

# **WESTERN ECONOMIC REVIEW**



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Cover Photograph by  
Candice Hammock

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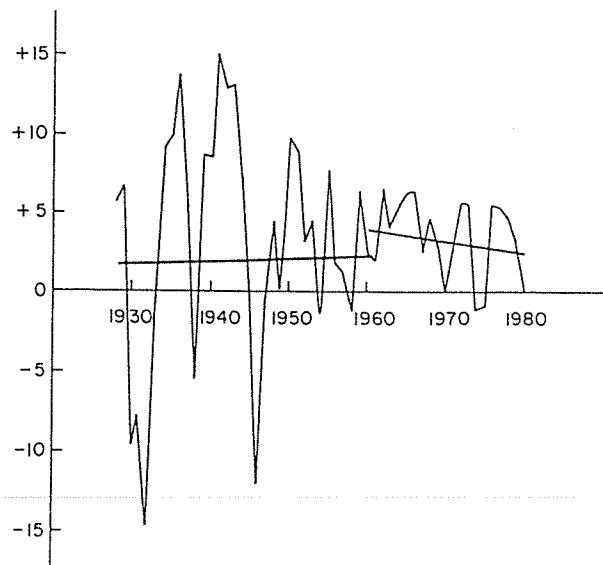
## WHAT HAS HAPPENED TO ECONOMIC GROWTH?

### 1.0 Introduction

Frequently, the attention of economic analysts, government and the media, concentrates upon very recent developments in the economy, with comparatively little discussion of their historical context. Some appear to feel that any economic fact older than a year is irrelevant. Yet, without some perspective, it is exceedingly difficult to appraise the course of the economy.

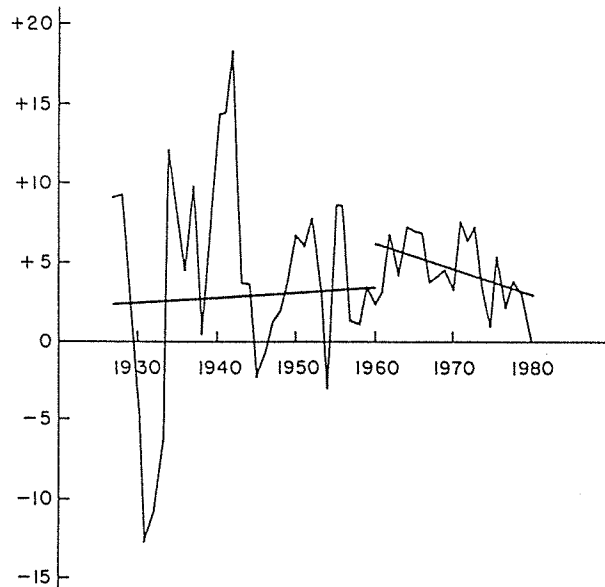
An important and widely used measure of economic well-being is, of course, the gross national product. Quarterly changes in real GNP are often taken as harbingers of the future. A widely accepted definition of recession is two consecutive quarters of negative real GNP. Rarely is this series examined in any detail over a prolonged period of time. For both the United States and Canada, the time series that results for year-to-year changes in real GNP is intriguing indeed.

Figure 1  
Real Gross National Product  
(Year-to-Year Percent Change)  
United States, 1926-1980



Source: 18,19

Figure 2  
Real Gross National Product  
(Year-to-Year Percent Change)  
Canada, 1926-1980



Source: 12

One feature emerges immediately from these time series. The year-to-year change in real gross national product has apparently dampened dramatically over the period 1927-1980. Not only has the amplitude of both series declined, but the cycle appears to return to 'normal' more rapidly. Deviations from the trend are less severe and less prolonged in recent years than in the pre-1950 era.

## 2.0 Cyclical Instability In Canada And The U.S. - Conjectures

Although rigorous hypothesis testing is not possible here, some conjectures can be made about the possible causes for this pattern.

First, and probably most important, is the vastly greater role played by government in both economies over the past fifty years. Evidence for this is provided in Table 1.

Table 1  
Government Expenditures (including Transfers)  
as a Percent of GNP

	Canada	United States
1980	41.7	36.4
1970	36.4	33.9
1960	29.7	30.0
1950	22.1	24.7
1930	19.8*	13.2*

\*estimated

Source: 4, 18, 19

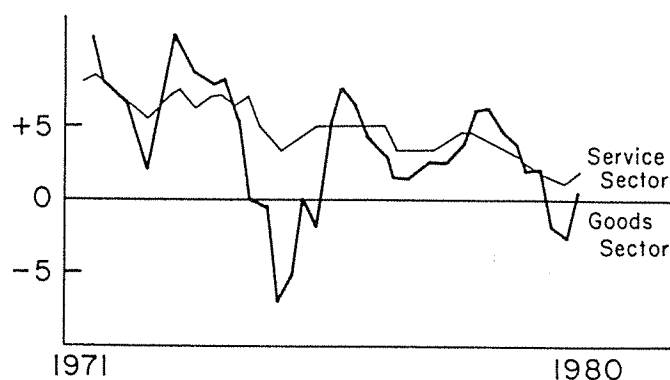
Some might be tempted to argue that the dampening of the business cycle is evidence that Keynesian-type fiscal and monetary policies do in fact work, but this idea may be premature. There is evidence (some provided by Milton Friedman) which demonstrates that government intervention in the economy is frequently mis-timed, with stimulus applied just prior to inflationary expansion, and restraint coincidental with recession. On the other hand, automatic stabilizers such as unemployment insurance and other transfers counteract these cycles and their timing is very close.

Another important reason for the greater stability of the two economies (recall what is plotted in Figure 1 and 2 is changes in the rate of growth), may be in the reduced role that agriculture and resources play in industrialized economies. Typically, and especially for a 'small open economy' such reliance exposes it to the boom-bust cycle that tends to characterize resources sold into international markets. Mineral and grain prices all are more volatile than manufacturing prices. This certainly is true for the United States. Canada still relies very heavily upon resource exports although over the past century these have diversified considerably, implying that no one price series dominates. This resource diversification may in itself contribute to greater stability.

Both economies, however, have undergone rapid change with respect to service sector employment. In 1927, barely 20% of the labour force was employed in the service sector (government, entertainment, real estate, retail sales, financial services, education, medical care, etc.) while in 1980, almost 60% of all workers were employed in these industries. An important feature of the service sector is that its output is less volatile than the goods producing sector (see Figure 3), and investment in these activities is very much a function of population growth and demographic

change and growth of real incomes, all of which are quite stable.

Figure 3  
Real Domestic Product  
(Year to Year Change)  
Canada



Source: 4

A third possible explanation is somewhat more technical, and lies in the recovery mechanism of an economic system. Compared to the trauma of the Great Depression, when a coincidence of financial and demographic events produced a sharp and prolonged downturn in national income, and compared to the immediate post World War II period when inflation eroded incomes, the post 1960 era has been relatively tranquil. Although recent events may augur change, even the OPEC price-shocks and commodity price inflations of the 1973-75 period have not produced sharply prolonged downturns. They may have other serious impacts though, as shown below.

Certainly a number of other explanations are possible, but the possibility that we are living in times of relative economic tranquility and stability is surprising, especially given the tenor of recent economic comment. Some would no doubt desire less stability in exchange for greater growth. Aside from the lower volatility exhibited by both the U.S. and Canadian economies, another feature of the first two figures is interesting. Figures 1 and 2 also show the trend lines on the year-to-year change in real GNP. (Note, trend lines on growth rates show the rate of acceleration. An

economy which is growing at a constant rate would have a trend line on the rate of change in real GNP that was horizontal and above the zero percentage line (X axis). Acceleration is shown by a positive slope on the trendline, while deceleration has a negative slope).

From 1927 until about 1960, both economies show accelerating growth rates; since 1960, both the U.S. and Canadian economies have been marked by a degree of deceleration. There is continued expansion, but the rate is declining. Since 1970, the Canadian economy has also decelerated faster than the U.S. economy, and possibly faster than any western (OECD) economy.

These trends of deceleration are common to major OECD economies during the post 1950 era, as indicated by Table 2.

Table 2  
Average Rates of Growth for OECD Countries

1927 - 1960	Average Growth
U.S.A.	2.7
Canada	3.6
1960 - 1970	
Japan	11.5
France	5.7
Italy	5.6
Germany	5.1
Canada	5.0
U.S.A.	3.9
U.K.	2.6
1971 - 1980	
Japan	5.2
Canada	4.1
Germany	3.7
France	3.3
U.S.A.	3.3
Italy	3.1
U.K.	1.8
1975 - 1980	
Japan	4.4
Italy	3.2
Germany	3.0
France	2.7
Canada	2.7
U.S.A.	2.1
U.K.	1.3

Real year-to-year percentage change in gross national product.

