no tariff charge at all. Manufactured fertilizers, on the other hand, have no tariff entering either Korea or Thailand.

In essence the Pacific Rim countries are using their tariff structure as a means of developing lightly processed local manufacturing; tariffs appear to be more conducive to Canadian exports of highly processed goods than of slightly processed ones. It seems doubtful, however, that Canada, and particularly the prairie region, can be competitive in these markets. Prairie exports will likely be confined to agriculturally based manufactured goods like fertilizers, meat products and vegetable oils in those Pacific Rim countries where the tariff rates are not preclusive.

One large question mark in export trade to Pacific Rim countries is the role of Communist China. With the recent diplomatic recognition of Communist China it can be expected that trade in commodities other than grain will grow, although the extent of trade is most difficult to forecast. The Chinese market is immense and even a small foothold could provide large benefits to prairie manufacturing concerns.¹⁵

3.4 Europe and the United Kingdom

Next to the United States, Europe (particularly the United Kingdom) is Canada's most important trading partner. Traditionally, however, most exports -- including those from the prairies -- have been confined to agricultural and raw industrial products, and indeed, new export opportunities for prairie manufactured goods in these markets appear limited. Once again, though, the preceding statement must be qualified, with respect to lightly processed items such as meat products.

¹⁵Chinese markets and production potential are simply not documented sufficiently at this time. However, as an indication of potential during the 1970's, note: J. Richter, "Beef Cattle Marketing Policy" in Canadian Journal of Agricultural Economics, Workshop, 1970, p. 151 where an increase of 76 per cent in Chinese per capita consumption of animal products is projected between 1965 - 1985 (by comparison, North American projection is 3 per cent, ECC is 25 per cent, Japan is 61 per cent). Also, FAO op. cit., where China is projected to have substantial beef and pig meat import needs during the 1970's -- some of this need, however, could be reflected by increased feed grain imports.

A development that could adversely affect even this potential, however, is the distinct possibility of the United Kingdom joining the European Economic Community. Free trade with other European countries would likely make the British Preferential Trade agreement much less important from a Canadian point of view. What effect this would have on Canadian and prairie manufacturing industries is at best unclear, but certainly in the short run all Canadian manufacturing concerns would be less able to compete in British markets for a share of the secondary manufacturing trade.

As in the case of Japan, it is thought that particular attention should be directed toward opportunities for prairie meat product exports to the European Economic Community. Per capita consumption of animal products in the European Economic Community is projected to increase by some 25 per cent between 1965 and 1985.¹⁶ FAO projections indicate that the European Economic Community should be self-sufficient in pig meat (however, if the United Kingdom is included in the European Economic Community, a substantial net import requirement would appear), although Italy and West Germany will have significant import requirements. In the area of cattle, however, FAO projections indicate a substantial and growing import requirement (which would be almost doubled if the United Kingdom

¹⁶Richter, op. cit.

is included). Major Canadian competitors currently are the largest suppliers to the European Economic Community meat products market, eg. South American, Eastern Europe, the Irish Republic, and Australia. In addition, levies and import taxes of the European Economic Community's Common Agricultural Policy, plus special barriers existing in individual countries, also act to limit potential.¹⁷ However, agricultural officials believe that the general increasing demand for world meat products, particularly beef, could bring prices to levels where prairie products would be competitive. Increased research, in short, is required to document opportunities for prairie meat products in the European Economic Community.

4. Conclusions

Changes in tariff structures normally occur only slowly over time and usually as the result of bilateral or multi-lateral negotiations. Such changes may in fact be a mixed blessing for prairie manufacturing concerns, with some industries benefiting from changes, others losing. The number of industries involved, moreover, is likely to be small at any given time.

¹⁷ See Urwick Currie, op. cit. Also, E. Crowston, "World Potential for Canadian Beef" in Canadian Journal of Agricultural Economics, Workshop, 1970, pp. 160-161.

The United States, in particular the Midwest region, and potentially the Pacific region (California), will continue to be the most important export markets for prairie manufacturers. With lower trade barriers between the United States and Canada, prairie manufacturing industries may be able to increase exports of more highly manufactured goods, for example, furniture and truck and bus bodies; also, important opportunities exist regarding exports of pork products.

Generally, in overseas trade factors other than tariffs (such as economies of scale, transport and competition in foreign markets) play an important role in hindering manufacturing exports, at least in the case of the more highly processed items. With respect to lightly processed goods, eg. meat products, vegetable oils, and fertilizers, however, where the prairie region could potentially have a comparative advantage, foreign tariffs will probably play an important role in determining export potentials. Major opportunities, particularly as regard meat products, are indicated for exports to Japan, other Pacific Rim countries, and the European Economic Community.

More detailed study, which is beyond the scope of this report, is necessary to quantify the benefits and cost accruing to prairie manufacturers as a result of tariff levels, both domestic and foreign. This study should, among other matters, examine the extent to which tariffs depress productivity within different

Canadian regions (eg. sheltering or causing inefficiency by encouraging product diversity over a wide range of protected products, limiting efficiencies that could otherwise be gained from scale specialization). The Economic Council has suggested that this factor may represent a significant tariff cost to Canada, and has argued that perhaps the main manufacturing regions of Central Canada, rather than the Atlantic Region or the western provinces, are now bearing the main economic costs of tariffs. In this context, it is "possible that substantial tariff reductions ... may have the effect of widening rather than narrowing regional income disparities."¹⁸

In conclusion, however it would appear that greatly increased attention should be paid to documenting foreign trade opportunities for prairie products, particularly agriculturally related products. In the past, concern has been expressed about inadequate effort in this area.¹⁹ Certainly, as compared to other Canadian regions, the prairie provinces currently sell a very small percentage of their manufactures in foreign markets.

¹⁸Economic Council of Canada, Fifth Annual Review, p. 156.

¹⁹For example, see Federal Task Force on Agriculture, op. cit., Chapters 4 and 7.

CHAPTER 6NATURAL RESOURCE INDUSTRY FACTORS
AFFECTING GROWTH1. Introduction

Chapter 2 documents the fact that the prairie economy today remains more directly dependent upon its natural resource industries than is the case for any other major Canadian region. Agriculture maintains prominence, reflecting early development and extensive land resources; the mineral industry, however, has emerged since the late 1940's as a major growth sector in the region.

The prominent role of the natural resource industries in western Canada is reflected in the structure and growth of prairie manufacturing industries. Chapter 2, for example, estimates that (excluding the chemical industries) over 64 per cent of prairie manufacturing employment in 1967 occurred in industries either processing resources or acting as major input suppliers to resource industries; the comparable average for Canada was 50 per cent.

The above factors indicate that the health of the resource industries -- agriculture, mining, forestry, fishing, energy -- and their rate of expansion affect markets for producer and consumer goods alike. For this reason, this chapter focuses upon an examination of these industries, evaluating their probable future impact upon prairie manufacturing opportunities.

In general, numerous manufacturing opportunities are

associated with both the inputs and the outputs of the resource industries. When scales of operation permit, producer-oriented manufacturing opportunities are created eg. agricultural implements, steel pipe and tube, perhaps chemicals for pulp and paper manufacture. When raw materials must be converted into a stable form before shipment (particularly when it is also desirable to reduce weight of the outgoing goods before they leave the region), manufacturing opportunities are created for regional processing of resource outputs eg. slaughtering and meat packing, smelting and refining of ores and minerals, the manufacture of paper. In short, the resource industries provide major opportunities; in any given case, of course, these opportunities could be restricted by other factors (eg. transport policies such as the Feed Freight Assistance Act, lack of capital, inadequate research, etc.).

In addition to direct effects on manufacturing opportunities, it is also clear that prairie resource industries have major indirect impacts upon prairie regional employment and income. The current depressed state of the agricultural industry, for example, limits not only markets for capital goods and processing; such a state of affairs also limits markets for a wide range of consumer goods and services. A rapid pace of expansion of the mining industry, the forest industries and improvement in the agricultural economy are important stimulants of prairie growth. This aspect of resource industry impact on manufacturing, however, is not extensively

examined in this report. Further research would appear to be required regarding the relevant prairie input-output coefficients required for such analyses.¹

A vast amount of research and literature exists regarding each individual prairie resource industry, let alone the region's entire resource industry package. This chapter does not attempt to summarize all available knowledge. Rather, attention is directed toward a review of critical features likely to affect directly prairie manufacturing opportunities during the next decade.

2. Agricultural Resource Industry Factors

The most significant factor relating to western agriculture is that future expansion will be governed by market capacities rather than by supply limitations.

With the exception of the northwest corner of the prairies, most prairie arable land is now under cultivation; yet, in itself, this factor does not impose any significant limit on future potential supply growth (eg. intensification practices such as increased fertilizer use, improved stocks, shifts in crop patterns, etc. provide

¹Appendix G, pp. G.2 - G. 11 and pp. G. 32 - G. 40 provides a review of past resource development in the prairies. References are made in these sections to available estimates of indirect resource industry impact within the prairies.

the basis for increased supply). Agricultural scientists have estimated that wheat, feed grain and livestock production could all technically (ignoring market problems) be expanded dramatically in the prairies.²

Furthermore, available research indicates that most agricultural areas in the prairie region are competitive with other Canadian regions in the production of wheat and feed grains.³ Although research is still continuing to assess interregional comparative advantages of Canadian livestock production, available analysis implies a strong competitive position in this area as well for prairie producers. In fact, prairie competitive position in livestock production is currently constrained by federal policies of providing feed freight assistance for movement of prairie feed grain to Central Canadian livestock producers. Removal of this

²See Shebeski and McGinnis, "Advancing Technology in Wheat Production", unpublished paper, December, 1969 where it is estimated that annual prairie production levels in wheat and coarse grains could be almost tripled by the year 2000. Also, see D. Baron, "Regional Development - Agriculture" in One Prairie Province? (Lethbridge: 1970) pp. 360-361 where technical potential for increased prairie livestock is outlined.

³See Craddock, W.J., Interregional Competition in Canadian Cereal Production, Economic Council of Canada Special Study No. 12 (Ottawa: 1970).

policy would shift a proportion of eastern livestock production into the prairies.⁴

Prairie agriculture, in short, is not constrained by major problems of supply. While continued improvement in productivity performance is vital for the industry's long term competitive position, at first glance it would appear that agricultural growth limits are imposed essentially by market capacity.

Anticipated increases in production by prairie agriculture must be measured by anticipated market expansion on a product by product basis.

Present forecasts project significant declines in prairie wheat markets, with the major expected increases in prairie production to occur in livestock, feed grains and rapeseed.⁵ (In addition some increased potential for prairie production of vegetables

⁴See MacEachern et al., Grain and Feed Transportation Benefits and Burdens, prepared for the Agricultural Economics Research Council of Canada. This report calculates that termination of the Prairie Feed Freight Assistance Policy would result in minimum estimates of eleven to eighteen million dollars of added hog and beef production in the prairies in the year following removal.

⁵Federal Task Force on Agriculture, op. cit., pp. 254-255. See also S. Hudson, Future Market Outlets for Canadian Wheat and Other Grains, Economic Council of Canada Special Study No. 11 (Ottawa: 1970).

would appear to exist; however, this item will be controlled by relative costs of production in different parts of the prairies, and will not be discussed further in this chapter.⁶⁾ The above shifts in market emphasis would appear to have significant implications for prairie manufacturing, particularly slaughtering and meat packing, feed mills and vegetable oil mills.

Prairie rapeseed expansion will, in part, be directed toward export markets. However, it appears that considerable opportunities are available in the domestic market for the processed product (eg. rapeseed oil); the Federal Task Force on Agriculture estimated that, by 1980, a doubling of domestic consumption of Canadian rapeseed oil could take place by replacing the vegetable oils presently being imported from other countries.⁷ Furthermore, major increased opportunities for increased production of rapeseed meal (eg. Japanese exports; livestock protein supplement

⁶Potential for increased manufacturing production of fruit and vegetable canners and preservers (SIC 112) is recognized in this report, based on discussions with provincial officials. See Chapter 13.

⁷Federal Task Force on Agriculture, *op. cit.*, p. 109. Although this indicates a substantial opportunity for prairie manufacture, present transportation policies act to constrain prairie production. See Chapter 8.

in Canada) were also estimated.⁸

Two factors appear to be significant as regards increased potential for prairie livestock production; continued significant increases in domestic demand for red meats;⁹ continued surplus in wheat markets if production continues on existing scale.¹⁰

Furthermore, as outlined in Chapter 4, opportunities for increased exports of red meats to the United States (pork products), Japan (pork and perhaps cattle) and the European Economic Community (cattle) also serve to enhance prairie livestock potentials.

Within Canada, analysis indicates that Quebec, British Columbia and the Maritimes will remain the main deficit areas for

⁸Ibid. At present, however, concern is expressed by prairie officials that rapeseed meal (as a by-product of increased rapeseed crushing) is rapidly moving into a surplus position on the prairies. Export to Japan is apparently constrained by the fact that railways will not move meal at Crow's Nest rates. Export demand, however, does exist.

⁹Ibid. Chapter 6, also pp. 251-260. Also, see Yankowsky, "The Intermediate and Long Term Market Outlook for Canadian Beef" in Canadian Journal of Agricultural Economics, Workshop, 1970 where total 1980 domestic beef consumption is estimated to be between 51 and 62 per cent over the 1967-1969 level. Total pork consumption is estimated to increase 24 per cent in the same period.

¹⁰Urwick Currie, op. cit.; p. 1V - 3.

beef and pork consumption.¹¹ Surplus prairie production will move into these deficit areas. In total, it is estimated that prairie livestock production for domestic consumption in 1981 could exceed 1.62 billion pounds of beef and veal, and 475 million pounds of pork.¹² By comparison, total prairie production for 1969 is estimated to have been 812 million pounds of beef and veal and 341 million pounds of pork.¹³

Opportunities for increased foreign exports of beef and meat products would represent market potential additional to that estimated for domestic markets.

Increased prairie livestock production would directly generate opportunities for increased prairie processing eg. slaughtering

¹¹Ibid, p. V-1 ff. See also Menzies Group confidential study evaluating prairie livestock potentials to 1980; pp. 22 - 24. Also Management Research Associates, The Potentials and Requirements for Future Development of the Livestock Industry in Western Canada (Oregon: 1970).

¹²Estimates based on Chapter 4 prairie population estimates, Canadian per capita consumption as estimated by Yankowsky (for 1980), and estimated prairie exports to other provinces in 1980 as estimated by Menzies Group.

¹³Source Dominion Bureau of Statistics, 23-203; estimated by multiplying inspected slaughter for prairies by national average of cold dressed weight (cattle and calves) and cold trimmed weight (pork).

and meat packing.¹⁴ In addition, achievement of livestock expansion would generate increased demand for manufactured feeds (although two factors are noted that could depress expansion of feed mills: trends toward rapeseed meal surpluses; and trends for farmers to prepare more of their own feed requirements).

In the final analysis, some officials point out that actual prairie livestock expansion will be governed by other factors than single demand opportunities and available competitive inputs. In particular, farm management and policy initiatives must act to limit the impact of various restraints to profitable herd expansion.¹⁵ Furthermore, increased effort and skill appears to be required in the search for foreign export markets; the tendency to merely accept growth based upon domestic demand requires evaluation. Particularly in the area of pork, it has been pointed out in discussions that prairie producers should have world export capability (eg. feed accounts for some 70 per cent of hog costs; and feed costs on the prairies are potentially among the lowest in the world).

¹⁴ See Yeh and Lin, "Technological Change in the Canadian Livestock Industry: An Input-Output Approach" in Canadian Journal of Agricultural Economics, July, 1969.

¹⁵ See Lohar, J.S., "Prospects for Increasing Beef Supplies in Canada", in Canadian Farm Economics, Vol. 4, No. 1, April, 1969. In general, pork supplies can be increased far more rapidly than beef supplies.

However, increased research and market analysis appears to be needed if world export hopes are to be realized.

Finally, it should also be noted (as experience has shown over the last decade) that technological changes affecting crop and livestock yields could always act to change the above projections.

As regards other prairie agricultural products relevant for regional manufacturing, major expansion is not projected for dairy products (which are affected by national and provincial marketing and production control policies), poultry products (which have recently suffered from overexpansion) or sugar (where production is already subsidized).

Appendix C and Chapter 13 discuss distinct opportunities in certain other agriculture-related manufacturing eg. agricultural implements, fertilizers. However, these opportunities require discussion of factors other than agriculture alone.

3. Mining

The mineral resources of the region fall into four use categories; industrial minerals, petroleum and natural gas, metallic minerals and other minerals.

Industrial minerals such as sand, gravel, stone, etc. are quarried as raw materials, chiefly for local industries related to the building trades. There is in general very little that is remarkable about the availability of these materials within the prairie region. Sand, gravel, limestone, etc. are widely dispersed

throughout the region and are so generally available that they do not constitute an impediment to construction or the manufacture of such products as cement, gypsum products or concrete. Brick clays are found in many locations and far exceed, in volume and frequency of occurrence, any foreseeable requirements for brick, tile or related ceramic materials. Sand suitable for the manufacture of glass is found in a number of locations. In general, these minerals of common occurrence are readily available for use in any manufacturing operations which may require them.

The extraction of petroleum and natural gas constitutes a major component of the economy of Alberta and is a significant component of the economy of Saskatchewan. Small quantities of crude oil are produced in Manitoba. Total crude oil production within the region currently approximates 550 to 600 million barrels per year, an increase from approximately 450 to 500 million barrels per year in 1970 and a considerably lower level in 1969. Natural gas production has followed a parallel course of increase and current outputs exceed those of 1970 by approximately 12½ per cent.

During the last two years continuing exploration efforts within the region have been less successful than in the past and there is currently some evidence to support the view that production of oil and natural gas has reached a peak level unless the very large reserves of oil held in oil sands and oil shales can be

exploited.¹⁶ Production of oil from oil sands remains marginally more costly than production from other sources and the technology for economic exploitation of oil shales has yet to be developed. It must be pointed out, however, that oil held in the latter forms far exceeds known reserves of oil and gas drawn from the more conventional sources.

Metallic mineral production within the region is concentrated in Manitoba where nickel, copper, selenium, tellurium, tantalum, gold, and silver are produced. Uranium ore discovered in Saskatchewan is currently under development and production is expected to commence in two years. Of the above, nickel and copper are by far the most significant. Output is currently valued at approximately \$250,000,000 per year with reserves adequate for considerable expansion. Exploration for metallic minerals continues although current markets and tax rate uncertainties have somewhat diminished the pace of exploration activity.

The metallic mineral resources of the Precambrian Shield are known to be lightly exploited and lightly explored. Anticipated market growth will lead to increased exploration activity during the

¹⁶ A possibility also exists that petroleum will be discovered by current exploration in the Hudson Bay lowlands.

decade and new mines can therefore be expected. The current rate of production is approximately five times the rate obtained a decade ago. The particular success of individual exploration efforts can never be forecast with accuracy and a single major discovery can lead to a doubling of present output. This makes ten year forecasts of output dubious at best. It seems clear, however, that major expansion can be anticipated.¹⁷

A number of iron ore deposits exist within the region and two of these are currently undergoing exploration; one at Choiceland, Saskatchewan and one at Neepawa, Manitoba. The probability of development of either of these deposits or other deposits within the region during the next decade is equally unsusceptible of forecast at this time. Again, however, it seems reasonable to assume that increased demand for iron and steel products within the region might lead to the exploitation of known or, as yet, undiscovered, iron ore resources.¹⁸

The potash industry emerged rapidly in Saskatchewan in the 1960's generating employment in the manufacturing sector in the form

¹⁷ See Manitoba to 1980, pp. 108 - 109. Manitoba nickel production was projected to triple current levels of output by 1980; four new gold-copper mines were projected for the same period as well as at least one new mine producing tantalum oxide.

¹⁸ Possible construction of major pipelines in Northern Canada could increase markedly prospects for an integrated iron and steel facility in the prairies (see Chapter 13, Item 291).

of processing and refining. Production approximated 860,000 tons per year in 1964 and is currently fairly stable at a level slightly in excess of 3,000,000 tons per year. Prices dropped from approximately \$36.00 per ton in 1964 to a low of \$25.50 per ton in 1968. Import curbs in the United States, the prime market area, account for declining prices and the fact that the industry is confronted with major over expansion at the present time.

Potash production has been maintained at a relatively stable level throughout 1969 and 1970. Preliminary indications suggest the same level will be maintained through 1971. Longer term prospects suggest the probability of sales increases approximating 5 per cent per year (on a volume basis) during the decade. Proved and developed reserves are adequate to maintain production at this level for many decades and there are large explored but undeveloped reserves also available. Limitations are imposed by market factors and conditions of world trade, despite the fact that Canadian potash is generally cheaper than that available from any other source.

4. Forestry

The forest resources of the region lie to the north and generally diminish in quality from west to east. Manitoba forests are largely committed, although there may be room for one additional pulp mill and some additional lumber production in the northeast corner of the province. Saskatchewan and Alberta resources are less heavily committed, particularly in the western foothills and the

north of the latter province. Rapid expansion of sawmilling seems certain in Alberta and additional pulp and paper capacity may be expected in both provinces.

The forest resource base is generally considered to be essentially a fixed one, since silvicultural methods (including fertilization, use of hybrid trees and similar techniques) are not likely to be introduced within the next decade into the region. Limitations, however, on the expansion of the forest based industries will be imposed essentially by market constraints.

The products of the regional forest industry are mainly pulp and paper, with associated lumber production. Pulp and paper capacity is currently approximately 2,500 tons per day. Uncommitted resources are adequate to sustain additional capacity of approximately 3,800 tons per day;¹⁹ in many instances, increased production of lumber will be contingent upon increased production of pulp and paper. Log sorting and similar techniques select saw timber from clear-cut areas and divert saw timber from pulp and paper production.

Markets for pulp, paper and related products have expanded very rapidly in North America in the last 25 years, and indeed

¹⁹For greater detail concerning output, capacity, employment and related data please see Chapter 13, Item 271, Pulp and Paper Mills, and Appendix C, Item 251 Sawmills and Item 271, Pulp and Paper Mills.

throughout this century. At this stage, there is no indication that this pattern will change although growing dissatisfaction with pollution, waste disposal, garbage and clutter may have an effect on the demand for such commodities as newsprint and tissue. The demand for lumber can be expected to grow rapidly in response to expanded building materials needs. The region is a net importer of wood products (on the order of 50 million dollars in 1967) but much of the expanded production of lumber will be in the form of spruce and pine stud material, some of which is likely to be exported to the United States where it finds a ready market. Higher value grades of lumber can be cut from the forest resources of the western portion of the region and these too will find ready markets.

Both pulp and paper (especially) and sawmilling are capital intensive and backward linked to forest harvesting operations. Some equipment and supplies used in the industries are manufactured in the region but the majority of capital goods are imported. The pattern seems unlikely to change in the next decade.

These industries on the other hand are not strongly forward linked within the prairie region. Much of the production of the pulp and paper industry is exported from the region and this pattern can be expected to continue.²⁰

²⁰At times statements are made by producers that the degree of regional processing depends on the tariff structure of the import nation; this area may require further research,

For the purposes of this report, it is assumed that a pulp mill will be completed and put on stream within the decade in northern Saskatchewan, that the mill at The Pas, Manitoba will go on stream and that at least one new mill will be added in Alberta during the decade. It seems possible that at least two more mills could be established within the region during this time period; however, excess capacity is acknowledged to exist currently in the industry, and future growth of world markets remains unclear. These problem areas, as well as concern about pollution effects, could limit future growth.

5. Fishing

The freshwater fishing industry of the region is relatively small, producing outputs worth some \$12 million per year at the present time. Until recently there were two limitations on the expansion of fish production with the region; markets and producers. Markets, however, are not longer the constraints they once were, as shortages of fish and fish products are becoming general throughout the world (in response to what is apparently an optimal level of harvesting of ocean species). The resource base of the industry is fixed so long as traditional technologies are retained. However, experimental work now underway at the scientific and commercial level indicates the probability of the emergence of fish farming within the region during the decade. This will undoubtedly have some effect on the production of fish in the region and the effect

may be large indeed -- although a precise forecast is not as yet possible.

Expansion of the region's freshwater fishing industry would act to increase related fish products processing.

6. Water Resources and Energy Supplies

Substantial unused water resources exist in the prairies. While these are not likely to generate economic activity or attract manufacturing industries, the presence of large surpluses of water ensures that industrial growth will not be inhibited. Available water resources are, however, unevenly distributed and water shortages are an impediment to industrial growth in some sub-regions.

The region is a net exporter of energy in the form of fossil fuels. Electric power derives from hydro sources and thermal sources fired by cheap fossil fuel supplies. The availability of low cost natural gas and relatively low cost electrical power is an inducement of relatively modest significance to manufacturing industries with major energy needs.²¹

In general, the substantial energy and water resources of the region eliminate energy or water problems as impediments to

²¹See George, R.E., A Leader and a Laggard (University of Toronto Press: 1970), Chapter 5, and G. Schramm, "The Effects of Low-Cost Hydro Power on Industrial Location," Canadian Journal of Economics, May, 1969.

industrial growth (except in certain sub-regions), and the ready availability of these resources at modest cost is a mild incentive for the expansion of manufacturing activity.

Finally, it should also be noted that anticipated expansions to energy capacity during the next decade serve to provide opportunities for prairie related industries. For example, Manitoba Hydro has recently announced that about \$800 million to \$1,000 million will be needed over the next ten years to carry out current Hydro plans for power development on the Nelson River. The capital intensity of major hydro facilities, however, generates demands for capital goods produced outside the prairie region; the precise impact and potential for prairie producers requires specific evaluation.

7. Conclusions

The above analysis indicates that prairie resource industries will continue to have a major influence upon overall growth within the region. Furthermore, market opportunities for many prairie resource products indicate specific opportunities for expansion of resource-related manufacturing during the next decade eg. slaughtering and meat packing, feed mills, vegetable oil mills, smelting and refining, fish products, pulp and paper mills, perhaps other paper converters. Given expected resource development, associated opportunities will exist for prairie petroleum refineries, steel pipe and tube mills, iron and steel mills, mixed fertilizers,

agricultural implements, machine shops, fabricated structural metal, concrete products, sawmills, industrial chemicals etc. (See Appendix C and Chapters 12 and 13 for discussion of specific industries.)

This chapter has not discussed potential opportunities for prairie manufacturing that might be associated with increased development of Canada's northern resources. This area, however, should be subjected to special examination. The possible construction of major pipelines in northern Canada, for example, would generate demands for steel pipe of the order of magnitude of 1,000 tons per mile; potential prairie steel producers, however, would face competition from large producers located outside the prairies (eg. Central Canada, Japan). (See Chapter 13, Item 291.)

Finally, this chapter has not examined the broader inter-industry linkages associated with resource-related growth; however, it would appear that such research should be conducted. Selection of specific manufacturing industries for evaluation could well be influenced by the results of overall area impact analysis.²²

²²See, for example, conclusions to detailed regional studies recently conducted to evaluate the impact of the F.R.E.D. programme in the Interlake, Manitoba eg. MacMillan and Lu, Regional Development, Planning and Evaluation: An Impact Analysis of Manitoba's Interlake Area Development Plan (Manitoba: 1971) unpublished. This research indicated that export increases in agricultural products and food and beverage manufacturing sectors had the greatest potential impact on Interlake area income. In the case of non-food manufacturing, area impact was considerably reduced by the large proportion of capital and operating inputs imported into the region.

Resource industries, however, represent only one factor affecting prairie manufacturing opportunities; analysis is directed in the following chapters towards evaluation of other relevant factors.

CHAPTER 7SCALE ECONOMY FACTORS AFFECTING GROWTH1. Introduction

The previous chapter examined the impact of natural resource factors upon growth, noting that particular resource strengths within the prairies attract to the region specific manufacturing industries. This chapter examines the impact of a different set of factors (scale factors) which could, at first glance, be thought to attract specific industries away from the prairies.

In the most general sense, scale factors represent economic forces that create different economic advantages for large-scale as compared with small-scale activities. Subsequent chapters will examine the impact of specific prairie costs relative to costs found in other regions, eg. transport costs, capital costs, manpower costs, research and development costs. This chapter, however, examines the relevance of the scale of activities alone.

Although it is acknowledged that large scale grouping of activities may occasionally create disadvantages, (eg. pollution), most writings have emphasized the economic advantages that large-scale activities enjoy over small-scale activities. Given the fact that population and manufacturing activity in Canada are currently decisively concentrated in Central Canada (Chapter 2), this factor could presumably represent a major economic force

limiting prairie manufacturing opportunities.

Given available research, however, this chapter cannot provide a precise evaluation of the impact of scale factors upon prairie manufacturing growth. The following merely serves to review commonly accepted types of scale factors, indicating areas of relevance to prairie manufacturing. Clearly, further research is required to quantify the actual significance of such factors upon prairie growth.¹

2. Internal Scale Economies of Production

Internal scale economies of production refer to the fact that technological production characteristics determine whether, to produce efficiently, a firm must produce on a very large, medium or small scale. To the extent that internal scale economies cause larger plants to operate more efficiently² than smaller plants, it is clear that output will become concentrated into a few firms.

¹Among the various sources covering the definition and relevance of different scale factors see: W. Isard, Methods of Regional Analysis (M.I.T. Press: 1966) chapter 7, and pp. 400-412; Also H. Perloff, et al., Regions, Resources and Economic Growth (University of Nebraska Press: 1960) pp. 77 - 86.

²The term "efficiently" refers here to the lowest possible production costs for a given level of output. For a general discussion of the term "economic efficiency" as it specifically relates to problems of monopoly and competition, see Economic Council of Canada, Interim Report on Competition Policy (Ottawa: 1969) Chapter 2.

Within the context of traditional notions that economic efficiency results from competitive markets, internal scale economies can thus create monopolies operating within imperfectly competitive markets.³ In 1964, in more than one-third of Canada's manufacturing industries there were as few as eight firms within each industry accounting for 80 per cent or more of the shipments of that industry.⁴

Chapter 4 made reference to the concept of a "threshold size" for certain prairie markets, eg. the fact that population growth could result in a market large enough to support the shift of certain industries into the region.⁵ Threshold size in effect refers to one impact of internal scale economies of production.⁶

³Ibid. Also, Task Force on the Structure of Canadian Industry, Foreign Ownership and the Structure of Canadian Industry (Ottawa: 1968) pp. 130-134.

⁴Economic Council of Canada, Interim Report on Competition Policy, p. 80.

⁵For a review of this concept and related location theory, see D.M. Ray, "Urban Growth and the Concept of Functional Region," Urban Studies: A Canadian Perspective ed. Lithwick and Paquet (Methuen: 1968) pp. 46-60.

⁶Internal scale economies alone, of course, do not determine growth in this case -- transportation costs, among other factors, play an important role.

Within the broad Canadian economy, recent research has indicated that the Canadian market is often incapable of bringing about the minimum cost levels that could be achieved from internal scale economies. The Economic Council of Canada, for example, has concluded "That the cumulative detrimental effect on the Canadian economy of inadequate plant size across a broad spectrum of industries is considerable."⁷ As mentioned in Chapter 5, international tariffs are frequently thought to play an important role in this regard, restricting Canadian access to larger foreign markets, and sheltering Canadian industry against potential foreign competition within the Canadian market.

It is apparent that internal scale economies do indeed create major advantages for large plants within certain industries. For example, it has been estimated that increasing scale economies (eg. falling unit costs) in refrigerator production occur when output is extended up to 200,000 units annually. This analysis would imply that the Canadian market is capable of supporting only two efficient refrigerator plants by present best practice standards.⁸

⁷Interim Report on Competition Policy, p. 76.

⁸Task Force on the Structure of Canadian Industry, pp. 154-155. It was estimated that scale economies did not continue to increase after 200,000 units annually. Six of Canada's nine refrigerator plants at the time of the report produced in the range of 40 to 60 thousand units.

Clearly, given the consumer market orientation of such an industry, the concentration of consumers in Central Canada, and the estimated nature of internal scale economies, it would be most unlikely that production would occur in the prairies.

Internal scale economies are likely to be found in such industries as iron and steel, industrial chemicals, wire and wire products, and manufacture of major appliances. In certain cases where scale factors are important, regional markets are adequate to support prairie production, eg. petroleum refining, agricultural implements, and steel pipe and tube manufacturing.

Analysts have also referred to economies of scale in marketing and advertising that frequently occur concomitantly with production economies.⁹ Such economies are most likely to occur where firms operate in large consumer markets and confront consumers whose tastes can be moulded by such means as heavy advertising expenditures, frequent styling changes, or the financing of dealer-service networks at the retail level. In such cases, large firms with major markets can incur costs that would be prohibitive to a smaller producer trying to serve only a smaller market. Given the

⁹Interim Report on Competition Policy, p. 75; also Task Force on the Structure of Canadian Industry, op. cit., p. 131.

advantages which accrue to those firms able to advertise, this factor thus also leads to greater concentration within a limited number of firms located near the largest markets. Manufacturing industries where economies of scale in marketing and advertising are important include motor vehicles (including snowmobiles), soaps and detergents, pharmaceuticals, and major appliances.

