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REPORT OF THE STANDING COMMITTEE ON AGRICULTURE

MAY 1991

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HOUSE OF COMMONS

CHAMBRE DES COMMUNES

Issue No. 56

Revue n° 56

Tuesday, March 26, 1991

Le mardi 26 mars 1991

Tuesday, April 9, 1991

Le mardi 9 avril 1991

Thursday, April 11, 1991

Le jeudi 11 avril 1991

Chairman: Harry Brightwell

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RESPECTING

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Payment to State farm debt

FARM DEBT UPDATE - 1991

paiement, étude sur l'endettement agricole au Canada

INCLUDING

Y COMPRIS

Fourth Report to the House

Quatrième rapport à la Chambre

REPORT OF THE STANDING COMMITTEE ON AGRICULTURE

MAY 1991

Second Session of the Thirty-fifth Parliament, 1989-90-91

Deuxième session de la trente-cinquième législature, 1989-1990-1991



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RESPECTING:

Pursuant to Standing Order 108(2), a study of Canadian farm debt

INCLUDING:

Fourth Report to the House

CONCERNANT:

Conformément à l'article 108(2) du Règlement, étude sur l'endettement agricole au Canada

Y COMPRIS:

Quatrième rapport à la Chambre

Second Session of the Thirty-fourth Parliament,
1989-90-91

Deuxième session de la trente-quatrième législature,
1989-1990-1991

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THE STANDING COMMITTEE ON AGRICULTURE

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has the honour to present its

FOURTH REPORT

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In accordance with its mandate under Standing Order 108(2), the Committee has carried out an examination of the financial situation of Canadian farmers as a follow-up to its report entitled *The \$22 Billion Problem: Options for the Financial Restructuring of Farm Debt*, tabled during the Second Session of the Thirty-third Parliament, in July of 1988.

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CHAIRMAN'S REMARKS AND FIGURES

In 1988 the Standing Committee on Agriculture analyzed the financial situation of Canadian farmers. While it found that two-thirds of them were financially secure, it estimated that the remaining third were carrying a debt much of which they could not service.

The present update reflects a continuing concern by the Standing Committee about this debt, which still persists as a major problem for Canadian farmers. It is estimated that close to \$5 billion in overdue interest expense has been refinanced since 1975. This approximates the amount of non-serviceable debt still outstanding. Although the amount of debt has been reduced in Saskatchewan, this is not the case for most of the rest of Canada.

The Standing Committee report compares two snapshots of financial conditions in the farming sector in 1987 and in 1989. It also looks at what might happen to the debt in 1992 under varying economic conditions. The Committee, while recognizing the pitfalls of making projections in the presence of many agricultural uncertainties, still feels it is an important undertaking in order to anticipate the financial problems that might arise.

The Standing Committee wishes to acknowledge the contribution of Dr. Ralph Ashmead of Ashmead Economic Research Inc. in designing a special analysis of the FCC 1990 Farm Survey, in making projections from his Farm Finance Model and in providing an interpretation of these data. I would also like to thank the research staff of the Committee, Len Christie, Sonya Dakers and Dr. John Dawson, for their assistance in preparing the Committee Report. Able administrative support was provided by the Clerk of the Committee, Carmen DePape.

Harry Brightwell,
Chairman
Standing Committee on Agriculture

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EXECUTIVE SUMMARY

Farms debt persists as a major structural problem for Canadian farmers. The amount of debt outstanding to agricultural producers remains over \$22 billion, only marginally lower than the peak level of \$23.2 billion in 1987.

The Standing Committee on Agriculture notes that there has been some marginal financial improvement since the publication of its 1988 report, "The \$22 Billion Problem: Options for the Financial Restructuring of Farm Debt". Nevertheless, the persistence of the debt problem is particularly obvious when compared to the United States farm sector, which has managed to reduce its overall farm debt by 40 percent over the 1980's.

The objective of the present study is to provide an update of the Committee's previous report on farm debt. It examines the current level of farm debt, the factors which maintain the current level of debt, and looks ahead to determine how future economic conditions could affect farm debt and its impact on farmers.

The characteristics of farm debt are examined in Chapter Two to help explain why that debt remains at its current level. Farm debt has remained high in Canada primarily due to the propensity of lenders, both private and government, to refinance overdue or delinquent debt. While market interest rates have been generally higher in Canada, the effective interest rates paid have been lower than in the United States not only because of direct interest subsidies, but also because overdue interest costs have been amortized into new loans. For example, it is estimated that close to \$5 billion in overdue interest expense has been refinanced since 1975. This is equal to the amount of excess debt or non-serviceable debt revealed by this study. The data suggest that the debt and capital values of Canadian farm businesses have been maintained at artificial levels at least in part by previous income and credit policies.

The regional distribution of farm debt, examined in Chapter Three, shows an increase in the average debt per farm in all provinces, with the exception of British Columbia, Saskatchewan and Manitoba. Alberta, in particular, leads all provinces in average debt per farm.

The financial risk position of farmers is compared between 1987 and 1989 from the perspective of their debt relative to assets, and their ability to service debt (debt service ratio). The financial risk of farmers has improved marginally. The beef, hog and supply-managed enterprises showed increases in risk while others have improved. On the basis of income, low income enterprises have generally a lower level of risk than the higher income groups.

The number of farmers who are in the most severe risk class, called insolvent in this study, has remained almost constant between 1987 and 1989 at over 47,000. Farmers in this group are in danger of losing control of their farm businesses. This study suggests that this group is unlikely to be salvaged through further subsidies or special assistance.

An important part of analyzing financial problems in agriculture is to assess the amount of excess debt which is held by farmers. Excess debt is defined as that amount of the total debt which cannot be serviced on a scheduled basis under current income and cost conditions. The study shows that while there has been no major change in the level of excess debt at \$4.8 billion, between 1987 and 1989, it has been regionally redistributed. Alberta and the Atlantic provinces show the greatest increases in excess debt and Manitoba the greatest decrease. Saskatchewan's amount of excess debt has begun to stabilize in response to the \$1 billion reduction in total debt that has occurred over the past two years; however, the excess debt continues to represent a substantial portion of the debt outstanding.

To understand the direction farm debt may take and how different factors may influence it, five projections of the financial structure of the industry were made. The study recognizes the limitations of these projections as they are based on estimates of changes that might occur in the industry, in this time of uncertainty. These simulations are presented in Chapter Four.

A base case simulation includes current projections of farm income, government payments, costs and interest rates. Overall, this projection suggests that there will be a slight increase in total excess debt. The debt problem is shifting to include the supply-managed industry, which had not been as severely affected by the debt problems of the 1980's as some other sectors.

A second simulation shows the impact of higher than expected cash operating expenses. This alternative is considered particularly appropriate as the ability to hold operating costs down will depend upon fluctuating energy prices and the capacity to adjust input usage. The results show a greater rise in excess debt. The central point of this evaluation of higher costs is the impact they could have on farmers in the provinces of Quebec and Saskatchewan.

The third projection evaluates the possibility of a grain sector price recovery and associated strength in other farm prices. For grains, this could arise from relatively low stock levels and from the current level of pessimism among grain producers which could lead to a fall off in production. Excess debt would lessen in this scenario, significantly in Saskatchewan and the Atlantic Provinces. Among industries, the supply-managed and other groups would benefit least.

The fourth projection of the chapter evaluates how an unanticipated rise in interest rates and inflation would impact on the sector. The results of this simulation are similar to those of rising input costs. The supply-managed industry is affected, with the incidence showing up especially in Quebec. Excess debt in Saskatchewan would also increase markedly. More moderate impacts are found for other regions.

Finally, an evaluation of lower interest rates is considered. This simulation restores the viability of the sector to 1989 conditions. Alberta will benefit the most from lower interest rates as it currently has the most debt.

A separate evaluation of the Gross Income Insurance Program (GRIP) shows that at least in 1991 and 1992, this program will have a net positive impact on farm income. Of particular interest, it will shelter higher indebted farmers from price and yield risk.

There is a consistent part of the industry which is in such severe straits that alternative economic scenarios will have almost no impact. Farm debt in Canada is not projected to fall under most conditions. The financial problems of some farmers will persist and so the demand will remain on both levels of government for assistance whenever there are even modest declines in market income.

The debt situation in the United States has shown a remarkable departure from trends in Canada. Between 1988 and 1990, U.S. farm debt declined from \$168 to \$129 billion, or by 22 percent. Over the same period of time, farm debt in Canada remained over \$22 billion.

Understanding why agricultural debt remains high in this country and what is exacerbating its current levels will help reveal the direction farm debt may take by province or region in the future. This is especially important in view of the economic uncertainty farmers face as farm income for 1991 and 1992 has been projected downward by Agriculture Canada and private sector forecasters. The level of future income subsidization is in doubt. Income support levels will depend on the outcome of the GATT discussions and the financial positions of federal and provincial governments. The recent higher energy prices could impact at least on 1991 farm operators in the form of higher fuel, fertilizer and chemical prices. These factors and others will affect the future financial conditions of farmers, their risk levels and the manageability of farm debt.