Source: 17

An interesting question arises concerning the various regions of Canada, and how their rates of growth have evolved over the past twenty years. It is difficult to obtain very long time series of growth rates in real gross domestic product for the provinces, but the period from 1962



to 1979 does support the above conclusion with one notable exception. Table 3 shows the growth rate for the four western Canadian provinces and Ontario. All have decelerating economies aside from Alberta, and possibly Saskatchewan.

Table 3  
Average Rates of Growth for Selected Provinces  
(Year to Year Percentage Change in Real GDP)

	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1962 - 79	4.7	4.0	6.7	7.7	6.7
1970 - 79	3.5	3.3	6.8	9.0	6.6
1974 - 79	2.4	2.0	7.7	9.9	4.2

Source: 14

It is important not to overstate these indicators. What is being demonstrated is a long term trend of declining growth rates in various OECD countries (Canada and the U.S. included), with one clear exception: the western Canadian provinces. None of these economies has begun to contract. Furthermore, these trends are common to all OECD countries, although only the most prominent are shown.

### 3.0 Deceleration in Growth: Some Possible Reasons

Aside from those who view economic growth with outright hostility, most will regard these trends with concern. It is more difficult to identify the factors responsible for deceleration and many explanations abound. Undoubtedly several forces may be at work, some independent, others interdependent.

Some analysts feel that declining productivity was the economic malaise of the seventies. Productivity is a term easily abused. Most economists accept that the source of productivity is investment in capital (machines and technology) and new techniques, where technique means the broad array of management and organizational practice. Often the discussion centres on the declining labour productivity ratios (output per worker hour) and fails to address other aspects such as capital productivity.

Related to this point is recent evidence computed for the U.S. which shows massive obsolescence in the capital stock. A recent Brookings Bulletin article by Martin Bailey

argues that the real value (inflation adjusted) of the capital stock declined abruptly during the seventies. For Canada, it is interesting to note that the real value of investment also declined throughout the seventies. There is certainly some merit to arguments that failures in the collective bargaining process which characterized the 1970's in Canada are important factors in declining growth rates. However, actual work time lost through strikes and lockouts averaged about 1/2% of the total time on the job and during the period of peak labour unrest such as 1975 rarely rose above 1%. Of course, to the extent that strikes were in 'key' areas, such as the transport and communications industry (Post Office), average work time lost figures greatly understate the true impact.

Another explanation may be that not only is government spending more as a percentage of GNP, but that its spending patterns have changed. Some argue that less is spent on direct goods and services and on capital formation (investment in roads, buildings, nuclear reactors, etc.) and more on subsidies and transfer payments. Some support to this position is provided in Table 4, but the degree of structural change is probably not sufficient to explain recent declines.

Table 4  
Components of Government Spending  
CANADA  
(Percent)

	Goods and Services	Defence	Transfers to Persons	Interest on Debt	Subsidies	Other
1980	47.1	4.1	25.0	12.4	5.6	5.8
1970	53.9	5.9	22.4	10.4	2.4	5.0
1960	46.4	13.6	27.2	9.6	2.8	.4
1950	47.3	12.1	25.1	13.3	1.6	.6

Includes Canadian and Quebec Pension Plans, Transfers to Non-Residents and Capital Assistance

Source: 4

Advocates of the 'limits-to-growth' school would undoubtedly cite the commodity shortages of the seventies and fragility of the 'spaceship' earth as fundamental forces in economic contraction. At times, these arguments have an evangelical flavour but there are important elements of truth to the position. Without question, the seventies have witnessed the coincidence of a number of mini-crises due to

oil and commodity price inflation. Neo-Malthusian predictions about population pressure and allegations that the earth is running out of critical resources ranging from oil to water all are current, and may figure in the stagnation of the international economy.

Many have cited over-regulation as an important factor contributing to inflation and declining productivity, and some efforts are being made to curtail a broad range of interventions. Coincidental with rapid economic growth, industrialization and rapid urbanization is the perceived need to regulate growth. Perhaps these elementary time series and trend lines are indications of the trade-off that is alleged to exist between economic efficiency and economic equity.

Finally, some have pointed to the 'zero-sum game' of modern economies where individuals, perceiving that government cannot act to protect their interests, form lobby groups capable of exacting significant short term gains. The countervailing power theory, advanced by Galbraith over thirty years ago to explain pluralistic liberalism, may in fact be a description of how individual groups can, acting in their own self interest, convert positive but variable sum games (where, over time, economic growth makes everyone better-off, albeit some more so than others), to variable sum games where on average no one wins. A bleak question facing modern planners is whether the economy is degrading to a point where decline is the norm.

For Canada, there is ample evidence to suggest that this latter situation may be possible. The unremarkable record in collective bargaining, regional interests, pressures from corporate lobby groups, the very real need to distribute economic opportunity to all segments of the population, in addition to the difficulties facing the world economy and financial markets, may all be exacting a toll on economic growth. If the Canadian economy is indeed entering an era of zero growth or even contraction, many of the aims of special interest groups to achieve a greater portion of economic opportunity and reward may be frustrated. Indeed, a period of contraction could become self reinforcing, and exacerbate regional and lobby group pressures, which in turn may jeopardize overall growth even further.

## II

### STRUCTURE AND EVOLUTION OF THE PRAIRIE ECONOMY

#### 1.0 Introduction

The prairie economy, consisting of Manitoba, Alberta and Saskatchewan, has undergone significant transformation during the twentieth century. The growth and expansion of Alberta is well known, but other changes in the composition of output and the structure of the workforce are less well appreciated. Certainly the persistent belief that these economies remain heavily dependent upon agriculture is quite misleading. Likewise the policy of targeting 'key' manufacturing areas as essential for economic growth may be misplaced for the prairie region.

Controversy also exists as to the true strength of the prairie economy. Will the resource boom enable this region to become a locus of sustained economic growth? To some, high technology is the answer, while others suggest it is already too late to climb aboard the micro-chip bandwagon. Behind much of the discussion is a nagging doubt that resources can overcome traditional barriers to the development of secondary industry in the west; namely a relatively sparse population, remoteness from markets, and perhaps, discrimination in a variety of non-production costs of manufacturing (such as freight rates).

This article reviews the past seventy years of economic development on the Prairies with a view to shedding partial light on these questions. First, an historical summary of development from 1910 to 1951 is briefly presented. Then the period 1961 to the present is examined in greater detail. During this period the prairie economy underwent rapid change, which even yet is not fully appreciated or recognized. Finally, investment, as a precursor for change, is analyzed to try and detect the probable course of economic development over the remaining half of the twentieth century.

A tentative conclusion of this article is that there is no compelling evidence to suggest that the prairie economy will become the locus of significant secondary manufacturing activity during the next quarter century. The hope that this region will be able to compete with Japan, the United States or even southern Ontario in high technology, will not be realized without very considerable investment, and to a degree, sheer luck. The major obstacles to rapid growth in manufacturing, such as small market size and remoteness from markets, will continue to beset manufacturers in the west. Certainly international events which are hampering Canadian

manufacturers in general will impede secondary industries on the prairies, but the new glamour industries based upon the 'chip' are not likely to find western Canada economically attractive, compared to Ontario.

Although revenues from oil, uranium and potash provide very high income and significant investment incentives, these are very sensitive to developments well outside the scope of regional policy. Much of the current economic activity in western Canada is dependent on international economic events, and national policy.

## 2.0 The Concept of Economic Structure and Evolution

Before plunging into the data, some methodological definition is in order.

First, designating certain epochs and identifying trends when data are usually made available on a calendar year basis, can frustrate clear analysis of economic events. Data availability is usually determined by administrative convenience rather than by functional economic significance. For example, in the first half of this century the census of the population and the census of manufactures provided crude benchmarks every decade. Data collected during this time period, which included two World Wars and the Great Depression, must always be viewed with discipline and a certain circumspection.

Aside from the distortions imparted by arbitrary temporal divisions, problems are also created by changing definitions and classifications. Statistical offices usually attempt to incorporate the latest methodology, which is laudable of course, but can also create grave difficulties when one wishes to look at trends over time. New industries and regions call forth new classifications, especially in a growing economy; all of this can obscure important features on the economic landscape.