Finally, internal scale economies can in some instances act to give decisive advantage, regardless of location, to whatever firm first succeeds in capturing the relevant market. "One region may have excellent transfer relations with reference to inputs and markets and therefore represent an excellent location point for producing a particular product. If, however, a producer in another region (likewise with good transfer relations) has pre-empted the total market, this excellence of site will avail nothing."¹⁰ The classic example of this aspect of scale economies was the location of the automobile industry where, for reasons largely unassociated with strict locational economies, the industry came to be firmly located in the Detroit area.¹¹

¹⁰Perloff, et al., op. cit., p. 80.

¹¹See Thompson, W.R., A Preface to Urban Economics (John Hopkins Press: 1965) pp. 45-46.

3. Economies of Agglomeration

Aside from advantages for large scale versus small scale plants, industry can benefit from external economies of localization and urbanization (regionalization).¹²

Localization economies can occur when plants of like character congregate at one site. The firms involved are usually small, with their raw materials, production processes and finished products all relatively unstandardized; consequently they rely on access to certain shared benefits (eg. specialized services, a common labour pool, interchange of design and development ideas etc.) in order to maintain viability. In the prairies, localization economies (ignoring other factors) appear to encourage further development in the clothing, furniture, and aircraft parts industries.

Urbanization economies have been hypothesized to occur when numerous unlike plants congregate in one area. Savings are generated through the sharing of facilities or services, power consumption, transportation, etc. For example, in an integrated steel works, heat economies achieved in the transferal of molten pig iron to open-hearth furnaces are such economies.

¹²See Isard, op. cit. and Perloff et al., op. cit. for more elaborate discussion.

Urbanization economies are, of course, usually encountered in major urban areas; in point of fact, these economies could be neutral as between urban centres beyond a certain size. One recent analysis, evaluating manufacturing growth in Nova Scotia as compared with Central Canada, concluded that there was no evidence that agglomeration forces had any influence on relative manufacturing growth in the two regions during the post-war period.¹³ This analysis is supported by the fact that little decisive change has tended to occur in the concentration of manufacturing jobs in major urban areas.¹⁴ If anything, data for the 1961-1967 period indicate that the concentration of manufacturing jobs in census metropolitan areas declined slightly within the prairies and within Central Canada.

4. Conclusions

Scale economies (and the capital requirements they often imply) serve in many instances to limit entry into particular industries.

¹³George, R.E., A Leader and a Laggard (University of Toronto Press: 1970), pp. 100 - 102.

¹⁴See Slater, D.W., "Trends in Industrial Locations in Canada," in Resources for Tomorrow, Vol. I, (Ottawa: 1961) pp. 413, 414 which indicates that since prior to World War I, there has been little change in the overall locational distribution of Canadian manufacturing activity within broad regions. In fact, some dispersion has occurred, particularly in Ontario, out of city centres toward the periphery of major city industrial areas.

Thus, those large organizations that can capture such economies are frequently able to generate internal savings sufficient to expand facilities as the growth of the market warrants, or to retaliate effectively against any would-be competitor seeking entry. Furthermore, these firms may control raw material supply sources, thereby eliminating any possibility of increased competition within the industry. The implication of these factors is that significant employment growth in certain industries may be determined by the success the prairie region enjoys in attracting larger concerns.

The ability of the prairie region in this regard is often severely constrained by purely economic factors governing locational decisions. With the exception of the extractive industries, firms realizing economies of scale are, generally speaking, a) traditionally located in eastern Canada and b) oriented to the larger consumer markets -- neither factor offering any real incentive for relocation to the prairie region. Indeed, while some transportation cost savings might be generated by the establishment of a plant to serve the prairie region, these savings would not likely exceed those accruing from operation of larger plants in other regions. Such considerations apply, for example, with reference to the following industries: motor vehicles, breakfast cereals, major appliances, and soaps and detergents. In a few instances, however, the concentration of market in the prairie region is adequate to support prairie production eg. petroleum refining, agricultural implements, steel pipe and tube industry.

Economies of localization offer some better prospects for policy initiatives to foster regional economic development; for example, localization economies could be significant for continued growth of existing clothing, furniture and aircraft part industries in the prairies. Opportunities may very well exist to reap future economies through the development of industrial complexes -- generated, for example, by increased mining activities in the region and in the north (with linkages to iron and steel, steel tube and pipe, and the metal fabricating industries) or by increased production of livestock (with linkages to processing plants and agriculture in general).

The fact, however, must be acknowledged that past development has created localization economies for some industries located in non-prairie regions. This would seem to be the case, for instance, with respect to the textile and knitting industries, where prairie metropolitan centres cannot at present offer the skilled labour pools, the developed transportation system, and certain other specialized services currently available in Quebec and Ontario. Hence, unless a firm is prepared to incur higher financing and unit production costs resulting from establishment of integrated facilities, the prospects of altering the spatial location of the majority of these industries within the decade is remote.

Economies of scale are perhaps one of the most significant factors influencing the location and efficiency of economic activity.

Had certain industries not been established originally in the eastern regions of Canada and had population not tended to be concentrated in these regions, then the prospects of attraction of such industries to the prairie provinces might have been considerably enhanced. The conclusion must be drawn, however, that under present conditions industries such as motor vehicle and confectionery manufacturing are most unlikely to relocate their operations in the prairie provinces, except perhaps to the extent of some minor, specialized activities.

As stated at the beginning of this chapter, it is not possible in this report to provide quantitative analysis of the present impact of scale economies upon prairie manufacturing growth, let alone evaluate the nature and impact of trends in this area. Scale economies, of course, do not operate in isolation -- their effectiveness is influenced by other factors such as tariff policies, combines or competition policy, transportation costs, etc. Although considerable national discussion focuses upon the problems of tariffs, combines policy and industry concentration, it would appear that more research is required to evaluate regional as well as national implications of alternative policies.

With the exception of certain industries currently located in the prairies, scale economies appear to militate against large scale import-replacement or shift of manufacturing industries into the prairies. However, as noted above, scale economies may well

serve to focus manufacturing development in the prairies upon those industries where localization economies currently exist, or where yet-to-be captured scale economies (eg. industries yet to be developed in Canada) exist.

CHAPTER 8TRANSPORTATION FACTORS AFFECTING GROWTH1. Introduction

Prairie concern about freight rate inequities emerged almost simultaneously with settlement and the construction of east-west Canadian rail links.

Given the location and settlement pattern of the prairies, it is natural that concern would exist about the cost of transport connections with outside domestic and world markets. The geographical expanse of the region and its sparse population yield low density transportation links between centres. Since carrier transport costs are significantly influenced by distance and by volume of goods shipped (other relevant factors would include risk of damage, terrain, climate, etc.), some total transport cost disadvantages can be expected for prairie producers relative to producers in many other regions.

In addition to cost-based transport factors, however, prairie producers have shown concern about rate structures. In spite of considerable development in highway and other transport systems, the prairies are still more dependent on rail transportation than is the country as a whole. Railways in fact still represent the principal constituent of the prairie transportation system, eg. in 1965 over 90 per cent of total intercity tons of revenue freight originating in the region was shipped by rail; less than 1.8 million

tons of motor carrier revenue traffic terminated in the region, as compared to rail tonnage unloaded of over 18 million tons.¹ In short, competition as between transport modes is demonstrably less prevalent on the prairies than within other Canadian region. Concern exists that rate structures for prairie shipments are higher than for other regions as a direct result of relatively ineffective competition.

"In these circumstances, the Prairie Provinces are more dependent upon rail transportation and the penalty of this captive status has been that the west has been called upon to make more than a proportionate contribution to the total railway overhead. This is the basic complaint of Manitoba on the question of freight rates. There are some spectacular cases where, for comparable commodities travelling over comparable distances, the freight rates are very much higher for traffic conveyed to and from western Canada. However, the freight rate syndrome is not usually manifested in such a striking way; spectacular disparities are less frequent than the persistence of more modest disadvantages affecting the general structure of freight rates."²

¹Railways have an almost captive market for both incoming and outgoing goods largely as a result of the volumes and long distances involved in prairie shipments. On the prairies trucks do carry a higher percentage of manufactured goods than of other freight; however, the competitive advantage of trucks vis-a-vis railways declines as distance increases. See G. Wilson and L. Darby, Transportation on the Prairies (Saskatoon; 1968), p. 5.

²Hon. A.R. Paulley; "Preliminary Statement on Freight Rates Affecting Manitoba", Submitted to Hon. D.C. Jamieson, Federal Minister of Transportation; May 27, 1971; p.1.

Some higher rated commodities which are primarily short-haul have, of course, transferred to alternative modes, eg. trucking.³ Pipeline competition has cut into the bulk movement of oil and gas, which had traditionally been traffic of the railways. Yet, despite the above, it appears unlikely the dominance of the railways within the prairies will be seriously challenged during the next decade. Even in the event, for example, that diversification into secondary industry were to accelerate, the railways still have capability of refining their technology sufficiently to handle a significant proportion of the resulting traffic.

The subject of prairie transportation problems represents far too major and far reaching a problem to be dealt with adequately in this report. Discussion is hampered by lack of data (for example, even the published Waybill Analysis includes British Columbia in one Western Region together with the three prairie provinces) and concomitant lack of comprehensive published analysis. This chapter utilizes available analysis and information in order to examine the relevance of transport factors to prairie manufacturing growth. In many instances, areas for future research rather than firm conclusions are indicated.

³However, distances between prairie centres and adoption of railway rate structures have limited full competitive effect of trucking. See Wilson and Darby, op. cit., pp. 5 and 48.

2. Rate Structures

As noted above, prairie concern over transportation focuses upon freight rate structures.

Railways represent a capital-intensive facility with resultant high fixed costs and relatively low marginal or operating costs. This basic feature of railways generated a "value of service" rationale for rate structures, eg. rates charged are based upon what the traffic will bear. In a monopoly or ineffective competition situation, it could be expected that rates would as a result be higher than would occur in a competitive situation. In addition, railways operating within the prairies must haul grain for export at fixed statutory rates; concern exists that railways raise rates on other prairie goods (eg. manufactured goods) in order to compensate for low returns on grain traffic.

In 1967 Canada's National Transportation Act underwent major revision. The new Act sought to reduce regulation of transport rates, and to encourage effective competition that would serve to promote long-run efficiency. As noted above, concern is expressed that this philosophy, while laudable in aim, results in inequities for prairie shippers who do not have the economic bargaining strength (in terms of both competitive environment and size) of their larger eastern competitors.

The 1967 Act also contained three provisions which can be used to protect shippers from excessive rate charges:

- a. Where rates or actions by carriers may prejudicially affect the public interest (Section 16).
- b. Where a shipper is deemed captive to the railway in carriage of goods in less than carload quantities under 5,000 pounds (Section 44).
- c. Where a shipper deemed captive to rail applies to the Commission to fix a rate equal to the variable cost of the carriage of the goods and an amount equal to 150 per cent of the variable cost as the fixed rate applicable to the carriage (Section 53).

As of the spring 1971, the Canadian Transport Commission had held only three rate hearings: an application under Section 16 relating to rapeseed oil and meal; two hearings on jurisdiction in respect of Section 16 applications on wood pulp. All of these hearings dealt with problems affecting prairie producers. Prairie governments argue that the Act's provisions for the protection of shippers are ineffective; that hearings under the Act can be predicted to be a very lengthy and expensive form of redress.⁴ And, aside from instances of spectacular discrimination, it is claimed that the Act provides no relief for shippers forced to bear an excessive proportion of the railway overhead via a freight rate structure which across

⁴Hon. A.R. Paulley; op. cit.; p. 3.

the board is higher than would prevail for similar commodities over similar distances in eastern Canada.⁵

The general implications for prairie manufacturing growth of freight rate structure problems will be discussed below; however, it is clear that major problems exist in attempting to evaluate the aggregate impact of the above problems. Suggestions of reform to correct the situation include examination of potential economies from consolidation of the two major railways; investigations of the costs and benefits of establishing regional railway systems; examination of more radical changes designed to generate greater competition within the prairie region.

In addition to the general implications deriving from the relative importance of model competition within the prairies, specific concerns have been raised in two areas: the problem of high freight rates for shipments in specific subregions of the prairies (eg. rural and northern areas); and the concern that national railways provide transcontinental freight rates that in effect give non-prairie manufacturers unfair competitive advantages relative to prairie manufacturers.

⁵Ibid; p. 4.

Rate problems for freight shipped between prairie communities lie beyond the scope of this report. These problems, however, reflect important factors affecting rural and northern development. It would appear that there are important economies of agglomeration in transport services; these economies relate principally to the larger urban centres, where peaking and backhaul problems can be minimized and intermodal competition accentuated. Analysis is required to quantify such effects and to examine the implications of alternative policy approaches.⁶

Concern about low transcontinental freight rates providing non-prairie manufacturers with an unfair competitive advantage over prairie industry deals with a problem area that affects total prairie industrial growth. Historically, the railway stated that low continental rates were required to meet Panama competition. Recently, the position taken has been that such rates are required to meet market competition from off-shore sources of material. The net result, however, has been the emergence of apparent rate inequities for prairie producers. Aside from the rapeseed oil and meal and wood pulp cases currently before the Canadian Transport Commission,

⁶ *Ibid*; pp. 15 - 18 for a discussion of northern freight rate problems in Manitoba. See also pp. 8 - 9 for examples of higher rates within Manitoba as compared to within Ontario for shipment of iron and steel products over similar distances.

cases cited of inequitable freight structures include:

- a. For steel fabricated products, rates to Alberta are based on rate to Vancouver plus a back-haul rate to Alberta. Thus Alberta rates quoted are in fact higher than rates quoted for the longer haul to Vancouver. For example, equal volumes of steel plate cost 76.8 per cent more to ship from Hamilton to Calgary than from Hamilton to Vancouver.⁷ Similar results are indicated for other iron and steel products and for many food-stuffs shipped from eastern Canadian locations.
- b. Rates on iron and steel products from Selkirk to Vancouver are identical to those from Montreal to Vancouver, although the Montreal-Vancouver haul is twice as far.⁸
- c. Rates originally quoted for shipments of steel from Sydney, Nova Scotia, to Gillam, Manitoba, were only 16 per cent higher than that in effect from Selkirk for a distance some three and two-thirds as great. After protest by the Manitoba Government, a new rate from Sydney to Gillam (double the rate from Selkirk) was introduced.⁹
- d. The distance from Toronto to Vancouver is more than double the distance from Toronto to Winnipeg; yet the carload rate for 100,000 pounds minimum for canned food-stuffs is only 15 per cent higher.¹⁰ A water

⁷Tariff Reference: Agreed Charge C.T.C. (AC) 2553.

⁸Hon. A.R. Paulley, op. cit.; p. 9.

⁹Ibid.

¹⁰Ibid; p. 11

competitive base would be expected to produce a lower structure of rates from Vancouver to Halifax than from Vancouver to Toronto and Montreal, but this is not the case.

- e. The Portage La Prairie producer of canned food-stuffs is charged \$2.01 on a 60,000 lb. minimum carload to Vancouver; the comparable rate for a distance nearly twice as great from Toronto to Vancouver is only \$2.08.¹¹
- f. In one area of federal rate assistance (feed grain subsidies) arguments have been advanced that the resulting rates act to transfer profitable meat-packing industry from prairie to eastern Canadian centres.¹²

The mere existence of rate inequalities does not prove which direction (up or down) the relevant rates should move. It is possible, for example, that the lower rates are artificially low and actually failing to cover costs. Concern has been expressed that the railways do not accurately estimate their real costs:

"Manitoba would argue that there should be greater stress on transportation characteristics and less emphasis on the existence or absence of competition in determining rates. Sometimes the railway companies seem to take a short term

¹¹Ibid; p. 12. Also, on pp. 12-14, evidence and arguments are advanced documenting concern that railway freight rates are facilitating a transfer of packing house activity from Winnipeg to Toronto/Montreal as a result of rate disparities.

¹²Royal Commission on Consumer Problems and Inflation; Prairie Provinces Cost Study Commission (1968), pp. 134 - 136.

view of unavoidable cost and, by carrying competitive traffic which meets little more than variable cost, impose a cost and not a benefit on traffic more captive to rail."¹³

"A cost oriented management should promote the flow of traffic providing the most profitable return. Even if low rates are required from Montreal to meet water competition, a lower rate from an intermediate point such as Selkirk would stimulate production at the intermediate point and allow the railways to meet competition as effectively but with an improved net revenue position."¹⁴

It should be noted that in some instances the prairies, and particularly Manitoba enjoy the benefit of low rate scales on shipments moving into the Ontario-Quebec market as a result of excess transportation capacity existing in the east bound flow. These rate scales can be as much as one-half of the cost of the west bound scale, and are most often realized in truck or piggyback movement.¹⁵

3. Impact and Importance of Transport Costs

The above analysis outlined concerns regarding freight rate disparities. Disparities in relative rates between different

¹³Ibid; p. 2.

¹⁴Ibid; p. 11.

¹⁵Information supplied by Manitoba Department of Industry and Commerce.

regions can act to shift competitive advantage; however, as indicated, overall analysis is not available as regards the net impact of the freight rate structure upon the growth of prairie manufacturing. Furthermore, no overall analysis is available as to the potential impact on prairie manufacturing of possible changes in the freight rate structure.¹⁶

Apart from the problem of relative freight rates, it is also relevant to evaluate the significance of freight costs in relation to total production costs or sales. Such an evaluation provides an indication of the extent to which freight rate levels could promote or retard prairie manufacturing growth.

In practice, it is extremely difficult to allocate freight charges to a final price or cost. Most manufactured goods go through several stages of production and if the assembly process is widely located, freight charges can be accumulated at each stage of production. Nevertheless, Table 8.1 presents estimates (derived

¹⁶One area not commented upon is the impact of freight rates on prairie exports. It is estimated that international freight traffic bears higher rates than domestic traffic; evaluation as to the desirability of this situation, to either Canada or the prairie region, can be debated. See J.M. Munroe, Trade Liberalization and Transportation in International Trade (University of Toronto Press: 1969) p. 197. Available estimates of the freight rate impact on regional export advantages suggest that the prairies enjoy relatively low rates as compared to Ontario, Quebec and Atlantic regions; however, the significance of these estimates is questionable; Ibid; p. 111.

TABLE 8.1

PERCENTAGE CONTRIBUTION OF THE TRANSPORTATION
AND STORAGE INDUSTRIES TO THE VALUE OF OUTPUT
OF SELECTED MANITOBA AND ALBERTA INDUSTRIES

	<u>Manitoba (1961)</u>	<u>Alberta (1962)</u>
Agriculture	10.28	10.51
Livestock	7.96	
Forestry	9.68	14.61
Petroleum	0.78	10.14
Non-Metal Mining	11.43	14.40
Meat Products	3.57	4.24
Dairy Products	3.93	5.23
Grain Mills	2.24	5.24
Beverages	4.23	5.20
Other Foods	1.86	
Clothing	0.56	15.75
Wood Products	24.74	6.28
Furniture and Fixtures	1.38	12.28
Paper and Allied	4.84	12.51
Printing and Publishing	7.76	3.24
Primary Metals	2.39	4.55
Metal Fabricating	4.77	4.26
Machinery	9.68	9.41
Transportation Equipment	2.09	5.15
Electrical Products	2.65	12.35
Non-Metallic Mineral Products	10.82	12.35
Petroleum Products	9.23	7.09
Chemicals	10.66	17.46
Miscellaneous Manufacturing	5.25	8.19
New Construction	6.68	2.44 ^a
Repair Construction	6.36	12.61 ^b
Communications	4.08	4.38
Electric Power	0.03	0.04 ^c
Other Utilities	0.05	
Transportation and Storage	3.99	3.62 (Rail) 3.59 (Other)

Source: Manitoba Economic Consultative Board Fifth Annual Report (Winnipeg: 1968); R.W. Wright, The Alberta Economy -- An Input - Output Analysis (Unpublished).

^aResidential Construction

^bIndustrial Construction

^cElectric - Water

from Manitoba and Alberta input-output tables) of the percentage contribution of transportation and storage activities to the value of output of selected regional industries. This table indicates that industries such as meat and dairy products, communications, utilities, and services are only lightly dependent upon transportation, whereas forestry, non-metal mining, and chemicals are precisely the reverse. (Although industries which serve local markets eg. beverages can be expected to display slight dependence upon transportation it is not considered that this factor explains the majority of the results presented.)¹⁷

It is impossible on the basis of available research to provide definite guides stating how important transport costs must be (as some per cent, for example, of cost or value) before they have a significant impact on trade flows. It is acknowledged that certain prairie industries can be particularly adversely affected by transport cost levels eg. for exports from the region, pulp and papers mills, biscuit manufacturers, vegetable oil mills, smelting

¹⁷ See Ibid; pp. 8 - 14, for similar estimates and discussions conducted within the international trade framework. Commentary and comparisons on the basis of Table 8.1 may, however, be misleading. Data for Alberta, for example, does not include any transport costs of finished manufactured goods imported from other provinces. Data collected for Prairie Provinces Cost Study Commission (op. cit., pp. 122 - 124), indicate that value of transport services for imported commodities varies widely.

and refining. In certain other prairie industries, concern is expressed about transport cost impact because inputs as well as exports require relatively long transport hauls, eg. furniture industry. In almost all cases, however, it is extremely difficult to state that transport costs are the major factor responsible for slow growth or underdevelopment.

It must also be noted that high transport cost levels can work two ways, eg. as they can prevent exports from the region, they can also discourage or prevent imports into the region. It has been argued that transport costs have in fact tended to serve somewhat as a protective shield for many existing locally oriented prairie industries, eg. breweries, some metal fabricating industries, soft drink manufacturers, concrete product manufacturers, dairy factories. In these instances, it is clear that a relationship exists between potential economies of scale and transport costs such that a prairie location becomes attractive. Improved potentials for economies of scale or reduced transport costs would tend to exert increased competition upon these types of prairie industry.¹⁸

¹⁸Wilson and Darby, op. cit., pp. 44 - 45. As discussed in Chapter 2 of this report, a relatively high percentage of prairie manufacturing output is apparently sold within the region. Detailed data presented in Appendix C indicates a variety of prairie industries (such as the examples given) which sell some 90 per cent of their product within the region and control at least 70 per cent of the relevant prairie market for Canadian manufacturers.

4. Conclusions

A recent study estimated that manufacturing product transport costs for shipments from the Atlantic region to the Ontario-Quebec region in 1962 were of the order of 5.3 per cent of total costs; furthermore, this study estimated that this percentage increased during the 1950's.¹⁹ Finally, the same study estimated that (for an average manufacturing plant) the product transportation costs facing a Nova Scotia plant supplying the Quebec-Ontario market in 1962 resulted in a net overall cost that was some 2.6 per cent higher than the corresponding costs of a Quebec-Ontario plant performing the same operations.²⁰ This study concluded:

"Though of the several cost disadvantages faced by an average Nova Scotian manufacturer competing in the central Canadian markets . . . product transportation costs are the biggest (ignoring the effects of entrepreneurship), even for the average manufacturer this disadvantage is still not big enough to be called crippling, and in many industries whose products have a high value relative to their weight and bulk, it is insignificant."²¹

¹⁹George, R.E., A Leader and a Laggard, (University of Toronto Press: 1970), pp. 89 - 90.

²⁰Ibid; p. 92.

²¹Ibid.

Meaningful evaluation of the average impact or importance of transportation factors for prairie manufacturing growth cannot be provided in this study, given available data and published research. Comparable analysis to that summarized above for Nova Scotia is not available for the prairies.

Current analysis of prairie transportation extends only to the point of indicating disparities, inconsistencies and regional problem areas related to freight rates and current federal transportation policies. By itself, such analysis indicates problems that require remedies -- at the very least, remedies are required on equity grounds.

Such analysis, however, does not deal with broader and more fundamental questions: Aside from equity problems, to what quantifiable extent do transportation factors really restrict prairie manufacturing growth? To what quantifiable extent would manufacturing growth be changed by alternative transportation structures and policies? At the very least, some form of average impact analysis appears relevant for future research. It would be preferable, however, to examine as well the impact within major divisions and types of manufacturing. In particular, it would appear relevant that the impacts of transportation factors be distinguished for the "protective shield" group as compared to other manufacturing groups.

Normally freight rates are not expected to rise nearly so fast as the general price index due to improved technology and

increased carrier competition; given the fact that most of the prairies remains largely a captive rail market, it is not clear to what extent the region will enjoy the benefits of competitively induced rate stability (although better opportunities will exist in manufacturing than in many other sectors).²² One recent prairie study predicted that transportation costs as a percentage of output will tend to fall; on the basis of this trend, it is conceivable that the relevance of the protective shield in particular, and of transport factors in general, would diminish over time.²³ This conclusion, however is by no means proven; furthermore, viewpoints on this matter vary widely within the region. Given the importance of transport cost trends, future research in this area would be relevant.

A background study for the recent Prairie Royal Commission on Consumer Problems and Inflation offered the following net evaluation of the impact of transport factors upon prairie development:

"it is unlikely that changes in transportation alone can effectuate any major change in the industrial structure on the prairies."²⁴

²²Wilson and Darby; op. cit.; p. 46.

²³Ibid; p. 15.

²⁴Ibid; p. 53.

Discussion indicates that this conclusion of the Prairie Royal Commission is viewed with skepticism by many government and private groups within the region, even though similar conclusions have been recently stated regarding the important of transportation as a location factor in the Atlantic Region.²⁵ Clearly, if a constructive consensus is to emerge, further research on the particular prairie situation is required.

Finally, in addition to the above, further examination is required as regards the intra-regional impact of transportation -- for example, the impact of transportation factors on the location of industry in different provinces, cities, and rural areas. At first glance, suggested economies of agglomeration associated with larger centres imply that transport factors create a major impediment to industrial development in small centres. The implications of this hypothesis require examination -- for example, aside from rural-urban impacts, the effect of such factors upon industrial growth in Saskatchewan (a province located in the middle of the prairies, having relatively small metropolitan centres) needs to be evaluated.

²⁵George, R.E., op. cit.: also The Economist Intelligence Unit, The Atlantic Provinces Transportation Study (Ottawa: 1967), pp. 90 - 91. Also, the Atlantic Development Council, A Strategy for the Economic Development of the Atlantic Region, 1971 - 1981 (Fredericton: 1971), p. 65 states "Transport costs are probably declining in relative importance as a location factor and, for many industries, are likely to be only a small item in total cost."

CHAPTER 9CAPITAL FACTORS AFFECTING GROWTH1. Introduction

Capital represents the cost (including price, rate of depreciation and interest charges for money used) of buildings, equipment and inventories required by a firm. Any attempt to quantify the cost of capital must confront a host of theoretical and data problems. It is beyond the scope of this report to attempt any actual measurement of the absolute or relative cost of capital to prairie manufacturing industries.¹ Furthermore, due to a scarcity of data, attention will be focused upon the availability and cost of capital funds; the cost of building, equipment and inventories for prairie manufacturing relative to manufacturing in other regions represents an area requiring future research. (It is not expected that major cost differences exist, however, in this excluded area; one recent study concluded

¹See George, R.E., A Leader and a Laggard (University of Toronto Press: 1970) Chapter 6, where (utilizing a special survey of firms) such estimates are made for Nova Scotia manufacturing. The estimates given indicate that in 1962 depreciation and interest capital cost represented 8 per cent of the value of Nova Scotia sales; furthermore, it is concluded that the cost of a unit of capital input appears to have been similar in Nova Scotia to that found for manufacturing in the Ontario-Quebec region.

that manufacturing building, equipment, and inventories represented costs which did not vary significantly between Nova Scotia and the Ontario-Quebec region.)²

Within prairie manufacturing, an historical review of growth reveals quite clearly the major role which large national and international firms have played. Despite the fact that the incidence of smaller firms appears to be somewhat greater on the prairies than in Ontario and Quebec, data clearly indicate the dominant position of the larger firms within the prairies.³ In 1966, only 20 per cent of prairie establishments had annual sales over \$500,000.; yet these establishments accounted for 74 per cent of the region's manufacturing employment, 88 per cent of total manufacturing sales, and 84 per cent of manufacturing value added. Between 1965 and 1968, the average percentage of manufacturing corporate taxable income attributable to non-Canadian-resident-owned companies was 60.5 per cent in the prairies.⁴

²Ibid. It should be noted that much equipment and capital goods have to be imported into Canada. One area of potential added cost would, however, be the added transportation required for prairie importers.

³See, for example, Appendix Tables A.9.1, A.9.2 and G. 14.

⁴See Dominion Bureau of Statistics, Corporations and Labour Unions Returns Act, Part I, 1968 (Ottawa: 1970), p. 38. Comparable percentages for other regions were: 70.0 per cent for Ontario; 60.3 per cent for Quebec; 59.6 per cent for the Atlantic; 44.1 per cent for British Columbia.

Available data suggest that, in addition to their size dominance, larger manufacturing firms have tended to be a major source of growth in recent years. For example, between 1961 and 1966, the class of prairie establishment having \$500,000. or more annual sales registered a 52 per cent increase in value of shipments and a 27 per cent increase in employment. In contrast, the class of prairie establishments having less than \$500,000. annual sales registered a 16 per cent increase in value of shipments and a slight decline in employment.⁵

Data are too limited to permit meaningful evaluation of the relative contributions to prairie growth of foreign versus Canadian owned manufacturing. It can be noted, however, that firms having more than 50 per cent foreign ownership appear to be significant (eg. generating more than 50 per cent of the industry's taxable income) and most prominent within the growth sectors of prairie manufacturing, eg. machinery, transportation equipment, electric products, chemical and chemical products, petroleum.⁶

⁵ Dominion Bureau of Statistics, 31-210. From the viewpoint of employment size classes, prairie establishments having 100 or more employment registered 27 per cent employment increase; establishments having less than 100 employment registered 8 per cent employment increase.

⁶ Corporations and Labour Unions Returns Act, Table 3.2.

Although the above data indicate the importance of large national and international firms within prairie manufacturing, this evidence does not really indicate that growth forces originated from outside the prairies -- for example, large firms are presumably attracted to the region by its growth prospects. Once such firms are located in the region, growth forces internal to the region would appear to perform a dominant role (given manufacturing export data outlined in Chapter 2 which indicate a relatively large percentage of sales being within the region). Furthermore, such evidence does not provide conclusive proof that growth does not originate from the transition of small firms into big firms (although data on the degree of foreign ownership alone tend to cast doubt on the past significance of this hypothesis).

Aside from growth itself, however, major differences tend to exist as between large and small firms in their relative ability to obtain capital funds.

The long established successful major publically owned company encounters little difficulty in financing the expansion of branch plant operations in the prairie provinces. Available sources of funds include retained earnings, earned surpluses, debenture and bond issues, stock offerings, and institutional debt financing. The array of possibilities are evaluated in terms of long term corporate growth objectives; the financial performance of projects under study, rather than capital availability, represents the major

factor of importance.⁷

For smaller independent companies (or indeed for medium size firms undergoing substantial expansion), the securing of required capital to commence and operate a manufacturing operation can be a serious problem. Persons who initiate manufacturing ventures frequently have control of resources, raw materials, or technology which is vital to the success of the venture. In short, they may have a viable manufacturing enterprise in view, but still lack the financial means to launch the project. Attracting equity investors can frequently involve sacrificing control. Even when the necessary equity funds are available, problems can be met in securing required debt financing.

Thus, whereas the large national firm has many options open to it, it is apparent that the sources of funds for the smaller independent concern are relatively limited. These sources within the prairies are described below in greater detail.

2. Sources of Financing

There are a number of agencies and financial institutions which are in a position to service the credit needs of manufacturing firms. The more important sources of external financing are listed below.

⁷No evaluation is made in this report, however, about the impact on prairie growth of non-resident controlled corporations. See Task Force on the Structure of Canadian Industry, for an outline of possible implications.

2.1 Chartered Banks

The role of the chartered bank is largely limited to providing for the short term (five years or less) financial requirements of manufacturing industries. The nature of the securities which chartered banks can take as collateral (specified by the Bank Act) has dictated this posture.

Most frequently the chartered banks become involved with financing inventories or receivables on a fluctuating basis. Short term loans for expansion are also provided. However, the long term debt requirements of manufacturers is not provided by the chartered banks.

2.2. Specialized Lenders

To meet the long term financial requirements of manufacturers and other commercial enterprises, specialized lending agencies have been developed. These sources of funds have often been created jointly by banks, trust companies and other financial interests to cater to the long term debt market. Examples of these agencies are Kinross Mortgage Corporation, RoyNat Ltd. and Canadian Enterprise Development Corporation Limited.

The latter organization was formed specifically to provide a source of venture or risk capital to business enterprise. Because the role which one organization can play relative to the need for this type of financing is limited, the Canadian Enterprise Development Corporation is most selective in its choice of clients. It is in a position to choose from a wide variety of projects placed before it and can assemble a portfolio of diversified growth oriented companies.

RoyNat Ltd. and Kinross Mortgage Corporation represent the type of lending agency which provides financing to a broader spectrum of manufacturing industry. Their financial involvement

may take the form of both equity participation and debt financing over a long term, usually 10 to 15 years. Again these sources of capital are selective. In order to secure financing from these agencies, the industrial project must clearly be able to demonstrate to the lender sales factory earnings potential and capable management.

The equity participation factor is not always mandatory in securing financing from these sources. However, the lender is in a position to make this requirement should it be felt to be to his advantage to do so. Sacrificing equity in order to obtain required debt financing is at times the only alternative open to the borrower.