CHAPTER ONE

INTRODUCTION

A. NEED FOR STUDY

In July 1988, the Standing Committee on Agriculture published its report, "The \$22 Billion Problem: Options for the Financial Restructuring of Farm Debt". The central issue in that study was the level of debt, its impact on the viability of farmers, and what alternative policy options could do to reduce the debt or its costs.

Although agriculture has seen many changes during the two years since this report was prepared, the level of farm debt in Canada has remained stubbornly high. Total Canadian farm debt outstanding was \$23.2 billion in 1987. This decreased marginally to \$22.8 billion at December 31, 1988. The recent Farm Credit Corporation (FCC) Farm Survey reports total farm debt to be \$22.2 billion as of January 1, 1990.

The debt situation in the United States has shown a remarkable departure from trends in Canada. Between 1985 and 1990, U.S. farm debt declined from \$166 to \$129 billion, or by 22 percent¹. Over the same period of time, farm debt in Canada remained over \$22 billion.

Understanding why agricultural debt remains high in this country and what is influencing its current levels will help reveal the direction farm debt may take by province or region in the future. This is especially important in view of the economic uncertainty farmers face as farm income for 1991 and 1992 has been projected downward by Agriculture Canada and private sector forecasters. The level of future income subsidization is in doubt. Income support levels will depend on the outcome of the GATT discussions and the financial positions of federal and provincial governments. The recent higher energy prices could impact at least on 1991 farm operations in the form of higher fuel, fertilizer and chemical prices. These factors and others will affect the future financial conditions of farmers, their risk levels and the manageability of farm debt.

¹ U.S. Department of Agriculture, Economic Research Service, *Agricultural Income and Finance: Situation and Outlook Report*, August 1990, p. 9. Throughout this report, monetary values given for the United States are in U.S. dollars except as noted in direct comparisons.

B. OBJECTIVES

The overall objective of this study is to analyze the financial structure of Canadian farmers, specifically to answer questions on the current debt and its impact, and how future changes in economic and policy conditions might affect debt levels and the financial viability of producers.

This objective will be achieved through performing the following tasks:

- i) providing a brief review of the key economic factors which underlie the current financial structure of agriculture;
- ii) analyzing the current farm financial structure and debt with respect to its incidence by province, commodity type, income classification, and to comparisons of the level of financial risk and stress in recent years; and
- iii) performing several policy and economic simulations which will evaluate the impact of future cost, policy and income conditions.

C. REPORT ORGANIZATION

Chapter Two provides a brief historical review. This review is limited to the primary capital, debt, and income variables which have combined in specific ways to create the current financial profile of Canadian farmers.

Chapter Three undertakes a detailed analysis of the current debt and financial conditions of the industry. The primary basis of this analysis is the use of the Ashmead Economic Research Inc. Farm Finance Model which has been developed specifically for this purpose. Special analyses and computer runs from the FCC Farm Survey support the research of this chapter. Changes in the level of financial stress are described in the chapter.

The outcomes of five economic projections are provided in Chapter Four. The Farm Finance Model is used to analyze the implications of several future situations which might occur over the next two years including:

- i) a baseline projection for currently forecasted economic conditions;
- ii) evaluation of the impact of higher input costs;
- iii) evaluation of the impact of an agricultural economic recovery led by the grain sector;
- iv) evaluation of the impact of higher interest rates and inflation; and
- v) evaluation of the impact of lower interest rates and lower inflation.

The final chapter provides a summary of the results and the implications of the study.

CHAPTER TWO

RECENT HISTORICAL REVIEW

This chapter will review a limited set of variables which serve to explain the current financial structure of agriculture. Comparisons will be made with U.S. agriculture where appropriate. Changes which occur in the United States often become leading indicators of eventual adjustments in Canadian agriculture.

A. CHANGES IN CAPITAL AND DEBT

1.0 Farm Capital

Farm capital is defined as the sum of the investment in real estate, buildings, equipment and livestock.

Amounts of capital investment have varied considerably between Canada and the United States. Figure 2.1 shows the relative change in both Canadian and United States capital values between 1970 and 1989. Relative to a base represented by the average capital values between 1970 and 1972, Canadian values increased four-fold by the peak in 1981-82. Significantly, U.S. capital values increased at a much lesser rate of just over two times over the same period. Since 1981, both Canadian and U.S. capital values have shown the same relative pattern of a decrease, followed by an increase at the end of the decade. U.S. values began a recovery in 1986. Canada followed with a recovery beginning in 1988.

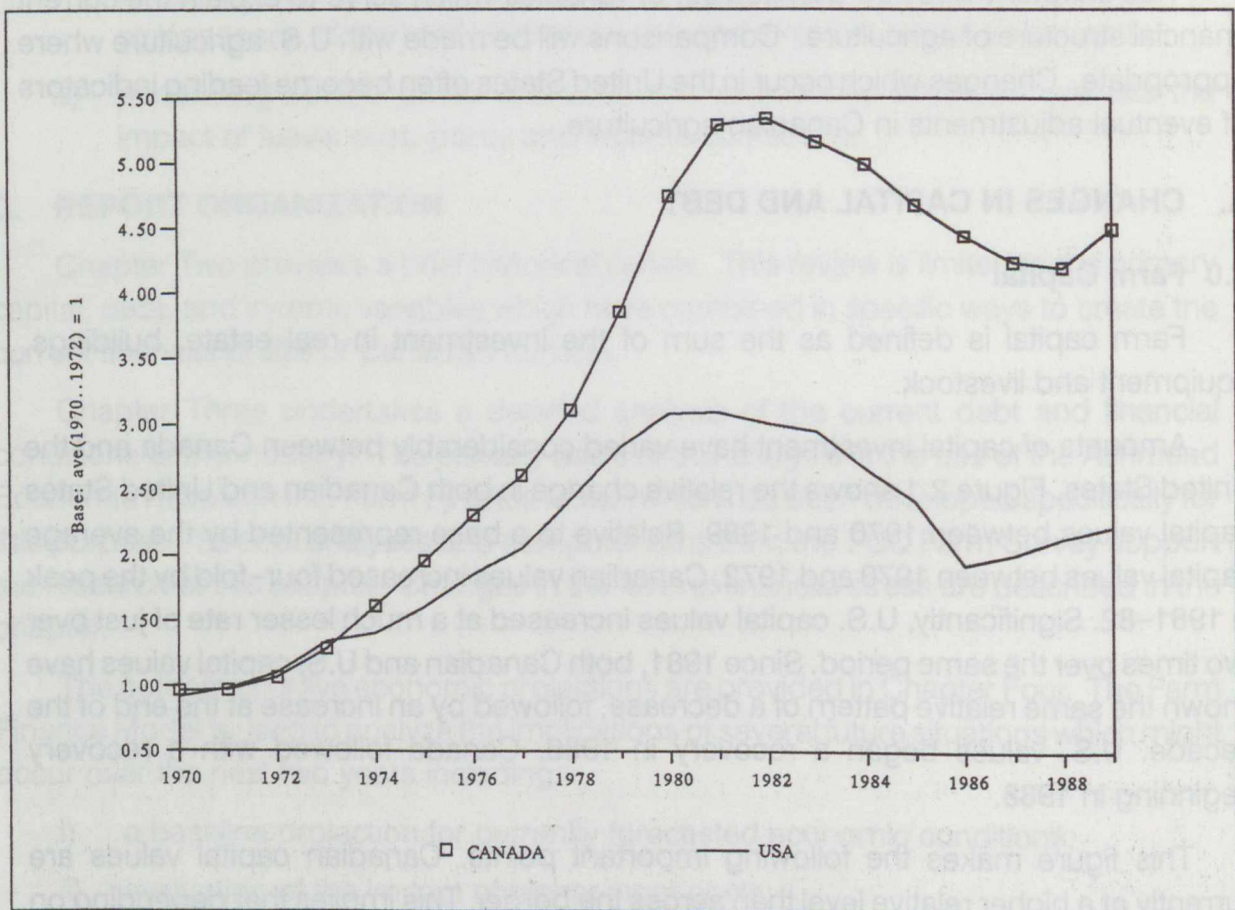
This figure makes the following important points. Canadian capital values are currently at a higher relative level than across the border. This implies that depending on the future level of farm income and other factors, there is the potential for further decline. Subsequent discussions in the chapter will help to explain the relative divergence between capital values in the two countries.

Land values, a component of farm capital, are important in assessing the economic status of the industry. The changes which have occurred in land values have been well documented by many studies. Overall, land values rose in Canada at a compound

annual rate of nearly 14 percent between 1971 and 1982². After a downturn for the next six years in essentially all provinces, land values in Canada, led by Ontario, increased in value between 1988 and 1990.

In summary, Canadian agriculture has become more capital intensive than the United States over the past twenty years. A significant reason for this capital intensification is the rate of appreciation in farm real estate values.