Finally, while statisticians have attempted to create unified regional statistical tables, this effort is incomplete, resulting in masses of disjointed data, sometimes capable of supporting a variety of interpretations. The data presented below represent the results of a fairly extensive effort to collect and unify the publicly available information to permit some broad generalizations. In some cases, omissions from the record have necessitated 'reasonable imputations' and assumptions. In an attempt to keep the discussion from being bogged in a morass of detail, only the pertinent data are presented. An appendix provides more detailed data which are available in full from the Institute.

Measurement of 'economic structure' is open to a wide variety of interpretations. Many use the term structure very strictly to mean analyses which utilize techniques such as input-output tables, where patterns of purchases and sales provide a detailed picture of inter-industry relationships. Input-output tables are expensive and difficult to construct, requiring assumptions such as constant prices, and a constant, linear technology (the scale of production having no bearing on the input mix) and are generally not useful for looking at trends over time. Furthermore, in an 'open' economy, such as that of the prairie region, external trade to and from the rest of Canada and the world tends to dominate economic activity, many of the transactions between firms on the Prairies and other areas are not recorded in sufficient detail.

Structure can also be interpreted more loosely. Relatively simple measurements can be taken of the proportion of economic activity or income which is generated by well-defined industries. Common measures of economic activity are value added, gross domestic product, and occupational structure. The first two support the analysis of structure by allowing an examination of the composition output, while the last measures relative proportions of the major input for various sectors of the economy.

Since input-output tables are non-existent for the period prior to 1960, and even post-1960, regional tables are experimental, these looser measures of structure are employed. In this article, structure will be measured by percentage value added and percentage labour force by sector.

Evolution, once again a potentially slippery term, quite simply measures changes in structure. There is a certain danger in misinterpreting evolution to be progress, where increased industrialization is often assumed to be a desirable feature of economy. Embodied in this notion of evolution or progress is manufacturing fetishism, where the service sector, which tends to produce few tangible products (except possibly reams of paper), is undervalued. Certainly, regional economic planners tend to ignore the possibilities inherent in the service sector for promoting growth and economic welfare. Whereas their choice would now be some form of high technology manufacturing plant, in the 1960's most provincial ministers of finance or economic development coveted steel mills.

What follows is largely a descriptive exercise, intended to trace the main features of prairie economic development with a view to providing some broad, and quite probably unexceptional views of both the history and probable course of the prairie economy. To our knowledge, there have been relatively few systematic attempts to unify the disparate

statistics which exist. Those which have been made, such as this one, continue to be confounded by data and methodological barriers.

### 3.0 An Historical Introduction To The Prairie Economy

It is a truism to state that the development of the prairie economy in the early twentieth century was closely tied to developments in the world grain trade. In 1896, international wheat prices rose sharply, coincidental with sharp reductions in ocean freight rates, increasing land prices in the United States, and the introduction of new, early maturing, high yield grains suitable to the Canadian climate and geography. Impelled also by the National Policy, conditions were ripe for a 'wheat boom' which laid the foundation for economic growth in the first half of the twentieth century.

Expansion was extremely rapid by any standard of comparison. From 1896-1916, population quintupled to 2 million, wheat production grew twelvefold, and the value of wheat exports increased by a factor of 30. This dramatic growth induced the rapid introduction of certain select, but very important services. Total track miles of railway, for example, increased three-fold during this period, although in retrospect, there was considerable overbuilding and waste. The new population also required many services. An important feature of early prairie development was a well developed mail order retail business. Financial and brokerage institutions also arose to service the wheat economy and accelerated the growth of Winnipeg.

By 1911, Winnipeg had 40% of the Manitoba population predominantly employed in the grain trade or in ancilliary services such as agricultural implements, construction materials, and finance. Winnipeg also quickly became an important regional manufacturing centre, especially in food processing. However, despite the rapid increase in prairie population, its dispersion throughout the Prairies, the relatively small size of urban centres compared to cities in the east, and their remoteness from both markets and resources, meant manufacturing never really could compete against the comparative advantages of the southern Ontario region.

An early trend, readily apparent at this stage, was the relative diversification of the Manitoban economy. The opening of the Crow's Nest Pass, and the access to coal was the first stage of the resource exploitation which would later become the basis for Alberta's growth. Agriculture in Alberta also tended to diversify, exploiting the climate and geography to create viable ranching and non-grain crops

farming. At the end of the First World War, Saskatchewan was the only prairie province heavily dependent upon wheat and other grains for its gross domestic product.

Between 1921 and 1926, grain prices slumped, and the western expansion stalled. Variations in grain freight rates also created uncertainty among farmers, which was only removed with the Statutory Rate Act of 1925, returning to the 1897 formula struck as the quid pro quo in the financing of the Crow's Nest Pass railway. Lagging wheat markets encouraged further diversification in Manitoba manufacturing, and the development of that province began to parallel that of Ontario. Mining, pulp and paper, and electric power production became increasingly important, and by 1926, over 70% of total output for Manitoba was in non-agricultural activities, compared to 54% for Alberta and 38% for Saskatchewan. Although non-agricultural activities increased, the Prairies remained predominantly a wheat economy.

Table 1  
The Wheat Economy - Selected Indicators

Year	Steam Railway Milage (Track Miles)	Population (Thousands)	Acres in Wheat Production	Average Yield	Total Wheat Production (Thousands of Bushels)
1900	4,183	420	2,495	9.4	23,457
1906	5,966	809	5,624	16.3	91,855
1911	8,081	1,327	9,990	20.9	208,697
1916	13,582	1,698	14,363	16.9	242,314
1921	15,270	1,955	22,181	12.6	280,098
1926	16,612	2,068	21,805	17.5	380,765
1931	18,316	2,354	25,586	11.8	301,181
1936	19,171	2,414	24,837	8.1	202,000
1941	19,405	2,363	23,731	16.6	393,000

Source: 1, 3, 6

After 1926, world grain prices recovered, and the western economy responded quickly in a short-lived expansion that was snuffed out by the crash of 1929, and the droughts of 1932-35. Grain prices collapsed and the Canadian government responded to the international depression with protectionism. These developments completely stalled the prairie economy until well after the Second World War, and although there was a modest recovery in growth from 1940, manpower shortages, especially in agriculture, limited these trends.

During this period, the most important event in the prairie economy, and perhaps even in Confederation, was the discovery of the Leduc oilfield in 1947. New fields were



subsequently discovered in Statler (1949), Wizard Lake (1951), and Pembina (1954), to propel Alberta to the fore in economic growth.

Between 1941 and 1961, the Saskatchewan economy continued to exploit grain production, with some modest diversification into resources such as potash. The contrast between the developments in Manitoba and Alberta during this period is truly startling. Manitoba's efforts to continue developing its manufacturing base centred on Winnipeg, which serviced agriculture. The expansion of Winnipeg, which was at its zenith in 1919, was hindered by continued slow growth in population and in the wheat economy. Technological developments in transportation, such as the Diesel locomotive, dramatically altered the need for labour to service the railway. Changes in storage and shipping technology, along with grain freight rates which favoured the movement of livestock directly to the east, all conspired against the meatpacking industries in Manitoba. The advent of air and passenger freight, and competition from trucking also acted to create transportation lines which bypassed the city.

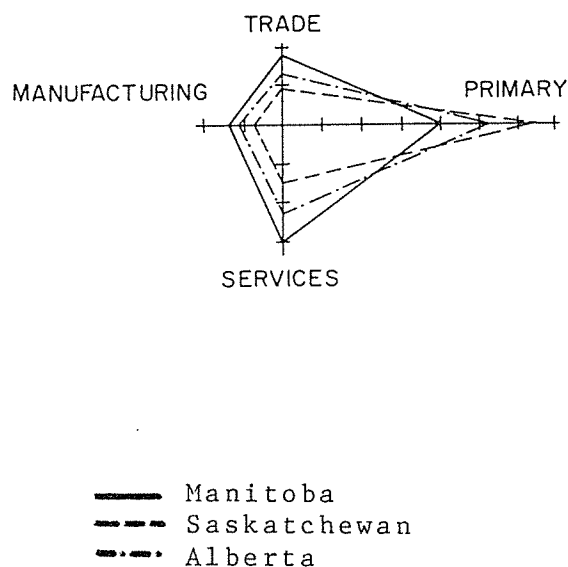
In contrast, both Calgary and Edmonton grew in response to the needs to service the oil economy. Construction and finance especially were favoured. In the late fifties, population in Alberta began a sustained growth, and this, coupled with demand from the oil and gas exploration and production, encouraged a variety of manufacturing and service industries, and rapid increases in investment activity.