2.3 The Industrial Development Bank

The Industrial Development Bank (I.D.B.) was established by the Government of Canada to provide for the financial requirements of small and medium sized businesses. Essentially the I.D.B. acts as a lender of last resort, dealing with those business concerns which cannot find other sources of financing (indeed, this situation must be demonstrated to the I.D.B. by the borrower in order to qualify for loans).

Although it provides for the financial needs of a wide variety of business enterprise, the I.D.B. does provide debt financing for the manufacturing concerns as well. In dealing with manufacturing ventures, the I.D.B. will provide up to 70 per cent of the financial

requirements of a venture. In order to provide financing to this extent the I.D.B. must be in a very well secured position. Often in addition to a first charge on the fixed assets of the borrowing business, the I.D.B. will require personal guarantees by the owners.

In assessing loan applications from manufacturers, the I.D.B. is interested essentially in the same factors as other lenders: management and earnings potential. In practice the I.D.B. has been more receptive to providing for the financial needs of manufacturing concerns which are seeking funds for expansion rather than for establishment per se. This type of posture has resulted in the I.D.B. acquiring a reputation as a conservative lending institution.

The terms of I.D.B. loans vary, usually from 10 to 15 years. Loans are made for working capital as well as for the fixed asset requirements of the manufacturing concern.

2.4 Public Subscription

Raising funds through public subscription is an avenue of financing from which the smaller independent manufacturing company is virtually excluded. Success in "going public" hinges on having a major brokerage house underwrite the stock issue. A major brokerage firm is interested in a stock offering only if the sponsoring firm has anticipated annual after tax earnings of \$200,000 or more and if the Toronto Stock Exchange will list the stock.

The brokerage firm is mainly interested in well established firms which have earned a reputation for earnings performance and growth potential. By handling this stock the brokerage is assured of being able to earn a commission through marketing the issue and at the same time to provide its customers with a stock which has a good potential for gain.

Very few prairie manufacturing companies have been able to use public subscription as a means of raising capital. There have been a few isolated examples where local brokers have floated issues on the local market, but failures have far outnumbered the successes.

2.5 Provincial Agencies

Each of the provincial governments in the prairie provinces has become involved in financing manufacturing enterprises. This involvement has come about both through the realization that industrial expansion could be accelerated through catering to the financial needs of concerns interested in developing manufacturing enterprises, and as a result of the use of offering attractive debt financing as a factor in competing for new industry.

The principal agent of the Manitoba Government in this field is the Manitoba Development Corporation (M.D.C.). The M.D.C. participates primarily in lending activities, but has lately expanded into the holding of equities. Most loans have been made to manufacturing establishments, with less than three per cent of loans

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presently outstanding (by value) being issued to tourist operators. The majority of loans made have been in the range of twenty-five to one hundred thousand dollars, although 11 loans each over three million dollars have been made since 1962.⁸

A Small Loans Division has recently been created within the Corporation to provide financial assistance to small businesses in the early stages of growth.

The Saskatchewan Government, as an incentive to location of manufacturing, at present offers a six year interest free loan, which may be forgiven under certain conditions. Minimum investments conditions are specified, with the requirement that the applicant provide equity of approximately thirty per cent. The maximum loan is \$5,000 for each job created directly, or 20 per cent of the capital cost, or \$300,000, whichever is the lesser. Loans are limited to manufacturers who wish to establish, expand or modernize outside the Federal Incentive Areas.

The Saskatchewan Economic Development Corporation (S.E.D.C.O.) also offers financial aid to manufacturing and processing industries, with loans normally being secured by a pledge of the fixed assets of the borrower. ✓

⁸Manitoba Development Corporation Annual Report,
(Winnipeg: 1971) pp. 14 - 15.

In Alberta the financial involvement of the Alberta Commercial Corporation (A.C.C.) started as an assistance programme to help small industries finance their inventories. Over time the A.C.C. became involved with providing loans to assist manufacturers in constructing buildings and purchasing machinery. Although all loans to the end of 1970 were under \$1,000,000, the role of the A.C.C. has expanded to the point where loans in excess of \$500,000 are included in its programme. ✓

The A.C.C. operates as a lender of last resort, providing financing to businesses which have been unable to secure financing from other sources.

In addition, the province of Alberta has also implemented an incentive scheme which is aimed at aiding manufacturers who locate in centres outside of Edmonton and Calgary. Such firms can apply for loans of up to \$500,000 or one-third of the capital employed in the project. The loan payments under certain conditions are forgivable over a five year period and thus essentially take the form of a grant. The programme only applies outside D.R.E.E. Incentive Areas.

2.6 Federal Incentive Grants

At the present time, through the programmes of the Federal Department of Regional Economic Expansion, manufacturing concerns which establish operations in specified geographic areas in each of the prairie provinces are eligible to apply for certain financial incentives. These incentives take the form of non-repayable grants ✓

which are designed to offset the financial disadvantages which may be incurred through establishing the enterprise in an area of economic disparity.

Since the introduction of the Federal Regional Incentives Act, 68 grants having a total value of \$8,992,766 have been made to firms located in the prairie region. This represents 21.8 per cent of all grants and 10.4 per cent of the value granted within Canada under the federal act.

	<u>Grants Under Regional Incentives Act</u>			
	<u>Number of Grants</u>		<u>Value of Grants</u>	
	<u>No.</u>	<u>Per Cent</u>	<u>\$'000</u>	<u>Per Cent</u>
Atlantic Region	94	30.1	33,594	38.9
Quebec	119	38.1	32,808	38.0
Ontario	21	6.7	10,427	12.1
Prairies	68	21.8	8,993	10.4
Manitoba	46	14.7	4,636	5.4
Saskatchewan	7	2.2	1,361	1.6
Alberta	15	4.8	2,996	3.5
British Columbia	10	3.2	478	0.6
Canada	312	100.0	86,299	100.0

Source: Official Report, House of Commons Debates, June 30, 1971; p. 7496.

3. Conclusions and Evaluation

The above provides a survey of capital and financing sources available to prairie manufacturing. The most relevant question, namely the adequacy of these capital sources, remains unanswered.

Once recent survey of firms setting up plants in Ontario and Quebec found that not once was either the availability of investment funds or the rate of interest charged for such funds mentioned as having influenced the choice of location.⁹ The same study concluded, after examination of firms within the region, that availability of long, medium or short term funds did not hold back manufacturing in Nova Scotia.¹⁰ Unfortunately, similar analysis is not available as regards prairie manufacturers.

capital is mobile

On an aggregate basis, available data indicate that prairie manufacturing has not been investing any less pro rata to its size than industry in Quebec and Ontario. In fact, capital investment measured on this basis has been slightly more significant in the prairies than in Central Canada; this, however, could be expected since prairie manufacturing is marginally more capital

⁹George, R.E., op. cit., p. 69.

¹⁰Ibid, pp. 67 - 70.

intensive than manufacturing in Central Canada (See Appendix G, Section 5.5).

MANUFACTURING CAPITAL EXPENDITURES AS
PER CENT OF SHIPMENTS VALUE

	<u>1952-1956</u>	<u>1957-1961</u> (Per Cent)	<u>1966-1968</u>
Atlantic	5.5	7.5	14.7
Quebec	4.3	4.7	5.7
Ontario	5.3	4.9	5.9
Manitoba	3.5	6.1	6.7
Saskatchewan	4.9	5.3	8.9
Alberta	13.1	7.3	5.3
Prairies	7.7	6.5	6.4
British Columbia	8.7	7.5	9.1

Source: Dominion Bureau of Statistics, 31-201, 31-201 P., 61-205.

Despite the above, concern is frequently expressed on the prairies that problems exist in the availability and cost of capital funds. This concern is probably expressed primarily as regards smaller firms or firms owned by prairie residents (capital availability is generally acknowledged not to be a problem for the larger national and international firms; these firms tend to dominate prairie manufacturing).

During the 1960's a regional bank was in effect established in British Columbia. At the present time the Government of Manitoba is actively investigating the prospects for a bank or near-bank that would have its head office in Manitoba. Among the reasons given for possible action in this direction, concern is expressed that existing national chartered banks tend to remove savings from the region

and tend to be uninformed about local investment opportunities. In contrast, it is thought that a locally based banking institution might show more concern, interest and awareness of local investment opportunities, and thereby create greater availability of capital funds for local firms.

It is beyond this report's scope to attempt any evaluation of the current Canadian banking system, or the effectiveness of the various federal and provincial agencies that have been created to work in this area. Similarly, this report cannot provide meaningful evaluation of the possible relevance of the Small Business Administration programme that currently exists in the United States.¹¹ On the basis of available information, it has not been possible to establish whether or not problems associated with capital funds are a significant constraint to prairie manufacturing growth. Further research would appear to be required in this area; research would be relevant to evaluate whether or not government action was warranted, as well as to evaluate possible alternative courses of action.¹²

¹¹The United States Small Business Administration offers a variety of federal programmes directed towards small businesses (without any geographic discrimination), including management and technical assistance, lease guarantee, and federal loans at low interest rates.

¹²Studies have frequently minimized this problem's significance in other Canadian regions (see R.E. George, *op. cit.*). However, it is possible that changes in capital institutions such as banks would be directed more towards problems of local entrepreneurship and management than towards problems of capital cost and availability. See Chapter 10.

Finally, although the D.R.E.E. industrial incentives grants programme is described briefly, evaluation of this programme's impact on prairie manufacturing growth has not been possible. Presumably some form of survey analysis, combined with an overall cost-benefit analysis, would be required to make such an evaluation. A number of questions would appear to be relevant for such an evaluation: To what extent have incentives acted to accelerate development of existing industries, rather than stimulate new industries or new enterprises? To what extent have incentives actually shifted industries into the prairies and out of other regions? To what extent have incentives encouraged developments that have a high multiplier impact on regional jobs and incomes?

Surveys conducted to evaluate the previous ADA programme suggest that the ADA incentives grants programme was relatively more successful at shifting industrial activity within Central Canada's economic heartland than into other regions such as the prairies.¹³ For example, one study surveyed firms who had received

¹³ See Davison, G.M., The Physical Location of Industry in Canada (Unpublished Report for the Department of Industry, Ottawa: 1966), p. 64. Also M. Yeates, and P. Lloyd, Impact of Industrial Incentives, Department of Energy, Mines and Resources, Paper #44, Ottawa: 1970.

ADA grants. This survey revealed that among the firms who were located in the economic heartland, only 3 per cent had themselves surveyed the prospects of locating in another province.¹⁴ Furthermore, only five out of 207 firms surveyed indicated that without incentives they would have located in other geographic regions of Canada.¹⁵ Among the firms located outside the economic heartland, 49 per cent stated that the grants programme acted to accelerate development, 35 per cent created new plant, 11 per cent shifted location, and 5 per cent claimed no effect was generated.¹⁶

It would appear relevant to compare the above evaluation of the earlier ADA programme with a similar survey of firms who have received D.R.E.E. grants. One major point alluded to in Chapter 8 is this study's observation that a significant number of prairie manufacturing industries appear to be producing primarily for local markets. It would seem relevant that the impact of grants to these firms as compared with grants to export-oriented firms be examined. Similarly, Chapter 6 outlined the fact that

¹⁴ Davison, G.M.; op. cit.: p. 57. For similar conclusions, R.E. George, op. cit.; pp. 111 - 114.

¹⁵ Ibid; p. 8.

¹⁶ Ibid; p. 63.

some manufacturing industries (eg. food processing) have substantial linkages within the region, such that their growth stimulates significantly area sales and incomes; the impact of D.R.E.E. grants in this broader perspective would also appear relevant.¹⁷

¹⁷ See George, R.E., op. cit., p. 151 where the hypothesis is advanced that capital grants tend to be most attractive to capital-intensive firms that tend to bring little indirect benefits to the region.

CHAPTER 10MANPOWER FACTORS AFFECTING GROWTH1. Introduction

Over the last decade, increasing attention has been paid to the role of manpower (all forms of labour inputs, including production workers, management, entrepreneurs, etc.) in the process of economic growth. A recent study by the Economic Council of Canada has, for example, documented the combined contribution of labour employment, education and residual factors to Canadian economic growth over the period 1962-1967 as follows: 69 per cent in the case of net national income and 57 per cent in the case of net national income per person employed. Employment growth alone accounted for 43 per cent of net national income growth; residual factors accounted for 17 per cent.¹

At the national level, the federal government established a Department of Manpower and Immigration in 1966 in order to develop and implement manpower policy. The primary objective of this

¹Walters, D., Canadian Growth Revisited, 1950-1967, Economic Council of Canada, Staff Study No. 28 (Ottawa: 1970), pp. 6 and 31. Residual sources of growth include other advances in knowledge, including non-formal learning processes, as well as methods by which production is organized and managed.

department has been to further economic growth by endeavouring to ensure that the supply of manpower matches the demand, quantitatively, and geographically. In addition, the department has attempted to promote equity and stabilization goals by means of manpower policy.² Three major programme areas (aside from immigration) within Canadian manpower policy are training, assisted mobility, and manpower centres intended to improve the operation of job markets.

Manpower improvement programmes have also been developed at the provincial level within the prairies. In general, however, statistics and analysis complementary to that available at the national level are not available. Estimates, for example, are not available showing the relative contribution of prairie manpower to prairie growth. Regional analysis has most frequently focused upon evaluations of relative wage costs, labour force growth, labour and management training needs, and general educational policy.³

²See Economic Council of Canada: Design for Decision-Making: Eight Annual Review (Ottawa: 1971); Chapters 6, 7 and 8.

³In addition to a review of provincial programmes in this area, see Manitoba Economic Consultative Board, Third Annual Review, (Winnipeg: 1966), Chapters 7 and 8. Also, Fourth Annual Review, Chapters 3 and 4. The writings of the Manitoba Economic Consultative Board indicate the importance of manpower policy to provincial industrial development.

Due to lack of both data and published analysis regarding prairie manpower, this chapter's scope must be limited. In addition to a review of general areas relevant to manpower policy, this chapter outlines possible areas of relevance to the region's manufacturing growth.

2. Manpower Supply, Demand and Mobility

General labour force statistics are available for the prairie provinces; however, detailed manpower data on characteristics, availability, demand, supply and work habits are not publically available on any systematic or regular basis. Given data problems, it is not surprising that analysis of regional manpower supply and demand problems is limited.⁴

In aggregate, manpower utilization in the prairies appears to be relatively high compared to other Canadian regions, eg. total employment represents a relatively high proportion of the region's population, civilian labour force participation rates tend to be relatively high, unemployment and underutilization rates tend to be relatively low (see Chapter 1, Section 3). Within the prairie

⁴One exception is: Ahamad, B., A Projection of Manpower Requirements By Occupation in 1975; (Department of Manpower and Immigration: Queen's Printer, 1969). Table 7.5 of this report shows estimates of required manpower inflows by occupation for the prairie region, 1961 to 1975. Outflows are indicated for farmers and fishermen. Major inflows are indicated for professional and technical, craftsmen, service and recreational, clerical and managerial.

region, mobility has played an important role. Out-migration from Manitoba and Saskatchewan has clearly helped, for example, to maintain relatively low unemployment rates (see Chapter 1, Section 4). Throughout the prairies, out-migration from rural areas in particular has been a prominent reality for many years.

Although manpower out-migration can have beneficial features, it also can create or intensify regional problems.⁵ Beyond the mere realization that certain social overhead capital facilities will frequently have to be maintained, it must be pointed out that:

- a. The more mobile segments of the population in the region are the young and the more highly educated -- the most productive types of workers in an economy.⁶
- b. To the extent that industries are strongly market oriented eg. petroleum refining, meat packing, furniture, the departure of population can only mean a continuing concentration of economic activity in the larger market areas of Canada.

Unless these problems are recognized, the value of

⁵United Nations; "Problems of Regional Development and Industrial Location in Europe", in Regional Development and Planning, (Cambridge: M.I.T. Press, 1965), p. 416.

⁶Courchene, T., "Interprovincial Migration and Economic Adjustment", in Canadian Journal of Economics, Vol. III, No. 4, November, 1970.

mobility programmes to a region can be overstated;⁷ indeed, it is acknowledged that manpower policy must take cognizance of regional requirements and regional impacts.⁸

Within prairie areas, agriculture has played a dominant role. Traditionally, this industry has required manpower highly specialized in particular skills which are not easily transferable to other occupations -- skills which have not tended in the past to require a high level of formal education. As the relatively better educated young have tended to migrate out of rural areas, the relatively poorer educated and older segment of the population has tended to remain, partly due to lack of better employment opportunities elsewhere. This type of migration, in combination with slow growth or decline in rural populations, influences industrial opportunities in rural prairie areas; aside from other considerations, manpower supply in such areas tends by itself to be conducive only to low skill and low wage industries.⁹

⁷Buckley, H. and E. Tihanyi, Canadian Policies for Rural Adjustment, Economic Council of Canada, Special Study No. 7 (Ottawa: 1967), p. 23.

⁸Economic Council of Canada; Eighth Annual Review, p. 125.

⁹Hedlin, Menzies, Manitoba Regional Economic Development Challenges to 1980; Vol. II, Part III (Winnipeg: 1968), p. 194.

At first glance, low wage manpower could be argued to be a potentially favourable factor for a region, capable of attracting industry. However, many factors detract from such a strategy. There are many low wage areas, for example, in North America; a low wage industry, therefore, must choose locations on the basis of many non-wage factors. Furthermore, an inflow of labour intensive low wage industry need not raise income levels substantially; the very fact of labour intensity and low capital inputs can serve to reinforce a tendency toward low incomes in a particular region (one exception of this case being where such an industry provides employment for a group who would otherwise be unemployed, eg. female labour in certain areas).¹⁰ Finally, as noted by the Manitoba Targets for Economic Development Commission:

"Because of the high degree of mobility of Canadians, a region whose population has characteristically been migrating out of the area cannot afford to focus (merely) upon job creation ... New employment opportunities have to provide a level of income that is competitive with outside opportunities. The creation of low-income job openings is futile if the openings remain unfilled because of "labour shortages" resulting from uncompetitive wage rates. This means that economic development

¹⁰Perloff, et al, Regions, Resources and Economic Growth, (University of Nebraska Press, 1960), pp. 603-606.

policy in . . . the prairie provinces will have to emphasize productivity if it is to succeed."¹¹

Aside from low skill manpower, the prairie region also offers certain concentrations of specific highly qualified manufacturing manpower, eg. aircraft parts, industrial chemicals, and management-entrepreneurial skills in clothing and furniture. In these cases, the presence of skilled manpower pools acts to encourage continued growth. Conversely, there are industries in which the prairie region lacks skilled manpower, eg. jewelery and silverware. Where skilled manpower is lacking, mobility or training programmes are relevant if other factors indicate potential feasible development.

At this time, the total effect of prairie manpower supplies and mobility on the region's industrial growth remains unclear. Levels of educational achievement in the prairies generally compare adequately with education characteristics of the nation's population.¹²

¹¹Commissions on Targets for Economic Development, Manitoba to 1980 (Winnipeg: 1969), pp. 30-31. It should be noted that, despite the above argument, certain prairie industries such as the clothing industry have continued to require immigration of low wage manpower from abroad.

¹²Prairie Provinces Cost Study Commission, p. 407. Evaluation of the region's net benefits from education programmes is, however, affected by out-migration and the existence of fiscal spillovers in education costs as between different provinces. Economic Council of Canada, Sixth Annual Review (1969), p. 127; Eighth Annual Review, (1971), Chapter 9.

Aside from general education levels, regional variations clearly exist as regards concentrations of specific manpower skills. The total impact of existing skill concentrations on manufacturing growth is unclear, as is the relative importance of this factor as compared to other factors. Finally, the net impact on prairie manufacturing growth of autonomous and induced mobility has yet to be examined.¹³ Given the importance of federal manpower and mobility policies, future research in this area would appear relevant.

3. Training and Productivity

Regardless of mobility, it is acknowledged that training and other programmes designed to increase industry productivity are required.¹⁴ Such programmes are currently conducted by both the federal and provincial governments, as well as by the industries themselves.

Aside from the direct problem of industrial development, training programmes (frequently in conjunction with mobility programmes) are relevant to advancement of low skill groups and the overall

¹³ See Economic Council of Canada, Eighth Annual Review, Chapter 7 for an evaluation of existing mobility policies.

¹⁴ See Manitoba Economic Consultative Board, Fourth Annual Report; also see Manitoba to 1980 (TED Report), pp. 342-354.

improvement of regional incomes. Without such programmes, the danger exists that low skill groups (eg. Indian and Metis) will fail to receive advancement or even perhaps employment, regardless of overall regional industrial growth. In short, training programmes offer one tool whereby industrial growth can be made relevant to the region's lower income groups.¹⁵

As regards industrial growth itself, in the short-run training programmes are necessarily directed towards the acquisition of specific skills by the labour force. In many cases, industrial manpower problems are capable of being solved by such an approach. In the longer term, however, it would appear that development of labour force flexibility is more relevant than acquisition of specific skills (eg. ability to adjust with relative ease to changes within industry). In such circumstances, it would appear that strategy should focus upon the general upgrading of the labour force over time, leaving specific training programmes in many cases to

¹⁵See MacMillan, J.A., et.al., Benefits and Costs of Manpower Services in the Interlake Rural Development Area (Department of Agricultural Economics, University of Manitoba: Research Bulletin No. 71, 1971). Benefit/cost ratios for the pooled group of non-agricultural manpower training services in the region are estimated to exceed 2.5.

training-in-industry.¹⁶ For example, only short on-the-job training programmes appear required in the furniture industry, in sash, door and planing mills, and in tire and tube production, provided that necessary general skills exist.¹⁷

Within the prairies, concern has been frequently expressed regarding the capability, skills and vision of the region's entrepreneurial and management manpower.¹⁸ It is recognized that the skills and structures required to direct industry have undergone major changes. Concern exists that those directing many existing

¹⁶ See Economic Council of Canada, Eighth Annual Review, pp. 104-123. The council argues for the examination of the more flexible notion of "job families", with common basic skill elements that can be related to components of basic training programmes.

¹⁷ Private benefit/cost ratios in the Interlake region for Basic Training and Skill Development (BTSD) and Manpower Corps programmes -- in which a high percentage of Indian and Metis have been enrolled -- have been low in comparison to other programmes. MacMillan, et al. observe, however, that in addition to a longer time span being required for evaluation in such instances, the ratios ignore any social benefits and costs arising from these programmes. See MacMillan et al., op. cit., pp. 16, 32-34.

¹⁸ See Manitoba to 1980 (Targets for Economic Development Report), pp. 20, 21, 40, 342-354.

firms in the region have failed to develop modern management skills and techniques. Also, as regards attitude and structure, concern has been expressed that some family-business entrepreneurs have failed to realize the advantages of larger scale industry (and the fact that such industry implies shared ownership, and probably more responsibility for those with "technocratic" skills).¹⁹ In the final analysis, however, no estimates are available as to the impact that that the above factors have had or are likely to have upon prairie industrial growth.

Concern is expressed also about management skills in firms located outside of the prairie region. In some instances, such concerns relate to branch plant operations within the prairies. In certain other instances, these concerns relate to management within national (or international) firms which governments wish to attract to the prairies. Analysis conducted in this report, for example (see Appendix C), indicates that major firms within industries such as glass products, distilleries, biscuit and processed cheese manufacutrers could fall into this category. National firms in such industries tend to concentrate their activities (particularly planning and high level decision making) in the larger eastern metropolitan areas of Canada. Isolation from the prairies can foster blind spots

¹⁹ Ibid.

to potential economic opportunities in the region.

"Within the larger cities, investment prospects come more easily within the line of vision of private . . . investors, whereas lack of information about other areas makes it difficult to judge whether opportunities in those places might not prove more remunerative. Even when more information becomes available, the prospects are likely to be obscure . . . Under these circumstances, Hirschman is quite justified in concluding that 'the external economies (in growing areas) . . . although real, are consistently overestimated by economic operators!'"²⁰

Once again, however, it must be noted that no estimates are available as to this factor's impact on prairie industrial growth. A recent survey, however, of 360 firms which set up plants in Ontario and Quebec in the late 1950's and the early 1960's provides indirect evidence suggesting that the "blind spot" factor is indeed important. When asked if they had considered looking for a plant site other than in the economic heartland of the Ontario-Quebec region, 79 per cent thought the Quebec-Ontario choice was obvious and considered no other province but the chosen one; of the remaining firms, only sixteen (4.5 per cent of the total surveyed) had even "looked" outside the Quebec-Ontario region; only nine (2.5 per cent)

²⁰Rodwin, L., "Metropolitan Policy for Developing Areas", Regional Economic Planning: Techniques of Analysis, ed. Isard and Cumberland (Paris: 1961), p. 225.

had seriously examined other regions in Canada.²¹ Detailed examination of the survey results indicated that few of the firms based their attitudes on previous knowledge or expert advice; only 8 per cent of the firms had even engaged consultants. The author noted, "When asked why he chose a particular location, one entrepreneur replied simply: 'This is my home.' Entrepreneurship seems to be one of the least mobile factors of production and each region must, unless it can offer the irresistible attraction of a scarce natural resource, produce its own entrepreneur."²²

In summary, the total impact of current federal and provincial manpower training upon prairie industrial growth has not been estimated.²³ Although many problems are discussed that would appear to indicate training needs, little quantification is available as to either these needs or the potential benefits and costs of alternative training programmes. Additional research, with a focus upon the

²¹ See George, R.E.; A Leader and a Laggard; Manufacturing Industry in Nova Scotia, Quebec and Ontario (University of Toronto Press: 1970), pp. 178-188, p. 112.

²² Ibid., pp. 113-114. In the same report, Chapter 3 provides an overall review of labour supply and costs in the Ontario-Quebec and Nova Scotia regions. The tentative conclusion is offered that Nova Scotia's towns and cities offer labour forces big enough to man all but the largest plants; nowadays few manufacturing processes demand special skills not generally available; the weak part of the manpower factor in Nova Scotia is management. pp. 51 - 55.

²³ See Economic Council of Canada, Eighth Annual Review, Chapter 6. On p. 117 estimates indicate that the prairie region made a net fiscal transfer to Quebec and the Atlantic Region during 1969-1970 as regards the federal manpower training programme.

prairie region, would appear relevant in this area.

Although not discussed above, prairie concern has also been shown regarding the overall productivity of many existing industries in the region. In Manitoba, one provincial programme assists individual firms and entire industries to conduct plant and industry productivity audits. Utilizing these audits, action is recommended. Initial activity focused upon clothing and furniture industries appears to indicate that this approach could be relevant throughout the prairies. Furthermore, recent dramatic improvements in sales by many clothing firms in Manitoba also serve to highlight the relevance of contemporary management.

4. Conclusions

Despite the importance attached at the federal level to manpower programmes, little concrete data and analysis are available for the prairies. The impact of current manpower programmes is unclear as regards overall regional development, let alone discrete manufacturing development. It would appear that increased research is indicated in order to quantify manpower problems and policy impacts within the prairies.

Utilizing standard indicators, aggregate manpower supply and utilization in the prairies appears to be relatively high as compared to other Canadian regions. To some extent this performance reflects mobility and out-migration from major areas within the region. The net impact of this mobility upon prairie industrial, income and manpower development has not been determined.

Within the region, past migration has created areas of varying skill concentration; in some instances, highly skilled groups provide encouragement for industrial growth. Low skill concentrations also exist, particularly in rural areas. The tendency for such areas to attract low wage industries is concluded to be not very significant (eg. in terms of probable growth in both income and jobs).

Aside from the direct problem of industrial development, manpower programmes can be a particularly relevant tool whereby low skill groups are provided with the ability to capture employment and advancement opportunities generated by growth.

Within the range of manpower problem and policy areas, concern is indicated as regards prairie management and entrepreneurship. Evaluation of the relevance of these factors to prairie industrial development (particularly the expansion of existing industries) is required.²⁴ Furthermore, evaluation of the impact of existing programmes in this area appears relevant, particularly the impact of

²⁴George, R.E., op. cit., pp. 103 - 105 concludes that his analysis of various relative input costs provides "no grounds for rejecting the hypothesis that the cost of producing goods and distributing them to customers in the Quebec-Ontario region is the same whether the producing plant is situated in Nova Scotia or in the Quebec-Ontario region . . . It seems established that cost differences of the factor inputs cannot explain the shortage of new plants (in Nova Scotia). Only one possible explanation appears to remain. The reason must be connected with the only factor input not previously dealt with -- entrepreneurship."

recent programmes centred around firm and industry productivity audits.

Finally, evidence exists that management and entrepreneurs who establish plants in the Ontario-Quebec heartland do not tend to seriously examine other regions in Canada. Further research in this area would be relevant in order to evaluate both the significance of this factor and the likelihood of success for policies directed at changing this situation.

CHAPTER 11RESEARCH, DEVELOPMENT AND DESIGN
FACTORS AFFECTING GROWTH1. Introduction

During the past year the Science Council of Canada has stated that increased attention must be focused upon manufacturing growth in Canada. An important requirement for growth in this sector is technological advance, particularly as regards the application of modern technology within industry.

From a different viewpoint, the federal Department of Industry, Trade and Commerce recently conducted a survey which indicated that, on average, only #3,650. per year is spent on industrial design by Canadian manufacturers. Concern over the lack of recognition by Canadian industry of the importance of industrial design led this Department in August, 1970, to introduce an Industrial Design Assistance programme (IDAP). Under this programme, financial help is available for design projects that take up to two years to complete (grants available are up to 50 per cent of design and administrative expenses, to a maximum of \$50,000.; no payments are made under the programme for capital or production tooling costs).

Within the prairies, each province has taken initiatives in the field of research and design. For example, a provincial research council exists in each province; each council focuses work upon

development of resource industries, assistance to manufacturing, and development of new products and new industries. Furthermore, certain additional special programmes are offered by provincial agencies. For example, the Manitoba Department of Industry and Commerce offers programmes in six distinct areas of industrial research: feasibility studies incentives, technical assistance incentives, design improvement incentives, research and development incentives, manpower development incentives, and export incentives.

Despite the existence of such programmes, however, concern continues to exist that smaller industrial establishments within the prairies lack necessary ability in this area. Small size frequently prohibits a company from having a technically-oriented employee on staff and this factor leads to difficulties in the transfer of technology. Potential new products, either in concept form or as crude prototypes, do arise from research and development work in the prairies (eg. at the universities); yet, difficulties continue to exist in finding appropriate mechanisms for assessment and, if warranted, commercial production.

In recognition of the above trends and concerns, this chapter provides a review of possible research, development and design factors. No statistics are available concerning the relative levels of investment in these functions in different Canadian regions, although casual observation indicates that the levels in the prairies are even less adequate than those in Canada generally.

Furthermore, it is not possible at this time to provide any meaningful evaluation of the impact that federal and provincial programmes are having in this area.

It is readily acknowledged that the following represents only a first rather superficial glance at the implications of research and design for prairie manufacturing. The underlying hypothesis, however, is very simple: If research and design are viewed as important for national manufacturing growth (relative, for example, to the United States), then this factor will have an important impact on the relative growth of manufacturing in Canada's different major regions. To the extent that this hypothesis is correct, it is clear that a great deal of additional research is required in this area.

2. Maintenance of Research Development and Design Capacity

One method whereby a firm may acquire the results of research, development and design programmes is to establish and maintain its own capacity in these fields. Indeed, there are substantial economies of scale to be reaped through such an approach, since research and design talents are usually most effective when combined and pooled. In particular, individual researchers often encounter difficulties in acquiring market data and other information necessary to facilitate their work.

The cost of maintaining a research, development and design function are, however, fairly large. The rewards of

maintaining such a function within a firm are, moreover, frequently uneven. There is often a considerable time lapse during which no innovations of commercial value are developed. This in turn implies the need for a considerable cash flow in a firm before such a function can be established.

A second requirement for the maintenance of a research and development team is the ability to capture the commercial rewards which derive from the marketing of a new product or a redesigned product. While the scale of commercial operations necessary to effect this recovery varies widely from one product to another, a firm must usually have a major share of a market before it can hope to recover the cost of research and development through sales of a new product.¹

The snowmobile industry provides an interesting illustration of the above statement. At the present time some of the smaller manufacturers produce less than 10,000 units per year while the largest producer is now gearing for production the level of some 200,000 units. The larger producer can recover the cost of a one million dollar per year research and development

¹Of course, in some instances a new product may just succeed in securing a market.

programme at a cost of approximately \$5.00 for each machine produced. A smaller manufacturer, on the other hand, gearing for production of 10,000 units per year, would find it necessary to recover \$100.00 from each unit sold in order to meet the cost of an equally substantial research and development programme.

Of course there are other industries where unit research and development costs are not quite as dramatic as those for snow-mobiles. Where the costs are lower as in the case of an article of clothing, the sale of a few dozen units may be adequate to cover development costs -- costs which in this instance relate primarily to the ingenuity and imagination of the designer. On the other hand, it must be recognized that many goods still require basic and applied research and engineering, the costs of which can only be borne by a handful of large organizations engaged in mass marketing in either the Canadian or North American economies. In either case, though, there is a close and direct relationship between the cost of new product development and the minimum size at which a firm can hope to maintain commercial competitive ability.²

²Complete generalization between cost and size can not be made, however, as there are specific industries where a high cost of research and development can be justified without requiring a large organization. This would appear to require the development of a new product with a high degree of technical innovation, eg. medical electronics. However, real need for the product must be assessed, and the producer must have protection through patents or special production techniques. In such cases, costs could be met with even a small market volume.