Figure 2.1
Relative Changes in Total Capital Values, Canada and the United States, 1970 - 1989

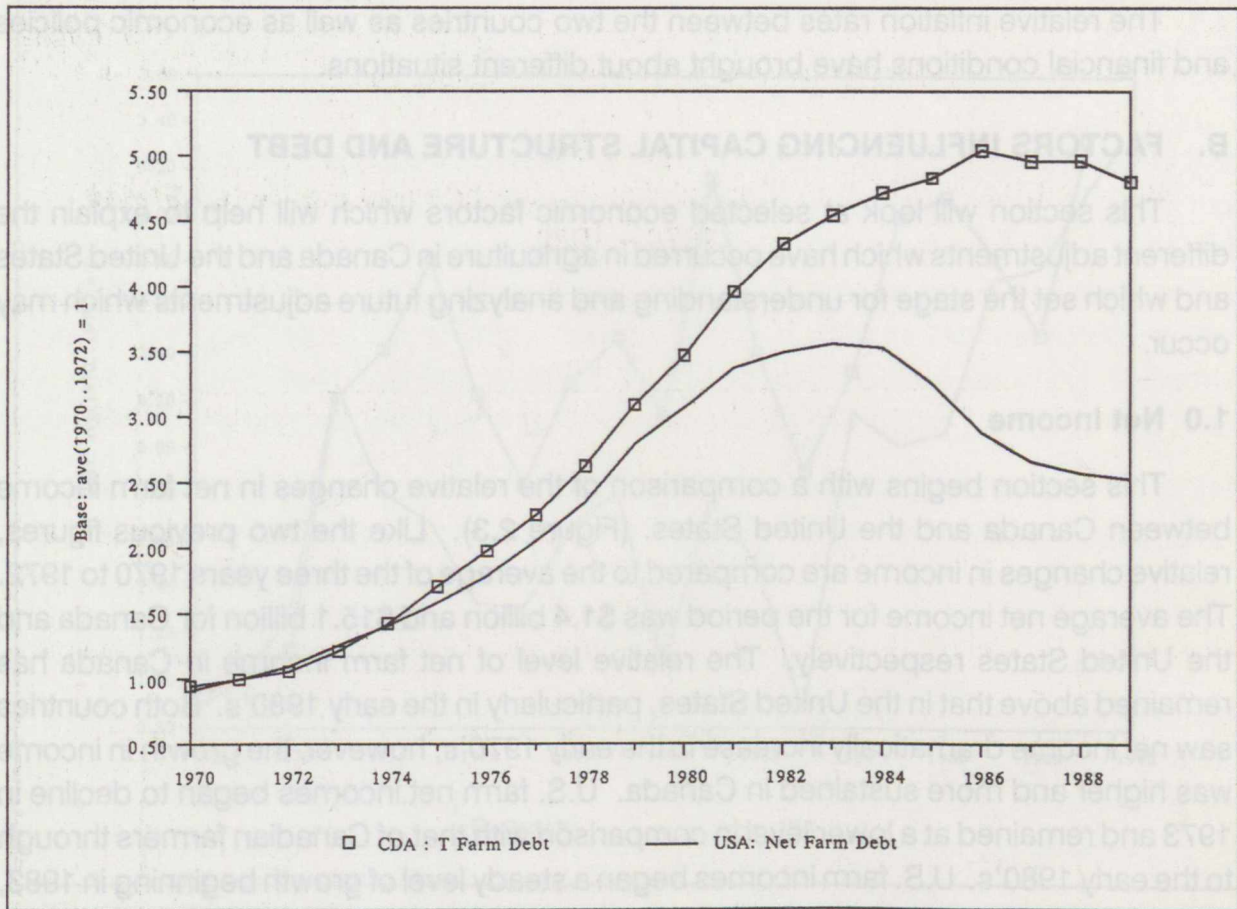


Source: Statistics Canada & U.S. Department of Agriculture, Economic Research Service

² Farm Credit Corporation, *Farm Credit Statistics*, various issues.

2.0 Farm Debt

Figure 2.2
Relative Changes in Debt Levels, Canada and the United States, 1970 – 1989



Source: Statistics Canada & U.S. Department of Agriculture, Economic Research Service

Relative changes in total debt outstanding are described in Figure 2.2. From a base of farm debt equal to one in 1970–72, indebtedness for Canada increased approximately four times to a value of five in the late 1980's. U.S. farm debt has shown a remarkably different pattern over the same period, increasing by just over two fold. Further, U.S. farm debt fell dramatically over most of the 1980's. U.S. farm debt peaked at a high of \$193 billion in 1983. By 1990³ farm debt had fallen to approximately \$129 billion, or by over 33 percent. Canadian farm debt has essentially remained flat after peaking in 1986. On a per farm basis, in Canadian dollars, the average debt per farm as of January 1990 was

³ U.S. Department of Agriculture, Economic Research Service, *Agricultural Income and Finance: Situation and Outlook Report*, August 1990, p. 9.

\$91,000, compared to \$72,500 in the United States. Obviously, there are dramatically different factors at work in Canada which have contributed to higher relative capital values and farm debt. The declines in U.S. capital values and farm debt suggest that a major economic and social adjustment has occurred in that country.

The relative inflation rates between the two countries as well as economic policies and financial conditions have brought about different situations.

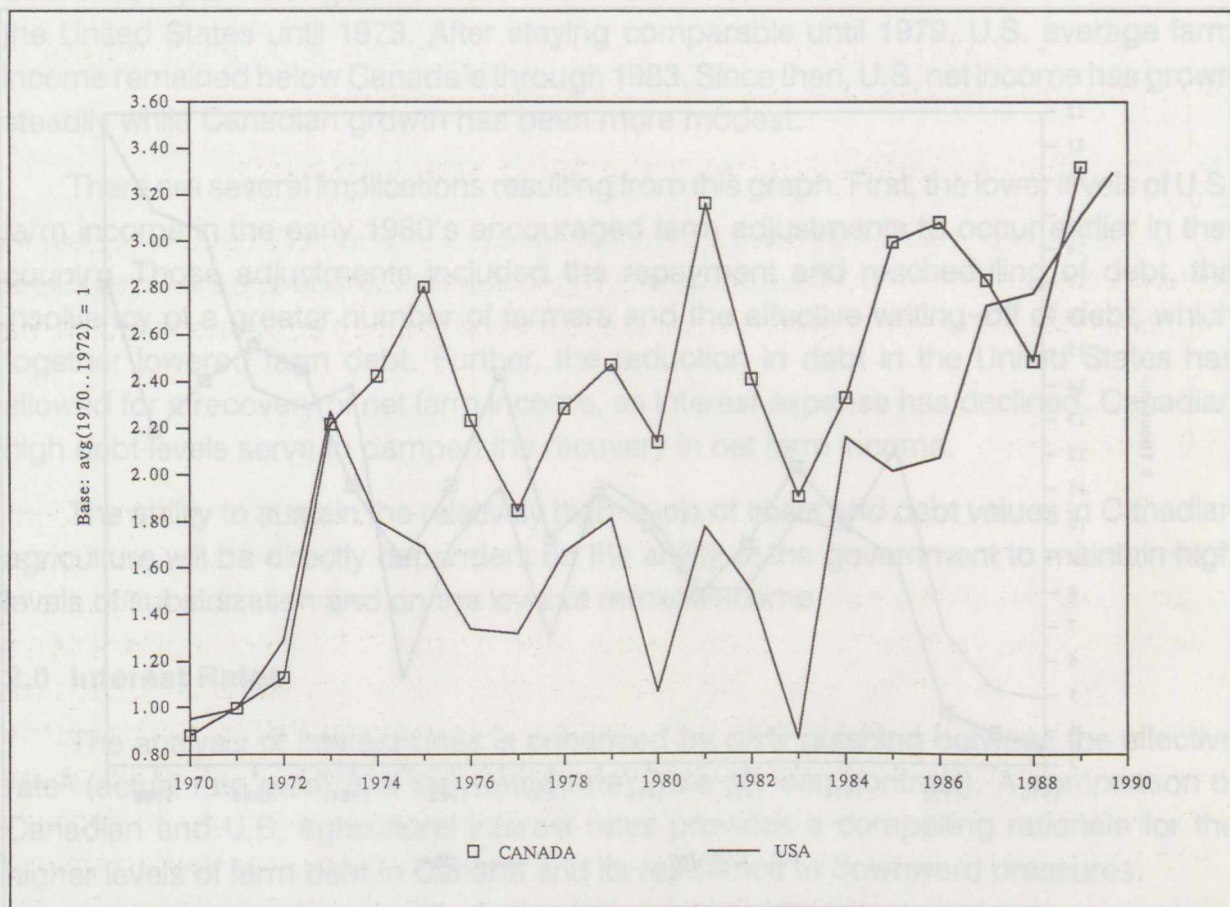
B. FACTORS INFLUENCING CAPITAL STRUCTURE AND DEBT

This section will look at selected economic factors which will help to explain the different adjustments which have occurred in agriculture in Canada and the United States and which set the stage for understanding and analyzing future adjustments which may occur.