Saskatchewan experienced steady out-migration, and dramatic rural to urban shifts in its population. Many small rural centres, so crucial to servicing the wheat trade in an earlier era, became redundant as farms took advantage of new technology in cultivation and harvesting, stable prices for grain, and rural electrification. Farm size increased and regional centres which could provide factory service to agricultural rolling stock, and food variety for the family freezer, grew at the expense of the local community. Despite some significant oil and gas discoveries, Saskatchewan persisted as a predominantly agricultural economy, providing substantial incomes for those who could take advantage of increased economies of scale and the new technology in farming.

The transformations in the prairie economy during the 1911-51 period, can be seen by examining the proportion of the labour force engaged in various activities. Figure 1 shows the percentage of the labour force employed in each of four sectors. Trade, finance, transportation and communication are collected into the vertical axis (up), while services and clerical work comprise the vertical axis (down). Agricultural and primary resource extraction (including min-

ing and oil wells), is depicted on the horizontal axis (right), while manufacturing and construction activity is shown on the horizontal axis (left). Each division on these axes represents 10% of the total labour force, and the sum of the intersections on each axis for a given province roughly equals 100%. For example, in 1911, Manitoba had 40% of the labour force employed in agricultural activity, 17% in trade and related areas, 30% in services, and about 13% in manufacturing.

Figure 1  
Percentage of Total Labour Force for the  
Three Prairie Provinces by Sector  
(1911)



Note: Primary includes agriculture and resource extraction (including oil), Manufacturing includes construction, Trade includes finance, transportation and communication, while Services are compiled as a residual.

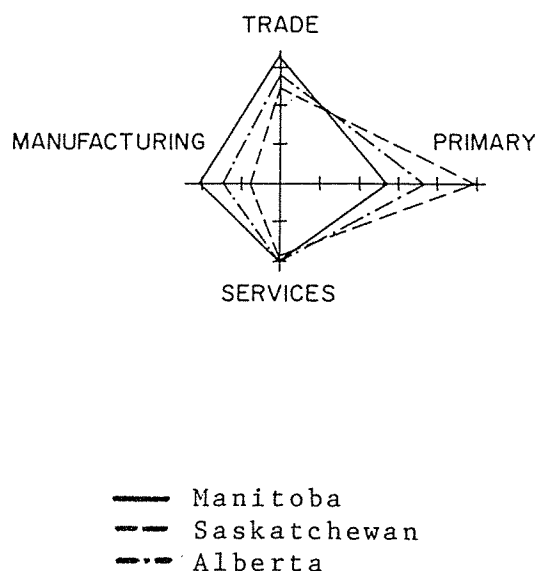
Source: 5, 20

In 1911, the predominance of the wheat economy is readily apparent, with almost 60% of the Saskatchewan labour force engaged in agricultural or primary resource extraction activity. Manitoba portrays a more diversified economy, with some 13% of its workforce employed in manufacturing and construction, a proportionately greater concentration in the

service sector (30% of the workforce), and 17% in trade and related areas.

By 1951, significant change in the occupational structure of the prairie provinces had occurred, as is apparent from Figure 2. All three economies are retreating from the wheat economy, with greater concentration in manufacturing and trade. Interestingly, service sector occupations have not grown as rapidly, and for Manitoba and Alberta, tend to occupy a lower percentage of the total workforce than in 1911.

Figure 2  
Percentage of Total Labour Force  
for the Three Prairie Provinces by Sector  
(1951)



Note: Primary includes agriculture and resource extraction (including oil), Manufacturing includes construction, Trade includes finance, transportation and communication, while Services are compiled as a residual.

Source: 5, 20

Similar evidence is supplied by the composition of value added as shown below in Table 1, which shows a number of important changes in the national and prairie economies. First, with respect to manufacturing, Canada, Ontario, and the Prairies show large gains in manufacturing value added as a share of gross domestic product, although the increase

is most rapid for the prairie region, (58% compared to 40% for Ontario).

Table 1  
Percent Value Added of Gross Domestic Product

	1910	1951
Manufacturing (1)		
Canada	34.2	40.5
Ontario	36.2	50.7
Prairies	11.2	17.7
Agriculture (2)		
Canada	30.3	11.9
Ontario	31.0	8.4
Prairies	44.0	34.6
Mining (3)		
Canada	2.9	8.5
Ontario	2.3	8.3
Prairies	2.3	8.2
Services (4)		
Canada	36.4	39.3
Ontario	32.9	37.2
Prairies	36.9	37.2

Notes:

- (1) Includes construction.
- (2) Includes forestry, fishing and trapping.
- (3) Includes oil wells.
- (4) Services are a residual.

Source: 11

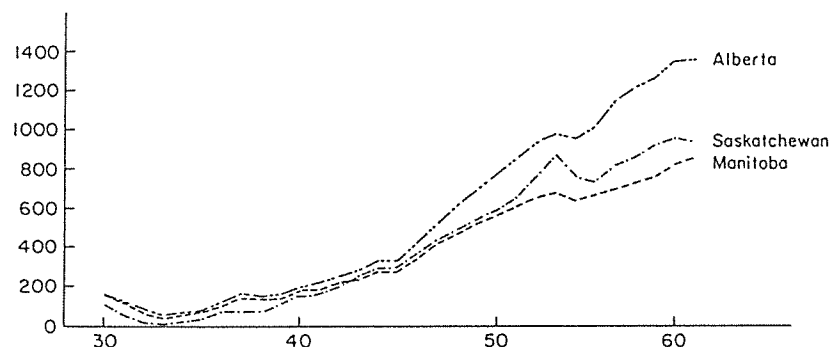
The prairie region retreated more slowly from agricultural and primary resources (mining and oil excluded), than Canada or Ontario. Both service and mining expanded their contribution to gross domestic product for all areas.

The postwar era began with all three prairie provinces still very dependent on agricultural and primary resource extraction. Manitoba was the most diversified, with strong manufacturing and trade related industries. Saskatchewan's grain economy was consolidating as new technology began to emerge, allowing producers to exploit important economies of scale in cultivation. Alberta was poised for the first oil boom.

Finally, it is interesting to try and trace the relative positions of the three economies throughout this 40 year period. One convenient benchmark is the volume of retail trade as shown in Figure 3. Retail trade was roughly equal for Manitoba and Saskatchewan in 1923. The Great Depression

is clearly indicated, but has less impact on Manitoba than on either Saskatchewan or Alberta, thus demonstrating the well established resistance of that economy to cyclical events. By the Second World War, Alberta had superseded the other two provinces in volume of retail trade.

Figure 3  
Retail Trade on the Prairies  
1930-1961



Source: 20

#### 4.0 Postwar Developments in the Prairie Economy 1961-1981

As mentioned above, using a particular date to delimit an epoch can be artificial. However, the period of 1961-1981 marks an era when statistics are more consistently collected and published and which is not traumatized by major international events such as world wars or depression, all of which distort any attempts to appreciate changes in economic structure. Finally, it also signals the explosive growth in Alberta, and to a lesser extent, the recent growth in the Saskatchewan economy.

As Table 2 shows, the Canadian economy has been marked by a steady decline in the contribution to gross domestic product made by manufacturing. While the period of 1911 to 1951 witnessed increased proportion of income from manufacturing for all regions, subsequently there has been a steady decline, no doubt due to the declining importance of manufacturing for the Ontario economy, which bulks large in the national data.

Table 2  
Value Added as a Percentage GDP

	1961	1971	1977
Manufacturing (1)			
Canada	36.6	34.1	30.6
Ontario	41.1	39.7	37.6
Prairies	23.9	20.9	22.4
Agriculture (2)			
Canada	6.0	3.7	5.4
Ontario	4.0	2.0	2.2
Prairies	12.5	9.4	7.4
Mining (3)			
Canada	4.4	4.0	6.3
Ontario	3.3	1.8	1.7
Prairies	11.2	12.9	21.9
Services (4)			
Canada	52.9	58.1	57.4
Ontario	52.9	56.5	58.5
Prairies	52.3	56.8	48.4

Notes:

(1) Includes construction and electric power.

(2) Includes forestry, fishing and trapping.

(3) Includes oil wells.

(4) Services are a residual.