3. Prairie Manufacturing

In general (with some exceptions), the manufacturing industries within the region do not have substantial research and development establishments of their own. They rely either upon borrowed or copied technology or upon new product developments imported from research and development institutions of the parent firms or other sources. For example, although the unit cost of research and development is low, the garment industry in the region until recently relied heavily upon copying designs developed in New York, Montreal and elsewhere. During the last few years design talent has been acquired and the industry is now generating its own design to some extent. The encouragement and continuation of this trend will be an essential factor in the continued expansion of this major industry group.

One industry where research and development capacity has been retained within the region has been agricultural implements. The growth of this industry is accounted for largely by the emergence of a) one or two firms producing a small range of products for the entire North American agricultural industry, and b) of a number of smaller firms producing highly specialized equipment adapted to western Canadian requirements. In the case of the latter, the equipment is not highly sophisticated and research and development consists largely of modifying designs to fit western Canadian conditions. Some engineering research is required but the unit costs are not large. As a result, firms producing tillage equipment, front end loaders and

hoists, tractor cabs and specialized machinery adaptations, such as those necessary for harvesting sunflowers, have accounted for a substantial portion of total growth.

Self-propelled swathers designed in western Canada to meet local needs were among the most successful designs for this type of machine in North America and consequently some local producers have succeeded in penetrating major markets in Canada and the United States. The one firm, moreover, that continued to market the product under its own brand name was able to retain sufficient funds to finance the development of large four-wheeled tractors and, later, self-propelled combines. Consequently, a small but significant research and design skill pool still exists within the region. The continued financing of the costs of this design pool appears somewhat fragile, however; it is significant that the continued expansion of the farm implement industry in the west will, in large part, be contingent upon the ability of a few firms established within the region to continue to finance research and development costs.

There are certain industries where internal research and development programmes are not as necessary for continued commercial competitive ability or industrial growth. The food products industries, for example, make less use of research and development programmes than many other industries -- indeed in 1965 the food and beverage group in Canada spent only some seven

million dollars on research programmes. This amount, however, considerably understates the total expenditure related to food production, since substantial research and development work is performed by firms such as machine and package suppliers. While some intraindustry research and development does occur within the region itself, most of these ancillary expenditures (in the backward linked capital goods and supply industries) occur outside the region. In general, the food industries appear capable of expansion without substantial direct investment in research and development programmes.³

Conclusions similar to that above would appear to apply with respect to the printing and publishing industries and to the manufacture of certain building products such as gypsum products, cement, stone, lumber, plywood and chipboard. In all these cases, however, an even higher percentage of the research and development work is performed by equipment suppliers.

There are many other industries present in the region which have little opportunity for growth because firms in these industries are not of sufficient size and stature to finance the

³Such an investment would presumably have to be associated with increased efforts to make maximum use and refinement of all agricultural products before export from the prairies.

cost of research and development programmes necessary to bring about expansion. Industries where this is the case include the production of many types of machinery (both for the capital goods and consumer goods market), automotive products, and major electrical appliances. It is significant that these industries include many which are large employers in North America and in Canada and many which offer opportunities for high levels of skill development and high wages and salaries.

Finally there is a group of industries whose markets are of sufficient size to permit the acquisition of new designs either through purchase of design rights or through independent research and development programmes. These include the furniture industries (particularly in the western part of the region), the production of shoes, the production of certain types of men's clothing including business suits and the production of farm implements. In all cases, the cost of research and development would be a significant factor in the establishment of new firms. Incentives, encouragement and assistance could well make the difference between the establishment and expansion of such industries and their stagnation or disappearance.

4. New Products

The emergence of new products is, of course, closely related to the research and development process. As a result, new products tend to emerge in geographic locations where major research and development functions are located -- which in general excludes

western Canada. Furthermore, the production of new products is frequently concentrated in existing manufacturing plants, such that increases in employment are concentrated in areas where existing products are produced. The fairly small manufacturing base of the region substantially reduces the probability of the emergence of large numbers of new products for manufacture within the region.

There are interesting exceptions to the general pattern. Entirely new products occur very infrequently, but nevertheless do result in the establishment of major industries. The entire automotive industry is a case in point and other examples include the production of computers and other related hardware and most recently in Canada, the snowmobile. Such entirely new markets emerge in response to a number of stimuli -- inherent need, the ingenuity of one or more inventors and, later, the ability to finance product improvement and the entrepreneurial skill to produce and market effectively. Location, moreover, does not always appear to be on the basis of cost-minimization criteria.⁴ Therefore, the

⁴Location of new industry will, however, conform to cost-minimization criteria if the cost of entrepreneurship does tend to vary significantly over space. See Benjamin Chinitz, "Contrasts in Agglomeration: New York and Pittsburgh" Locational Analysis for Manufacturing, Karaska and Bramhill (editors), (Cambridge, Massachusetts: 1969), p. 319.

prairie region cannot be completely excluded as a possible site for location of new industry.

5. Conclusions

In the past decade, Canada's gross expenditures on research and development have more than doubled; this performance should be more than equalled during the next decade, with major expansion occurring particularly within industry.⁵

For all industries reporting in Canada, there were 7.7 scientists and engineers per 1,000 employees. On this criterion, the 10 leading industries were.⁶

	<u>Research and Development Scientists and Engineers Per 1,000 Employees</u>
Drugs and medicines	46.4
Scientific and professional instruments	39.6
Non-manufacturing (other than transportation and other utilities)	29.6
Aircraft and parts	23.2
Electrical products	20.7
Chemical products (other than drugs and medicines)	18.2
Gas and oil wells	17.8
Rubber	10.9
Petroleum products	10.1
Primary metals (non-ferrous)	8.2

⁵Canada Year Book, 1970-1971; Chart I, p. 465.

⁶Ibid, p. 501.

In total, three industries (electrical products, chemical products and aircraft and parts) alone employ more than 50 per cent of Canada's research and development personnel, and account for over 50 per cent of all current intramural expenditures on research and development.

At this point, no data or analysis are available regarding the regional distribution and impact of Canada's research and development activities. Major questions remain to be answered: Is research and development regionally concentrated? Is it primarily industry concentrated? Is it concentrated by size of firm within an industry (such that, below some critical size, firms cannot undertake research and development)? What effect does research and development have upon an industry's growth, upon the regional distribution of an industry? Assuming that assistance is given for research and development, what is the most effective procedure (eg. special industry-government programmes, industry alone, special research agencies, revision of patent laws, etc.)? What linkages (eg. government, universities, etc.) provide the most effective environment for industrial research?

It is clear that research and development is important

⁷Ibid.

within aircraft and parts, petroleum products, chemical products and electrical products -- industries which are either important today in the prairies, or which governments have tried to encourage within the prairies. Furthermore, as outlined in this chapter, research and design are important (in different ways) for other major prairie industries such as agricultural implements, clothing and furniture.

Finally, whereas the above discussion focuses upon the research and development process within existing industry, one possible strategy for regional industrial development could be to look for "technology gaps" or advances that established industry is not fully exploiting. Such a strategy could involve a concentrated effort upon one industrial sector, ideally a sector that could offer a complex of linkages with existing prairie resources and industries. It has been argued that this type of strategy was integral to the Japanese post-war recovery.⁸ Although this approach offers potentials for an underdeveloped region, it is probable that considerable national as well as regional dedication would be required to concentrate within the prairies a development of the type implied.

⁸See, for example, review in Time, May 10, 1971.

CHAPTER 12REVIEW AND CLASSIFICATION OF PRAIRIE
MANUFACTURING OPPORTUNITIES1. Introduction

This chapter, which concludes the analysis of Part II, identifies and classifies prairie manufacturing opportunities. In effect, this chapter summarizes the major conclusions of the detailed industry-by-industry analysis contained in Appendix C, as well as reviewing the analysis of growth factors presented in Chapters 4 to 11.

As outlined earlier in Chapter 3, Chapter 12 distinguishes three major classes of three-digit manufacturing industries: Class 1 industries that are expected to develop largely on the basis of existing growth forces; Class 2 industries where development is restricted by clearly identified problems potentially capable of being ameliorated by policy initiatives; Class 3 industries (eg. all remaining industries) where potential employment growth in the prairies during the 1971-1981 period does not appear likely to exceed 100 jobs. The chapter proceeds first by outlining the Class 3 industry group, followed by the Class 1 and Class 2 Groups.

The methodology and limitations adopted in the following analysis are outlined in Chapter 3, and are not repeated here. Given the broad aim of this report to evaluate the relevance of the manufacturing sector to prairie problems during the next decade, this chapter summarizes the ranges of possible manufacturing

employment indicated for individual industries. It must be emphasized, however, that the study objective is not to predict or project total prairie manufacturing job growth. Rather, the objectives are: 1) to identify possible industries where policy attention appears warranted, and 2) to indicate (partly as a check upon the industry-by-industry analysis) the possible range for prairie manufacturing jobs during the next decade.

2. Class 3 Industries: Marginal or Declining Growth Prospects

Of the 140 three-digit manufacturing industries under the 1961 Standard Industrial Classification Code, 65 (or 47 per cent) have been classified as Class 3 industries -- those with marginal or declining growth prospects on the prairies. A list of Class 3 industries is contained in Table 12.1. In 1967, these industries accounted for less than 12 per cent of total manufacturing employment in the region.¹ Employment growth between 1971 and 1981

¹Data confidentiality renders more precise calculation impossible. See Appendix D. Also, see notes at end of Table 12.1 regarding uncertainties for particular industries included in the Class 3 group.

TABLE 12.1

SUMMARY CLASSIFICATION OF CLASS 3 INDUSTRIES:
MARGINAL OR DECLINING GROWTH PROSPECTS

124	Flour Mills
125	Breakfast Cereal Manufacturers
131	Confectionery Manufacturers
147	Wineries
151	Leaf Tobacco Processing*
153	Tobacco Products Manufacturers
161	Rubber Footwear Manufacturers*
169	Other Rubber Industries
179	Miscellaneous Leather Products
183	Cotton Yarn and Cloth Mills*
193	Wool Yarn Mills
197	Wool Cloth Mills
201	Synthetic Textile Mills
211	Fibre Preparing Mills
212	Thread Mills*
213	Cordage and Twine Industry
214	Narrow Fabric Mills*
215	Pressed and Punched Felt Mills*
218	Textile Dyeing and Finishing Plants
219	Linoleum and Coated Fabrics Industry*
221	Canvas Products Industry
223	Cotton and Jute Bag Industry
229	Miscellaneous Textile Industries
231	Hosiery Mills
246	Fur Goods Industry
247	Hat and Cap Industry
256	Wooden Box Factories
258	Coffin and Casket Industry
268	Electric Lamp and Shade Industry
272	Asphalt Roofing Manufacturers
297	Copper and Alloy Rolling*
298	Metal Rolling, Casting and Extruding
305	Wire and Wire Products
306	Hardware, Tool and Cutlery
316	Commercial Refrigeration and Air Conditioning
318	Office and Store Machinery*
326	Railroad Rolling Stock Industry
327	Shipbuilding and Repair*
328	Boatbuilding and Repair ^a
331	Manufacturers of Small Electrical Appliances
332	Manufacturers of Major Appliances*

TABLE 12.1 (Continued)

SUMMARY CLASSIFICATION OF CLASS 3 INDUSTRIES:
MARGINAL OR DECLINING GROWTH PROSPECTS

334	Manufacturers of Household Radio and Television Receivers*
338	Manufacturers of Electric Wire and Cable
339	Manufacturers of Miscellaneous Electrical Products ^a
343	Lime Manufacturers
351	Clay Products Manufacturers
352	Refractories Manufacturers
353	Stone Products Manufacturers
354	Mineral Wool Manufacturers
355	Asbestos Products*
357	Abrasives Manufacturers*
359	Other Non-Metallic Mineral Products
369	Other Petroleum and Coal Products
371	Explosives and Ammunition Manufacturers
374	Pharmaceuticals and Medicines ^a
376	Soap and Cleaning Compounds
377	Manufacturers of Toilet Preparations
379	Other Chemical Industries
382	Jewellery and Silverware
383	Broom, Brush and Mop Industry
384	Venetian Blind Manufacturers
393	Sporting Goods and Toy Industry
395	Fur Dressing and Dyeing
398	Typewriters, etc.
399	Miscellaneous Manufacturing Industries

Source: Hedlin, Menzies and Associates Ltd.

* No manufacturing activity in the prairie provinces in 1967.

^aSome commentary received during the review of this report suggested possible assured growth in these industries that might exceed 100 jobs by 1981. In each case, however, growth in excess of 400 jobs was not expected. Given the small magnitude of the potentials in question and lack of data for analysis, further research was not conducted.

is anticipated to range from zero to 3,900 jobs, and would represent a maximum increase of approximately 31 per cent over 1967 employment levels for all Class 3 industries.

In general, industries with prospects of increasing their employment by less than 100 employees in the forthcoming decade were regarded as Class 3 industries. Certain different types of industries, moreover, could be distinguished:

- Manufacturing activities in which employment and/or value of shipments has reached a plateau, such as in flour mills and railroad rolling stock.
- Industries serving slow growth regional and sub-regional markets, eg. boat building and repair, and clay products industries.
- Industries for which demand has been declining eg. cotton and jute bags, stone products, mineral wool and venetian blinds.
- Industries for which little resource base exists on the prairies eg. tobacco products and wineries.
- Activities dominated by oligopolistic concerns in other regions, such as the manufacture of breakfast cereals, confectioneries, most textiles, hardware, major and small electrical appliances, and soaps and cleaning compounds. Factors relating to scale and availability of capital usually preclude establishment in the region; many of these industries are in any event characterized by considerable excess capacity.

In only a few instances are factors such as native employment, opportunities for the rural economy, linkages, manpower and/or research and development influential in the case of Class 3 industries.

As an illustration, boat building is one of the few examples where firms might possibly be established in rural areas or where research and design skills might affect the profitability of a particular plant. In only two cases do significant backward linkages exist with respect to other activities -- in refractories and in explosives and ammunition -- and, despite these linkages, increases of more than 100 in direct employment are not expected. Finally, manpower appears as a significant factor only in cases where highly skilled labour is necessary, such as in the manufacture of certain electrical products, jewellery and silverware. In general, then it may be concluded that factors other than those relating to employment and value of shipments do not appear to warrant reclassification of any Class 3 industries nor do they appear to warrant special policy measures on the part of governments or their agencies.

Although growth prospects were evaluated at the three-digit industry level, data can be combined for convenience at the two-digit industry level. Table 12.2 shows estimated Class 3 1967 employment and 1971-1981 anticipated job growth for each two-digit prairie manufacturing industry. In most two-digit industry groups, Class 3 employment represented less than 10 per cent of total employment in 1967; exceptions were limited to chemicals, non-metallic minerals, electrical products, machinery, transportation equipment, and leather goods manufacturing industries.

TABLE 12.2

CLASS 3, PRAIRIE INDUSTRIES, EMPLOYMENT, 1967
AND EMPLOYMENT GROWTH PROSPECTS, 1971-1981

<u>Two-Digit Industry Group</u>	<u>Estimated Employment, 1967</u>		<u>Anticipated</u>
	<u>Class 3</u>	<u>Per Cent of Total</u>	<u>Growth</u>
			<u>1971-1981</u>
Food and Beverage	1,700	5.4	0 - 200
Tobacco Products	x	x	-
Rubber	x	x	0 - 100
Leather	100	11.9	0 - 100
Textile	1,400	x	0 - 900
Knitting Mills	x	x	0 - 100
Clothing	450	5.2	-
Wood	348	4.6	0 - 200
Furniture and Fixture	80	2.5	0 - 100
Paper and Allied	300	8.0 e	0 - 100
Printing, Publishing and Allied	-	-	-
Primary Metals	200	3.5 e	-
Metal Fabricating	1,080	9.3	0 - 200
Machinery	1,200	20.6	0 - 100
Transportation Equipment	900	14.0	0 - 200
Electrical Products	800	29.8	0 - 200
Non-Metallic Mineral	800	13.2	0 - 500
Petroleum and Coal Products	220	9.5	0 - 100
Chemicals and Chemical Products	900	23.3	0 - 500
Miscellaneous Manufacturing	2,000	x	0 - 300
All Prairie Manufacturing	12,478	10.9	0 - 3,900

Source: Appendix C

x = Confidential

- = Nil

e = Estimate

Industries have been included within Class 3 on the basis of available data and analysis of various factors which influence prairie growth. For purposes of future discussion, the study team was asked to identify those Class 3 industries where significant growth has occurred within Canada. These industries are listed below (eg. where Canadian employment growth exceeded 30 per cent, 1961-1967). Available time did not permit evaluation of future Canadian growth prospects in these industries. It must be emphasized that the study team includes this list for future discussion purposes only; this study did not discover any indication that major growth in these industries could be shifted into the prairies.

SIC No.	Industry	Canadian Growth, 1961-1967		Canadian 1967 Employment
		Employment (Per Cent)	Value of Shipments	
229	Miscellaneous Textiles	50.8	157.7	11,500
298	Metal Rolling	57.0	115.4	4,300
306	Hardware	53.9	97.1	14,000
318	Office Machinery	56.1	73.3	12,100
326	Railroad Rolling Stock	50.2	168.8	6,200
169	Other Rubber Industries	46.1	82.6	11,400
201	Synthetic Textiles	33.9	65.1	21,000
305	Wire Products	31.3	66.3	16,000
338	Electric Wire and Cable	35.6	94.6	9,000
339	Miscellaneous Electrical Products	39.5	81.2	13,500
377	Toilet Preparations	45.3	70.3	4,900
218	Textile Dyeing and Finishing	36.0	88.6	2,700
316	Commercial Refrigeration and Air Conditioning Equipment	62.3	142.6	2,700
328	Boat Building and Repair	62.6	129.3	2,200
331	Manufacturing of Small Electrical Appliances	48.0	92.1	5,900
352	Refractories	43.9	71.9	1,100
359	Other Non-Metallic Mineral Products	45.8	52.2	700

3. Class 1 Industries: Assured Growth Prospects

The 44 industries (31 per cent of all three-digit industries) classified as assured growth prospects (see Table 12.3) are similar to those in Class 3, in the sense that direct initiatives on the part of governments are unlikely to have any profound effect on their activity within the region over the next decade. In contrast, however, Class 1 industries have a significant impact on employment and income within the region; in 1967, for example, these industries accounted for almost 55 per cent of total manufacturing employment in the prairie provinces. Total Class 1 employment growth between 1971 and 1981 is anticipated to range from 18,450 to 28,100 jobs, and would represent an increase of between 30 per cent and 46 per cent over 1967 Class 1 employment.

Industries in the assured growth category have been grouped into three different divisions: 19 were classified as having moderate growth potential (approximately 150 - 300 employees), 14 good growth potential (300 - 1,000 employees) and 11 major growth potential (over 1,000 employees).²

²As a result of expected increases in productivity, the following industries have been identified as those likely to experience increases in value of shipments far in excess of employment; dairy factories, biscuit and soft drink manufacturers, breweries, tire and tube manufacturers, sawmills, heating equipment, petroleum refining and chemical products.

TABLE 12.3

SUMMARY CLASSIFICATION OF CLASS 1 INDUSTRIES:
ASSURED GROWTH PROSPECTS

<u>Group A - Moderate Growth Prospects</u> <u>(Approximately 150 - 300 employees)</u>		<u>Anticipated</u> <u>Growth</u>	
103	Poultry Processors	150 -	200
105	Dairy Factories	200 -	300
128	Biscuit Manufacturers	150 -	300
141	Soft Drink Manufacturers	200 -	300
145	Breweries	0 -	200
172	Leather Tanneries	150 -	300
175	Leather Glove Factories	+100	
252	Veneer and Plywood Mills	150 -	200
273	Paper Box and Bag	200 -	300
294	Iron Foundries	150 -	200
296	Aluminum Rolling and Casting	150 -	200
301	Boiler and Plate Works	200 -	300
307	Heating Equipment Manufacturers	200 -	300
329	Miscellaneous Vehicle Manufacturers	150 -	300
335	Communications Equipment	150 -	200
337	Battery Manufacturers	150 -	200
341	Cement Manufacturers	200 -	300
345	Gypsum Products	150 -	200
365	Petroleum Refineries	150 -	250
<u>Group B - Good Growth Prospects</u> <u>(300 - 1,000 employees)</u>			
129	Bakeries	300 -	400
139	Miscellaneous Food Industries	300 -	400
163	Tire and Tube Manufacturers	600 -	700
251	Sawmills	400 -	600
259	Miscellaneous Wood Industries	500 -	700
303	Ornamental and Architectural Metal	300 -	500
309	Miscellaneous Metal Fabricating	500 -	750
315	Miscellaneous Machinery and Equipment	500 -	1,000
325	Motor Vehicle Parts and Accessories	300 -	500
336	Electrical Industrial Equipment	400 -	600
378	Industrial Chemicals	300 -	500
381	Scientific and Professional Equipment	400 -	600
385	Plastic Fabricators NES	800 -	1,000
397	Signs and Displays	300 -	400

TABLE 12.3 (Continued)

SUMMARY CLASSIFICATION OF CLASS 1 INDUSTRIES:
ASSURED GROWTH PROSPECTS

<u>Group C - Major Growth Prospects</u> <u>(1,000+ employees)</u>	<u>Anticipated</u> <u>Growth</u>
254 Sash, Door and Planing Mills	2,000 - 3,000
286 Commercial Printing	
287 Plate Making and Type-setting	
288 Publishing only	1,200 - 1,500
289 Printing and Publishing	
302 Fabricated Structural Metal	1,000 - 2,000
304 Metal Stamping, Pressing and Coating	1,500 - 1,800
308 Machine Shops	1,000 - 2,000
324 Truck Body and Trailer Manufacturers	1,500 - 2,500
347 Concrete Products Manufacturers	
348 Ready-Mix Concrete	1,500 - 2,000

Source: Hedlin, Menzies and Associates Ltd.

Broadly speaking, the following factors influence the growth prospects of Class 1 industries:

- No industry will be highly dependent upon markets outside Canada for growth potential over the next decade. Growing prairie markets will, however, be important, particularly in food and beverage industries, printing and publishing, metal fabricating, machinery, non-metallic minerals, and petroleum industries. In total, approximately 80 per cent of Class 1 employment in 1967, and over 70 per cent of Class 1 maximum anticipated growth (1971-1981) is tied to market growth within either the prairie or northern regions.
- Canadian markets outside the prairies are a major factor for approximately 20 per cent of Class 1 employment in 1967, and over 25 per cent of Class 1 maximum anticipated growth (1971-1981). These markets are of particular significance for wood industries, paper, box and bag industries, transportation equipment industries, and food and beverage industries, chemicals industries, and leather industries.
- Prairie resource inputs are an important factor for some 20 per cent of Class 1 employment (1967), but are directly associated with less than 8 per cent of maximum anticipated growth. This factor is important in certain food and beverage industries, sawmills, and petroleum refining. Because of their significance within the region, however, natural resource industries clearly create major demand linkages with many manufacturing industries eg. machinery, primary metals, etc.
- Transportation usually acts as a shield assisting Class 1 industries to compete within the region against suppliers from outside the region eg. breweries, soft drink manufacturers, a number of metal fabricating industries. In the case of a few industries (less than 5 per cent of either previous employment or anticipated growth), however, high outbound transport costs appear to be a major factor constraining significant growth eg. biscuit manufacturers, leather tanneries, certain metal fabricating industries

- Scale factors, and the features of oligopolistic markets frequently associated with scale factors, are of major importance in restricting growth for some 10 per cent of Class 1 employment in 1967. Example of affected industries are iron foundries, miscellaneous vehicles, and communication and electrical industrial equipment. In some instances, however, prairie markets now exceed (or soon will exceed) the threshold size necessary for establishment of larger, more efficient plants eg. tire and tube production, and possibly industrial chemicals.

- In many instances, Class 1 industries are already established in the prairie region and are naturally suited (due to transport, resource, and economy of scale factors) to the region. For these reasons, these industries are analyzed to be assured growth prospects: direct government initiatives are unlikely to affect these industries in a profound manner. Therefore, other factors (eg. skilled labour, design skills, capital, etc.) are rarely identified as a major problem area. Availability of labour may create problems for leather glove factories, truck body and trailer manufacturing, industrial chemicals, communications and industrial electrical equipment. On-the-job training programmes may serve within the first three industries, however, the last two industries require highly skilled labour pools with a heavy orientation toward research, development and design functions.

Secondary benefits other than employment growth appear far more prevalent in Class 1 industries than in Class 3. Opportunities for native people and for the rural economy, for example, exist with respect to leather glove factories and sawmills, while strong linkages are evident in the metal fabricating and wood products industries, as well as in biscuit and soft drink manufacturing, concrete products, chemicals and plastic fabricators.

A number of Class 1 industries have potential to develop many plants, rather than only a few large plants, within the region; either the markets served by these industries are local, or else scale economies may be outweighed by other factors such as smaller firms realizing agglomeration economies in urban areas. Examples of industries with multi-plant potential range from soft drinks and tire and tube manufacturers to sash, door and planing mills, most metal fabricating industries, plastic fabricators, and manufacturers of scientific and professional equipment. In some cases, multi-plant potential is concomitant with dispersal of economic activity over space, even if only among and within large urban areas.

Table 12.4 shows estimated Class 1 1967 employment and 1971-1981 anticipated job growth for each two-digit manufacturing industry. In the case of seven industry groups, Class 1 employment represented over 50 per cent of total 1967 employment: food and beverage, wood, printing and publishing, metal fabricating, electrical products, non-metallic minerals, petroleum and coal products. Major employment growth appears to be concentrated within the following: wood, metal fabricating, transportation equipment, non-metallic minerals, food and beverages, printing and publishing, and miscellaneous manufacturing industries. In some cases, high percentage growth is anticipated eg. transportation equipment, metal fabricating. In other cases, major job growth

TABLE 12.4

CLASS 1, PRAIRIE INDUSTRIES, EMPLOYMENT, 1967
AND EMPLOYMENT GROWTH PROSPECTS, 1971-1981

<u>Two-Digit Industry Group</u>	<u>Estimated Employment, 1967</u>		<u>Anticipated</u>
	<u>Class 1</u>	<u>Per Cent of Total</u>	<u>Growth</u> <u>1971-1981</u>
Food and Beverage	16,297	51.6	1,300 - 2,100
Tobacco Products	-	-	-
Rubber	x	x	600 - 700
Leather	287	34.3	150 - 400
Textile	-	-	-
Knitting Mills	-	-	-
Clothing	-	-	-
Wood	7,170	95.4	3,050 - 4,500
Furniture and Fixture	-	-	-
Paper and Allied	1,200	32.0 e	200 - 300
Printing, Publishing and Allied	9,013	100.0	1,200 - 1,500
Primary Metals	1,000	17.5 e	300 - 400
Metal Fabricating	10,530	90.6	4,700 - 7,650
Machinery	1,700	29.1	500 - 1,000
Transportation Equipment	2,500	38.9	1,950 - 3,300
Electrical Products	1,400	52.1	700 - 1,000
Non-Metallic Mineral	3,600	59.5	1,850 - 2,500
Petroleum and Coal Products	2,080	90.3	150 - 250
Chemicals and Chemical Products	1,844	47.8	300 - 500
Miscellaneous Manufacturing	2,000	x	1,500 - 2,000
All Prairie Manufacturing	60,621	52.9	18,450 - 28,100

Source: Appendix C

x = Confidential

- = Nil

e = Estimate

appears to result primarily from the industry's current significant size eg. food and beverages, printing and publishing.

4. Class 2 Industries: Qualified Growth Prospects

Thirty-one industries (22 per cent of all three-digit industries) have been classified as belonging to the Class 2 category (see Table 12.5). Together, they account for approximately 35 per cent of total manufacturing employment in the prairies in 1967. While most of these industries are expected to generate some employment and value of shipments growth even if the current trends are maintained, additional growth potential will be contingent upon the removal of one or more obstacles to growth, some of which can be subject to policy manipulation.³

Total anticipated Class 2 employment, excluding possible additional growth restricted by current obstacles, is projected to range between 4,100 and 15,300 jobs during 1971 to

³Beyond estimates relating directly to employment, the following industries have been identified as likely to experience major increases in value of shipments over the next decade; slaughtering and meat packing, feed mills, distilleries, the clothing group and glass and glass products. Discussion of relevant obstacles to growth of Class 2 industries is presented below in this chapter and in Chapter 13.

TABLE 12.5

SUMMARY CLASSIFICATION OF CLASS 2 INDUSTRIES:
QUALIFIED GROWTH PROSPECTS

	<u>Anticipated Growth^a</u>	<u>Additional Growth Potential^b</u>
101 Slaughtering and Meat Packing	1,000 - 1,500	500 - 3,000
107 Processed Cheese Manufacturers	0	0 - 300
111 Fish Products Industries	0	0 - 250
112 Fruit and Vegetable Canners and Preservers	500 - 800	0 - 1,500
123 Feed Mills	300 - 600	0 - 1,000
133 Sugar Refineries	0	0 - 600
135 Vegetable Oil Mills	50 - 150	0 - 300
143 Distilleries	0	0 - 400
174 Shoe Factories	100 - 200	0 - 600
216 Carpet Mat and Rug	0 - 100	150 - 200
239 Other Knitting Mills		
243 Men's Clothing		
244 Women's Clothing		
245 Children's Clothing	(1,000)- 3,000	0 - 7,000
248 Foundation Garments		
249 Other Clothing Industries		
261 Household Furniture		
264 Office Furniture	800 - 1,200	0 - 3,000
266 Miscellaneous Furniture		
271 Pulp and Paper Mills	750 - 1,000	0 - 4,000
274 Other Paper Converters	100 - 150	0 - 800
291 Iron and Steel Mills	200 - 400	0 - 500
292 Steel Pipe and Tube Mills	200 - 400	0 - 500
295 Smelting and Refining	400 - 500	500 - 2,000
311 Agricultural Implements	1,000 - 3,000	0 - 3,000
321 Aircraft and Parts	±1,000	0 - 2,000
323 Motor Vehicle Manufacturers	0	(200)- 200
356 Glass and Glass Products	200 - 300	400 - 600
372 Mixed Fertilizers	300 - 500	0 - 500
373 Plastics and Synthetic Resins	200 - 400	0 - 500
375 Paints and Varnishes	0 - 100	150 - 300

Source: Hedlin, Menzies and Associates Ltd.

^aGrowth based on existing framework and trends.

^bGrowth potential that could be realized if specific problems resolved.

1981, and would represent an increase of between 10 per cent and 39 per cent over 1967 Class 2 employment.

Possible additional employment growth that could occur if obstacles are removed is estimated to range between 1,500 and 33,050 jobs during 1971 to 1981, and would represent an increase of between 4 per cent and 84 per cent over 1967 Class 2 employment. In total, therefore, Class 2 employment could increase by between 5,800 to 48,750 jobs during 1971 to 1981. Actual increases will depend, however, on the degree to which major obstacles that currently confront these industries are resolved.

Class 2 industries are the subject of detailed profiles analyses contained in Part III of this report. These profiles concentrate not only upon the key characteristics pertaining to Class 2 industries, but also seek to indicate the nature of the problems confronting these industries and the manner in which these problems may be overcome.

In general, the following observations apply to this class of prairie industries:

- Canadian and foreign markets outside the prairies are of major importance for Class 2 industries eg. over 70 per cent of 1967 employment was associated with industries where growth was significantly affected by such markets, while less than 15 per cent of 1967 employment was tied primarily to the regional market. Approximately 45 per cent of 1967 employment was associated with industries where foreign market penetration will be significant for growth during the 1970's eg. slaughtering and meat packing, clothing, aircraft

parts, pulp and paper, mixed fertilizers, agricultural implements. Canadian markets outside the prairies are significant for a number of industries eg. slaughtering and meat packing vegetable oil mills, furniture. Penetration of prairie markets, however, also remains as a significant factor for certain industries eg. steel pipe and tube, glass products, furniture, paints and varnishes, carpets, iron and steel mills.

- Food and beverage and pulp and paper industries stand out as cases where growth generates prairie resource expansion. Other industries, however, could be significantly influenced by the demands created by natural resource production eg. primary metals, machinery, agricultural implements, chemicals. In total, approximately 50 per cent of 1967 employment in Class 2 industries was closely linked with prairie natural resource industries.
- Well over 30 per cent of the 1967 Class 2 employment was associated with industries where economies of scale and/or the presence of an oligopoly market were major factors. Growth prospects for some of these industries are contingent upon the ability of the region to attract the large major firms who have their own sources of capital and skills eg. processed cheese, shoe factories, carpets, paper converters, glass products, distilleries, paint and varnishes. In a few cases, the critical requirement is that existing prairie firms expand to the point where major scale economies can be achieved eg. furniture industries.
- Transportation factors will have both beneficial and adverse effects on Class 2 industries. With respect to industries such as iron and steel mills and smelting and refining, high inbound freight costs could continue to provide some locational advantages to prairie producers serving local markets. Freight rate structures are identified as a major factor restricting prairie potential growth in a few specific cases eg. vegetable oils, and perhaps finished leather goods.

(As outlined in Chapter 8, however, freight rate structures play a critical role in determining growth potential for specific different areas within the prairies.)