1.0 Net Income

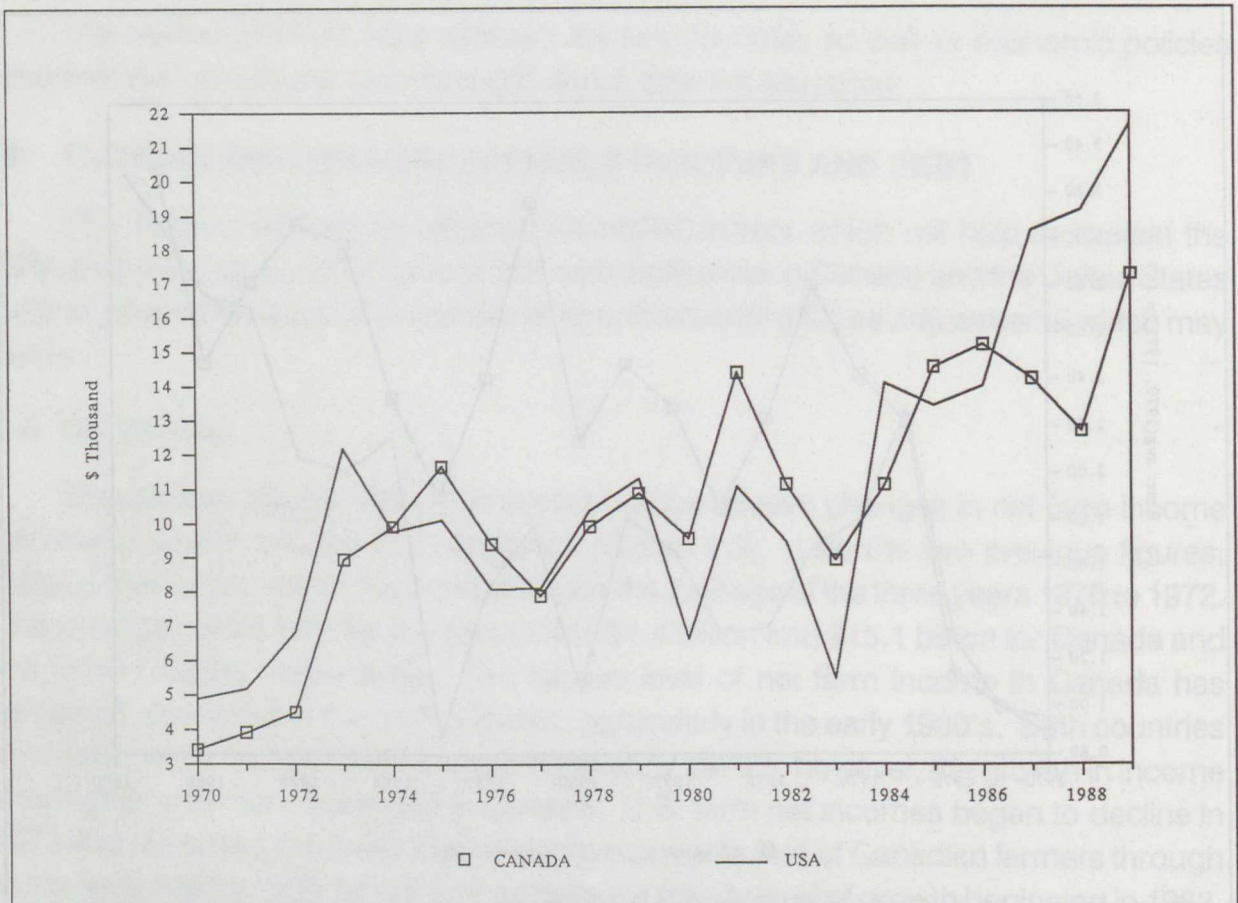
This section begins with a comparison of the relative changes in net farm income between Canada and the United States. (Figure 2.3). Like the two previous figures, relative changes in income are compared to the average of the three years 1970 to 1972. The average net income for the period was \$1.4 billion and \$15.1 billion for Canada and the United States respectively. The relative level of net farm income in Canada has remained above that in the United States, particularly in the early 1980's. Both countries saw net income dramatically increase in the early 1970's, however, the growth in income was higher and more sustained in Canada. U.S. farm net incomes began to decline in 1973 and remained at a lower level in comparison with that of Canadian farmers through to the early 1980's. U.S. farm incomes began a steady level of growth beginning in 1983, which has continued through 1990.

Figure 2.3
Relative Changes in Total Net Farm Income, Canada and the United States,
1970 - 1990



Source: Statistics Canada & U.S. Department of Agriculture, Economic Research Service

Figure 2.4
Comparison of Net Farm Income per Farm, Canada and the United States,
1970 - 1989



Source: Statistics Canada & U.S. Department of Agriculture, Economic Research Service

Relative to their respective base periods of 1970-72 net farm income in Canada has generally been higher than in the United States. Farm income has been supported in both countries by generous levels of direct government subsidization. In Canada, between 1985 and 1989, government subsidies from all sources reached \$14.33 billion⁴. This amount represented 13 percent of total cash receipts and 44 percent of net cash farm income for this period.

⁴ Statistics Canada, *Agricultural Economics Statistics*, (21-603), Ottawa, 1990, Receipts Section p. 27-31.

The actual level of farm income per farm must concurrently be assessed to understand the financial position of Canadian and U.S. farmers. Figure 2.4 compares income per farm between 1970 and 1990 making no adjustment for exchange rates or difference in purchasing power. Income per farm in Canada was lower than for farmers in the United States until 1973. After staying comparable until 1979, U.S. average farm income remained below Canada's through 1983. Since then, U.S. net income has grown steadily while Canadian growth has been more modest.

There are several implications resulting from this graph. First, the lower levels of U.S. farm income in the early 1980's encouraged farm adjustments to occur earlier in that country. Those adjustments included the repayment and rescheduling of debt, the insolvency of a greater number of farmers and the effective writing-off of debt, which together lowered farm debt. Further, the reduction in debt in the United States has allowed for a recovery of net farm income, as interest expense has declined. Canadian high debt levels serve to dampen the recovery in net farm income.

The ability to sustain the relatively high levels of asset and debt values in Canadian agriculture will be directly dependent on the ability of the government to maintain high levels of subsidization and on the level of market income.

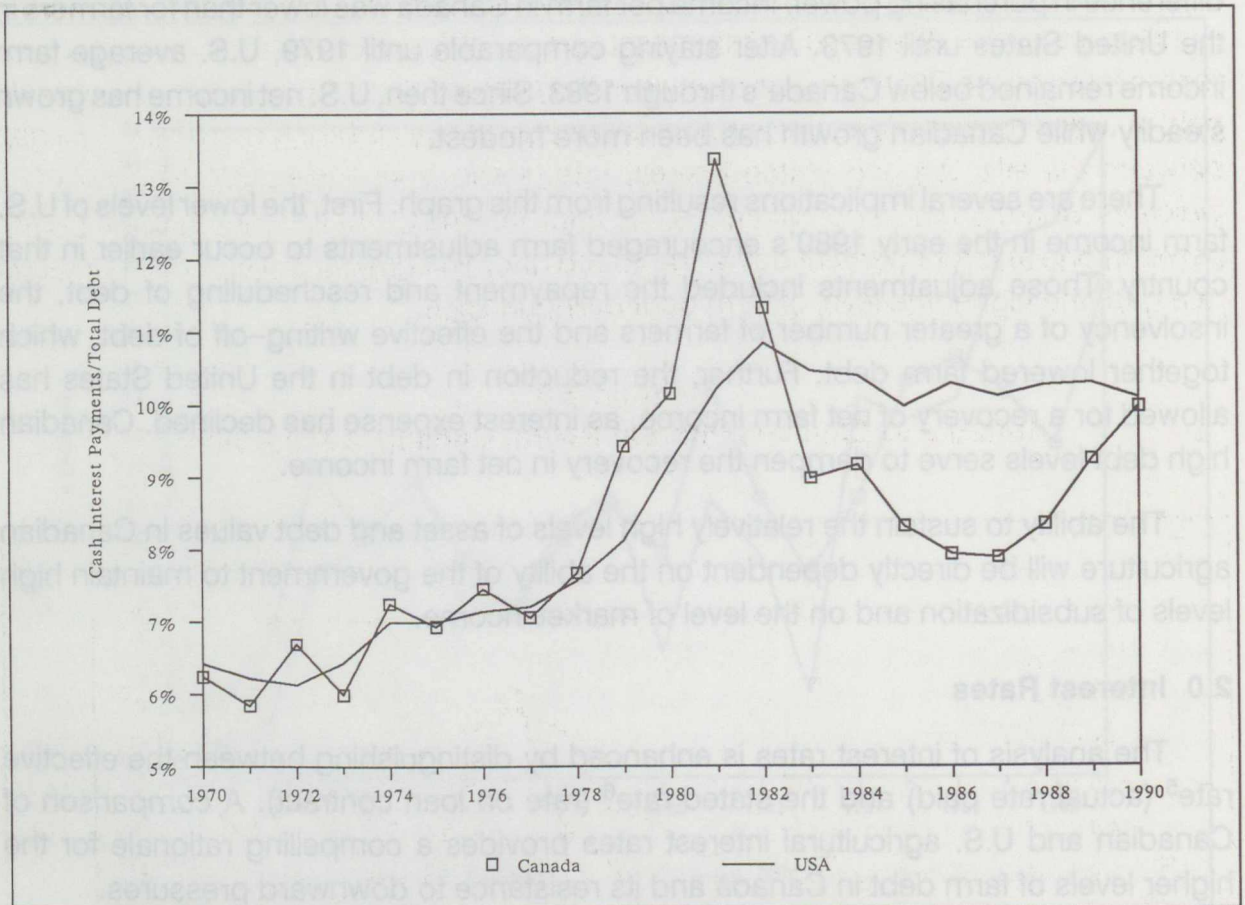
2.0 Interest Rates

The analysis of interest rates is enhanced by distinguishing between the effective rate⁵ (actual rate paid) and the stated rate⁶ (rate on loan contract). A comparison of Canadian and U.S. agricultural interest rates provides a compelling rationale for the higher levels of farm debt in Canada and its resistance to downward pressures.