Source: 4, 11

The prairie economy obtained more of its gross domestic product from manufacturing between 1951-1961, induced by population expansion in Alberta, primary resource development in Saskatchewan, accelerated mining and pulp and paper development in Manitoba, and of course, the requirements of the oil economy. Between 1961 and 1971, manufacturing declined a little in importance for the Prairies, in step with the national economy. However, most recently there appears to be a reversal.

Agriculture, as indicated both by value added and labour force data, is declining in importance for all areas, including the Prairies. Agriculture has contributed less than 10% of annual gross domestic product to the prairie economy for the past ten years. It is useful to remember that food processing, fertilizers and agricultural implements, all dependent upon the productivity of agriculture, are classed as manufacturing activities. Also important is the fact that these industries are turning increasingly to U.S. and world markets and are less dependent upon prairie agriculture for sources of supply or markets. As farm size has increased, labour has been displaced in favour of capital intensive techniques, encouraging the growth of these areas of manufacturing. Labour force data have a tendency to underplay the remaining important role of farming on the Prairies.

Of course, the most important post-war development in the occupational structure of the national and regional economies is the dramatic growth of service sector employment. Increased population, and more importantly, increased affluence has prompted vastly greater demand for the broad spectrum of services demanded by modern consumers. It is the service sector comprised of medical, educational and cultural activities that is now responsible for 60% of employment and over 50% of value added as shown in Table 2 and Figures 4a-c below.

Before examining the three individual provinces, it is worth noting that manufacturing, in terms of both labour force and value added, is dwindling in importance for the national economy and Ontario. From 1961-1971, the Prairies seemed to follow national trends, but recently a slight reversal can be noted (Table 2). As Table 3 shows, the contribution by the Prairies towards national value added in manufacturing has steadily increased. Some care must be taken not to exaggerate the importance of these trends, as they may be merely the result of expanding population, and the possibly transitory demands of a rapidly expanding primary resource sector. One conjecture, which runs counter to this, is that the oil economy does provide a base for expanded manufacturing, possibly through providing a security of energy supply.

Figure 4a  
1961  
Percentage of Total Labour Force

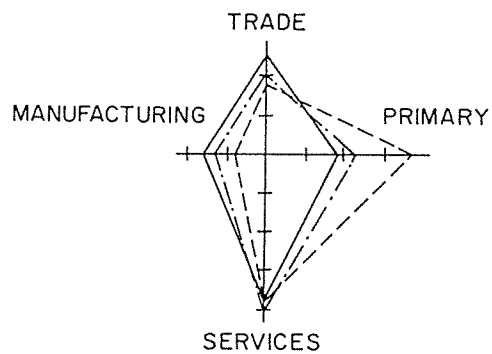
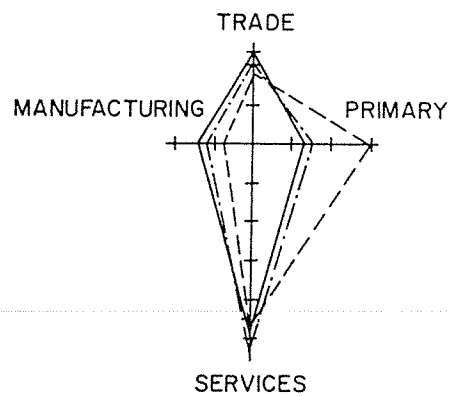


Figure 4b  
1971  
Percentage of Total Labour Force





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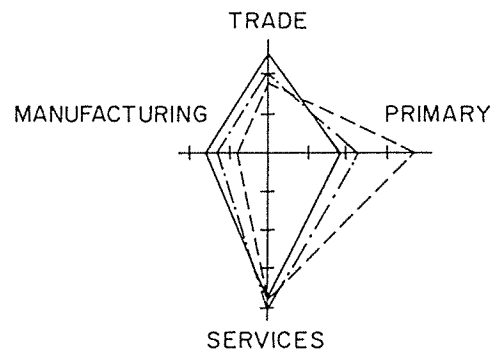


Figure 4b  
1971  
Percentage of Total Labour Force

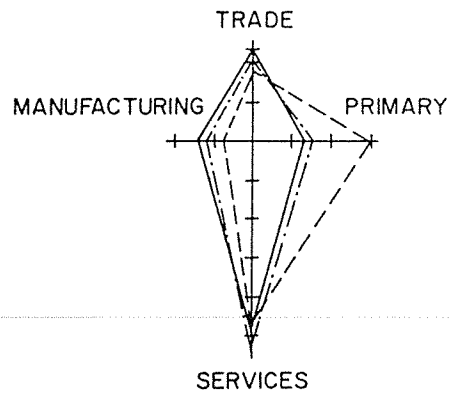
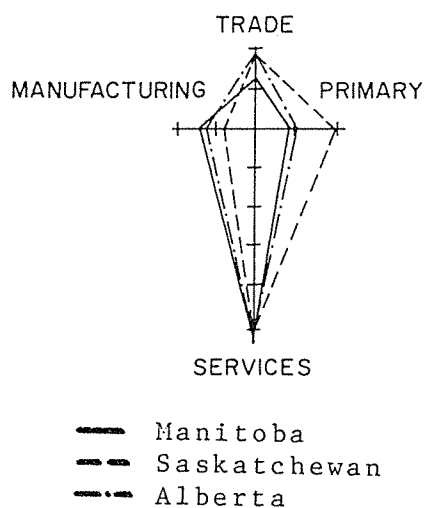


Figure 4c  
1980  
Percentage of Total Labour Force



Note: Primary includes agriculture and resource extraction (including oil), Manufacturing includes construction, Trade includes finance, transportation and communication, while Services are compiled as a residual.

Source: 11

This is speculative and the evidence for a pronounced shift in the locus of manufacturing activity remains ambiguous at best.

Table 3  
Manufacturing Value Added as a Percentage of Total Output  
(Prairie Region)

1911	1951	1961	1971	1977
5.9	5.7	7.0	7.2	7.9

Source: 11

Turning now to the three prairie provinces, Figures 4a-c show that the expansion of the service sector is very startling. With respect to occupational structure, there is considerable similarity between the three. Manitoba still has a greater percentage of its workforce engaged in manufacturing, although this has contracted over the past twenty years, while Alberta and Saskatchewan have increased their share. Manitoba also has a much smaller trade sector in 1980 compared to the other two provinces.

### 5.0 Investment Trends on the Prairies

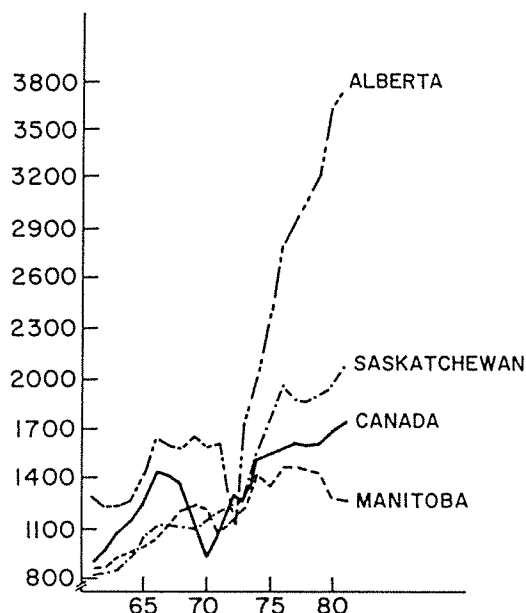
Investment spending (capital accumulation) has long been identified as the most volatile component of gross national product (and gross domestic product for regional economies). As such, they have a key role in determining short run fluctuations in employment and income growth. Finally, investment is essential for firms which desire to maintain their competitive position, especially with regard to the technique, cost and product range. Figure 5 illustrates the overall pattern of per capita expenditures (including maintenance) on capital equipment for Canada and the three prairie provinces for the past twenty years.

Throughout the early sixties, investment spending on the Prairies grew steadily, encouraged by oil exploration and refining in Alberta, continued hydro developments in Manitoba and Saskatchewan and growth in the national economy. By 1966, however, the regional and national economies paused.

Aside from a worldwide recession, oil exploration and development waned in Alberta, after the first two decades of intensive activity following the Leduc discovery. During the mid-sixties there was an exodus of exploration activity to the United States, and the overall impression of many was that the oil boom was drawing to a close and contraction would ensue. In Saskatchewan the completion of major potash and hydro developments, coupled with relatively stagnant grain markets initiated declines in rates of capital accumulation. Manitoba tended to withstand these pressures of the mid-sixties, but even by 1969 investment growth declined. The investment picture for the Prairies during the late sixties portrays stagnant economies with rapidly declining investor confidence. Interestingly, Figure 5 shows that at the time when investment spending was declining on the Prairies, it was beginning to revive for the rest of the country.