- Labour and entrepreneurship as inputs into production are evaluated to be major factors affecting growth in industries representing over 30 per cent of 1967 Class 2 employment eg. clothing, furniture, aircraft parts. Research, design and development are evaluated to be major factors affecting growth in industries representing approximately 40 per cent of 1967 Class 2 employment eg. clothing, agricultural implements, furniture, aircraft parts.

Class 2 industries are similar to those of Class 1 in the multitude of secondary benefits other than total employment growth which must necessarily be taken into consideration. Thus, industries such as fish products, distilleries, pulp and paper, slaughtering and meat packing, fruit and vegetable canning and preserving, and the clothing industries offer employment opportunities for native people and potential for the rural economy.

Once again, linkages are an extremely important variable relating to the growth prospects of these industries. For example, expansion in the agricultural sector could generate significant demands resulting in employment increases in feed mills and agricultural implements in the region; significant expansion in slaughtering and meat packing, canning and preserving and distilleries would create increased agricultural opportunities. In a similar vein, increased activity in the mining and forestry sectors could easily spill over into iron and steel, steel pipe and tube, furniture, pulp and paper, and plastics and synthetic

resins. It is clearly evident that the health and stability of the primary resource sector in the prairies will have a significant impact on the growth potential of Class 2 industries.

Finally, the incidence of the multi-plant location factor is probably higher for Class 2 industries than for Class 1. Multi-plant potential exists with respect to the majority of food and beverage, clothing and furniture industries, as well as leather tanneries, glass products, plastics and synthetic resins, and paints and varnishes. Multi-plant potential in these cases offers not only an opportunity for dispersal of economic activity over space, but also (in certain instances such as paints and varnishes) the opportunity for significant import replacement.

Table 12.6 shows estimated Class 2 1967 employment and 1971-1981 job growth prospects for each two-digit manufacturing industry. Possible additional growth resulting from removal of obstacles is shown separately from anticipated growth based on existing trends. Industries such as printing and publishing, wood, electrical products, and petroleum are not classified as being among the qualified growth prospects (Class 2). In 1967, Class 2 industries in the prairies represented: a small share of chemicals and non-metallic minerals; some 40 per cent of food and beverages employment; approximately 50 per cent of leather goods, paper and allied, machinery and transportation equipment employment; over 70 per cent of primary metals employment; and approximately 95 per cent of clothing and furniture employment.

TABLE 12.6

CLASS 2, PRAIRIE INDUSTRIES, EMPLOYMENT, 1967
AND EMPLOYMENT GROWTH PROSPECTS, 1971-1981

<u>Two-Digit Industry Group</u>	<u>Estimated</u> <u>Employment, 1967</u>		<u>Growth Prospect 1971-1981</u>		<u>Possible</u> <u>Additional</u> ^b	
	<u>Class 2</u>	<u>Per Cent</u> <u>of Total</u>	<u>Anticipated</u> ^a			
Food and Beverage	13,600	43.0	1,850 -	3,050	500 -	7,350
Tobacco Products	-	-	-	-	-	-
Rubber	-	-	-	-	-	-
Leather	450	53.8	100 -	200	0 -	600
Textile	x	x	0 -	100	150 -	200
Knitting Mills	-	-	-	-	-	-
Clothing	8,200	94.8	-1,000 -	+3,000	0 -	7,000
Wood	-	-	-	-	-	-
Furniture and Fixture	3,100	97.3	800 -	1,200	0 -	3,000
Paper and Allied	1,800	48.0 e	850 -	1,150	0 -	4,800
Printing, Publishing and Allied	-	-	-	-	-	-
Primary Metals	4,200	73.5 e	800 -	1,300	500 -	3,000
Metal Fabricating	-	-	-	-	-	-
Machinery	2,847	48.8	1,000 -	3,000	0 -	3,000
Transportation Equipment	3,500	54.5	-1,000 -	+1,000	-200 -	+2,200
Electrical Products	-	-	-	-	-	-
Non-Metallic Mineral	870	14.4	200 -	300	400 -	600
Petroleum and Coal Products	-	-	-	-	-	-
Chemicals and Chemical Products	900	23.3	500 -	1,000	150 -	1,300
Miscellaneous Manufacturing	-	-	-	-	-	-
All Prairie Manufacturing	39,467	34.5	4,100 -	15,300	1,500 -	33,050

Source: Appendix C

^a Projected trends, assuming obstacles continue.

^b Possible additional growth if existing obstacles removed.

x = Confidential

- = Nil

e = Estimate

5. Conclusions to Part II: Summary of Growth Prospects, Prairie Manufacturing

The analysis presented above was designed primarily as an approach for evaluating specific industries; the objective was to determine, by use of order of magnitude or "possible range" employment growth estimates, which industries appear to merit further policy attention (eg. which industries have a significant opportunity for employment growth that will be constrained by obstacles potentially subject to policy manipulation). In addition, the approach adopted throughout Part II attempted to evaluate the relevance of various factors which are commonly assumed to affect prairie manufacturing growth.

5.1 Class 2 Industries: Growth Opportunities Requiring Examination

Part II has identified 31 three-digit manufacturing industries (22 per cent of the total) as Class 2 industries having significant prairie growth potential constrained by obstacles that could conceivably be removed during the next decade. In total it was estimated that up to 33,000 jobs in prairie Class 2 manufacturing industries could be directly affected during the 1971-1981 period by successful removal of expected obstacles. The estimate of 33,000 jobs represents, of course, an outer limit created by adding up individual estimates for 31 separate industries. In reality, it is most unlikely that policies and events would ever combine between 1971 and 1981 to achieve this outer limit; a more realistic

aggregate analysis would perhaps suggest that only some 50 per cent (16,500) to 75 per cent (24,800) of these jobs could be achieved by appropriate policies during the next decade.

Further discussion on these industries occurs in Chapter 13, where detailed profiles are presented, outlining for each industry its particular development problems as well as possible ways to remove these problems.

5.2 Review of Overall Manufacturing Employment Growth Prospects

The analysis conducted in Part II, particularly the analysis presented in Appendix C and Chapter 12, involved the estimating of 1971-1981 employment growth prospects for each three-digit prairie manufacturing industry. These estimates are aggregated below; one aim of this aggregate analysis is to double-check the overall consistency of the individual industry estimates; in addition, it is relevant to obtain a preliminary insight into the potential aggregate impact of manufacturing growth upon the prairie economy. It is emphasized, however, that this study never attempted to project (by standard techniques) aggregate prairie manufacturing growth; all analysis was conducted at the individual three-digit industry level. Other studies are available which have projected total prairie manufacturing growth.

Aggregation of this study's three-digit industry estimates suggest that by 1981 prairie manufacturing employment will increase, without special policy initiatives, to between 161,000 and 186,000

jobs.⁴ (See Table 12.7 for summary of anticipated growth by two-digit industry groups.) As outlined above, appropriate policy initiatives could further increase prairie employment by some 16,500 to 24,800 jobs (eg. up to a total of approximately 211,000 in 1981). (See Table 12.7 for additional growth prospects by two-digit industry groups.)

Independent forecasts for the 1971-1981 period prepared by the Systems Research Group⁵ estimate that total employment in Canadian manufacturing will increase at a compound rate slightly under 2.25 per cent per year, while the total prairie labour force will increase at a rate slightly over 1.5 per cent per year. By comparison, the aggregation of this study's three-digit industry estimates suggest the following 1971-1981 growth rates for total prairie manufacturing: 1.5 per cent per year for minimum anticipated growth without special policy initiatives; 3 per cent per year for maximum anticipated growth without special policy initiatives; up to 4.4 per cent per year if a substantial proportion (eg. 75 per

⁴ Pending release of Census data, it is estimated that prairie manufacturing employment increased from 114,500 in 1967 to 138,500 in 1971; estimates for 1981 are based on 1971-1981 growth prospects (see Table 12.7) added to estimated 1971 employment.

⁵ See references in Chapter 4.

TABLE 12.7
GROWTH PROSPECTS IN PRAIRIE MANUFACTURING
EMPLOYMENT 1971-1981, BY 2 DIGIT INDUSTRY GROUPS

<u>Industry</u>	<u>1967 Employment</u>	<u>Anticipated Growth^a</u>	<u>Additional Growth Potential^b</u>
Food and Beverage	31,602	3,150 - 5,350	500 - 7,350
Tobacco Products	x	-	-
Rubber	x	600 - 800	-
Leather Goods	837	250 - 700	0 - 600
Textiles	1,483 S	0 - 1,000	150 - 200
Knitting Mills	x	0 - 100	-
Clothing	8,650	-1,000 - +3,000	0 - 7,000
Wood	7,518	3,050 - 4,700	-
Furniture and Fixtures	3,185	800 - 1,300	0 - 3,000
Paper and Allied	3,396 S	1,050 - 1,550	0 - 4,800
Printing, Publishing and Allied	9,013	1,200 - 1,500	-
Primary Metals	5,245 S	1,100 - 1,700	500 - 3,000
Metal Fabricating	11,612	4,700 - 7,850	-
Machinery	5,836	1,500 - 4,100	0 - 3,000
Transportation Equipment	6,426	950 - 4,500	-200 - +2,200
Electrical Products	2,686	700 - 1,200	-
Non-Metallic Mineral	6,050	2,050 - 3,300	400 - 600
Petroleum and Coal Products	2,304	150 - 350	-
Chemicals and Chemical Products	3,857	800 - 2,000	150 - 1,300
Miscellaneous Manufacturing	1,503 A	1,500 - 2,300	-
All Manufacturing	114,504	22,550 - 47,300	1,500 - 33,050

Source: Hedlin, Menzies and Associates Ltd.

^a Projected trends, assuming obstacles continue.

^b Possible additional growth if existing obstacles removed.

x = Confidential

- = Nil

S = Saskatchewan data excluded due to confidentiality.

A = Alberta data excluded due to confidentiality.

cent) of the additional growth prospects are realized for Class 2 industries.

Forecasts by B. Ahamad estimate that, between 1966 and 1975, manufacturing employment will grow faster in the prairies than in any other Canadian region, increasing at a rate of between 3.0 per cent and 3.9 per cent per year (eg. corresponding projected rates for total Canadian manufacturing were 1.5 per cent and 2.1 per cent per year).⁶

In summary, rates for total anticipated (eg. without special policy initiatives) prairie manufacturing growth between 1971-1981 presented in Part II of this study are within the range projected in the two independent studies reviewed above. If additional growth potential associated with Class 2 industries is realized, prairie growth rates would exceed projected rates.

5.3 Potential Impact of Manufacturing Growth Opportunities on Prairie Economy

As regards the potential 1971-1981 aggregate impact upon the prairie economy generated by manufacturing growth, two points

⁶Ahamad, B., Projections of Manpower Requirements by Occupation to 1975: Canada and its Regions, Department of Manpower and Immigration (Ottawa: 1969), pp. 78-91. Prairie growth rates were based partly on the secondary effects of expected forestry and mining developments.

can be noted.

First, it would appear that, even if all possibilities for prairie manufacturing growth outlined in Part II were achieved, in 1981 manufacturing would continue to account for a smaller share of the total prairie labour force than of the labour force in any other Canadian region.⁷

Second, it would appear that accomplishment of the manufacturing growth opportunities outlined in Part II would be unlikely to result in even natural rates of population increase in the prairie region (let alone within Manitoba and Saskatchewan, where Chapter 1 has documented consistent net out-migration in the past). The analysis underlying this second point is provided below.

Manufacturing growth can act to generate additional prairie jobs in two ways: a) directly (eg. the new manufacturing jobs directly created), and b) indirectly (eg. to the extent that

⁷This conclusion is based on regional labour force projections made by the Systems Research Group. It would appear that, in 1981, manufacturing could account for at most no more than 13 per cent of the total prairie labour force.

manufacturing growth is based on new exports or upon import substitutions, service and other sectors in the region will experience associated employment growth).

Potential prairie job growth resulting directly from manufacturing growth has been described above (see Table 12.7).

It is difficult, however, to estimate prairie job growth that would indirectly result from manufacturing growth; this difficulty is created primarily by problems of accurately estimating the degree to which manufacturing growth would be based on either new export sales or new import substitution within the region. On the basis of the analysis presented in this study, it is simply assumed (as probable maximum estimates) that 40 per cent of anticipated manufacturing growth and 90 per cent of possible additional manufacturing growth would represent new exports or new import substitution. Furthermore, it is assumed that approximately two additional prairie jobs would at most be generated indirectly for each new manufacturing job associated with new exports or new import substitution.⁸

Given the above, the following estimates can be provided

⁸Exports and imports refer, of course, to shipments either leaving or entering the prairie region. For a discussion of appropriate broad regional multipliers (eg. the assumption of two indirect jobs for each direct manufacturing job) see J. VanderKamp, "The Effect of Out-Migration on Regional Employment", in Canadian Journal of Economics, III, No. 4, November, 1970, pp. 542-544.

of the total employment and population growth impact associated with prairie manufacturing growth ranges estimated in Part II for the 1971-1981 period:

PRAIRIE GROWTH GENERATED BY MANUFACTURING, 1971-1981

	<u>Manufacturing Employment</u>	<u>Indirect Employment</u>	<u>Total Employment</u>	<u>Total Population</u> ^b
Minimum Anticipated	22,500	18,000	40,500	94,000
Maximum Anticipated	47,300	38,000	85,300	198,000
Maximum Potential ^a	72,100	83,000	155,100	360,000

^aAssumes that 75 per cent of additional growth prospects for Class 2 industries are realized.

^bAssumes national labour force participation rates projected for 1980 (see Appendix F).

In short, the above estimates indicate that during the 1971 and 1981 period up to 155,100 prairie jobs and 360,000 prairie people would be associated with the manufacturing growth estimates presented in Part II of this report. It is considered that these estimates could well be on the high side, given the assumptions adopted; a lower multiplier or a lower percentage of manufacturing exports could, for example, reduce associated population growth to around 300,000 people.

The above estimates relate, of course, exclusively to the direct and indirect effects of manufacturing activity. No account is taken of positive or negative effects on growth (direct and indirect) resulting from employment changes in agriculture, extractive resource industries, tourism, etc.

Given the scope of this report, it is necessary to adopt indirect methods for assessing the probable extent to which manufacturing growth would be sufficient to offset other factors (eg. agricultural population decline) tending to create net out-migration from the prairies. Available projections indicate that during the 1971-1981 period, projected prairie population growth will fall below natural population (eg. births less deaths) by between zero and 400,000 people.⁹ Analysis indicates that the net impact of the maximum potential prairie manufacturing growth opportunities outlined in Part II would at most range between 160,000 and 216,000 people over and above projected population growth during the 1971-1981 period.¹⁰ In short, on the basis of this analysis, it is concluded that the manufacturing growth opportunities outlined in Part II would be unlikely to result in even natural rates of

⁹ Estimate based on projected prairie population range presented in Chapter 4, plus available projections which indicate that on the basis of natural population growth prairie population in 1981 should approximate 4.1 million people.

¹⁰ Estimates based on: a) maximum potential population growth associated with manufacturing growth, indicated above to be 360,000 people; b) independent projections discussed in Chapter 12 which indicate that, as part of projected population growth, prairie manufacturing employment will grow by at least 2.25 per cent per year, and perhaps by more than 3 per cent per year (eg. between 40 per cent and 55 per cent of the maximum population growth of 360,000 people generated by possible manufacturing growth represents population growth already incorporated into the Chapter 4 prairie population projections for 1981.

prairie population increase during the next decade. While longer term results might be more significant, it must be noted that the above analysis is conducted only at the regional level; little indication is given that current trends of out-migration from Manitoba and Saskatchewan would be reversed.

The overall impact and relevance of manufacturing opportunities to the prairie economy during the next decade will be discussed more fully in the concluding chapter of this study (Chapter 14). However, it can be noted that the dominant share (perhaps in excess of 70 per cent) of prairie population growth generated by manufacturing opportunities will occur within the region's five metropolitan centres (Calgary, Edmonton, Regina, Saskatoon, Winnipeg). As outlined in Chapter 2, approximately 65 per cent of prairie manufacturing employment growth during the 1961-1967 period was concentrated in the region's five metropolitan centres; there is little evidence that this concentration will be significantly reduced by 1981. Furthermore, although comprehensive analysis has not been conducted, available evidence suggests that service industry employment generated by manufacturing is more highly concentrated within the metropolitan centres than is the case for the manufacturing employment itself.

5.4 Evaluation of Growth Factors Affecting Prairie Manufacturing Opportunities

As noted in Chapter 3, a common concern existed that this study examine specifically the various factors which affect

manufacturing growth (eg. transportation, capital, tariffs, etc.). These factors were extensively examined in Chapters 4 to 11; however, as these chapters indicate, precise evaluation was frequently prevented by the scarcity of available data and current analysis. In short, many relevant areas requiring further research were outlined.

Some of the broad conclusions reached in Chapters 4 to 11 are summarized below:

- a) Population projections suggest that, although exceptions may exist for specific industries, domestic consumer market opportunities for prairie manufacturing firms will not alter radically in the next decade. In a few instances, a possibility exists that prairie consumer market growth will create a market large enough to support particular industries that currently ship products into the region (see Chapter 4).
- b) Given the expected relatively slow growth of many prairie markets, access to markets outside the region can be expected to be an important factor affecting prairie industrial development.
- c) The United States (particularly the Midwest, and potentially the Pacific region) will continue to be major export markets for prairie manufacturers. It would appear, however, that greatly increased attention must be paid to documenting foreign trade opportunities for prairie products, particularly export of agriculturally related products to the United States (pork), Japan (cattle, pork and feed-stuffs), other Pacific Rim countries, and the European Economic Community (cattle). In many cases, foreign and Canadian trade and tariff policies will play an important role in determining prairie exports.

- d) Prairie natural resource industries will continue to act as a major impetus toward the region's manufacturing growth. Market opportunities indicate specific growth opportunities for resource based activities such as slaughtering and meat packing, vegetable oil mills, fish products, smelting and refining, perhaps pulp and paper mills and other paper converters. Expected resource growth should generate prairie manufacturing opportunities for petroleum refineries, steel pipe and tube mills, iron and steel mills, mixed fertilizers, sawmills, industrial chemicals, etc. In many instances, however, the potential effectiveness of competition to prairie producers from large firms located outside the prairies (eg. Central Canada, Japan, etc.) must be assessed.
- e) Scale economies (and the capital requirements they often imply) act in many instances to limit entry by prairie producers into particular established industries. With the exception of certain industries currently located in the prairies, scale economies appear to militate against large scale import-replacement or shift of manufacturing industries into the prairies. However, scale economies may well serve to focus prairie manufacturing development upon those industries where localization economies currently exist, or where yet-to-be captured scale economies (eg. industries yet to be developed in Canada) exist.
- f) Current analysis of prairie transportation extends only to the point of indicating disparities, inconsistencies and regional problem areas related to freight rates and current transportation policies. Analysis is not available regarding the broader and more fundamental questions (eg. the extent to which transport factors really restrict prairie manufacturing growth). Although some analysis suggests that the impact of transport factors on manufacturing growth within different Canadian regions would be minimal, this conclusion is viewed with skepticism by many government and private groups within the region.

Further research is required if a constructive consensus is to be achieved.

- g) On an aggregate basis, available data indicate that prairie manufacturing has not been investing any less pro rata to its size than industry in Quebec and Ontario. Evidence suggests that capital factors have probably not acted to restrict significantly total prairie manufacturing growth, given the dominant position of large national and international firms within the region's manufacturing sector. Concern, however, is frequently expressed as regards the availability and cost of capital funds for smaller firms or firms privately owned by prairie residents. Further research seems relevant to quantify both the impact of capital factors on small firms and the impact of D.R.E.E. industrial incentives grants on total prairie manufacturing growth.
- h) The impact of current manpower programmes is unclear as regards overall regional development, let alone discrete manufacturing development. Utilizing standard indicators, aggregate manpower supply and utilization in the prairies appears to be relatively high as compared to other Canadian regions, reflecting in part the results of mobility and out-migration. In some instances, the existence of highly skilled manpower currently in the prairies provides encouragement for industrial growth. However, concern is expressed as regards prairie management and entrepreneurship; further analysis in this area is warranted. Also, analysis would be relevant to evaluate the degree to which management and entrepreneurs who establish plants in the Ontario-Quebec heartland tend to examine seriously prospects in the prairie region.
- i) Given increased national attention regarding the role of research and development in manufacturing growth, future research is required to evaluate the regional distribution and impact of Canada's research and development activities. At present, it is clear that research development and design are important within specific prairie industries, ranging from clothing to aircraft.

PART III

GUIDELINES FOR PRAIRIE MANUFACTURING DEVELOPMENT

CHAPTER 13CLASS 2 INDUSTRY PROFILES1. Introduction

Chapter 12 identified prairie manufacturing industries having significant employment potential; in the case of 31 Class 2 industries, however, significant growth was constrained by major obstacles.

Chapter 13 provides further and more detailed examination of each Class 2 industry. The industry profiles which follow (listed according to Standard Industrial Classification coding) are designed primarily to identify clearly each industry's major obstacle or problem, and to evaluate how best each development problem could be overcome. The profiles also comment upon the significance of achieving potential for different industries, and evaluate (where relevant) the likelihood of problems actually being resolved.

As outlined in Chapter 12, most Class 2 industries are projected to experience some employment growth during the next decade regardless of policy initiatives. However, in each case, it is estimated that additional employment potentials exist which will not be achieved without overcoming specific development problems. This chapter does not repeat data and employment estimates presented earlier in Chapter 12; as indicated in Chapter 12, industries with

additional employment potential of at least 1,000 jobs are largely concentrated in resource-related industries (eg. livestock, pulp and paper, fruit and vegetables, feedmills, smelting and refining, agricultural implements). In addition, additional employment potential of at least 1,000 jobs is indicated for certain industries already served by an existing manpower and management base in the prairies (eg. clothing, furniture, and aircraft parts).

In general, it is estimated that over half of the additional job potential for Class 2 industries will require increased penetration of non-prairie markets; over one-third of this potential will require resolution of problems involved in penetrating foreign markets. Problems involving prairie resource development affect directly some 40 per cent of additional Class 2 job potential; problems involving research and design, management skills, scale economies, and transportation also affect a significant share of the estimated job potential.

Throughout Chapter 13, many cases exist where some degree of co-operation between prairie provincial governments could be appropriate. For convenience, these are summarized below:

1. The possible establishment of trading corporations or co-operative ventures to penetrate foreign markets (eg. slaughtering and meat packing, fruit and vegetable canneries and preservers, agricultural implements, mixed fertilizers; perhaps clothing and pulp and paper).

2. The examination of industry behaviour with specific reference to the Combines Investigation Act (eg. processed cheese manufacturers, agricultural implements, glass products).
3. Establishment of jointly owned Crown Corporations or other possible actions to encourage regional industries with significant area linkages (eg. iron, steel, tube and pipe mills, agricultural implements are cases where strong linkages exist, yet outside competition is strong).
In some cases, the relevance of designating a public utility under joint control of the three provincial governments could be examined (eg. in addition to the desire for interprovincial co-operation, it could be argued that a private monopoly would adopt a pricing structure that maximizes profits rather than broader regional net benefits associated with cost savings for linked regional industries).
4. Co-operation on joint submissions to the federal government, or in joint action to resolve specific problems common to prairie manufacturing (eg. transport costs for vegetable oil mills and meat products; pollution control for pulp and paper; productivity analysis, research and design programmes for other industries).

Item 101 - Slaughtering and Meat Packing

Slaughtering and meat packing is one of the largest manufacturing industries within the region, employing some 10,000 people in various urban centres across the prairies. The value of output of the industry has grown steadily in response to constantly increasing levels of per capita consumption of red meats in Canada. During the 1961-1967 period, for example, the value of factory shipments increased by 54 per cent in Canada and almost 70 per cent within the region. Employment in the industry has, however, been growing more slowly; regional employment in the six year period 1961-1967 increased by only 5½ per cent, while for Canada as a whole the rate was 6.8 per cent.

The figures help to reveal a significant change in the pattern of industrial organization. Thus, the relatively slower growth of employment within the region may be attributed essentially to two factors: a) productivity increases generated by consolidation of plants and b) the increasingly common practice of shipping whole carcasses to eastern markets from the western producing regions, rather than shipping carved meats and finished meat products. The latter factor has, moreover, affected the concentration of the industry in western Canada, with much of the expansion of the industry in new "kill and chill" plants in smaller urban centres within the region (especially Alberta).

In 1961, 33.8 per cent of the value of shipments of the

slaughtering and meat packing industry was produced in western Canada. By 1967, 35 per cent of the market had been captured by producers in the west.

The industry is partly market oriented and partly resource oriented. At a minimum, the slaughtering and carcass preparation functions of the industry are best located in proximity to major sources of raw materials, i.e. livestock. Final processing operations (eg. carving and cutting) benefit considerably though from economies of scale, and consequently plants located close to major markets have tended to be somewhat more efficient than smaller plants. However, some provincial officials believe that there is evidence of a possible trend towards block ready systems, the economies of which would justify final processing taking place at or close to prairie killing plants. Further research and examination of trends in plant location appear warranted.

Livestock producers in western Canada enjoy a cost advantage over livestock producers in the east. While this cost advantage is not large, it is likely to increase in future because the agricultural resources in the western region are believed capable of expansion at lesser costs than expansion of comparable resources in the east. In particular, the capacity of the western region to produce forage and feed grains is likely to offer incentives to continued expansion of livestock production within the region.

Domestic Markets

The pace of expansion of the industry may be judged from the pattern of increase in per capita consumption of red meats. Between 1955 and 1969, for example, per capita consumption of red meats in Canada increased from 138.8 pounds to 156 pounds. Most of this increase was in consumption of beef which increased from 69.1 pounds to 86.4 pounds. Pork consumption grew by approximately two pounds per capita during the same period. The consumption of veal declined and the consumption of mutton and lamb increased by 1.4 pounds to a total of only four pounds per capita. As noted in Chapter 6, total 1980 domestic beef and veal consumption is projected to increase some 58 per cent over the 1967-1969 level; total domestic pork consumption is projected to increase some 24 per cent during the same period.

As a result, this industry should grow steadily in Canada during the next decade. Increases in productivity deriving from a number of factors including economies of scale, will, however, continue to result in employment growth slower than the growth of shipments.¹ Furthermore, the industry will continue to grow more

¹During the 1961-1967 period, total Canadian cattle and calf dressed weight plus trimmed weight of pork production increased by 26.8 per cent, from 2.42 to 3.07 billion pounds. During the same period, the value of Canadian shipments for slaughtering and meat processors increased 54.1 per cent. In comparison, however, Canadian employment in slaughtering and meat processing increased only 6.8 per cent.

rapidly in the western region than in the east. The possible trend toward whole carcass shipment may have an off-setting effect on growth of employment in the west. Annual increases in employment will be small (eg. around 1 per cent per year) when measured in percentage (although not absolute) terms.

As noted in Chapter 6, estimates indicate that prairie livestock production for domestic markets in 1981 could exceed 1.6 billion pounds of beef and veal, and 475 million pounds of pork (total 1969 production estimated to have been 812 million pounds of beef and veal and 341 million pounds of pork). These estimates may overstate the amount of growth likely to occur for domestic markets. However, projections do indicate that the prairies will increase their proportion of Canada's cattle production and slaughterings.

Chapter 6 also noted, however, that the competitive position of prairie livestock production is currently constrained by federal policies of providing feed freight assistance for movement of prairie feed grain to Central Canadian livestock producers. Removal of this policy would shift into the prairies substantial additional production for domestic markets (eg. one report cited estimated that termination of this policy would result in a minimum of eleven to eighteen million dollars of added hog and beef production in the prairies in the year following removal). The Federal Task Force on Agriculture, as well as the

recent Prairie Provinces Cost Study Commission, recommended that existing policy be changed in this area.

Export Markets

The development of export markets for Canadian meats could add substantially to the growth of this industry. As noted in Chapter 5, three markets deserve consideration: the United States, Japan and the European Common Market (EEC). (Additional prospects for exports to Pacific Rim countries other than Japan also exist, but are not commented on below. See Chapter 5.)

The prospect for the development of increased exports of processed meats from Canada to the United States has traditionally received little enthusiasm. The American market has a continuing deficit in beef products; however, opportunities for Canadian beef products (excluding live feeder cattle) are not thought to be significant, given current Canadian costs, United States tariffs and quotas, and the competitive ability of Australia and New Zealand. As noted in Chapter 5, however, opportunities for the export of Canadian pork products could well be significant (eg. quality preference exists for Canadian pork, a less restrictive tariff than on beef, absence of quotas, etc.). Continental free trade in hogs should offer additional stimulus to prairie hog products.

The Japanese market for Canadian grown and processed red meats has only recently developed. As outlined in Chapter 5, it may constitute an interesting opportunity for expansion of the

entire prairie industrial complex. Japanese production of red meats is no longer adequate to meet domestic demand. Prices are relatively high at the consumer level and imports are being used increasingly to meet demand. The Japanese market is, of course, very attractive to producers in the United States, Australia, New Zealand and Argentina as well as Canada. Canadian meat packers have been successful, however, in securing orders of substantial size for chilled pork and beef in Japan.

The Japanese market is highly organized and, so far as countries exporting to Japan are concerned, is focused upon a central, government controlled purchasing agency which accepts tenders from time to time in order to augment domestic supplies. (This pattern parallels Japanese purchasing practices for wheat and other food grains.) Only limited market research is necessary, therefore, consisting mainly of determining quality and price factors appealing to the consumer and the central food purchasing agency.

The logistics of delivery of red meats from Canada to Japan are, however, difficult and might be worthy of further investigation. The compatibility of Canadian market systems with Japanese purchasing practices might also be examined. It seems probable that smaller producers and speciality producers in particular have difficulty in placing bids on a regular basis with the Japanese purchasing agency. The possibility of more effective and co-operative bidding by Canadian packers might be explored. The potential rewards

are large, as the Japanese population continues to grow and rising levels of living in Japan do contribute to increased consumption of red meats.

It has recently been noticed that Japanese corporations are entering into joint feed-lot ventures throughout Australia and New Zealand. This activity, and its potential impact on Canadian meat product export to Japan, require examination.

The European market is much more complex than Japan. Agricultural policies within the European Common Market countries militate against imports of red meats into the Common Market. On the other hand, prices in the Common Market countries are relatively high and it appears that a potential may exist for exports from Canada (or other countries) to this market area. In particular, projections indicate a substantial and growing requirement in the EEC for beef imports. There are tariff and quota conditions to be met in such countries and, in addition, the logistics of delivery and marketing are complicated. There is no simple, unitary purchasing agency such as in the case of Japan and imports, when they occur, are generally handled by private importers and distributors confronted with a shortage of supply or excessive price from local sources.

It is widely believed that Europe will continue to have difficulty in producing adequate quantities of red meats. Further, costs of production and prices have been rising steadily in some

countries. Consumer dissatisfaction with price and quality is evident in some markets, such as Sweden. A substantial opportunity may therefore exist for Canadian production to find outlets in Europe. Greatly increased research, however, is required regarding the European Economic Community.

Conclusions

The slaughtering and meat packing industry can be expected to expand steadily in response to domestic demand. It may be further expanded if markets in the United States, Japan (or other Pacific Rim countries) and Europe can be developed to substantial proportions. Furthermore, prairie production for domestic markets could be increased by removal of existing Feed Freight Assistance subsidies for eastern livestock producers. In short, the potential for increased employment within prairie slaughtering and meat packing is substantial. Associated with expansion of this industry would be increased employment and increased growth of net farm income in the prairie livestock industry; also increased sales would occur within such support industries (eg. linked to livestock) as feed manufacture, transportation, the manufacture of building products, etc. Many of these industries, such as the feed industry, are dispersed throughout the region and would generate employment on a similar basis. Consequently, any expansion of export markets can be expected to produce highly favourable and desirable results, not only in the manufacturing sector but in the agricultural sector as well.

As regards domestic markets, removal of the Feed Freight Assistance Act and examination of trends in plant location both warrant consideration.

Action which might be effective in realizing export potential includes:

1. Examination of the compatibility of Canadian meat marketing systems with Japanese meat purchasing systems and the design, if appropriate, of systems or agencies to improve this compatibility.
2. Examination of quality and price requirements of the Japanese markets and, if necessary, the dissemination to producers through agricultural extension programmes.
3. Examination and consideration of ways and means for improving logistics of delivery of red meats from Canada to Japan.
4. A thorough examination of European markets and market potential, possibly conducted jointly by government and industry, to determine the long term feasibility of developing European markets for Canadian red meats.
5. Examination of marketing systems in Europe and, if appropriate, consideration of design of marketing methods and strategies for penetrating this market.
6. Consideration of joint efforts by the governments of the three provinces, the federal government, the industry and producer groups to examine the implications of potential red meat exports to the region, to primary producers and to processors and packers.
7. Examination of the relevance for Canadian meat exports of current Japanese joint feed-lot ventures in Australia and New Zealand.

8. Examination of opportunities and strategies for increased Canadian sales of pork products into the United States.

Finally, as pointed out in Chapter 6, actual prairie livestock expansion may well be governed by farm management and policy initiatives directed at profitable herd expansion. Furthermore, concern has been expressed that the industry has a tendency merely to accept growth based upon domestic market sales. In general, increased effort and skill appear to be required as regards attempts to expand livestock export sales.