⁵ Effective rate is the actual interest paid relative to debt outstanding. It is calculated by cash interest expense over debt outstanding.

⁶ Stated rate or accrued rate is that rate written in the loan contract and represents the amount which should have been paid.

Figure 2.5
Effective Agricultural Interest Rates, Canada and the United States, 1970 – 1990

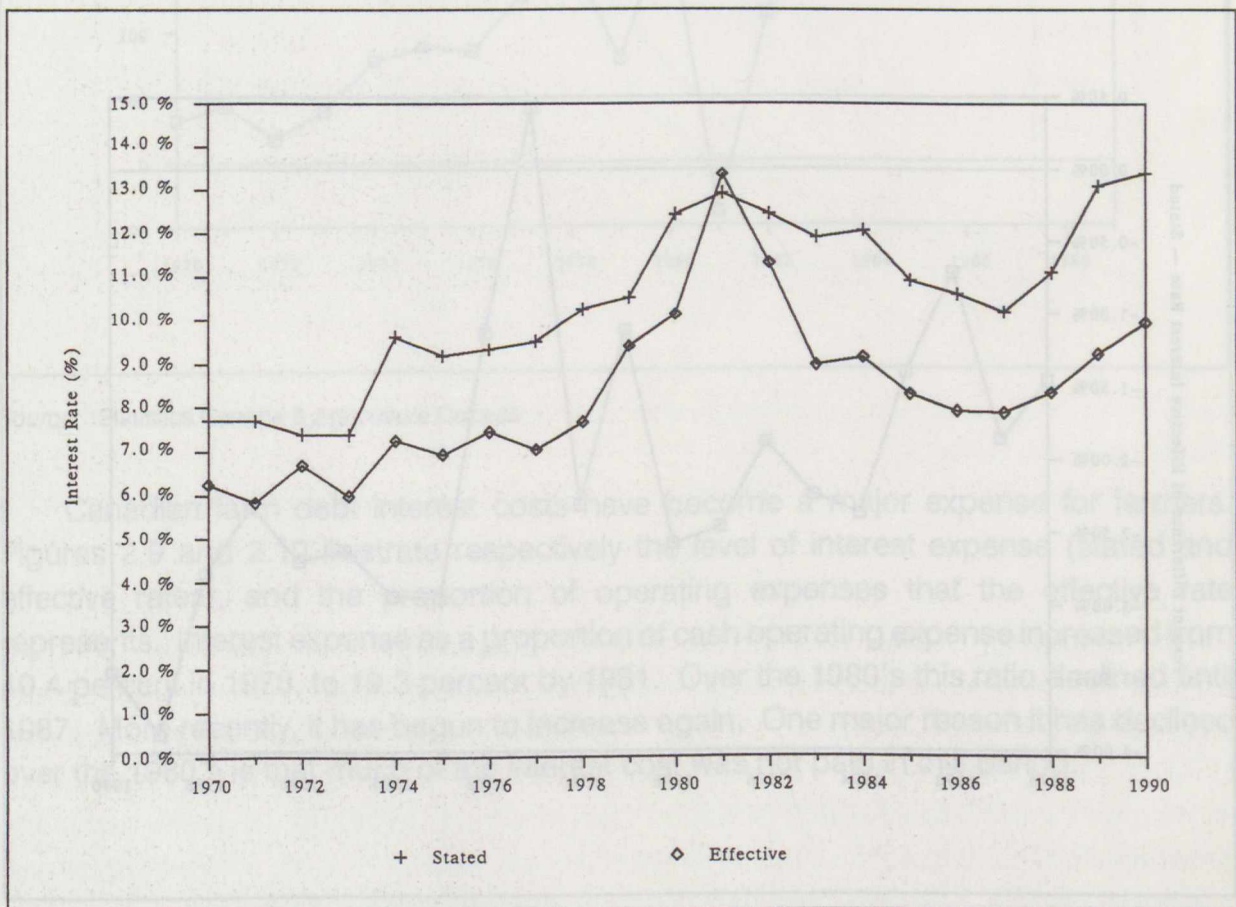


Source: Statistics Canada & U.S. Department of Agriculture, Economic Research Service

Effective interest rates paid by farmers were almost identical between 1970 and 1978. (Figure 2.5). After peaking at over 13 percent in 1981, Canadian effective agricultural interest rates declined very significantly to almost eight percent, before increasing over the past three years. U.S. effective rates peaked at near 11% in the United States in 1982 and have remained near 10% over the 1980's. These rates do not reflect the full accrued or stated rate, but represent only interest paid. This divergence between Canadian and U.S. effective interest rates is explained as much by the overdue or unpaid interest, as by a difference in market rates. The lower effective interest rates in Canada on farm debt since 1983 may partially have contributed to the higher levels of debt. This is explained further in the following paragraphs.

Figure 2.6 compares the effective interest paid and the full accrued rate over the past two decades. The accrued or stated agricultural interest rate is the weighted average cost of farm debt, after adjustments for any interest rebates. The effective interest rate paid for almost all years was significantly less than the stated or accrued rate. What is the significance of this difference? One measurement of financial stress in the industry is represented by the width of the gap between the accrued rate and the actual interest rate paid. A widening gap shows that farmers are unable to pay all the interest costs. The gap between the effective and stated interest rate is shown in Figure 2.7. The zero line indicates where there is no difference. Except for 1981, the effective rate has been between one and four percent below the stated rate. The greater the size of this interest rate gap, the higher the level of farm debt delinquencies.

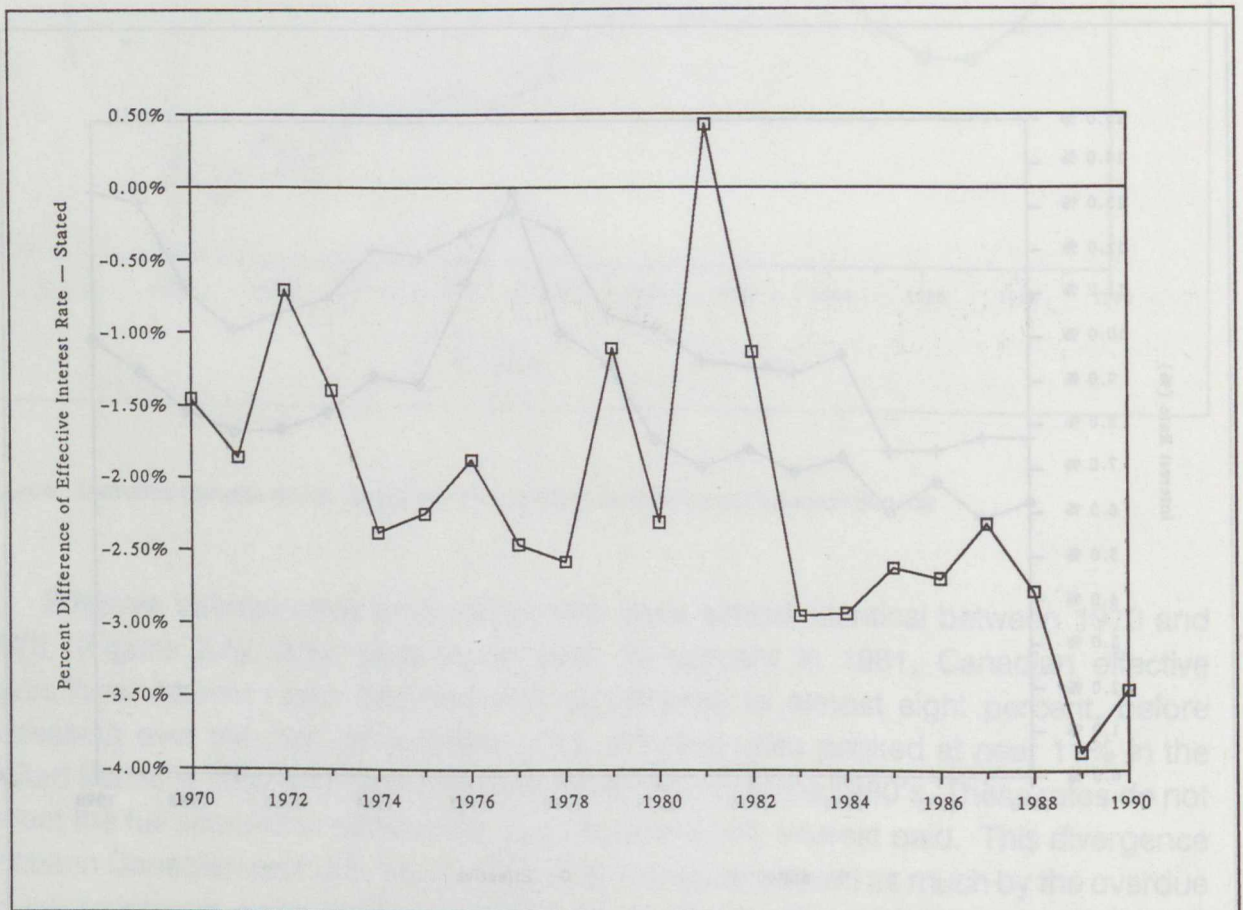
Figure 2.6
Stated and Effective Interest Rates, Canada, 1970 - 1990