In 1971-1974 a number of 'independent events' coincided to turn the fortunes for investors in western Canada. The

Figure 5  
Per Capita Investment  
(Dollars)



Source: 15

demand for agricultural products, especially grain, reversed sharply in 1971, precipitated by world wide grain failures, resulting in large grain sales to the Soviet Union and China. Mineral resources markets also experienced shortages which encouraged increases in potash and metals prices.

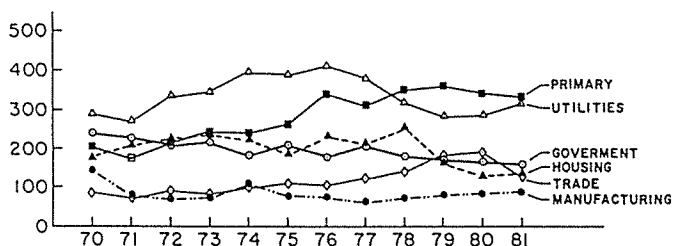
The most important development of this period was, of course, the 'energy crisis' and the cartelization of much of the western world's fossil fuel supplies. Oil and gas exploration skyrocketed in both Alberta and to a lesser extent, Saskatchewan. In Manitoba, significant public sector investment in hydro also occurred, but in the mid-seventies both Manitoba and Saskatchewan experienced a pause in investment activity. For Saskatchewan, this was temporary, but the Manitoba economy stagnated and has failed to attract significant investment interest since. Undoubtedly a major factor in this decline during this period was the conclusion of a significant hydro development program, which some argue was wasteful in its overbuilding. The late seventies de-emphasized public sector investment even further, resulting in a significant decline in total investment for Manitoba.

Two questions are central. First, to what extent has the dramatic increase in the wealth and income available to the Alberta government and its growing population laid the foundation for diversification of the economy? Second, to what extent will other Canadians, be able to share in this good fortune? A look at disaggregate investment patterns over the past five years, while not conclusive, does indicate some possible trends.

In Figures 6a-c, recent investment spending is disaggregated among major sectors. Unfortunately, it is not possible to obtain consistent data that allow closer examination of the components of investment, especially various industries within manufacturing.

First, for Manitoba, it is clear that the downturn in aggregate investment from the mid-seventies on, was caused primarily by declines in public sector, and in utility and housing investment, all of which had important secondary effects in construction activities.

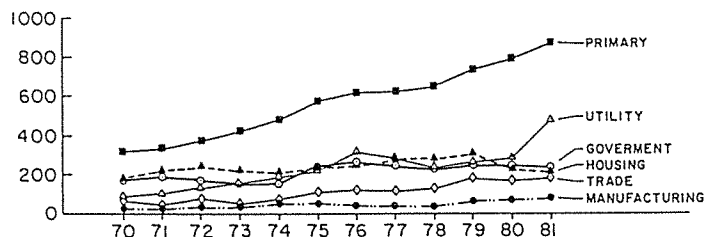
Figure 6a  
Total Investment (Manitoba)  
(Millions of 1971 Dollars)



Source: 15

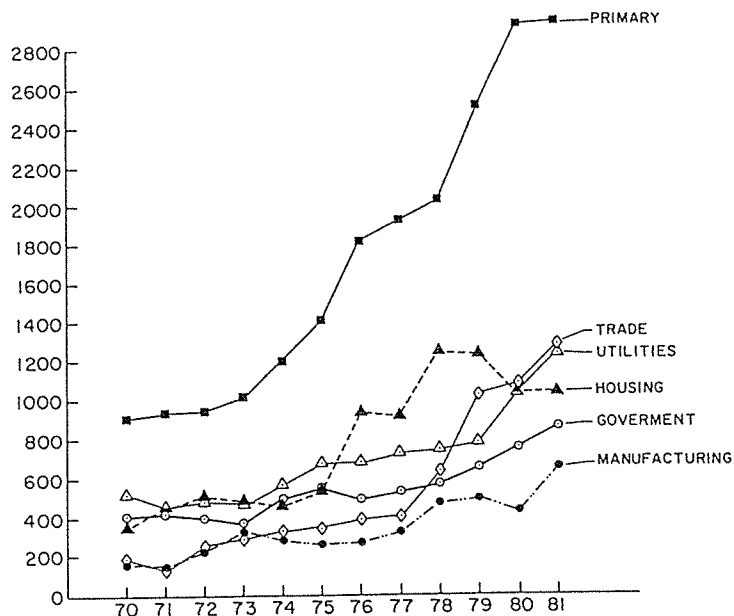
During this period (1976-1981), very modest increases in manufacturing sector investment, which is predominantly private, moved against the trends in all other areas. One hypothesis, which cannot be tested with the data at hand, argues that Winnipeg now enjoys significant cost advantages compared to Calgary and Edmonton, and that these may be inducing increased interest in Manitoba as a locus of manufacturing activities.

Figure 6b  
Total Investment (Saskatchewan)  
(Millions of 1971 Dollars)



Source: 15

Figure 6c  
Total Investment (Alberta)  
(Millions of 1971 Dollars)



Source: 15

For Manitoba, only the primary sector and to a lesser extent, trade, show continued and sustained increases in investment throughout the seventies. Utilities, led by hydro, demonstrate substantial increases in investment during the mid-seventies, but recently this has slackened considerably, as the installed generating capacity has proved more than

adequate. Government investment activity has tended to decline throughout this entire period, as has investment in manufacturing. Although there has been a modest increase in manufacturing investment during the past three years, present levels of spending have not recovered to 1970 levels. In addition to the termination of major utility investments, the collapse of the housing market, precipitated by slow growth and at times outright contraction in the population, accounts for much of the recent decline in investment. Present trends in investment activity are likely to continue, barring a significant recovery in utility investments, public sector capital accumulation and a recovery of new house construction. The prospect for a recovery in manufacturing investment appears reasonably good, as entrepreneurs attempt to exploit lower wage and operating costs found in urban centres in Manitoba compared to cities to the west.

The Saskatchewan economy exhibits investment patterns which are intermediate to those of Manitoba and Alberta. Primary resource investment growth dominates, but significantly, all sectors except housing and to a slight extent government, have tended upward. Whereas the level of investment (in terms of 1971 dollars) has remained relatively constant over the 1970-1980 period for Manitoba, for Saskatchewan this level has tended to increase substantially.

Alberta is clearly the exception, with the dramatic investments in fossil fuel associated activities dominating. Significant in the increase are manufacturing and trade activities, which in 1970 together accounted for some 15% of total investment, which in 1981 had increased to 23%. Every aspect of investment in Alberta has shown dramatic growth in real terms. Most recently, uncertainty over energy prices has produced a levelling off, which does not appear to be changed with the National Energy Policy. Increased interest rates profoundly affect all parts of the Canadian economy, even Alberta.

## 6.0 Summary

To return to the main question, the prairie economy has undergone significant and rapid change, both with respect to composition of output and occupational structure. Now, only Saskatchewan can be said to depend very heavily upon agriculture. Alberta is clearly becoming a diversified resource extraction economy, with very dramatic development in the service sector. The three prairie provinces all show dramatic differences in rates of growth. A major concern of all governments is the management of this growth, with Alberta anxious to use the resource income to provide long term stability and to mitigate the social costs of explosive economic growth while Manitoba is seeking to stimulate growth.



Whether industrialization, especially high technology, can take root in a region that traditionally has had few locational advantages remains very much in doubt. Resource extraction typically calls for a relatively low, albeit very highly paid population capable of supporting a large service sector. The usual requirements to creating the demand for high technology industries in communication for example, is the need to process vast amounts of information and this does not yet appear to be the case for the Prairies. The issue of regional industrialization will be addressed many times in future issues of this journal.