Item 107 - Processed Cheese Manufacturers

There is no substantial manufacture of processed cheese within the region. The marketing of processed cheese in Canada is controlled by a small oligopoly dominated by a single firm. All production is located in eastern Canada.

Raw materials suitable for the manufacture of processed cheese are readily available in the region at costs comparable to those which are found in eastern Canada. There appears to be no impediment to production of these products in the region but substantial market penetration would require marketing under an existing and established brand name or the establishment of a new firm within the oligopoly.

Conclusions

It appears that this is a case where salesmanship and persuasion by provincial development agencies might be effective in attracting a new industry.

Item 111 - Fish Products Industries

This industry is limited by the availability of raw material. Commercial fishing within the region has not been expanding and the traditional resource base appears to be fully exploited. Certain species such as mullets and tullibee are not exploited to capacity and efforts are currently being made to expand production and processing of these. This will not result in any substantial increase in employment, however.

Expansion of the industry can take place only if additional raw materials can be found. Experimental work, including commercial experiments, appears to have established the feasibility of fish farming within the region. It also appears that there is a large resource base suitable for this enterprise.

Conclusions

In the event that fish farming proves successful on a major scale, the Freshwater Fish Marketing Corporation would be required to organize additional processing capacity and labour.

Item 112 - Fruit and Vegetable Canneries and Preservers

Vegetable processing is conducted within the region by several firms who produce canned vegetables, canned soups, and a variety of processed potato products. Operations are located in proximity to vegetable growing areas.

The short growing season and extreme climate of the prairie region precludes commercial production of a number of fruit and vegetable crops including most tree fruits. A number of other crops can be produced within the region but the commercial potential is marginal, usually as a result of climatic factors. It is possible, for example, to grow tomatoes, raspberries, strawberries and blueberries quite successfully in southern Alberta and southern Manitoba, but the growing season is short and varieties which yield well over an extended period of time and are otherwise suited to processing are not suited to the region. The processor of course will usually favour the longest possible growing season for any given crop, since long growing seasons and extended harvest periods make possible longer production runs for a given commodity.

Corn, carrots, peas and other soft vegetables have been canned and frozen in southern Manitoba and in Alberta. Commercial operations of canneries handling these vegetables have typically been marginal and some have recently ceased to operate. It would appear that short production runs have been the major factor prohibiting the establishment of commercial operations of a scale

adequate to meet cost and quality competition in national markets. Some canning and freezing of these crops continues, however, and continued scientific research may improve the competitive ability of regional producers to meet the needs of the processor.

Potato processing has expanded rapidly in the region in the last ten years. Prairie soils and growing conditions are (in certain areas) apparently ideal for the production of potatoes for processing. The chief advantages appear to be relatively high solids content and relatively low production costs. Both of these factors are related to certain soil types combined with climatic factors. The products produced include potato chips, pre-processed french fried potatoes and dehydrated potatoes. Potato chips are oriented to regional and sub-regional markets, while french fried and dehydrated products are marketed across Canada and in the United Kingdom and Europe. The ability to compete in wide market areas appears to derive exclusively from the capacity of the region to produce a particular quality of raw material at a relatively low price.

Canned soup is manufactured in one location in the region by a major international firm. This operation is now some 10 years old and appears to be flourishing. The industry is oriented to the availability of dairy products, poultry products, meat products and root crops and does not appear to be impeded by the short growing season for soft vegetables.

The products of this industry are diverse and the prospects for expansion vary from product to product. It is possible that the processing of potatoes could be expanded considerably. The expansion of production of soft vegetables (peas, corn, brussel sprouts, broccoli, asparagus) will be slow unless technology changes or new varieties are developed within the region which are suited to processors needs. The development of strains of fruit, and particularly tree fruits suited to the region does not appear likely. Increased manufacture of soups appears to be a distinct possibility.

Conclusions

Continued agricultural research could lead to the development of strains and varieties more suited to the needs of processors. Expanding the production of potato products will require the attraction of additional firms to the region. The potential of the United Kingdom and European Common Market areas as markets for Canadian processed potato products deserves exploration. The attraction of additional firms manufacturing soups seems possible.

Research and development programmes related to agriculture are generally in the public sector and hence within the control of governments. The allocation of additional funds to development of fruit and vegetable crops must be weighed against alternate allocations for other agricultural products. Industrial promotion efforts are indicated in the case of potato products and soups; in this regard, the influence of transportation rates, tariffs and marketing ability on sales potential in export markets also warrant examination.

Item 123 - Feedmills

The feedmill industry in the region draws raw materials from local farms and food processors and manufactures them into mixed feeds and feed supplements for the livestock industry. The most important raw materials include cereal grains, alfalfa, and packing house wastes. In many cases by-product materials such as shorts or bran are used by the industry.

The industry imports very little into the region. It is not highly capital intensive and a substantial portion of capital goods are of regional origin. Some pharmaceuticals are imported into the region and some raw materials, such as fish meal, are also imported. The total value, however, of these imports of raw materials, components and capital goods represents only a small portion of the final value of manufactured output.

Feed manufacturers within the region supply the western Ontario market, a portion of the northern British Columbia market and make occasional shipments to other points in Canada. One item, pelletized dehydrated alfalfa, is exported from Canada in some volume (generally to Japan). The portion of production which was exported from Canada in 1967, however, was less than 2 per cent and there has been no evidence of any substantial change in this pattern during the last four years.

The industry is widely dispersed throughout the region. There are plants of substantial size located in major centres such

as Winnipeg and Calgary, which can capture economies of scale in manufacturing (through longer production runs) and also enjoy the advantage of proximity to meat packing plants from which packing house wastes are derived. To some extent, these larger plants specialize in production of concentrates rather than mixed total rations. A great many small plants are widely dispersed throughout the region in proximity to markets created by livestock and poultry feeders. Consequently much of the employment is rural and widely dispersed.

The industry has grown rapidly in the region. Employment increased by 62 per cent in the 1961-1967 period and the value of factory shipments increased by more than 150 per cent during the same period. By comparison, Canadian feedmill employment and sales increased only 11 per cent and 78 per cent respectively during the same period.

Approximately 83 per cent of Canadian feedmill sales in 1967 was represented by supplements, macro premixes and complete feeds for livestock. In total, the following show total changes during the 1962-1967 period in sales of supplements, macro premixes and complete feeds to the three major livestock groups (data includes shipments from non-feedmill industries which manufacture these commodities as secondary items):

CANADIAN SALES OF SUPPLEMENTS, MACRO
PREMIXES AND COMPLETE FEEDS, 1962 AND 1967

	<u>1962</u>	<u>1967</u>	<u>Percentage Change</u>
	(\$ Million)		
Calves and Cattle	51.7	99.7	92.8
Swine	67.0	126.0	88.0
Poultry	133.3	195.8	46.9
Total	252.0	421.5	67.3

Poultry represents the largest single market for feedmill sales; however, cattle and swine have represented major growth markets during the 1960's.

The growth rate of the feedmill industry in the prairies has exceeded that for slaughtering and meat packing (eg. sales increased by 154 per cent and 70 per cent respectively, 1961-1967). The rapid growth in prairie feedmills has been caused by intensification of livestock production; increased prairie livestock production required an increasing level of use of manufactured feeds.

At the present time a number of factors have combined to limit opportunities for further dramatic expansion of prairie feedmill manufacturers. In part, heavy grain surpluses have acted to depress the market for manufactured feeds; similarly, surplus poultry production has undoubtedly restricted growth in feedmill sales. Furthermore, officials note that a trend may be appearing for farmers themselves to prepare more of their own feedmill requirements (which acts to reduce sales by feedmill plants). Finally,

there is a possibility that rapeseed meal surpluses (by-product of increased rapeseed crushing) may act to reduce feedmill sales.

In short, it is not possible to extrapolate past trends in the prairie feedmill industry; in fact, it is extremely difficult to even determine clear trends in the midst of the many major changes outlined above. Further research is required in this area.

Finally, aside from domestic market uncertainties, export market opportunities (eg. Japan) warrant examination. Furthermore, the feedmill expansion resulting from greatly expanded prairie beef pork production requires further study. In particular, pork expansion would appear to generate greater feedmill output than would occur under comparable beef expansion.

Conclusions

On the basis of past trends, continued expansion of prairie feedmills would appear likely. However, as outlined above, a number of factors are currently acting to alter past trends; further research is required to determine more precisely the nature of the changes occurring in this industry.

Furthermore, research is required to document the implications for prairie feedmills if prairie beef and pork exports were to be greatly expanded.

Finally, research and activity is required to document possible feedmill export opportunities.

Item 133 - Sugar Refineries

The production of sugar from sugar beets is somewhat more costly than production from sugar cane. Beet sugar production in Canada (and in many other northern hemisphere countries) has been stimulated by subsidization in order to ensure stability of supply. The subsidization required is substantial and it has not been the policy of Canadian governments for some years to subsidize increased production. It seems probable that this policy will not change unless existing supplies from the Carribean region and elsewhere become unstable or unless world shortages force up prices of cane sugar -- both most unlikely events.

Conclusions

Beet sugar is manufactured in Alberta and Manitoba but not in Saskatchewan. Irrigated acreage in the Diefenbaker Lake area is suited to beet sugar production and production could be increased in Manitoba and Alberta. In the event that increased beet sugar production were considered desirable the region would be in a reasonably strong position to compete for increased quotas for beet production.

Item 135 - Vegetable Oil Mills

Vegetable oil mills are located in each of the prairie provinces, with output being shipped within the region, transported to eastern Canada for sale and, in some measure, exported from Canada. Movement of vegetable oil and oilseed cake from western Canada to eastern Canada is impeded by a freight rate disadvantage of the order of magnitude of one-half cent per pound. The disadvantages manifests itself as the difference between the cost of shipping unprocessed oil seed from western Canada to eastern crushers and the cost of shipping the processed products, (vegetable oil and oil seed cake) to the same destination. The industry has made strong representations to federal regulatory agencies concerning the effect of this disadvantage and their argument has been supported by the governments of the prairie provinces. A change in the freight rate structure could improve the competitive ability of western firms selling into the large eastern market which is supplied in considerable measure by vegetable oils and oil seeds imported from the United States. Similarly, an adjustment in rail freight structures would reduce the cost of shipping finished products west to Vancouver for export. National and international markets are highly competitive and a cost disadvantage of one-half cent per pound is significant.

The industry is not a large one, employing less than 700 people in Canada, but shipments have grown rapidly in the last 10 years. Approximately 300 persons are employed within the prairie

region. It is considered that adjustment of the freight rate structure could result in a doubling of capacity and of employment within the region.

Conclusions

Action effective in reducing the difference between the cost of shipping rapeseed east and west and the cost of shipping finished products to the same destinations could be effective in improving the competitive ability of this industry.

As noted in Chapter 6, however, substantial potential exists for expansion of prairie rapeseed oil during the next decade (eg. Federal Task Force on Agriculture estimated that, by 1980, a doubling of domestic consumption of Canadian rapeseed oil could take place by replacing vegetable oils presently imported from other countries; major increased opportunities for sales of rapeseed meal were estimated, as a livestock protein supplement within Canada and possibly for export to Japan).

At present, some concern is expressed by prairie officials that rapeseed meal (as a by-product of increased rapeseed crushing) is rapidly moving into a surplus position on the prairies. Despite export demand, it is claimed that exports are constrained by transport costs (eg. railways will not move meal at Crow's Nest rates). Export opportunities as well as the impact on transport costs warrant further examination.

Item 143 - Distilleries

The major products of distilleries in Canada is Canadian whiskey. Gin, vodka, some liqueurs and distillery by-products are also manufactured. The industry has expanded rapidly since World War II in response to major demand growth for Canadian whiskey in export markets (including the United States and Europe).

Prior to 1960 the industry was almost exclusively concentrated in central Canada. In the last decade, however, three distilleries have been placed in operation within the western region and another is under construction. Two of the existing distilleries are of modest size and one is quite large. Two were financed and established by local interests, one later merging with a major national firm. The third existing distillery is owned by a large national firm.

The cost combinations for distilling in western Canada appear to be marginally lower than those in eastern Canada. Factors contributing to the very small cost differential are the relative cost of shipping raw materials which originate in the west and the cost of shipping the much lighter finished product, as well as the cost and availability of land for warehousing and plant purposes. Although these cost differentials are not of major significance they may be adequate to attract additional firms who require augmented distilling capacity. Such firms might be attracted from eastern Canada, from the United States, or from Europe.

Conclusions

There is probably little that can be done to increase the pace of expansion of this industry in western Canada. Industrial promotion efforts may, however, be successful in speeding the process. Furthermore, continued attention should be given to research and development respecting new corn varieties; the growth of improved varieties in the prairies could serve to assist expansion in the region.

Item 174 - Shoe Factories

The manufacture of boots and shoes employs more than 20,000 people in Canada. Only one plant of any significant size is located within the region.

Successful firms in this industry must make substantial investment in design, particularly in the manufacture of ladies shoes. Recovery of design costs is related to the scale of operations and magnitude of sales. In addition, there are important economies of scale in manufacture. Finally, economies of scale are present in the distribution and sales processes.

The industry is dominated by large, well established firms although some smaller firms are also present. The western market is not considered large enough to capture economies of scale in operation. Consequently, any producer located within the region must look to national sales to achieve adequate volume. Freight costs from the west to major markets in the east constitute an impediment to profitable operations in the region. This obstacle is probably not insurmountable, but is likely to discourage the establishment of branch plants in the west.

Conclusions

Industrial promotion efforts might be successful in attracting producers from eastern Canada or the United States although this currently seems unlikely. Some small plants manufactured specialized lines might also be encouraged to expand.

Such expansion would require the acquisition of considerable equity and debt capital and the acquisition of design services.

Item 216 - Carpet, Mat and Rug

This is a relatively small, but rapidly growing industry in Canada. The use of synthetic fibres in the form of rugs to replace a variety of other floor coverings is the chief cause of growth. This trend has been accelerated by technological change and improvement in the product and, simultaneously, by rising levels of incomes in Canada.

At this time the industry is concentrated in Central Canada, although one plant has been established in British Columbia. (The raw materials for this industry are manufactured in synthetic fibre mills located in eastern Canada.) The consumer and commercial markets for carpets and rugs tend to be highly competitive, however, and require rapid service from the mill to the retail outlet or to the commercial installation. In such circumstances, a member of the small oligopoly which produces and sells carpets and rugs in Canada might be encouraged to establish a plant of minimum economic size within the region. Alternatively, a manufacturer from outside Canada might be attracted to this market area.

Conclusions

Special research on the relationship between scale economy factors and market potential for prairie producers appears warranted. Such research would indicate the probability of success of industrial promotion efforts by provincial governments.

THE CLOTHING INDUSTRIES

Item 239 - Other Knitting Mills

Item 243 - Men's Clothing

Item 244 - Women's Clothing

Item 245 - Children's Clothing

Item 249 - Other Clothing Industries

This group of manufacturing industries employs more people than any other single manufacturing industry in the region: about 10,000 persons. This total is only a little more than 5 per cent, however, of total employment in these industries in Canada. Expansion of the clothing manufacturing industries could provide substantial additional employment in western Canada in the next decade, provided certain conditions are met; on the other hand, it is also possible that the industry will not expand employment at all during the decade. The background to this uncertain future deserves continuing attention.

The industry within the region is heavily concentrated in the Winnipeg area, which is the smallest of three major garment manufacturing centres in Canada. There is a limited amount of production in Saskatchewan, some of it in branch plants established by Winnipeg firms. A few firms are located in Alberta, including one large one in Edmonton.

The output of the industry on the prairies includes a wide range of clothing. Only a few classes of clothing are not produced

(men's suits, lingerie, hosiery, for example). Until recently most of the goods produced were in low price and lower medium price lines of work clothing, men's outer wear, women's outer wear, lower priced dresses and children's clothing. Recently medium and higher priced lines have been added to these general categories and notable progress had been made in the manufacture of sweaters, ladies dresses and suits and some higher priced lines of men's clothing.

The market for the regional industry was, at one time, a regional one. Improved transportation and communication systems have allowed service of eastern markets and regional producers now sell across Canada. Within the last five years substantial markets have been developed in the Midwestern United States and even in the eastern states by some manufacturers.

The industry employs personnel with a wide variety of skills and talents. While some employees command high wages as a result of high skill levels, wage levels in the industry are in general rather low. One of the characteristics of the clothing industries, however, is their ability to offer employment to those who do not wish (or have been unable) to invest a substantial amount of time in education and training. In this respect, the industry offers an attractive balance to other forms of industrial and commercial employment within larger urban centres and in small centres scattered throughout the farming region.

The Manitoba section of the industry was carefully studied

in 1968 by the Targets for Economic Development Commission. The report of the Commission reveals many of the problems of the industry in western Canada as a whole:

"The apparel industry in Manitoba consists of roughly 120 firms and accounts for about 5 per cent of the total Canadian industry. The industry in Manitoba is generally conservative and heavily oriented toward basic garments, with the result that it is overly vulnerable to the high level of soft good imports. It is greatly fragmented and therefore unable to reap the benefits which accrue simply from size; and its low productivity, compounded by low management and supervisory skills combines with high wages to keep manufacturing costs high. The result is that in real dollar terms, the industry's growth rate has been negative in recent years."¹

Changes in the industry in Manitoba in the two and one-half years since the publication of the TED report are significant. Several firms have moved out of aging, loft-type buildings in the centre of Winnipeg to new, more efficient buildings in Winnipeg and other centres. Improvements in working conditions have been effective in relieving, at least to some small extent, labour shortages which have plagued the industry. New management has been retained by several firms and, as a result, greater emphasis has been placed upon improvements in productivity, marketing and design. In several cases, designers have also been hired. Joint programmes worked out by

¹Report of the Commission on Targets for Economic Development, (Winnipeg, Manitoba; March, 1969) p. 183.

provincial government agencies have assisted in labour training and labour recruitment, productivity improvement and marketing. In those firms which have opted for growth and development, a reasonably rapid pace of expansion is occurring, although admittedly the comments from the Commission report still apply to many firms in the industry.

Conclusions

Most of the action necessary to the expansion of the clothing industries must occur within the manufacturing firms. The first requirement is a general upgrading of management skills; this step should facilitate not only an increase in productivity, but an expansion of sales as well -- sufficient in fact to finance the cost of new product design, a factor of critical importance in breaking into and maintaining a position in the medium and higher priced markets. The industry is not capital intensive and capital needs can usually be met with minimal difficulty where management is strong and growth prospects appear good. Much of the equipment can be leased or rented and only buildings are required as a capital investment -- indeed the latter can often be obtained on attractive leasing arrangements from communities anxious to create employment for substantial numbers of people with low skill levels.

Achievement of economies of scale and purchase of raw materials can be significant in the manufacture of certain types of clothing, and the relatively small regional firms sometimes have

difficulty in acquiring material at a price competitive with larger (usually eastern) competitors. In the case of more highly styled clothing, however, economies in purchase of raw material can seldom be realized by a firm of any size; material purchases tend to be locked to the length of production runs, which are generally short for higher priced, more highly styled and individualistic garments.

The cost of freighting raw material from textile plants in the Montreal area to western Canada adds a small cost burden to western production which is not faced by producers in eastern Canada. Similarly, shipment of finished products eastward and southward from the region can add a small but significant freight cost. It appears, however, that skillful management can overcome this cost disadvantage through achievement of higher rates of productivity and other economizing measures.

In summary, the key requirement for the expansion of the garment industry is a pool of skilled management motivated to expand the industry through product improvement and successful marketing strategies. It is encouraging to note that this process has begun in a significant number of firms within the region; the rate of expansion, however, will be contingent upon the rate at which other firms opt for such growth and development.

Most of the action necessary to expanding the industry must occur within the framework of the firms. It is clear, however,

that co-operative programmes between the industry and government in areas of management training, design, labour training and labour recruitment can be effective tools in any development strategy.

THE FURNITURE INDUSTRIES

Item 261 - Household Furniture Industry

Item 264 - Office Furniture Industry

Item 266 - Miscellaneous Furniture

There is a considerable similarity in the factors affecting the future growth of the three categories of furniture manufacturing, and the three are therefore treated jointly.

These industries currently employ more than 3,000 people within the region. Of these, more than 1,500 are employed in the manufacture of household furniture and more than 1,000 in the manufacture of miscellaneous furniture. Very little office furniture is manufactured within the region.

Approximately two-thirds of the household furniture purchased within the region is imported from elsewhere in Canada and from foreign sources. Almost all office furniture is imported from elsewhere in Canada and more than one-half of the miscellaneous furniture purchased within the region is imported from other regions.

About one-third of the household furniture manufactured within the region is sold elsewhere in Canada and about 10 per cent of the miscellaneous furniture finds markets outside the region.

It is obvious that freight costs are an important factor in the final price of furniture of all types. Most furniture items are bulky and require very careful handling during transportation. The result is a fairly high freight cost per unit, which provides a cost barrier to eastern manufacturers attempting to sell within

the prairie region and, similarly, provides a cost barrier to western manufacturers attempting to sell in eastern Canada. The high cost of freighting furniture between east and west is therefore at once the greatest advantage possessed by western manufacturers and the greatest disadvantage.

Manufacturers within the region are confronted by a number of cost disadvantages. Most of these relate to the size and scale of operations within the region. Manufacturers within the region are typically confronted with difficulty in financing adequate management teams on the budget generated by the earnings from the manufacture of relatively small quantities of goods. A survey and audit of firms in Manitoba discovered inadequacies in areas of sales management, forward planning, industrial engineering, work study, productivity and even accounting. Small scale plants also have difficulty in financing the cost of design, and competence in design is a critically important factor as tastes and demands change in the market place. Raw material costs met by the Manitoba industry are estimated to be 10 per cent higher than the national average, a reflection of inability of achieve economies through bulk buying of raw materials and components. Furthermore, manufacturers in eastern Canada have been able to arrange pool shipments by rail and truck to reduce transportation costs between eastern plants and western markets. Arranging similar east bound shipments is difficult, due to the relatively small size of western plants, the relatively

small size of the total industry and consequently, the small volume of furniture moving from west to east.

The cost disadvantages and the cost advantages confronting manufacturers within the region are more or less in balance. The industry in the west has been growing, but at a pace slower than the growth of the industry in eastern Canada. The larger average size of operations in the east combined with the advantages of agglomeration tend to improve the competitive ability of eastern producers relative to that of western producers. Nevertheless, very substantial opportunities exist for expansion of these industries if cost disadvantage factors can be met and overcome. Most of the furniture used in western Canada is manufactured in eastern Canada or imported from outside the country. Canadian furniture manufacturers, including some within the region, have demonstrated that it is possible to compete effectively in the American market, and furthermore, some producers in western Canada (particularly in the Winnipeg area) have succeeded for some considerable time in shipping furniture to eastern Canadian markets.

The Canadian furniture industry is rather openly organized. Producers of various sizes compete with each other and the tendency to oligopoly is not very strong. Firms established within the west might be expanded, new firms might be established, and branch plants of eastern firms might, as in one or two recent cases, be attracted to the region.

It is obvious that expansion of this industry could employ

a substantial number of people. Furthermore, expansion of the industry would tend to create markets for certain components, including metal stampings, plate work, extrusions, particle board and chip board, veneers, milled wooden components, etc.

Conclusions

Expansion of this industry would require co-operative efforts by manufacturers and provincial governments. There is evidence of great difficulty among furniture manufacturers in achieving a size adequate to meet the cost of a number of essential managerial and technical inputs. The inputs required tend to be intangible and of a type not easily financed by presently available instruments of credit. It is interesting to note that while capital is fairly readily available for the financing of plant and the development of production capacity, it is much less readily available for financing the pool of management and design skills necessary to achieving a scale of operation adequate to meet quality and price requirements in the market place.

Efforts to improve managerial skill and technical skill at the production level through educational courses are no doubt useful, but the major requirement of this industry is a source of funds to be borrowed against future production and sales for the purpose of attracting and holding the necessary skills within individual firms.

Raw material cost differences derive largely from the

scale of operations and from agglomeration. Higher raw material costs will continue to confront the industry within the region until the scale of operations increases substantially and until there is a greater agglomeration of furniture manufacturing within the region. Once again, action effective in financing the management, design and entrepreneurial skill pools necessary for expansion of operations and the capture of a greater share of the regional and export markets. is the only effective way of reducing raw material costs

The furniture industries probably provide one of the most interesting challenges to the industrial development and promotion agencies within the region. It should be emphasized, however, that programmes of assistance to this industry would require a high degree of sophistication and skill in design and execution. It is also important to note that most of the activity necessary to the expansion of the industry must occur within the structure of the manufacturing firms rather than within government development agencies. Direct transfers of funds or the loaning of manpower by governments to the industry could be effective. Assisting the industry in design costs through grants or longer term loans or in financing the non-bankable cost of management development might also be effective. Risks in individual cases might be relatively high, however, and programmes of direct aid to firms could be controversial for a number of reasons. The industry seems unlikely to achieve its potential, however, unless extraordinary (and costly) assistance is provided.

Item 271 - Pulp and Paper Mills

The pulp and paper industry is now well established in the region. Prior to the 1960's only one major mill existed, at Pine Falls in Manitoba. Since 1960 two mills have been established in Alberta, one at Prince Albert, Saskatchewan and another at The Pas, Manitoba. Total capacity approximates 2,500 tons per day. Timber stands in the region are adequate to support additional capacity: additional production of at least 1,500 tons per day seems possible both in Alberta and in northern Saskatchewan, while Manitoba timber stands could probably sustain an additional 800 tons per day.

The industry has grown rapidly during the last decade in Canada in response to rapidly increasing demand for newsprint and other products based on cellulose. There is currently a modest level of over-capacity in the industry, most of which would be absorbed by normal and expected cyclical demand fluctuations. (Demand for newsprint and a number of other paper products is responsive to business cycle changes and particularly the demand for advertising space in newspapers.)

New locations are chosen by the industry on the basis of total cost of finished products delivered to market. Throughput costs are roughly equal at all sites and tend to diminish as plant size increases. The cost of raw materials is a major variable in the total cost package and the cost of freight on finished products is also extremely important. The cost combinations in the prairie

region are relatively high because of high raw material costs and high freight costs. The costs at new sites on the prairies are now comparable to those in such locations as northern British Columbia, the Yukon and Labrador. It seems likely that a site in western Alberta and one in northern Saskatchewan offer the earliest promise for development.

There is some possibility, however, of a decrease in the rate of growth in utilization of paper products. Rising concern with pollution and the clutter created by massive use of newsprint and other paper products may result in programmes of demand control, increased enforcement of pollution control standards in existing mills and in new mills (resulting in a substantial increase in the cost of final products), and finally, the refusal of the provincial governments to allocate more timber for pulp and paper manufacture eg. in Alberta, where large diameter timber stocks suitable for lumber and wood products are found. These considerations make it difficult to forecast the rate of growth which may occur -- although on technical grounds additional production totalling some 4,000 tons per day (and adequate to employ up to 5,000 persons) could be established within the region within the decade.

Conclusions

The rate of expansion of this industry will be contingent in large measure upon public policy concerning pollution control in Canada and the United States. Public policy effective in

curbing demand growth in the United States is probably beyond control of federal or provincial governments in Canada and beyond the control of the industry. The future shape of public policy in Canada concerning the allocation of forests to pulp and paper manufacture and the control of pollution created by pulp and paper mills is not yet clear. It appears that the industry could expand employment by about 5,000 persons in the event that such expansion is considered to be in the public interest.

At present some uncertainty exists concerning future trends in demand for pulp and paper products; among other factors, trends in newspaper demand have not been stable. Specific research on long term trends would be relevant prior to any major expansion of capacity.

Item 274 - Other Paper Converters

At the present time only modest production capacity is maintained within the region. Products of this industry vary widely from exercise books to bulk items such as toilet tissue. The latter items are manufactured mainly in eastern Canada or British Columbia, necessitating a considerable expenditure on freight for shipment to the prairie region. In the event that the prairie market were to expand to the point where a local plant could capture economies of scale, major manufacturers would likely establish production capacity within the region. Such a situation could well occur within the decade.

Raw material for this industry is pulp or paper, both of which are produced within the region. Financing of new capacity would not constitute an impediment, since production is controlled by a relatively small oligopoly of international firms who are capable of generating their own internal financing. Any manpower skills not readily available could easily be developed.

Conclusions

It appears, therefore, that this industry may expand in the region in response to expanding markets. Specific examination of scale economies for prairie production would provide guidance as to the relevance of promotion efforts.

Item 291 - Iron and Steel Mills

There are approximately 50 iron and steel mills in Canada, and of these only a few are large, totally integrated iron and steel making facilities. Four small mills operate in the prairie region, three being "bar" mills producing only reinforcing bar and merchant bar (small angles, channels, flats, rounds); the other mill is involved in the production of flat hot rolled products suitable for pipe manufacture and commercial uses. The industry employs almost 50,000 people in Canada and perhaps less than 2,000 in the prairie region.

Expansion of the industry within the region would be desirable for several reasons. Thus, while the iron and steel industry is itself a major direct employer, the possibility does exist of further increases in regional employment through linkages:

1. Backward to iron ore, coal and other raw material supplies.
2. Forward to farm equipment, machinery, tanks, boilers and related metal fabrications. The high cost of iron and steel as a raw material factor input (the result of high freight costs between eastern mills and western markets) presently reduces the competitive ability of the industries mentioned above.

Important factors affecting the location of the industry include ability to secure markets adequate to capture economies of scale, availability of raw materials at relatively low cost, and minimization of freight costs from mill to market. Obviously, of these, the factor of most critical importance to a location in

western Canada is the combination of market sizes and ability to capture economies of scale.

The total market within the region is now estimated to be in excess of one million tons per year. Slightly less than half this market is met by local production, even though the three bar mills do supply most of the reinforcing bar and similar products required in the region (indeed bar mill capacity on the prairies is likely to be adequate for some years to come). The fragmentation of the remaining market into a number of sub-markets has, however, in the past restricted opportunities for the development of an integrated iron and steel production facility.

Nevertheless, changes in both the technology of the industry and in market demand could require a reassessment of this position.

With reference to the first factor, the advent of direct reduction and similar techniques of production has reduced the significance of economies of scale in this industry; competitive unit production costs can now likely be realized at much lower levels of output than previously.

The possible construction of major pipelines in northern Canada has also increased markedly the prospects of a facility being established. Large diameter gas pipelines, for example, would use steel pipe in quantities of the order of magnitude of 1,000 tons per mile. These, it should be noted, are quantities larger than

the requirements for existing pipelines which are of smaller diameter. In the event that oil and/or gas pipelines are constructed from the Mackenzie Delta area or from the King Christian Island gas find, major additions to the total regional market for steel products would occur.

It must be noted, however, that these additions to the local market would be in the form of very large orders for uniform and standard products and as such would certainly be attractive to producers located in eastern Canada (who might use ocean freighting for transport) and to producers in Japan and elsewhere. To ensure participation in the first northern line, a substantial addition to local flat hot roll mill capacity would probably have to be undertaken almost immediately.

Other markets for iron and steel products within the region will continue to develop steadily over the next decade, and while the viability of an integrated facility is very much dependent on Arctic pipeline construction, the role that these other markets could play in enabling such a development to go forward should not be discounted.

Finally, coal suited for the manufacture of iron and steel products is available in quantity in Alberta and is currently being exported to Japan. Iron ore is also found in a number of locations within the region. Some of it is apparently suitable for pelletizing. Given current demands for iron ore these deposits

appear to be uneconomic. They might, however, be suited to supplying a major complex. Other raw materials are generally available.

Conclusions

In summary, if major new markets for iron and steel products develop within the region the establishment of an integrated iron and steel manufacturing capacity seems possible. The primary stimulus for such a development appears to be the possible construction of pipelines to transport oil and gas from the Arctic to eastern Canada and the United States. The cost and revenue combinations which such markets and developments would create do not appear to have been analyzed in detail as yet, however. This task would probably best be carried out by the federal government in order to avoid duplication.

In addition, it has been suggested that possible relationships to the steel alloy industry (particularly stainless steel products) utilizing the alloy material available in the prairies should be considered.

Item 292 - Steel Pipe and Tube Mills

This industry produces a wide range of steel pipe and tubing for various commercial, consumer and industrial applications. The most significant commodity, however, is steel pipe for pipeline construction. During the last 15 years there has been substantial construction of pipelines in western Canada to gather and to transfer oil and gas. Anticipated petroleum and gas developments in northern Canada seem likely to increase demand for steel pipe by a very large amount. (Please see Item 291 - Iron and Steel Mills.)

In the event that pipeline construction occurs, and in the event that primary iron and steel capacity is expanded on the prairies to capture the market created by such expansion, an opportunity will be created for the manufacture of additional quantities of steel pipe within the western region.

Conclusions

Continuing review of plans and intentions concerning the transport of oil and gas from the Northwest Territories and Alaska is obviously indicated. Action effective in establishing additional primary iron and steel manufacturing within the region might also improve the probability of establishing additional pipe and tube manufacture.

Item 295 - Smelting and Refining

A number of minerals produced within the region are smelted and refined locally, copper, lead, zinc and nickel being the most important of these. Smelting and refining operations employ substantial numbers of people in Manitoba and a smaller number in Alberta.