Source: Statistics Canada & Agriculture Canada

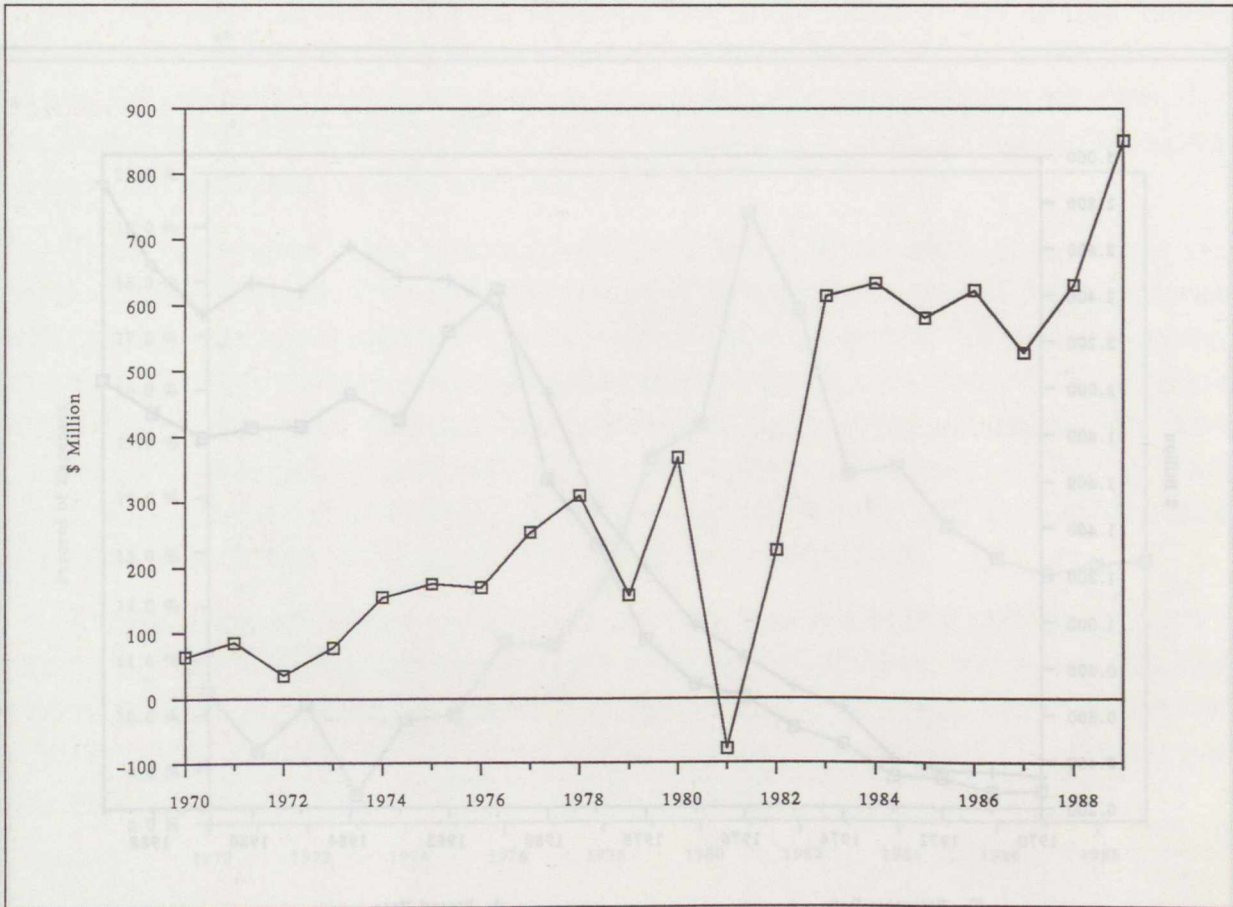
The major implication of a large gap and higher farm debt delinquencies, is that farm debt can rise as unpaid principal and interest payments accrue. Figure 2.8 illustrates the annual amount of interest which is estimated to have remained overdue. Between 1975 and 1989, overdue interest payments totalled \$5.2 billion. The amount of overdue interest and principal grew particularly in the early 1980's and again in the last few years. A large proportion of this debt would have been refinanced or "termed out" into new debt. Frequently, the technique for resolving the problem of debt delinquencies in agriculture has been to refinance the overdue amounts into new loans. The willingness of government and commercial lenders to refinance delinquent loans has been a major force in maintaining high levels of farm debt in the 1980's.

Figure 2.7
Difference of Effective and Stated Interest Rates, Canada, 1970 – 1990



Source: Statistics Canada & Agriculture Canada

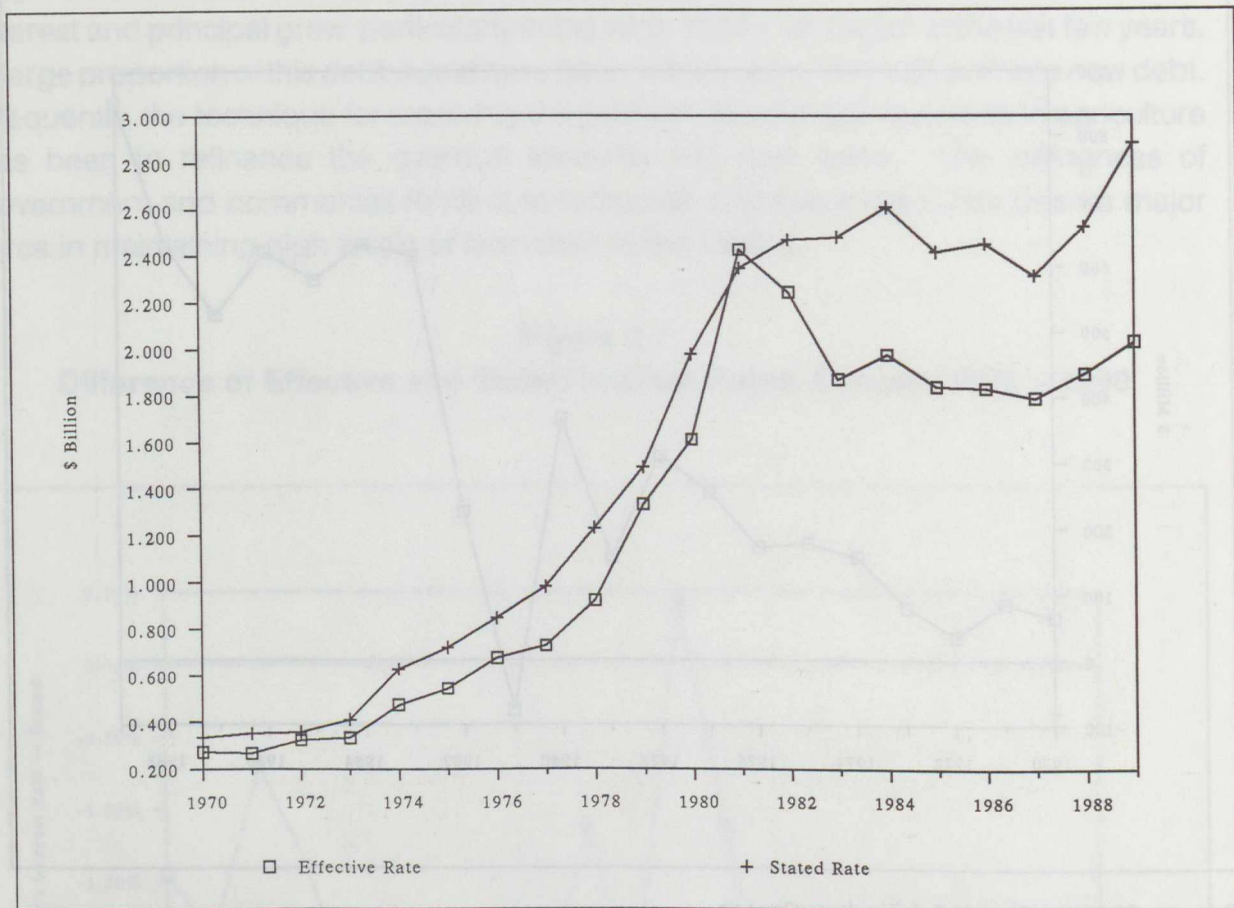
Figure 2.8
Overdue Interest on Canadian Farm Debt, 1970 - 1989



Source: Statistics Canada & Agriculture Canada

Canadian farm debt interest costs have become a major expense for farmers. Figures 2.9 and 2.10 illustrate respectively the level of interest expense (stated and effective rates), and the proportion of operating expenses that the effective rate represents. Interest expense as a proportion of cash operating expense increased from 10.4 percent in 1970, to 19.3 percent by 1981. Over the 1980's this ratio declined until 1987. More recently, it has begun to increase again. One major reason it has declined over the 1980's is that much of the interest cost was not paid in this period.