Appendix A  
Millions of Real (1971 Dollars) Investment By  
Sector By Province

MANITOBA

	Primary	Manitoba	Utilities	Trade	Housing	Government	Total
1970	204.1	145.1	291.9	96.2	187.3	241.4	1,167.8
1971	186.1	83.6	269.1	77.1	213.2	231.2	1,060.4
1972	215.2	77.9	333.2	95.9	224.9	217.3	1,163.7
1973	242.0	77.9	346.5	90.0	245.5	214.6	1,216.8
1974	244.0	106.6	391.8	100.0	224.1	183.6	1,249.3
1975	256.0	80.3	397.1	105.2	185.2	202.8	1,227.8
1976	284.4	81.9	402.7	102.4	232.3	185.3	1,324.5
1977	277.4	63.6	380.2	129.8	213.2	203.8	1,272.6
1978	299.5	73.4	313.6	139.9	301.2	183.2	1,310.8
1979	302.4	80.9	288.1	180.9	210.9	177.4	1,240.7
1980	292.4	82.3	290.7	188.7	137.9	170.1	1,163.0
1981	288.3	84.5	316.7	138.7	139.4	165.8	1,132.9

SASKATCHEWAN

1970	319.5	32.9	197.3	61.9	98.1	181.2	890.9
1971	329.9	41.9	225.6	48.9	102.1	194.2	951.6
1972	387.6	37.9	239.2	94.1	132.8	184.1	1,075.7
1973	430.4	38.2	216.7	78.7	170.4	174.7	1,109.2
1974	485.9	56.3	201.8	80.0	194.7	179.5	1,198.2
1975	563.3	56.7	223.8	103.6	218.6	226.9	1,393.3
1976	606.1	54.4	246.0	114.7	306.6	261.6	1,589.1
1977	602.1	48.1	285.2	111.6	288.8	251.5	1,587.4
1978	624.5	43.4	240.9	121.8	285.4	237.2	1,553.3
1979	725.0	65.5	259.7	194.6	300.6	244.7	1,791.1
1980	741.4	66.2	289.9	180.9	234.4	235.3	1,748.1
1981	813.7	71.9	393.1	194.7	216.0	224.5	1,971.8

ALBERTA

1970	905.3	189.2	511.2	192.3	360.8	404.5	2,563.3
1971	935.0	177.3	450.0	165.9	447.2	419.3	2,594.8
1972	939.3	228.5	467.1	261.4	502.9	397.5	2,796.5
1973	1,037.9	320.2	463.0	293.5	481.9	369.6	2,965.7
1974	1,201.8	295.4	565.8	334.7	451.8	492.9	3,342.5
1975	1,411.2	280.8	677.1	356.1	526.4	532.0	3,852.8
1976	1,818.9	284.6	673.0	385.6	935.9	498.2	4,596.2
1977	1,936.3	309.7	718.0	399.3	905.1	530.4	4,788.9
1978	2,030.9	460.5	726.8	633.4	1,227.5	561.2	5,640.0
1979	2,473.7	493.3	767.8	916.3	1,215.9	648.9	6,514.9
1980	2,911.1	422.1	940.4	986.9	1,029.3	746.3	7,036.5
1981	2,937.4	626.1	1,132.6	1,128.3	1,041.6	830.7	7,696.8

Source: 15

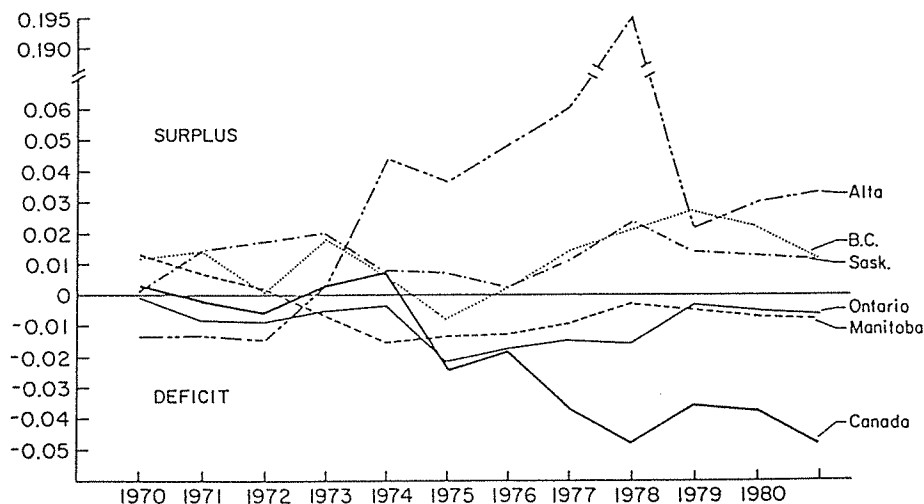
### III

#### DEFICITS - REAL OR IMAGINED?

The matter of the provincial deficits has recently been featured in the media. When the recent NDP government assumed office in Manitoba, much was made of the fact that the projected deficit for fiscal 1981 was higher by some 80 million dollars than had been forecast by the outgoing administration. These concerns were also voiced in 1977 when the Conservatives took over from the NDP.

Are current deficit levels truly out of control? One way of looking at this is to examine the deficit in relation to the Gross Domestic Product. If the GDP is taken as a crude measure of a province's ability to pay for government services, when the ratio of deficits to GDP is increasing, the burden of the deficit is rising. On the other hand, declining deficit/GDP ratios indicate that the net addition to the public debt is less than the growth in the ability to pay. Below in Figure 1, the deficit/GDP ratios for Canada, Ontario, and the four western provinces are shown.

Figure 1  
Surplus (Deficit)/GDP 1970-1981



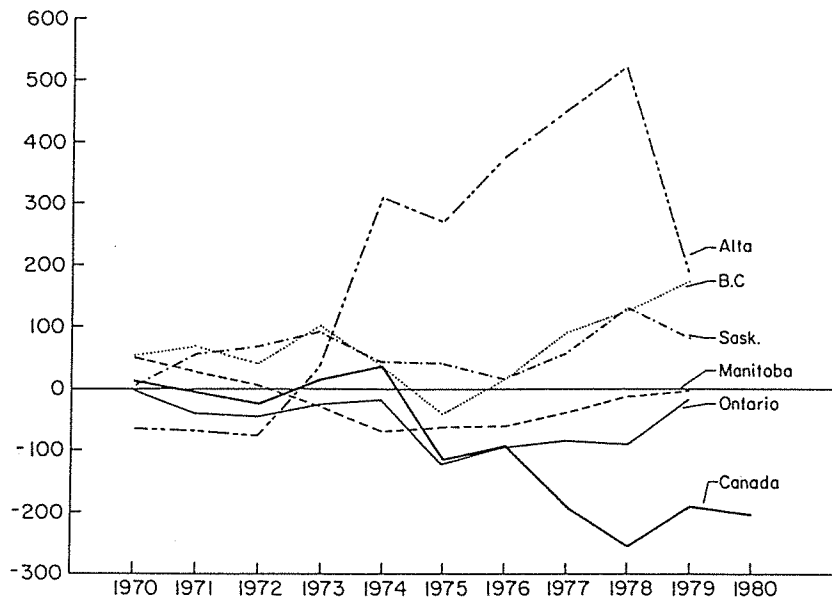
Source: 6, 7

The years 1979-1981 are estimates since national accounts basis of government finances are not complete for 1980, and cannot be computed for 1981 until Crown Corporations have their fiscal year end.

From these data, the overall fiscal trends in Confederation are clear. Provinces have generally pursued a conservative fiscal policy; resulting in either higher surpluses per GDP, or lower deficits per GDP ratios throughout the 1970-1980 period. The federal government's deficit per GNP ratio increased. Thus by this simple measure, deficits pose little fiscal problem to provinces compared to the federal government.

With respect to per capita surpluses (deficits), it is apparent from Figure 2 that for all areas but the federal government, this has tended to increase (decrease for deficits). In a strict accounting sense, the deficit exposure of the provincial taxpayer has also been declining, while the federal taxpayers have assumed greater deficits.

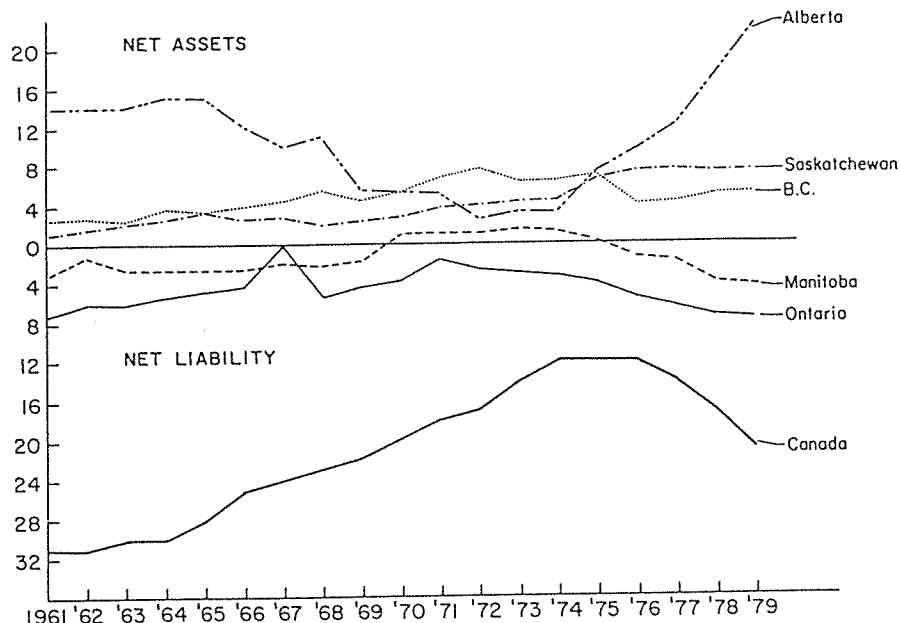
Figure 2  
Real Surplus (Deficit) Per Capita  
(Dollars)



Source: 6, 7

Finally, of course, deficits are transformed into debts. Figure 3 shows the real debt (1971 dollars) as a percent of GNP/GDP for Canada, Ontario and the regions.