A first pre-condition necessary for smelting and refining operations is the availability of ores or concentrates. Most of the ores currently produced within the region are smelted locally and some of them are refined. Since mining exploration has continued at a high pace (particularly in Manitoba and Saskatchewan), additional production of copper, nickel, lead, zinc and other metals is anticipated within the decade.

At the present time most of the copper produced within the region is smelted, but not refined; the volume of copper available from smelters within the region is understood to be inadequate to sustain refining operations.¹ Substantial volumes of copper concentrates are shipped to Japanese markets, where the by-products of copper smelting -- in particular sulphur -- are of greater value than in Canada. Indeed, the value in Japan of the sulphur so derived is understood to be adequate to pay for the costs of smelting and

¹Commission on Targets of Economic Development, op. cit., p. 111.

the cost of transportation of concentrates from Canada. Hence -- and this may be the case for other metals -- the markets for concentrates cannot necessarily be filled by smelted or refined products.

Production of additional copper within the region seems probable within the decade. This may well lead to an expansion of existing smelters or to establishment of new smelting capacity. Similarly, expanded production of lead and zinc (generally found in association with copper within the region) could result in expanded smelting of these metals. Should the total volume of smelted copper within the region reach a level approximately double the current level, refining might become a possibility.

At present almost all nickel is smelted and refined to final form within the region. (Some nickel concentrates from Manitoba are transported to Alberta for smelting and refining.) This appears likely to continue, and expanded production of nickel also seems probable.

Conclusions

Action effective in stimulating the development of the mining industry is likely to be effective in expanding the smelting and refining industries. Beyond this, it appears that little can be done to cause this industry to expand.

Prohibitions on the export of unsmelted metals have been established in one or two jurisdictions. Whether or not these would

be effective in stimulating smelting and refining within the western region is not clear. It appears that such restrictions and regulations might well reduce overall markets for metals rather than increasing smelting and refining operations.

Item 311 - Agricultural Implements

The manufacture of agricultural implements is a major industry in North America. A long established pattern of free trade exists between Canada and the United States. The Canadian market for farm equipment may be seen as two regional divisions of this continental market, the prairie region being the larger of the two by a small margin (eg. averaged 59 per cent of Canadian farm machinery and repair part sales, 1959-1969).

Prior to 1950 the Canadian manufacturing capacity of the industry had been heavily concentrated in eastern Canada. During the last 20 years, however, production in western Canada has expanded rapidly and the eastern share of production capacity and employment has diminished somewhat. Initially the expansion of the production in western Canada consisted largely of the manufacture of specialized machines for the prairie regional market. Generally these were relatively small, uncomplicated machines such as tillage equipment, grain handling equipment, farm wagons and swathers. The market for many of these machines was expanded, however, to include important penetration of the American side of the Great Central Plains market. Simultaneously, in the 1960's, production of large, four-wheel drive tractors, tractor drawn combines and self-propelled combines was established within the prairie region. The success of such operations has been modest when measured against total markets for farm equipment in North

America, but has been considerable when compared to the size and scale of pre-1950 manufacturing capacity in western Canada.

Whether this pattern of expansion will continue can not be forecast with any degree of confidence. The factors affecting the potential of the industry in western Canada are complex. They include marketing problems such as economies of scale in selling, the financing of inventory, and entry into an industry dominated by large firms. Relative cost of manufacture and of transportation for plants located in western Canada, as well as capacity to establish and maintain adequate research and development facilities, are additional important factors. Finally, the ability of the region to attract branch plants of major, established manufacturers now located in the American Midwest or eastern Canada must be taken into consideration in attempting to forecast the employment potential of this industry.

It is convenient to categorize present and potential producers of farm equipment into three groups: short line producers, medium size firms and the major firms.

The Short Line Producers

Short line producers compete effectively on the basis of their ability a) to design and market equipment with specialized applications and b) to manufacture less highly specialized equipment (eg. tillage and grain handling equipment) at lower costs than those encountered by their larger competitors. The lower costs

derive primarily from lower labour costs; plants are generally not unionized and hence wage scales are significantly lower than those which occur in plants of major manufacturers. The small manufacturer, however, generally suffers from a disadvantage in freight costs, both on raw materials (including steel) shipped in from eastern Canada and on finished goods. The freight cost problem is compounded by the location of the small manufacturers; many of them are distant from major transportation hubs and must re-ship inbound and outbound freight through such centres as Winnipeg and Saskatoon. Manufacturers in Saskatchewan are at a particular disadvantage because of the relatively high freight cost on inbound materials from eastern Canada to Saskatoon as compared to the cost of the same materials landed at Winnipeg.

Short line producers have difficulty in achieving economies of scale in manufacturing¹ and, in addition, their capacity to finance research, development and design programmes is limited by their ability to finance and to recover from the market place the cost of these programmes. Such firms frequently market their output through agencies established by the long line manufacturers, and

¹This problem may be alleviated somewhat by encouragement of component manufacturing in the region.

consequently do not encounter major difficulties of entry into the market. The long line manufacturers, on the other hand, appear to have generally decided against attempting to compete with the short line manufacturers in the production of goods on which production lines are small and where profits, for the large firm, are of little consequence. In some cases, the manufacturers of short line equipment sell under contract to the manufacturers of long line equipment who sell the specialized goods under their own brand name. This pattern is particularly present for two Manitoba firms in the case of tillage equipment such as cultivators and harrows.

The assembly of adequate capital to finance additional capacity research and development programmes and inventory is a major problem for the short line manufacturer. The security of capital invested in such firms is generally considered to be lower than that offered by investment in the long line firms, and consequently, capital is scarce and often expensive. Confronted with these difficulties, the short line manufacturers often have difficulty in attracting management and entrepreneurial skill, as the rewards of income and security offered by the larger firms tend to be higher than those which the small firm can afford.

Despite these impediments, the short line manufacturers have nevertheless continued to expand production. Recent downward fluctuations in the total market for agricultural equipment (which derived from declines in gross and net farm income) have,

however, damaged the capacity of some of the smaller firms and, indeed, some have ceased to exist. The continued capacity to design and market specialized equipment at favourable production costs indicates, however, that the short line manufacturers will generally continue in operation. To the extent that they are able to acquire funds for research and development programmes and to finance capital expansions, they may be expected to continue to grow. Some of them may choose to attempt to move into a higher production category through manufacture of more complex machines such as tractors and combines. One or two firms have succeeded in this venture and this may encourage others.

The Medium Sized Firms

The medium sized firms are confronted by the same problems as the short line manufacturers. In general, they are more capable of financing programmes of research and development and have somewhat better access to capital markets. At least one firm has succeeded in public subscription of funds. The medium sized firms, however, are in direct competition with the major manufacturers, as their production of combines, swathers and tractors has eroded markets enjoyed by the long line manufacturers. Consequently, the marketing strategy of the major firms includes efforts to limit market penetration by the medium size firms, usually through the former's relatively strong agency position. In particular, given that the market for farm equipment is concentrated into a few

months each year and that large inventories must be financed by manufacturers and dealers during the rest of the year, the larger firm and its dealers are in a more advantageous position -- as a result of their more ready access to inventory financing sources.

In addition, the medium sized firm is confronted by particular problems relating to economies of scale. The Royal Commission investigating the cost of farm equipment in Canada, for example, found that major economies of scale were present in plants manufacturing tractors and combines.² Economies of scale in marketing are also obviously present: the cost of advertising a production stream of 500 combines must be compared with the cost of advertising a production stream of 5,000.

The medium sized manufacturers (located away from the main centres of production in North America) have attempted to counter such cost disadvantages by paying wage and salary rates substantially below those paid by major manufacturers, by selling machinery at prices lower than those charged by the major manufacturers, and by reducing research and development expenditures. However, these are not always satisfactory solutions. Lower wages and salaries

² Canada, Report of the Royal Commission on Farm Machinery, Ottawa, Information Canada, 1971.

are unlikely to be maintained should the scale of plant increase, while lower sales and advertising costs can only be achieved by limiting advertising programmes to a lower level of intensity than those employed by long line manufacturers. Finally, limiting investment in research, development and design carries with it the danger of failure to maintain competitive ability with the larger firm.

As in the case of the small manufacturers, the medium sized manufacturers have, in one or two cases, succeeded in meeting all of the difficulties outlined and in expanding their share of the market. Whether or not they can be expected to do so will be contingent upon their ability to maintain a balance between their cost disadvantages and their cost advantages. This in turn will be largely contingent upon their ability to maintain a pattern of growth to the point where economies of scale are captured before wage and salary rates, which constitute their major cost advantage, rise to levels directly comparable to those encountered by the major manufacturer. Maintenance of such a pattern may require some programmes of financial assistance and, in addition, continuous scrutiny of trade practices of the larger firms in the oligopoly.

The Major Firms

Major firms currently have no production capacity within the region. On several occasions major firms have shown interest in creating or acquiring production capacity on the prairies. The

possibility remains that this could occur within the next decade, through either construction of new production capacity somewhere within the region or acquisition of a medium sized producer by a major firm. Since markets are international and since medium sized firms do not rely exclusively on the regional market, it would clearly be more advantageous to the region if additional capacity were established.

Attraction of major firms to the region must rely upon demonstration of cost advantages. Studies by the Royal Commission on farm equipment failed to establish that there were long term cost advantages to manufacturing within the region. For example, it seems unlikely that a major manufacturer could establish within the region and pay wage rates substantially below those paid by the same firm in eastern Canada. This cost element factor may however, be preclusive. The relative average cost of manufacture in the western region might be reduced by increased concentration of farm equipment or related machine manufacture. Greater economies of scale, and other cost reductions could also derive from an expansion in the western portion of the market area.

Conclusions

Continued expansion of the farm equipment industry in western Canada would appear to be contingent largely upon the expansion of small firms manufacturing short production lines of specialized equipment and upon the expansion of medium sized firms.

Further, one or two of the small firms might succeed in expanding production into the medium sized range.

Both the small and medium sized firms are confronted with considerable, but apparently not insurmountable difficulties. Action to assist them in the areas of financing research and development programmes, acquisition of capital for financing inventory, acquisition of capital for expanding production capacity and assistance and maintaining surveillance over restrictive trade practices could add significantly to the capacity of such firms to grow. Attraction of major firms to the region appears unlikely but not impossible.

Item 321 - Aircraft and Parts Manufacturers

Only two firms continue to manufacture complete aircraft in Canada and neither of these is located within the region. Throughout North America the industry is encountering difficulties, which derive in part from the scale of manufacturing operations necessary to the production of modern aircraft and in part from the high unit cost of research and development necessary to aircraft design. Demand for military aircraft has diminished somewhat recently and this has contributed to confusion and financial weakness in the industry.

Several manufacturers within the region manufacture components for aircraft produced elsewhere and re-manufacture and re-fitting operations are also present. Both phases of these operations have included military and civilian aircraft. Since 1970 employment has declined somewhat within the region in direct response to the difficulties confronting the industry throughout North America.

Canadian airlines are major purchasers of aircraft manufactured in the United States and elsewhere. In order to secure large Canadian orders, foreign manufacturers have contracted for component part manufacture in Canada. Canadian airlines can be expected to continue purchasing substantial numbers of large aircraft and consequently it appears that there will be a continuing opportunity to manufacture component parts in Canada.

Manufacturers within the region have been successful in capturing important contracts resulting from Canadian purchases of civilian aircraft in the United States. Canadian government policy concerning civil aviation and the Canadian aircraft industry is likely to have an important effect on the extent to which component contracts will be awarded in Canada. In addition, proposals to encourage the manufacture in Canada of short take off and landing (STOL) aircraft could result in further component sub-contracts within the region.

Conclusions

The manufacture of aircraft components and aircraft re-manufacture within the region represents a tiny fraction of a very large industry in North America. The future of the industry in the region, however, will depend upon defence commitments in Canada, upon Canadian government policy concerning the aircraft industry in Canada, and upon the general health of the aircraft industry in North America. There appears to be little action which can effectively be taken at the regional level to stimulate this industry. Continued pressure by the Government of Canada to encourage the manufacture of component parts in Canada could, however, assist the industry in the region.

Item 323 - Motor Vehicle Manufacturers

This category includes the manufacture of automobiles, trucks and buses. It does not include school buses, snowmobiles, all-terrain vehicles, or other specialized automotive machines. The industry is represented in the region only by the manufacture of motor buses for inter-city and urban use.

One major firm in the region was recently involved in negotiations over purchase by a larger, integrated American firm, an acquisition which might have resulted in improved production capacity, as well as the ability to finance research, development and design programmes. The costs of the latter programmes have in particular constituted a heavy burden on firms in the region, since ability to maintain continued competitive marketing is closely related to the ability to meet quality and performance standards. Major automotive manufacturers of course encounter little difficulty in financing such costs.

There does not appear to be any possibility of attracting these larger firms to the region for the purpose of producing automobiles or trucks. Economies of scale in production, market orientation, availability of raw materials and components and other factors are likely to continue to discourage decentralization of this industry.

The industry is confronted with research, development and finance problems within the region. Continued action to assist firms in meeting these problems would be necessary if the industry is to

expand. Whether or not market opportunities in competition with established major automotive firms will warrant such continued assistance may require careful analysis. Should one or the other of the two firms fail, however, employment in the region is likely to decline.

Item 356 - Glass and Glass Products Manufacturers

Major products of this industry include automotive glass, flat glass for windows and related purposes, glass containers and speciality glass products. Only the latter two, containers and speciality products are manufactured within the region.

Automotive Glass

The manufacture of automotive glass is market oriented and the market is determined by the location of major automotive manufacturers.

It appears most unlikely that the manufacture of automotive glass would be established within the region.

Flat Glass

The manufacture and sale of flat glass is in the hands of an oligopoly of international firms. The location of production capacity is market oriented, with some considerable bias, however, toward raw material costs. Production capacity in Canada is concentrated exclusively in the central region, and while substantial quantities of glass are imported from foreign countries to western Canada, the larger portion of the market is met by production from these eastern Canadian plants. Although the prairie regional market appears large enough to sustain the operations of a flat glass plant, the capital investment involved appears to be inconvenient to members of the producing oligopoly.

Resources for the production of glass are present within

the region. These include silica sand, lead, soda ash and other materials. Energy costs within the region tend to be somewhat lower than in most parts of North America. There is no resource base impediment to glass production.

Establishment of flat glass production within the region will occur only if one of two conditions is met: either new manufacturer, not part of the existing oligopoly, must be encouraged to exploit the western Canadian market (such a venture would probably meet with strong competition from firms already marketing within the region) or one of the existing firms must be persuaded to establish production facilities within the region. In the latter case, a close analogy exists to the rubber tire and tube industry, where two major manufacturers (the largest two) have already established capacity in western Canada; in the event that one major manufacturer locates within the region, others may be forced to follow suit, in order to meet competition.

Glass Containers and Miscellaneous Glass Products

Glass containers and miscellaneous glass products are manufactured within the region. Glass containers are far more significant than miscellaneous glass products, although the market for containers has been expanding slowly. The use of plastics, steel and other products as substitutes for glass containers has in particular reduced the growth rate of the industry.

For some time, at least 10 years, the establishment of

additional container manufacturing capacity within the region has appeared to be almost feasible. The limiting factor has been demand. Thus, increases in demand for large volume products such as beer bottles and soft drink bottles have been outweighed by declines caused by the substitution of plastic and other materials as packages for commodities such as household cleaners, milk, etc. Should the distilling industry grow as expected, however, sufficient demand will be generated to warrant the creation of new production capacity. Meanwhile, continuing growth of requirements for staple products can be expected and this in itself should generate growth in existing plants.

The manufacture of specialized and miscellaneous glass products tends to occur in rather small plants. While some growth can be expected, particularly in such areas as ornamental glassware the total amount will not likely be significant.

Conclusions

Action effective in increasing competition among flat glass markets in Canada might force the establishment of a flat glass plant within the region. The high freight cost involved in moving flat glass from eastern mills to the region may exceed economies of scale which can be captured by expanding existing capacity in the east.

Action effective in attracting to western Canada a manufacturer not involved in the production of glass in North America

at the present time seems at least conceptually possible.

It seems probable that the manufacture of glass containers will be expanded either at existing facilities or in new facilities as market for glass containers increases. There is little reason to believe that any action of government would be effective in changing this pattern. One exception is the possibility of laws or regulations or taxes affecting the relative cost of such alternate containers as throw away bottles, returnable bottles, cans and alternate systems of packaging. Concern for pollution factors might thus affect the potential for the manufacture of glass containers within the region. This effect might be favourable or unfavourable depending upon the nature of the regulation.

Item 372 - Mixed Fertilizers

The capacity of manufacturing plants located within the region to produce mixed fertilizers has expanded very rapidly during the last decade. The expansion took place in response to a rapid rate of growth of demand: this trend was reversed, however, when grain surpluses began to develop in 1967. As a result the industry is presently characterized by a remarkably high level of excess capacity, most of it in new and even unused plant.

Mixed fertilizer is not ordinarily shipped over long distances. Freight costs make this essentially a market oriented industry. Thus, most of the mixed fertilizers produced within the region are also consumed within the region, although some small quantity is shipped to British Columbia, western Ontario and to the United States.

Recently, in the face of excess capacity, some manufacturers have exported some small quantities of mixed fertilizers to countries in the Pacific Rim. The high cost of transport and tariff barriers make this market difficult for Canadian producers. It seems unlikely that such markets will develop to any considerable extent, although shortages of capital in some developing countries may encourage continued imports.

Conclusions

Expansion of the industry will be contingent largely upon improvement in grain marketing and growth of gross and net farm

income within the region. The potential for export marketing in the under-developed Pacific Rim countries may be worthy of investigation.

Item 373 - Plastics and Synthetic Resins

This industry grows rapidly in response to increasing demand for a wide variety of plastic products. The output of the industry is essentially raw material for the manufacture of plastic products although some product classes find direct consumer or commercial markets. Increased use of plastic materials for insulation, flotation, water proofing, packaging, farm, domestic and commercial plumbing and water transmission and a wide variety of less voluminous uses stimulates a rapid growth in demand.

The pattern of demand growth is responsive to the development of new products useful at the consumer, commercial and industrial levels. Although the industry has been expanding rapidly and developing new products for two decades, the rate of new product development remains high, and consequently the demand for raw materials continues to increase at a rapid (albeit unpredictable) rate.

In general, the industry is highly capital intensive and of large scale, although some of the products are produced in smaller less capital intensive operations. The research and development requirements are substantial; firms must maintain a rapid pace of technological development (this requirement may be reduced in future as use patterns stabilize and major applications are discovered and become standardized).

Conclusions

At present, economies of scale in manufacture, the relatively

high capital cost of production capacity, and the requirement for substantial research and development investment tends to limit most of this industry to large, well established firms. Such firms are not present in the region at this time, although growth in regional demand may stimulate branch plant location.

Alternatively, firms in allied fields may be encouraged to expand into the manufacture of plastics and synthetic resins. The possibility also exists that major users such as the manufacturers of plastic pipe and hose may integrate vertically.

Assistance with research and development costs might be useful to new manufacturers or small firms interested in expansion. Industrial promotion efforts might succeed in attracting branch plants of major manufacturers.

Item 375 - Paints and Varnishes

This is a small industry employing less than 400 people within the region. It is expected that existing plants will continue to expand employment and output and that this will create some modest increase in employment. Additional plants may, however, be established.

Some 60 per cent of the paints and varnishes used within the region are imported from other regions. The industry is reasonably well established in Winnipeg but Edmonton (which seems to have an equal market potential and similar production costs) appears to offer an opportunity for the establishment of paint and varnish manufacture.

Conclusions

Attraction of this industry to the western portion of the region is likely to occur only if existing manufacturers either from inside or outside the region are encouraged to establish branch plants, or if firms in allied and related industries are encouraged to enter the paint and varnish industry. Detailed economic feasibility studies may be warranted.

CHAPTER 14CONCLUSIONS AND OBSERVATIONS REGARDING
THE PLACE OF MANUFACTURING IN PRAIRIE
DEVELOPMENT STRATEGIES1. Introduction

This chapter presents the study's overall conclusions and observations regarding the place of manufacturing within prairie development strategies during the next decade.

The preface to this report stated the major objective of this study to be an overall evaluation of manufacturing opportunities within the prairies; this evaluation is designed primarily to evaluate the potential impact of manufacturing upon the region's development problems during the next decade.

Part I reviewed prairie development problems and changes in prairie economic structure. Part II focused attention upon the manufacturing sector, evaluating the various factors that affect this sector's growth, and identifying those distinct manufacturing industries at the three-digit level where policy attention appears to be warranted during the next decade. Part III consists of two chapters examining guidelines for prairie manufacturing development: Chapter 13, which provides profiles identifying problems and possible courses of action for specific priority manufacturing industries; and this concluding chapter (Chapter 14) which provides more general observations regarding the potential impact of prairie

manufacturing opportunities upon the region's development problems.

Data and analysis presented in the previous parts of this report provide a perspective for discussing prairie development strategies. However, as noted throughout this report, this study is not intended to provide definitive evaluations of the many aspects of prairie development that are examined. The objective is far more limited, namely to co-ordinate available knowledge and research in order to gain a preliminary view of appropriate development and research priorities for the decade of the 1970's.

More specifically, the following chapter does not presume to propose an optimal development strategy for the prairie region -- such a task lies far beyond the scope of this report. Rather, the aim is to evaluate the broad implications which appear to flow from the preceding analysis, and which in turn would then provide preliminary material relevant for the design of a more comprehensive prairie development strategy. In short, the approach adopted defines issues rather than proposes solutions.

It is apparent that a variety of choices must be made between alternative government regional economic development strategies. In its most recent annual review, the Economic Council of Canada emphasizes that the choice of alternatives confronts governments at three distinct levels: choice of objectives, choice of policies or strategies, and choice of programmes or tactics. At each level analytical information can sharpen judgements about

these alternatives; such information is also relevant for necessary on-going evaluation and possible alteration of objectives, strategies and programmes.¹

The outline of this chapter reflects the type of choices that confront governments when selecting alternative regional economic development strategies. Section 2 follows this introduction, and outlines current D.R.E.E. regional development goals and strategy; this discussion provides a broad framework for subsequent analysis related to the prairie region. Section 3 examines choices that exist regarding development goals for the prairies. Section 4 examines choices that exist regarding development strategies for the prairie region, with particular emphasis upon the manufacturing sector. Section 5 presents overall conclusions and observations regarding the potential impact that a manufacturing growth strategy would have upon the prairie region.

Discussion of alternative goals and strategies must, of necessity, carry analysis into the area of judgement. Chapter 14 represents observations and judgements which the consultants arrived at during the course of this study. The approach adopted strives

¹Economic Council of Canada, Design for Decision Making: Eighth Annual Review, (Ottawa: 1971), p. 66.

to present an objective analysis based on broad economic theory as well as concrete available facts; however, it is to be expected that by its very nature the topics discussed will continue to generate different views among different individuals, groups and governments. This chapter is intended to contribute to the on-going discussions, rather than to provide a consensus of existing viewpoints.

2. Current D.R.E.E. Regional Development Goals and Strategy

The Department of Regional Economic Expansion (D.R.E.E.) was created in 1969 and represents a consolidation and modification of earlier rural and regional development policies.

The major aim of D.R.E.E. is:

"To bring about growth that is dispersed widely enough to provide, as nearly as is possible, equally high employment and earning opportunities across Canada."²

²Hon. J. Marchand, "Regional and National Co-operation," Proceedings of One Prairie Province Conference: ed. D.K. Elton (Lethbridge; University of Lethbridge and Lethbridge Herald, 1971), p. 38.

Action is focused upon the problem of improving employment where existing opportunities are particularly inadequate. This goes beyond reducing unemployment, attempting also to improve low rates of labour force participation and to reduce under-employment.³

To achieve these aims, D.R.E.E. currently provides three kinds of programmes.⁴

1. Encourage private-sector (eg. goods and non-government services, without excluding crown corporations) investment in slow growth areas. The strategy lowers capital costs by providing grants for industry, establishing, expanding or modernizing plants in designated regions. Capital incentive grants are available for all manufacturing and most kinds of processing, (e.g. petrochemical processes, production of paper and paper-board from pulp, saw-milling, processing of fish and farm processing). Other industries, and initial processing in resource based industry (eg. oil refining, pulp, newsprint) are excluded.
2. Improve industrial and community infrastructure in slow growth regions, utilizing special area programmes.
3. Assist the process of adjustment, helping people to realize new opportunities and to adjust to changes in their former way of life. The strategy embraces a variety of methods: NewStart programmes of employment preparation for severely disadvantaged people; P.F.R.A., F.R.E.D., A.R.D.A., projects to consolidate and improve farms, to relocate, to develop new land uses.

³ Kent, T. "Current Objectives of Federal Policies", speech to Conference on Regional and Rural Adjustment: Winnipeg, November, 1970; p.1.

⁴ Ibid: p. 5.

Priority within the D.R.E.E. programme was given to industrial incentives for manufacturing development projects intended primarily for urban growth centres.⁵

By itself, the manufacturing incentives programme strives to focus upon those industries which would be viable and appropriate in a given area. In effect, the programme makes a number of basic assumptions:

- a. Manufacturing, particularly secondary manufacturing, represents the growth sector best suited to meet the development problems of slow growth regions; this sector at present is relatively underdeveloped and unbalanced in such regions; in addition, it is noted that manufacturing growth is associated with service industry growth within a region.
- b. A significant amount of new manufacturing would be viable and appropriate in slow growth regions, even though these industries would fail to become established (or would develop far less rapidly) without incentive grants.
- c. The most effective strategy to promote additional viable manufacturing in slow growth regions is to provide capital grants to the appropriate firms.

Concentration upon reasonably large urban centres results from the observation that transport costs and training costs, together with the absence of backward and forward linkages, tend to make uneconomic any major attempt to divert industry from the

⁵ Marchand, J., House of Commons Debates, Official Report, Vol. 113, Number 117. March 20, 1969; p.6894.

larger centres to rural areas. In addition, a number of other assumptions appear to be implicit in the existing strategy of manufacturing development in large urban centres, for example:

- a. Urban growth will promote and radiate growth throughout a region. ⁶
- b. Manufacturing creates urban areas, rather than the reverse causal process. ⁷

The D.R.E.E. programme is designed to be selective, to create growth points in each "region" (not necessarily each province), to create a country where "everyone does not move to Toronto". In the Minister's own words, describing the D.R.E.E. programme for regional equality:

"But, to be realistic as well as ambitious, I must emphasize that I mean regional. I do not mean parochial. I am not talking about small areas. I am not even necessarily talking about individual provinces.

"If we are serious when we aim at equal opportunities, we are not aiming at a new factory at every cross-roads. We are not pretending that there will be new herds of fat cattle in every township. We are not telling ourselves that there will be more jobs in every village, or even that every village -- every group of houses round a couple of elevators and a country store -- will continue to exist. Most will not.

⁶Paquet, G., "Growth Centres and Urban Development", draft paper presented to Conference on Regional and Rural Economic Adjustment, Winnipeg, November, 1970; p.14

⁷Ibid., p.15

"Regional development, if it is not a slogan, if it is serious, is not a denial of the forces of concentration that are at work so strongly and so inevitably in our society.

"The processes of increasing scale, in industry and in agriculture, are going to continue. The dramatic urbanization of Canada is going to continue. On the prairies it is going to gather strength. That is the reality on which progressive development policies must be based.

"Regional development does not mean trying to fly against the winds of inevitable changes. It means that we are determined to make those winds blow strongly and beneficially in all regions. It means that we are not all going to live in Toronto and Montreal and Vancouver. It means that we are going to have smaller but strong growth centres spread across Canada, in all regions." ⁸

During the debate establishing the new D.R.E.E. department other areas of intended activity were outlined; for example, programmes for tourist development in slow growth areas; programmes for economically lagging areas inhabited by a high proportion of Indian and Metis; programmes for the encouragement and development of medium and small towns as trading centres and smaller industrial centres "especially important to the prairies". ⁹ These intended

⁸Hon. J. Marchand, "Regional and National Co-Operation;" op. cit. p.40.

⁹House of Commons Debates, Official Report, Vol. 113, Number 118, March 21, 1969, p. 6980.

activities, however, were not given priority, and were not included in the Department's initial programmes.

In general, the D.R.E.E. programme is intended to represent a fully co-ordinated federal initiative to improve employment and general development in Canada's slow growth regions. Although the emphasis is upon economic growth, action extends into the social development and resource conservation areas. Within the context of recent environmental concerns, D.R.E.E. programmes and incentives must comply with national and provincial standards for pollution control.

3. Prairie Development Goals

3.1 Broad Priorities: Economic Growth and Quality of Life

Certain choices do exist regarding development goals for the prairies.

The depression of the thirties marked a period of particularly disastrous economic upset in the prairie region. As might be expected after such a period, the goal of economic growth represented the region's major challenge during the immediate post-war years. And, as outlined in Chapters 1 and 2, the post-war era indeed brought major growth and change in industrial structure within the region.

Today, for the first time since the depression, the primacy of economic growth as a goal is being seriously questioned within the prairies as well as throughout North America.

To some extent, today's questioning of economic growth is undoubtedly related to the economic growth that has been achieved -- as the frontiers of the 1940's become well explored, it is understandable that new frontiers and new goals will be sought.

Current concern over economic growth, however, also clearly reflects knowledge gained about the limitations, inadequacies and harmful side-effects of crude growth. Pollution, congestion, urban crowding -- concern about a deteriorating natural environment represent one major symptom. As regards the human environment, increasing concern is expressed about our quality of life, eg. continuing poverty, regional disparity, health and cultural inadequacies, increasing family and social dislocation. All of these concerns are relevant to the people of the prairies -- in some instances because the problem does exist already, and in other instances because people want to be certain that by advance planning the problem will not arise.

In addition to the above concerns, prairie people also endure certain particular problems which show all too well that technology, growth, and "progress" do not bring equal benefits to everyone. For the farm, rural and native communities, economic growth has created an era of relative individual hardship and decay in social position. Recent provincial debates also indicate concern that unrealistic attempts at stimulating growth have created give-away

programmes, spoiled resources, and spiralling costs -- all of which remain as added burdens for the region's residents.

Although the primacy of economic growth as a goal is under serious question, it is unlikely that much would be solved by an abrupt shift to a zero growth target. Keynes, when elaborating his economic theories designed to resolve the problems of successive depressions, expressed great concern that future demand would fail to grow rapidly enough to prevent stagnation, unemployment and economic despair. This concern would surely be resurrected if zero-growth became a reality. If the lessons of depression show anything, it would appear that the weakest members of the economic community would be the first to starve from abrupt stagnation. Perhaps there is a vague but growing trend already toward minimal economic growth as an acceptable social target; but this trend could not be acceptable if it forces abrupt economic and social change -- it will not be acceptable in other words, for the decade of the seventies.

Rather than zero growth, it would appear that the goals of controlled and moderate growth will be relevant for the seventies.

Concern for broader goals, for a higher quality of life, implies that the question "Growth for whom?" must be answered. To the extent that attention is focused on individual problems rather than abstract aggregate institutional or social goals, and increasing array of distinct goals should emerge. As the Economic Council has

pointed out in its Eighth Annual Review, a wide array of Goal Indicators (rather than the limited goal of gross national output) must emerge within each area of concern eg. health, education or public safety. For each area of concern, indicators must go beyond measurements of total output -- it is essential that indicators also show the distributions of the aggregate among regions, income groups, ethnic groups, age and sex groups, etc.¹⁰ In other words, the goal of regional growth is not to develop "a region," but to provide increased opportunity for individual people living in the region. Indicators are required to ensure that development and adjustment activities are in fact directed towards distinct and current individual needs.

In addition to making growth more relevant to a wider number of people, concern for the environment and for rising social costs imply that emphasis upon sheer economic growth must be moderated. Rather than being placed in a position of primacy, economic growth must be evaluated relative to other major economic and social goals eg. inflation control, environment conservation, and desires to maintain internal, long-run control over national and regional economies.

¹⁰Economic Council of Canada, op. cit.; p. 7.

Within the prairie region, problems of income disparity, serious rural adjustment, and low incomes within the large and growing native community testify to the need for concern about the distributional aspects of economic growth (see Chapter 1). Strategies which fail to answer the question "Growth for whom?" can easily be labelled as "crude economic growth" strategies, unacceptable to the region's longer term needs.

As regards the need for government to moderate emphasis upon economic growth, numerous examples can be cited to show prairie concerns: the effect of pollution upon fisherman, natives and tourism; the reversal of pulp mill development decisions in Saskatchewan due to concerns over pollution and long-term costs; the public and human costs of adjustment in rural and native communities.

To the extent that D.R.E.E. represents a fully co-ordinated federal initiative for general development of Canada's slow growth regions, the programme is extremely relevant for major segments of the prairie community. To the extent, however, that major initiatives are based almost solely on achieving gross increases in manufacturing jobs, the D.R.E.E. programme becomes less relevant and meaningful to many people in the region.

As D.R.E.E. realizes, manufacturing is most likely to locate in large growth centres, and for this reason, it offers

little immediate hope of relief to the severe problems of rural areas and native peoples. Perhaps prairie problems cannot be solved without aggregate growth, and perhaps manufacturing provides the best opportunity for total job growth; however, the region's experience with oil, mining and manufacturing development suggests that industrial development by itself is not sufficient to resolve major problems of disparity (eg. for rural and native residents). This is not to suggest that manufacturing should more directly intrude into the rural economy; in rural areas, resource and service industries are probably far more relevant. The point made is simply that prairie manufacturing development does not in fact provide "development" for a significant proportion of the prairie community.