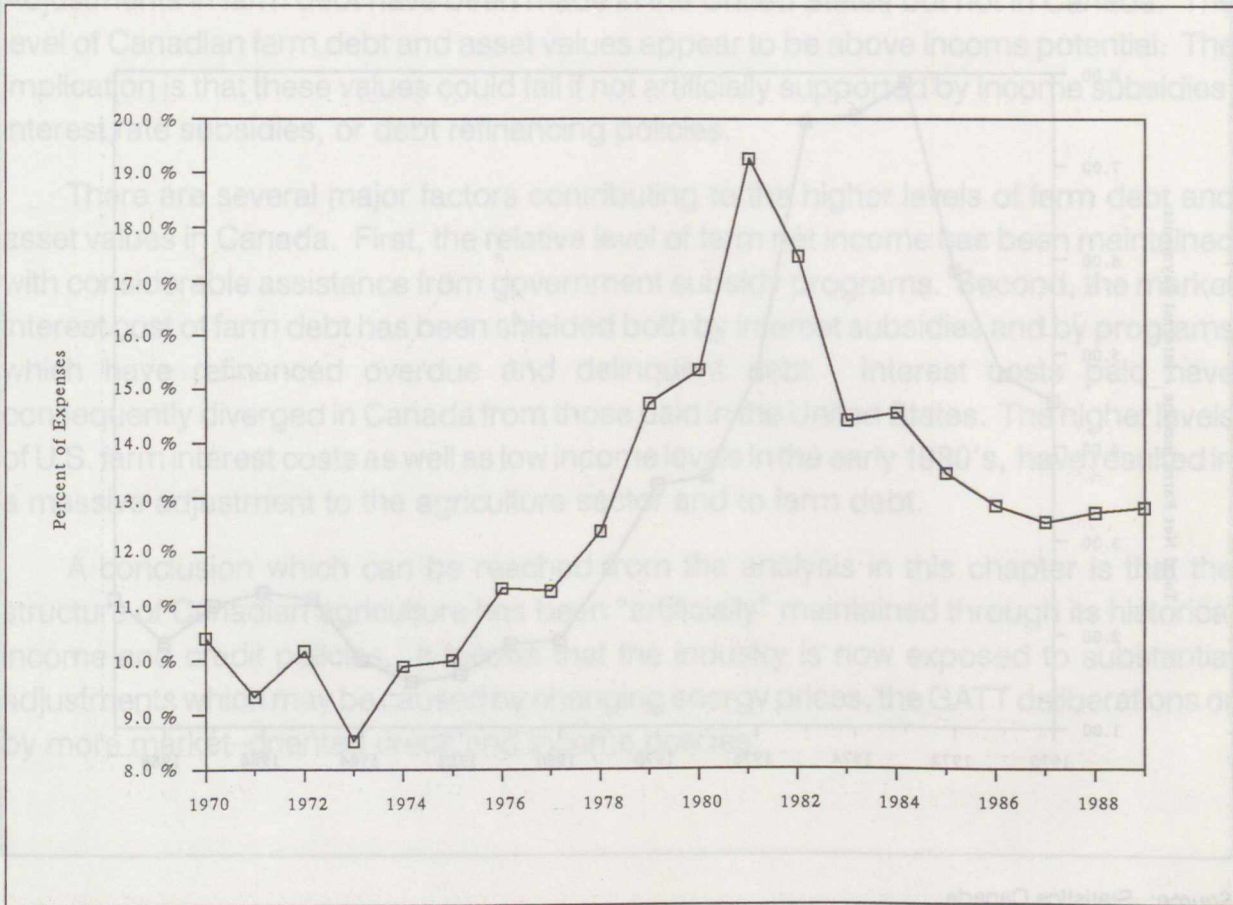
Figure 2.9
Annual Farm Interest Payments at Effective and Stated Rates, Canada,
1970 - 1989



Source: Statistics Canada

Figure 2.10

Interest Payments (Effective Rate) in Proportion to Total Cash Operating Expenses, Canada, 1970 - 1989

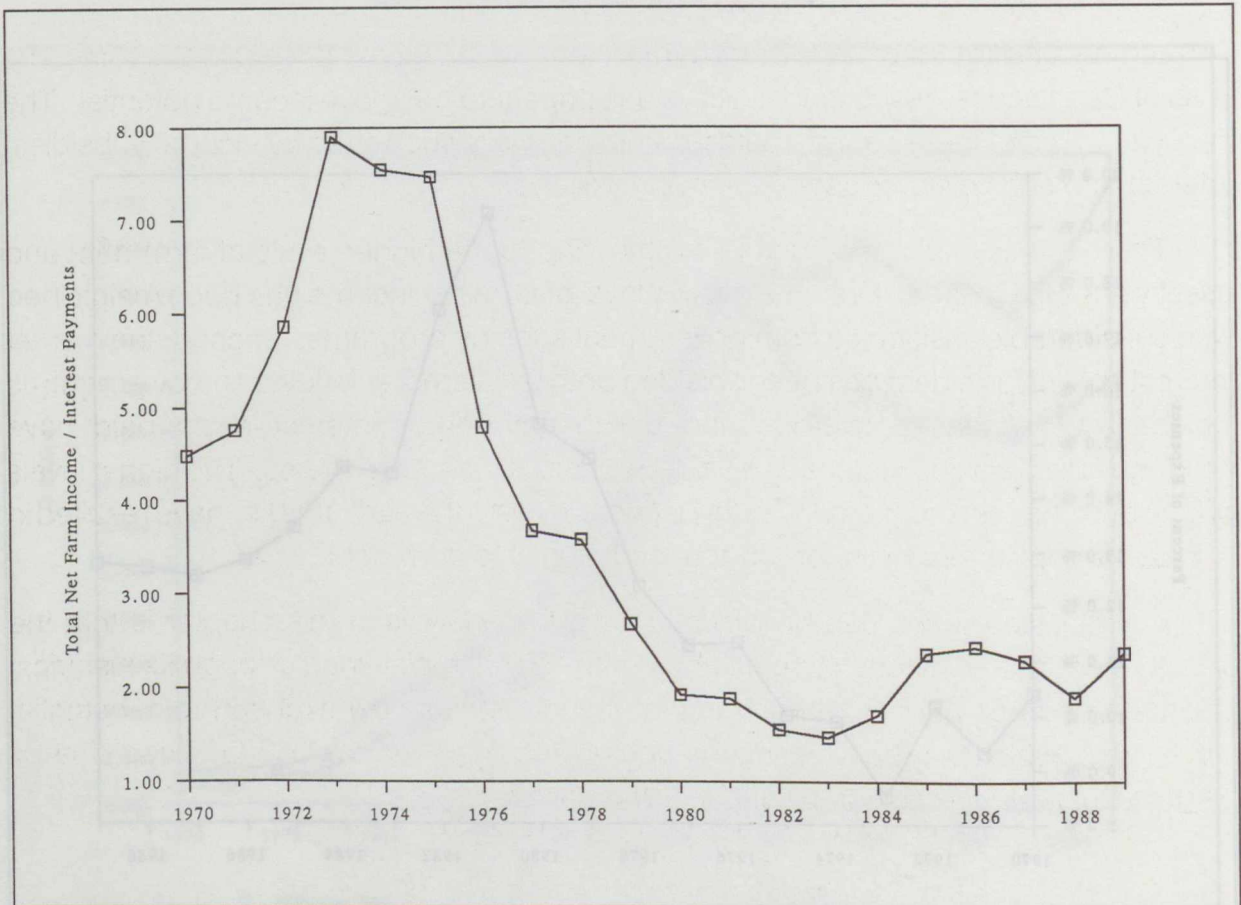


Source: Statistics Canada

An alternative way of evaluating the relative cost of farm debt is by using the ratio of net farm income to interest payments. This ratio represents the number of dollars of net income for each dollar of interest expense. It is very sensitive to minor variations in income or interest costs. Figure 2.11 tracks the ratio over the past twenty years. In 1973, there was nearly \$8.00 of net income for each dollar of interest expense, a very low risk financial position. This ratio deteriorated quickly over the balance of the 1970's and early 1980's. For the latter part of the 1980's, this ratio stabilized around 2.0. It is likely that at this low level, there will be a continued large amount of interest expense which cannot be serviced on a scheduled basis.

Figure 2.11

Total Net Farm Income in Proportion to Interest Payments, Canada, 1970 - 1989



Source: Statistics Canada

3.0 Farm Input Costs

Farm operating costs have not increased markedly during the 1980's. Between 1981 and 1989, the price of farm inputs in eastern Canada increased at a compound annual rate of 1.71 percent⁷, well below the general rate of price inflation in the economy. One reason for the modest rise in farm input costs has been the decline in energy prices in the 1980's. Energy costs impact directly on fuel, fertilizer and chemical input prices. Recent rise and fall of oil prices and renewed uncertainty about Canadian energy supplies may reduce the ability to control input costs in the near future.

⁷ Statistics Canada, *Farm Input Price Index*, (62-004), various issues.

C. SUMMARY

CHAPTER THREE

This chapter has identified that farm debt and land values in Canada are relatively higher in relation to the 1970-72 base period, than those in the United States. Adjustments in farm debt have been made in the United States but not in Canada. The level of Canadian farm debt and asset values appear to be above income potential. The implication is that these values could fall if not artificially supported by income subsidies, interest rate subsidies, or debt refinancing policies.