Figure 3  
Net Debt/GDP  
(Percent)



Source: 6, 7

The reason for the recent increase in net federal debt to GNP ratio is straightforward. Expenditures have risen through increased transfers and subsidies, coupled with interest rate inflation. Revenues have been constrained by low economic growth, equalization payment formulas which transferred revenues from the federal to the provincial governments and special programs such as income tax indexation and RRSP deductions.

There is danger in comparing government debt to GNP, for implicit is the assumption that the GNP is the appropriate revenue base. Government does not have the ability to completely tax GNP. The true tax base is significantly smaller. Although the Laffer curve (the supposed relationship between government taxation and government revenues which postulates that increases in taxes eventually will reduce government revenues as tax burdens produce economic decline) has never been thoroughly tested, for very large tax increases it probably does hold.

Another view of government debt is provided in Table 1, which shows interest charges as a percentage of total expenditures, and Table 2, which shows government debt as a percentage of income. It is noteworthy that in 1979 corporate liabilities were \$633 billion, while the gross debt for government was \$173 billion.

Table 1  
Interest/Expenditures (1) (Percent)

	Federal	Provincial	Corporate
1978	13.1	7.0	6.8
1979	15.3	7.7	7.9
1980	15.7	7.3	8.1 *

Note:

(1) (Expenditures for the corporate sector are total operating expenditures).

\*estimated

Source: 4, 9

Table 2  
Gross Debt/Revenues (1) (Percent)

	Federal	Corporate
1978	210.0	115.0
1979	225.0	116.0
1980	212.0	119.0 *

Note:

(1) Debt for the Federal government is measured as gross debt which corresponds to total liabilities as defined for corporations. Revenues for the corporate sector are defined as total income, (before all expenses and taxes are deducted).

\*estimated

Source: 4, 9

Although the federal government appears considerably more 'levered' than either the provincial governments or corporations, there is little to suggest in this analysis that federal government debt is out of control. Recent deviations from the longer term trend of declining debt/GNP ratios at the federal level, shown in Figure 3, are clearly explained by politically popular policies and a very weak economy. The new energy revenue sharing arrangements should permit the federal government to resume lowering its debt exposure. It is also not completely accurate to compare government debt and debt management practice with that pursued in the corporate sector. Corporate debt is issued on the expectation, and indeed, the necessity of generating a cash flow. Much of government debt is issued on the expect-

tation that it will not return a cash flow to the government but augment the cash flow of the private sector. When debt is issued to cover expenditure on social capital such as highways, airports, etc., the prime beneficiaries are private individuals and firms. Also debt issued to support technical services and education often produces assets not capable of market valuation, yet does yield significant benefit.

A more important question turns on the relative surplus position of many provincial governments related to the federal government. In general, the western provinces and Ontario have either accumulated surpluses or substantially reduced their deficits. This imbalance surely is at the basis of the current fiscal crisis of inflation. It becomes profoundly misguided to separate the fiscal responsibilities of the two levels of government. Aside from the arbitrary distinction found in the Constitution, for Canadians in general it is the net deficit position of government, provincial and federal, that is paramount.

Of course the current fiscal negotiations, especially the revisions to equalization formulas, and 'established programmes financing', may have profound impacts on individual provinces. While deficits per capita do not appear to be drastically out of control, the new fiscal federalism, when finalized, may well have dramatic and profound implications for provincial finances. If this occurs, the inevitable result will be a serious disruption of the general goals of equalizing the quality of life for all Canadians.

## GLOSSARY

Economics, like all social sciences, is replete with its own curious jargon which at times appears designed to obscure rather than clarify. To assist readers in penetrating this vocabulary, the Western Economic Review will include a glossary of terms used in the current issue. It may also be useful to economists to remind them of what these terms mean.

### CROSS-SECTION DATA

This representation of data 'freezes' time, and compares economic indicators across a number of units. Thus, a table which shows gross national product for a number of countries in 1980, is cross-section data.

### GROSS NATIONAL EXPENDITURE (GNE)

This is the sum of all expenditures on consumer goods and services, private and public investment expenditures, and net foreign transactions (exports minus imports), during a given period of time (usually year or quarter year). By definition, it equals gross national product (GNP).

### GNE IMPLICIT PRICE DEFLATOR

This is a price index for all goods and services produced during a given period of time. It generally is lower than the consumer price index, and is most useful for adjusting national income data.

### GROSS DEBT

For government, gross debt refers to its total liabilities.

### GROSS DOMESTIC PRODUCT (GDP)

Identical to gross national product, except that net foreign transactions are excluded. For a province, GDP measures the market value of all goods and services produced in a given year.



### GROSS NATIONAL PRODUCT (GNP)

This is the market value of all goods and services produced within a given period of time. Its major components are wages and salaries, investment income, rental income, profit and interest. By definition, it is equal to the gross national expenditure (GNE).

### GUARANTEED ANNUAL INCOME (GAI)

A procedure of paying lower income households regular income supplements, to restore them to some minimum level of economic welfare. The main advantage of the system is argued to be the elimination of the welfare bureaucracy.

### LEAST SQUARES PROCEDURE

This is a procedure for estimating a line through cross-section and time series data, such that the 'distance' between the data points and the line, is made as small as possible on average. It is a very widely employed procedure for finding an 'average' line through data plotted on graphs. The strict definition is that the line is placed through the data points such that the sum of squared, vertical distances (deviations), between the data points and the line, is made as small as possible (least sum of squares).

### NATIONAL INCOME ACCOUNTS

These are accounting tables designed to represent the different components of a nation's income and expenditure, during a given period. These represent flows, and are roughly equal to the income expenditure statements used by firms.

### NATIONAL POLICY

This policy, pursued by the first Conservative government (MacDonald), had three components: tariff protection for Canadian industry, aggressive promotion of immigration to the West, and massive subsidization of the Canadian Pacific Railway.

### NEGATIVE INCOME TAX

Often used synonymously with GAI, this version is associated with Milton Friedman, who suggested using the tax system to disburse income support to households who fell be-

low a poverty line. The point of the scheme was to efficiently restore lower income households to some minimum income, without the paraphernalia of the welfare state or distasteful means tests.

#### NET DEBT

For government, net debt refers to total liabilities less assets. Unlike usual accounting practice, governments have liabilities in excess of assets, simply because many of its expenditures result in unquantifiable benefits, education, health, etc.

#### NOMINAL DATA

These are data for which no adjustment for inflation has been made. The usual adjustment involves dividing an appropriate price index into the data in question.

#### OECD

Organization for Economic Co-operation and Development is a group of countries comprised of industrialized non-communist countries.

#### REAL DATA

When nominal data are adjusted for inflation, they become 'real' or inflation adjusted data. For time series data, such as gross national product over a span of time, the usual practice is to divide the GNE implicit price deflator for each year or month, into the corresponding nominal data. For consumer expenditures and wages, the consumer price index is the most common "deflator". For example, a 10% annual increase on a salary of \$20,000 produces a nominal increase of \$2,000; but if inflation during the same period (usually measured by the consumer price index) is 12%, real income has fallen (to approximately \$19,600).

#### TIME SERIES DATA

These are data collected for a given unit (country, province, city, census tract, firm, etc.) for a number of years, months, weeks or even days. This format tends to be most commonly used for analyzing economic policy.

### TREND LINE

Computed for time series data, this line summarizes the overall tendency of the data. It is usually computed using the least squares procedure, but care must be taken in that, like averages, one extreme value can considerably distort the picture.

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