The basic economic and social problem is one of priorities given demonstrated needs within the region. As such, the broader aspects of D.R.E.E. approach (eg. adjustment, native people assistance, development of medium and small towns) require increased activity within the prairie region.

On this score, it would appear relevant that a broad regional manufacturing review such as this study should form the basic framework for proceeding to more detailed examination of specific problems and strategies for their solution (eg. the potential opportunities for rural areas, native peoples, and individual provinces should be specifically examined): As suggested above

potential development roles for non-manufacturing industries warrant attention.

3.2 Regional and Provincial Development Goals

D.R.E.E. strives to generate high employment and earnings opportunities within each Canadian region; but a similar commitment is not made regarding small areas or even individual provinces. The critical question then becomes: "What are the Canadian regions to which the commitment is made?" Is the prairies one such region -- or is the commitment extended to each individual prairie province? Certain similarities and complementarities exist as between the three provinces; however, as shown in Chapter 1, from the viewpoint of economic performance (and perhaps future opportunities) the region divides into two distinct areas (the Alberta area, and the Manitoba-Saskatchewan area). This question is far beyond the scope of this report; yet it clearly raises a basic range of choices relevant to development strategies.

3.3 The Goal of Improving Regional Employment Opportunities

On the basis of its early priorities in the Atlantic and Quebec regions, D.R.E.E. places priority upon improving employment where existing opportunities are particularly inadequate. Theoretically, this approach could be identical to placing priorities upon improving economic growth opportunities in each region -- in practice, however, emphasis upon employment leads to emphasis upon regions where statistical evidence exists of unemployment and low

labour force participation.

In this regard, the Atlantic and Quebec regions clearly show the greatest employment problems. Two factors in the prairies work to generate a deceptive picture of the true relative employment situation in the region. Firstly, a significant amount of native unemployment is not included in published statistical series and appreciable underemployment in the agricultural sector cannot really be reflected in regular statistics. Secondly, a relatively high out-migration rate for prairie areas as compared to the Atlantic and Quebec regions consistently acts to maintain low unemployment rates within prairie areas, thereby obscuring problems of employment growth.

The impact of such factors¹¹ as these should certainly be quantified through further more detailed research.

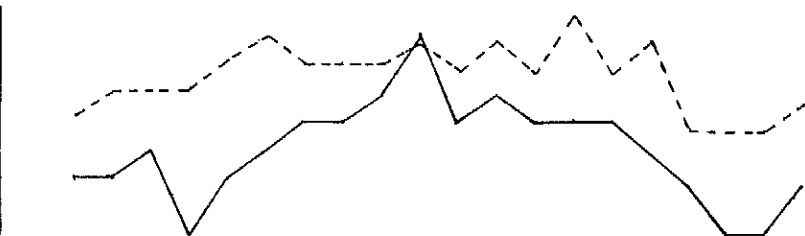
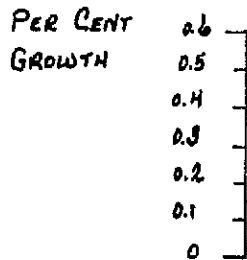
On the question of regional out-migration and unemployment rate relationships, Chart 14.1 provides indirect evidence indicative of differences between the Atlantic and prairie regions. The Atlantic region and the Manitoba-Saskatchewan region have roughly the same number of people. Unemployment rates are far higher in the Atlantic

¹¹Regarding estimates of 1961 Indian reserve labour force participation rates in Manitoba areas, see; Province of Manitoba Royal Commission Inquiry Into Northern Transportation: (Winnipeg; Manitoba Queen's Printer, 1969) p. 83.

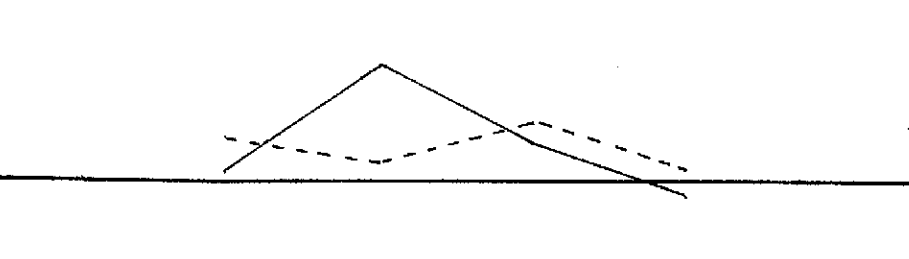
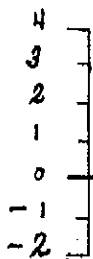
CHART 14.1

RELATIVE GROWTH RATES, ATLANTIC REGION AND MANITOBA SASKATCHEWAN REGIONS

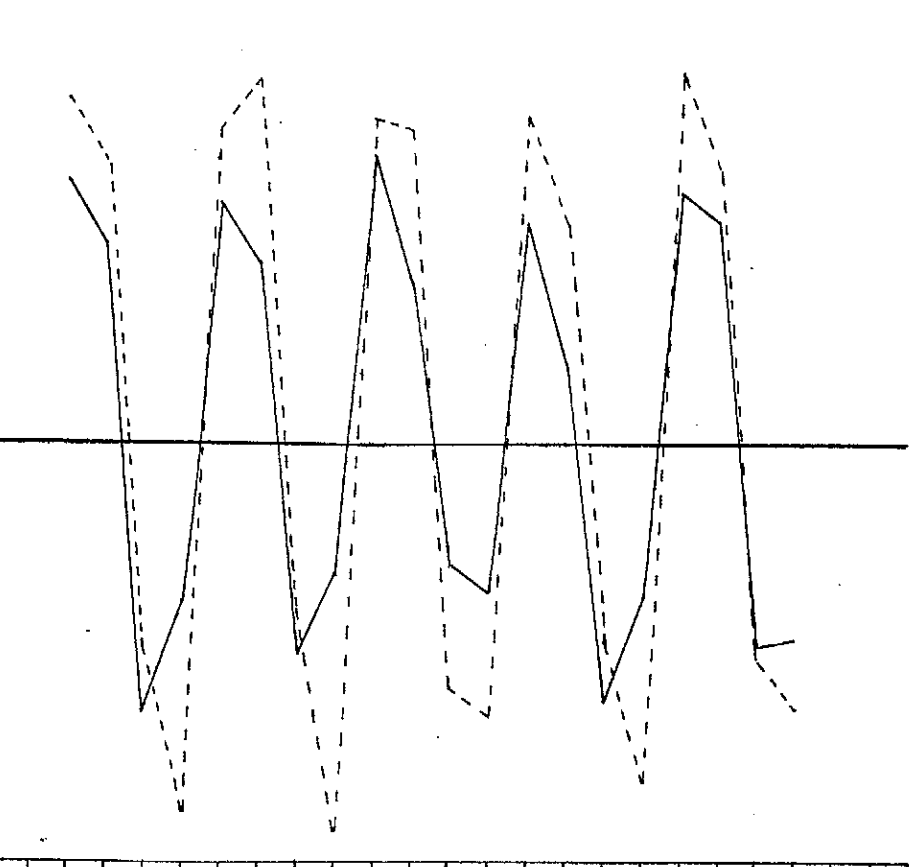
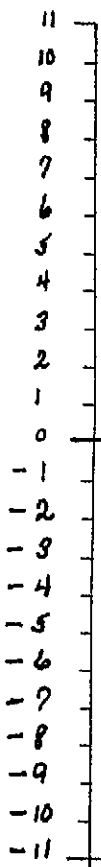
QUARTERLY GROWTH, POPULATION 14 YEARS AND OVER.



ANNUAL EMPLOYMENT GROWTH



QUARTERLY EMPLOYMENT GROWTH



1966 1967 1968 1969 1970 1971

——— MANITOBA SASKATCHEWAN REGION
 - - - ATLANTIC REGION

than in the Manitoba-Saskatchewan region. Yet, as regards comparison of employment growth rates, the two regions appear to demonstrate almost equivalent performance -- a performance which is far below that demonstrated in other Canadian regions. Furthermore, the Atlantic region demonstrates noticeably higher population growth rates than the Man-Sask region. These data suggest that employment opportunities are equally inadequate in each region; however, unemployment rates in the Man-Sask area tend to be kept low due to comparatively higher rates of out-migration.^{12 13}

¹²It is recognized that other factors (eg. fertility rates) must be considered. However, population growth has been slower in the Man-Sask region than in the Atlantic region since at least 1951. Furthermore, available data indicate more net migration from Man-Sask than from the Atlantic (despite the fact that the Atlantic region has more people than Man-Sask). See T.J. Courchene, "Interprovincial Migration and Economic Adjustment," Canadian Journal of Economics; Vol. III, No. 4, November, 1970, p. 576; (estimated net labour force outflow 1956-1961; Atlantic 17,257; Man-Sask 22,687). Also, Economic Council of Canada, Eighth Annual Review, p. 142, (Estimated net outflow 1968-1969: Atlantic 8,940; Man-Sask 13,808.)

¹³Quebec has higher employment growth rates and lower out-migration rates than either the Man-Sask or Atlantic regions. Cultural factors are used to explain Quebec out-migration rates. See Courchene, op. cit., p. 557.

Average Monthly Growth Rates 1966 - 1970	Man-Sask	Atlantic	Alberta	British Columbia	Quebec	Ontario	Canada
	(Per Cent)						
Employment	3.9	3.6	13.1	19.6	6.4	13.0	10.1
Population 14 and Over	4.2	7.4	13.1	18.5	10.0	13.4	11.4

Source: Dominion Bureau of Statistics, Special Labour Force Survey, 71-001.

The question raised relates to the "proper" choice of goals and goal indicators. Is "inadequate employment opportunities" best measured by unemployment rates or employment growth rates? Is out-migration viewed as acceptable for equalizing regional opportunities; or, given the bias of relative youth and higher skill levels among out-migrants as compared to those who remain, is high net out-migration from a significant sized region proof of inadequate employment opportunities?

Ultimately, answers to such questions hinge partly upon broad interpretations of national and regional goals. Within the framework of a traditional nineteenth century nation-state, economic efficiency was defined within the context of the "national good" (eg. citizens should move freely anywhere within a country for the goal of national efficiency; however, mobility across national

boundaries was assumed to be less desirable and less likely). Within the context of a twentieth century federal state, large in size and marked with major regional differences, should there be a different criterion for economic efficiency?¹⁴

Despite differences in relative prosperity, each prairie province shares the experience of post-war growth generated by the exploitation of non-renewable mineral resources. Common concern exists that the region's future growth could be limited: renewable resource industries tend over time to experience decreasing employment; non-renewable resources will eventually be exhausted; manufacturing growth is severely constrained by geography and by historical concentration in Central Canada. The efficiency and justice of maintaining any region in the role of "hewers of wood and drawers of water" raises again broad discussions of appropriate goals within a federal state. The aim, however, of co-ordinating all federal policies in order to generate balanced and sustaining employment opportunities in each region would appear to represent a goal shared by each prairie province. To some extent, this goal seems consistent with general D.R.E.E. objectives; the priority, however, remains unclear.

¹⁴On the basis of traditional criteria, prairie economic performance has been relatively efficient compared to other slow growth regions. The ability of prairie people to adjust to change by mobility has been remarkable (See Prairie Provinces Cost Study Commission; p. 374).

A vast gulf can lie between regional problems and regional potentials -- specific regional goals must be realistically designed with a view to known potentials. Regional development and growth alone can do little directly for regional poverty, for example, if the vast majority of the poor are elderly or otherwise unemployable.¹⁵

Attempts to force urban-oriented manufacturing into scattered rural towns would entail gigantic costs, even if technically possible. In this sense, migration will always be part of the social system; jobs cannot be guaranteed at each point on the map.¹⁶

In summary, choices exist regarding the priority of D.R.E.E. development goals relevant for the prairies. Each prairie province contains major slow growth areas; employment opportunities are clearly inadequate in these areas, particularly when employment growth rates and the degree of out-migration are noted. It is clear regional growth alone does not necessarily solve problems in the slow growth areas; programmes must be selected with this in mind. In addition, programmes must be selected which show awareness of the growing concerns about the costs of economic growth. Questions also exist regarding

¹⁵Lithwick, N.H.; Urban Canada, Problems and Prospects (Ottawa: Information Canada, 1970); p. 25. This indeed appears to be the case in many urban areas, and perhaps also in many rural areas.

¹⁶See Ibid, p. 87 for a similar analysis. To state this, however, is not to say that all forms of migration are either necessary or desirable. Although industrialization may not be possible in many small centres, other forms of economic activity may be socially desirable (eg. service production) if full social costs (eg. costs of building new facilities and of abandoning old facilities, etc.) of out-migration are evaluated.

definition of the regions to be developed (eg. each prairie province, the prairie region, etc.). Finally, choices exist regarding the broad goal of the integrated D.R.E.E. approach: to the extent that action is focused to aid slow growth areas, relevance can be seen to Manitoba and Saskatchewan (and rural areas in general). To the extent that the broader goal also exists to equalize opportunities for the creation of balanced and sustaining industrial structures in each Canadian region, relevance can be seen to each prairie province.

4. Prairie Development Strategies

Quite apart from choices relating to goals, choices exist regarding strategies to be adopted. While goal selection is frequently guided by subjective values, selection of strategies to achieve a given set of goals is governed largely by current understanding of processes, mechanisms and structures for implementing goals.¹⁷

4.1 Broad Strategies: Distribution Problems and the Process of Regional Growth

Canadian economic development has been characterized by sequences of resource exports based on foreign market demands; the history of prairie development, based on agricultural and mineral exports,

¹⁷See Lithwick, N.H.: Urban Canada; Part I for a discussion of the relevance of this point to urban policies.

has been consistent with the Canadian experience. In Canada, "As exports continued, domestic incomes rose; markets reached adequate scale, and domestic production, first concentrated in Montreal and then increasingly, because of its more advantageous location, in Toronto, began to replace imports."¹⁸ Through a fortunate sequencing of resource export expansion, the basic conditions for urban development emerged at certain locations in most Canadian regions.

Urban development, however, created a transformation of the economy. Whereas in 1870, over half of economic activity was in the primary sector (and thus non-urban), by the 1920's this proportion had fallen to one-quarter, and today, stands at just over one-tenth.¹⁹ In short, the role of resource exports as the catalyst of growth has been greatly reduced, and self-sustaining urban growth has taken over. Even Canada's foreign trade growth has become largely based on urban located industrial specialization conducted within a continental market place, rather than exclusively on primary product export.²⁰

¹⁸ Ibid; p. 70.

¹⁹ Ibid; p. 73.

²⁰ See Economic Council of Canada, Seventh Annual Review, September, 1970; Chapter 6.

Urban-centred industrialization has occurred simultaneously with a tendency toward depressed conditions in rural areas. This trend has been aggravated by fundamental economic forces which affect the resource industries located in rural areas, eg. the tendency for the food share of consumption to fall as income rises; the rapid rate of labour reducing technological change in agriculture; the capital intensity of mineral resource industries.

These trends have led analysts to argue that regional economic growth today depends on cities rather than on the resource hinterland. To some extent, the D.R.E.E. growth centre strategy reflects this viewpoint:

"In areas where cities have failed to emerge, depressed rural conditions prevail, whether around the coal mines of Nova Scotia, the wood lots of New Brunswick or the rural slums of Eastern Ontario. This lesson must be well understood, for those who argue for industrial development to offset rural depression miss the mark entirely. The problem is lack of cities, not industries. To thrive, industries require the full range of urban amenities such as convenient transportation, skilled labour and ready markets...Because manufacturing industries located in cities, economic growth has been attributed to industries. However...there are overriding economic reasons for their location in urban environments."²¹

²¹Lithwick, N.H., G. Paquet: "Urban Growth and Regional Contagion" in Urban Studies; a Canadian Perspective: Toronto: Methuen Publications, 1968); p. 32. In addition it can be noted that most industries have become market oriented rather than resource oriented.

"To the extent that there are no cities, regions tend to be depressed, except where profitable resource activity persists, such as in northern Ontario, the Prairies and British Columbia."²²

While the above analysis strongly supports a policy of industrial growth within major urban centres, other assumptions frequently associated with the strategy of growth poles or growth centres are not so easily defended. For example, it is not at all clear that urban growth promotes and radiates growth throughout a region's rural areas.²³ Furthermore, as pointed out above, manufacturing and urban areas may indeed appear simultaneously; however, it is not clear which factor is the driving force. Growth strategies could be radically different if the regional problem is lack of cities rather than lack of industries.

²²Ibid; p. 37. Profitable resource activities in the prairies presumably refer primarily to the mineral industries.

²³Ibid; pp. 31 and 32 where authors argue, "The linkages in an urban milieu are entirely intra- and inter-urban": Also, see G. Paquet "Growth Centres and Urban Development". Finally the experience of northern mineral resource development apparently indicates that in the case of this profitable resource activity, growth occurs at points rather than radiating throughout the region. See Hedlin, Menzies, Thompson, Manitoba: An Historical Impact Analysis of Resource Development (Winnipeg, June, 1970).

The above analysis appears to conform with the outline of prairie problems and structures outlined in Chapters 1 and 2 of this report. Industry is concentrated in the metropolitan areas; these areas appear to enjoy some degree of internal self-sustaining growth; disparity problems are clearly most severe in rural areas where the urban influence is comparatively small and where manufacturing remains relatively undeveloped even as compared to rural areas in other parts of Canada.

The above analysis indicates that choices are required regarding development strategies relevant to the most depressed parts of the region. Even if manufacturing growth is utilized for overall job growth in the prairies, the immediate relevance of this strategy to rural problems must be demonstrated. Manufacturing potentials for different urban sized groups require examination. Alternative strategies relevant for rural areas must also be evaluated; at first glance, strategies other than those focusing upon the manufacturing sector would appear to have more potential impact on the depressed areas of the prairies (eg. agriculture and other resource policies, adjustment policies, service industry growth in rural trade centres, consolidation of rural centres to create small urban centres in rural areas).²⁴

²⁴See Manitoba to 1980, Report of the Commission on Targets for Economic Development; (Winnipeg: Manitoba Queen's Printer, 1969), Part Six, Chapters 1 and 2. As regards the impact of urban growth on depressed rural areas, see M.H. Yeates, P.E. Lloyd, Impact of Industrial Incentives; (Department of Energy, Mines and Resources, Paper #44, Ottawa, 1970) p. 38.

4.2 Manufacturing Strategies for Prairie Growth

Ignoring the problems of disparity and distribution between different prairie areas, it is still possible to focus upon a strategy of manufacturing growth (acknowledging that most of this growth will occur in metropolitan centres) in order to increase total regional employment and income. Such a strategy raises a number of questions, of which two appear particularly relevant: a) Which manufacturing industries offer the most potential? b) What policies or tactics are best suited to developing the selected manufacturing industries?

a. Which manufacturing offers most potential?

Various criteria are advanced to help answer this question: "appropriate industry for a given stage of development"; industries with large direct employment; industries with large multiplier impacts on a region, etc.

As regards a "stage of development" viewpoint, the strategy has been suggested of concentrating growth in those industries which are relatively unrepresented (such industries would be either import-substituting or exporting, and would nearly always be unrelated to the region's primary resources).²⁵ In short, this strategy in the prairies would place emphasis upon manufacturing (since it is relatively undeveloped compared to other Canadian regions) and particularly upon secondary (non resource related) manufacturing.

²⁵ See A Strategy for the Economic Development for the Atlantic Region, 1971-1981 (Atlantic Development Council, 1971) Chapters 2 and 9 for a current example of this viewpoint.

It is not at all clear that relatively undeveloped sectors do, however, represent the greatest development potential.

Concentrating upon manufacturing alone, past experience probably indicates only the following as regards standard stages of development: a shift from regional to export (particularly foreign) markets; a shift from labour-intensive to capital-intensive; a shift from light to heavy labour skills; a shift toward increasingly sophisticated technology and management.²⁶ These shifts can generate growth and still be focused within resource related manufacturing. For example, in Quebec after 1935 manufacturing underwent a profound transformation: light manufacturing (Clothing, footwear, textiles, tobacco -- all of which benefited from earlier tariff protection) began to mark time, while the expanding industries were "those that exploit the natural resources of the region on a world scale and for world markets" (eg. hydro-electric energy, minerals, pulp and paper).²⁷ Since 1945, "Quebec manufacturing has turned more and more to industries producing durable consumer goods and production goods, much of the change being directed to the transformation, the treatment, or the increased utilization of the natural resources of the province."²⁸

This report has concluded that the greatest potential for prairie manufacturing development at the present time lies with industries related to the region's strong resource base (eg. livestock,

²⁶ See Andre Raynauld, The Canadian Economic System, Toronto: MacMillan, 1967), Chapter 3.

²⁷ Ibid; p. 66.

²⁸ Ibid; p. 69.

pulp and paper, fruit and vegetable, feedmills, smelting and refining, agricultural implements); in each case, the need is to ensure that skills, technology and management become concentrated within the prairies with efforts directed at increased penetration of export markets. Aside from direct employment created, industries such as livestock processing are additionally attractive because of their strong linkages and local employment multipliers.

In addition, this report has emphasized major potentials within certain secondary manufacturing where a prairie skill base already exists (eg. clothing, furniture, aircraft parts). As argued for resource related opportunities, these industries must show improved skills, management, research, and penetration of export markets.

This report has also outlined other industries where significant growth could be achieved if certain problems are overcome. Some of these fall within the category of secondary manufacturing (eg. shoe factories, carpet mat and rug, motor vehicle manufacturers, paints and varnishes, glass and glass products). Furthermore, some 44 three-digit industries, representing 55 per cent of total prairie manufacturing employment in 1967, have been classified as assured growth prospects (i.e. not requiring special assistance or attention).

Undoubtedly industrial opportunities will emerge that have not been foreseen in this report. Aside from such industries, it is also possible that a strategy could be advocated to attract major growth industries (eg. growing in other regions) which this report has rejected. Industries that could fall within this category are: other rubber industries, miscellaneous textiles, metal rolling, wire products, hardware, railroad rolling stock, electric wire and cable, miscellaneous electrical products, toilet preparations, commercial refrigeration and air conditioning equipment, boat building and repair, small and major electrical appliances. This report could uncover no evidence of significant prairie growth prospects (over 100 job growth) during the next decade for these industries. Without new evidence of such prospects a strategy which focused efforts upon such industries

would presumably represent a major shift in regional development policy -- an attempt perhaps to generate growth even in industries not apparently viable within a region (or not viable for an extremely long time period). Subsidized crown corporations or subsidized private industry would appear likely (or legislated market restrictions). Presumably the goal behind such efforts would be to create similar industrial structures in each Canadian region.

An alternative strategy not explicitly examined in this report would be to deliberately plan development in the prairies of certain new processes or even new industries yet to emerge. Such a strategy could be based upon the observation that many new industries (eg. automobiles at the time of Ford) develop where managerial skills (rather than markets or raw materials) happen to exist. Once established, such industries often stay rooted in their original location, despite analysis which indicates that some other location "would have been theoretically better". Furthermore, once established these industries often enjoy certain economies of scale and special skills which effectively inhibit growth in competing areas. This strategy, which could be complementary to measures suggested in this report, in effect states "We won't compete against established industries or processes in other regions; instead we'll capture the skills and new technology required to capture the emerging industries." It has been argued that part of post-war Japanese industrialization strategy involved such a strategy of looking for "technology gaps" -- advances not being fully exploited in the West.²⁹ Such a strategy might offer potentials for prairie manufacturing; however, to be effective, it is probable that considerable national as well as regional dedication would be required to concentrate such activity in the prairie region.

²⁹ See review of Japan's industrial growth in Time, May 10, 1971 (p. 58). One example in Japan was the use of the oxygen steelmaking process in steel expansion; this process was developed in Austria, but applied most effectively in Japan.

b. What policies will best develop identified manufacturing opportunities?

This report estimates that up to 33,000 manufacturing jobs in the prairies could be directly affected by potential policy actions. In contrast to current practice, however (where added manufacturing growth is promoted by means of capital grants to qualifying firms in each manufacturing sector), this report's analysis strongly suggests the relevance of alternative strategies.

The current policy of regional capital incentive grants available to all manufacturing many indeed act to speed up the development process (rather than to actually create new manufacturing). Within this report's longer perspective of a decade, however, it is not at all clear that such a policy focuses effort to achieve maximum potential change.³⁰

Statistics utilized in this study indicate, for example, that many prairie manufacturing industries sell some 90 per cent of their product within the region and control at least 70 per cent of the relevant prairie market for Canadian manufacturers, eg. dairy factories, feedmills, bakeries, soft drink manufacturers, breweries, printing and publishing, commercial printing, fabricated structural metal, machine shops, concrete product manufacturers, petroleum refineries, etc. To the extent that such industries are indeed successfully tied to local market growth, the development role of assistance grants to them is highly questionable. In short, it would appear that assistance grants should only be available to those manufacturing industries where action is indicated to be required in order to capture new growth opportunities for the prairie region.

Furthermore, the interviews and analysis conducted in this study indicate that capital grants frequently do not meet directly the problem confronting a particular industry (eg. the need to finance foreign market penetration efforts, new skill development, new

³⁰ The evaluation of this strategy given in Impact of Industrial Incentives, dealt with a region that is probably not at all analogous to the prairie situation.

industrial design, added growth of a critical resource, etc.). Government assistance for Canadian manufacturing growth (as administered by the Department of Industry, Trade and Commerce and equivalent provincial departments) takes the form of a wide variety of programmes and services, covering areas such as research, development, design, production and marketing. To the extent that regional manufacturing growth is desired, it would appear that a similar variety of programmes and services rather than a single money payment strategy would be appropriate. (See Chapter 13 for detailed analysis of specific industries.)

This report indicates opportunities where some degree of co-operation between prairie provincial governments seems appropriate. (See introduction to Chapter 13.)

1. The establishment of trading corporations or co-operative ventures to penetrate foreign markets.
2. The examination of industry behaviour with specific reference to the Combines Investigation Act.
3. Establishment of jointly owned Crown Corporations or other possible actions to encourage regional industries with significant linkages.
4. Co-operation in joint submissions to the Federal government, or in joint action to resolve specific problems common to prairie manufacturing.

In addition to the above strategy questions, numerous other areas appear relevant but have not been examined in this study:

1. The rationale behind the designation of specific areas eligible for incentive grants requires examination. If growth will in fact concentrate in prairie metropolitan areas, why not designate entire provinces or the entire region (thereby removing pressures for existing counter-programmes by provinces in non-designated areas)? Given the fact that opportunities and tax

bases are located within provincial administrative frameworks, why should some areas of a wealthy province such as Ontario be eligible for incentives (the "Ontario region" is developed and can provide substantial internal assistance to its own slow growth areas)?

2. Given the fact that most manufacturing in the prairie (as in Canada) is foreign controlled, what impact does this have (if any) on regional development mechanisms and strategies? One recent analysis suggests that the failure of certain regions to achieve more rapid manufacturing growth is due largely to factors affecting the location of branch plants of United States subsidiaries.³¹ Further examination of this analysis seems relevant.
3. Earlier chapters outline numerous areas where the influence of specific factors requires further research (eg. tariffs, freight rates, mobility, linkages, etc.). In addition, continuing evaluation is required of the impact on the prairies resulting from major federal economic policies (eg. monetary and spending policies; tax policies; exchange rate policies; transport and tariff policies; northern development policies).³²
4. Proper evaluation of alternative strategies requires knowledge of inter-regional distribution effects (eg. does aid to prairie manufacturing in fact generate substantial benefits for Central Canadian industries supplying capital goods, industrial materials, services, etc.?) At present, such knowledge is lacking. A fundamental examination is required of inter-regional flows within Canada (money, goods,

³¹Roy, D.M., "Urban Growth and the Concept of Functional Region," in Urban Studies: A Canadian Perspective; p. 63 ff.

³²Specific regional policy implications could be examined regarding arguments for provincial stabilization policy (A. Raynauld, presentation to Senate Committee on Finance and Banking, June 9, 1971) and against federal capital and tax incentives to special industry groups (E. Kierans, "Contribution of the Tax System to Canada's Unemployment and Ownership Problems," paper to Canadian Economics Association, Annual Meeting, St. John's, June 3rd, 1971).

services, people and resources in both the private and public sectors). In addition, research is required to estimate the specific impact within the prairies resulting from growth of different manufacturing industries. Such research could include quantitative evaluation of factors responsible for the region's growth.

5. Conclusions: Impact of Manufacturing Growth Strategy

The D.R.E.E. programme is intended to represent a fully co-ordinated federal initiative to improve employment and general development in Canada's slow growth regions. Although emphasis is placed upon economic growth, action extends into the social and resource development areas.

Within the prairie region, problems of income disparity, serious rural adjustment, and low incomes within the large and growing native community testify to the need for concern about the distributional aspects of economic growth. To the extent that priorities within the D.R.E.E. programme are given solely to gross increases in regional manufacturing jobs, the programme becomes less relevant to many people in the region. Manufacturing is most likely to locate in the large urban or metropolitan centres; manufacturing growth in such areas is unlikely to generate associated growth within the resource and rural areas.

Choices are required regarding development strategies relevant to the most depressed parts of the region. Manufacturing potentials for different sized urban areas require examination. However, in this regard alternative or complementary strategies for rural areas

are probably far more relevant (eg. agriculture and other resource policies, adjustment policies, service industry growth in rural trade centres, consolidation of rural centres to create small urban centres in rural areas, etc.).

Additional areas of choice also exist regarding D.R.E.E. goals. First, it is not clear to what precise Canadian regions the D.R.E.E. commitment is made -- to each prairie province, for example, or to the prairie region. Second, it is not clear what relative importance D.R.E.E. attaches to different measures of performance (eg. unemployment rates, employment growth rates, out-migration rates). Third, programmes must be selected that show awareness of increased concerns about the costs of economic growth.

Assuming that manufacturing growth strategies can be relevant to the problem of generating total job and income growth in the prairies (ignoring any distributional aspects), choices exist as to the best strategies for promoting manufacturing growth.

This report concludes that the greatest potential for prairie manufacturing growth at present lies with industries either related to the region's strong resource base or having an existing strong skill base in the region. It is analyzed that such industries have major opportunities for expansion if skills, management, research and penetration of export markets are improved.

As regards the essential details of a manufacturing growth strategy, this report offers two major points: a) assistance should

be focused only upon those industries where action is indicated to be necessary in order to capture growth opportunities (as compared to making assistance available to all manufacturing); b) a mixture of strategies should be utilized in order to best focus effort upon distinct and different development needs (as compared, for example, to a single-money payment capital incentive strategy). Furthermore, areas of possible co-operative effort between the three prairie provincial governments are outlined, as well as relevant areas for future research.

One major question remains, namely "What would be the impact on the prairies of a manufacturing growth strategy? Would it solve the region's problems?"

As summarized above, it is unlikely that manufacturing growth alone would have a major impact upon the severe disparities as between groups and areas within the prairies.

Ignoring distribution problems, a manufacturing strategy could also be adopted in order to generate total prairie employment and income growth. However, despite significant growth, manufacturing opportunities outlined in this report would probably not result in radical changes to the region's overall employment growth during the next decade.

As outlined in Chapter 2, the manufacturing sector in the prairies has remained relatively smaller than the manufacturing sectors located in each other Canadian region. As outlined in

Chapter 12, even if all potential growth discussed in this report was achieved, in 1981 manufacturing would continue to account for a smaller share of the total labour force in the prairies than in any other Canadian region. Furthermore, analysis presented in Chapter 12 also indicates that potential manufacturing opportunities would be unlikely to result in even natural rates of prairie population increase during the next decade. While longer term results might be more significant, it must be noted that the analysis is conducted at the regional level. Current trends indicate that, within the region, Alberta would experience net in-migration of people while Manitoba and Saskatchewan would experience net out-migration. This report's analysis of manufacturing opportunities provides no indication that a manufacturing growth strategy would change these trends during the next decade.

In summary, it is not at all clear that regional development of prairie areas should focus primarily upon a strategy of manufacturing growth. Such a strategy would deal inadequately with regional distribution and disparity problems; it would also probably not generate startling aggregate growth within the next decade. Alternative strategies relevant for examination include: policies to stimulate tourism; private service growth; reallocation of federal service employment; growth of public and private services in rural growth centres; alternative resource growth and adjustment policies. It is also possible, of course, to examine the possible effects more

radical measures than those examined in this report, eg. major legislation and commitment of funds to shift manufacturing growth away from fast growth and into slow growth regions; major changes in national transport or export policy designed to promote growth in slow growth regions.

As noted in this report, major choices exist regarding the broad goals of federal initiatives such as D.R.E.E. To the extent that action is focused to aid slow growth areas, direct relevance can be seen to Manitoba and Saskatchewan (and rural areas in general). To the extent that a broader goal also exists to equalize opportunities for the creation of a balanced and sustaining industrial structure in each Canadian region, relevance can be seen to each prairie province.

But, as it is hoped that this report has also indicated, major choices and questions regarding strategy remain to be evaluated, assuming that broad consensus can be reached as to the appropriate goals for regional development within a large and regionally diverse federal state.