There are several major factors contributing to the higher levels of farm debt and asset values in Canada. First, the relative level of farm net income has been maintained with considerable assistance from government subsidy programs. Second, the market interest cost of farm debt has been shielded both by interest subsidies and by programs which have refinanced overdue and delinquent debt. Interest costs paid have consequently diverged in Canada from those paid in the United States. The higher levels of U.S. farm interest costs as well as low income levels in the early 1980's, have resulted in a massive adjustment to the agriculture sector and to farm debt.

A conclusion which can be reached from the analysis in this chapter is that the structure of Canadian agriculture has been "artificially" maintained through its historical income and credit policies. It follows that the industry is now exposed to substantial adjustments which may be caused by changing energy prices, the GATT deliberations or by more market-oriented credit and income policies.

Table 3.1 summarizes, on a regional basis, the average debt outstanding per farmer. On a national basis, the average debt per farmer remained almost constant between the years 1938 and 1990 at \$93,300 and \$91,200 respectively. Alberta has taken the lead in 1990 in having the highest average debt per farmer at \$119,500. Relative to the national average, this is 21 percent higher. In 1938, Saskatchewan had the highest average debt per farm. Alberta and the Atlantic provinces showed the greatest increases over this period and the provinces of British Columbia, Saskatchewan and Manitoba all show declines.

ANALYSIS OF FARM FINANCIAL STRUCTURE

This chapter will evaluate the current structure of farm debt, its incidence with respect to specific regions, commodity types, and income levels. It will also assess how the financial risk of the industry has changed.

A. CURRENT STRUCTURE OF FARM DEBT

The current level of farm debt in Canada is estimated by the Farm Credit Corporation 1990 Farm Survey at \$22.2 billion as of January 1, 1990. This compares to \$22.4 billion two years earlier by the same survey.

An important question to determine is whether financial conditions have improved or deteriorated for farmers. It can be illuminated by conducting an examination of the change in farm debt outstanding by region. Changes across regions are often masked by only observing national trends.

Table 3.1 summarizes, on a regional basis, the average debt outstanding per farmer. On a national basis, the average debt per farmer remained almost constant between the years 1988 and 1990 at \$93,300 and \$91,200 respectively. Alberta has taken the lead in 1990 in having the highest average debt per farmer at \$110,500. Relative to the national average, this is 21 percent higher. In 1988, Saskatchewan had the highest average debt per farm. Alberta and the Atlantic provinces showed the greatest increases over this period and the provinces of British Columbia, Saskatchewan and Manitoba all show declines.

Table 3.1
Average and Relative Debt by Region, 1988 and 1990

Region	1988		1990	
	Average Debt per Farm (\$'000)	Average Debt Relative to National Average	Average Debt per Farm (\$'000)	Average Debt Relative to National Average
British Columbia	98.1	1.05	94.3	1.03
Alberta	102.8	1.10	110.5	1.21
Saskatchewan	103.9	1.11	84.5	.93
Manitoba	77.3	.83	73.2	.80
Ontario	85.4	.92	87.7	.96
Quebec	89.0	.95	92.9	1.02
Atlantic	74.3	.80	88.0	.96
Canada	93.3	1.00	91.2	1.00

Source: Farm Credit Corporation, 1990 Farm Survey

In Alberta, debt increases were primarily due to the strong lending volume under the Alberta Farm Credit Stability Program, as well as the availability of subsidized interest loans under the Alberta Development Corporation. The data would suggest that provinces like Alberta, Quebec, British Columbia and the Atlantic provinces would have the most difficult time weathering a drop in future farm net income.

Table 3.2 shows how the total farm debt outstanding is allocated across Canada. The table shows that, in 1988, Saskatchewan had the greatest amount of debt, followed by Alberta and Ontario. In 1990, Alberta has the greatest amount of debt, approximately 24 percent of the Canadian total. Ontario has the next greatest share, followed by Saskatchewan. It is noteworthy that 60 percent of the debt outstanding is still held within the four most western provinces. In 1989, however, these four Western provinces produced 49 percent of the realized net farm income down from nearly 60 percent a decade ago.⁸ This imbalance between net income and debt shows how farmers in the western provinces have become increasingly exposed to financial risk as incomes have fallen. They continue to be vulnerable to further declines in farm income.

⁸ Agriculture Canada, *Farm Income, Financial Conditions and Government Expenditures Data Book*, July, 1990, p. 3.

Table 3.2
Total Debt Outstanding by Region, 1988 and 1990

Region	1988		1990	
	Total Debt (\$ Billion)	Percent of Canada	Total Debt (\$ Billion)	Percent of Canada
British Columbia	1.19	5.3	1.02	4.6
Alberta	4.96	22.1	5.32	23.9
Saskatchewan	5.96	26.6	4.97	22.4
Manitoba	1.81	8.1	1.79	8.0
Ontario	4.89	21.8	5.18	23.3
Quebec	3.02	13.5	3.33	15.0
Atlantic	0.59	2.6	0.61	2.8
Canada	22.42	100.0	22.22	100.0

Source: Farm Credit Corporation, 1990 Farm Survey, Table 1B

Table 3.3
Farm Debt Distribution by Enterprise Type, January 1, 1990

Enterprise Type	Number of Farmers	Total Debt (\$ Billion)	Average Debt per Farm (\$)
Cash Crop	129,827	11.46	88,271
Beef	58,699	3.74	63,710
Hogs	9,635	1.54	159,800
Supply Managed	34,305	5.49	160,035
Other	17,303	0.80	46,235
Total	249,768	23.02	92,166

Note: Number of farmers and debt varies from published 1990 Farm Survey due to suppression of data from small samples and computer rounding errors.

Source: Farm Credit Corporation, 1990 Farm Survey

Another useful way to look at the distribution of debt is by enterprise type. Table 3.3 lists the total and average debt per farm by enterprise. It is apparent that at the time of this survey, hog producers and supply-managed enterprises (in which are included dairy, poultry and egg producers) had the highest average debt per farmer. The higher average debt per farm and the increased risk levels of farms in these two sectors, as may be seen in the following Tables 3.6 and 3.7, could make them vulnerable to future price or cost changes.

B. ANALYSIS OF FARM STRUCTURE AND FINANCIAL CONDITIONS, 1987 AND 1989

This part of the study compares the structure and financial conditions of farmers between 1987 and 1989. Income information used in the comparison is for the two calendar years and the value of assets and liabilities is for January 1, 1988 and January 1, 1990. The methodology involved the development of a Farm Finance Model (FFM)* which is a simulation tool to evaluate not only the current profile and structure of the farm industry, but also to simulate previous and future conditions. The FFM is structured by province, enterprise and three income groups within each enterprise. The current profile of the agriculture industry has been entered into this model. The data are taken from the Farm Credit Corporation's 1990 Farm Survey. The model determines many parameters including debt payments, debt servicing capability, net income, and a variety of financial risk indicators. The model can be shocked by a series of external (exogenous) parameters which then allow it to represent either a historical period or a future simulation. The summary of the financial structure and profile of the agricultural industry, based on the FCC Survey, is given in Appendix A.

The following section will first define some risk measures used in the study, and next provide detailed comparisons of the financial conditions between 1987 and 1989.

1.0 Definition of Financial Risk

It is important to develop an objective measure of financial risk which can compare the relative financial stress of particular segments of the farm population. The risk measure is the same used in the previous Standing Committee Study⁹.

* Developed by Ashmead Economic Research Inc.

⁹ Canada, House of Commons, Standing Committee on Agriculture, "The \$22 Billion Problem : Options for the Financial Restructuring of Farm Debt", Ottawa, July 1988, p. 67 and Glossary, p. 143.

This measure of risk combines the Debt Asset Ratio (DAR) and the Debt Service Ratio (DSR) to develop an overall measure of risk. Those two ratios are defined as:

$$\text{DAR} = \frac{\text{Total Farm Liabilities}}{\text{Total Farm Assets}}$$

$$\text{DSR} = \frac{\text{Revenues} - \text{Operating Expenses}^{10} - \text{Living Costs} + \text{Off-Farm Income}}{\text{Principal} + \text{Interest Expenses}}$$

The two ratios each contribute uniquely to the measurement of risk. The DAR can be considered an overall measure of asset security risk. The DSR is a measure of cash flow risk. A high DAR constitutes higher financial risk. A high DSR signals lower risk. For example, a DSR = 1 indicates that the business has just enough income to service its debt payments. A ratio of 0 suggests no debts can be serviced, but that only operating expenses can be paid.

These two ratios are combined to develop one single measure of risk. This overall measure of risk is defined as:

$$\text{Risk Factor} = \text{DAR} \times \frac{1}{\text{DSR}} = \frac{\text{DAR}}{\text{DSR}}$$

This combination of the DAR and DSR represents the inverse relationship of these two variables. Low levels of the DSR (less than 1.0) are disproportionately more risky than higher levels above one. The calculation of the risk factors for a range of DAR and DSR levels is shown in Table 3.4.

¹⁰ Before Interest expenses and depreciation.

Table 3.4
Risk Factor for Alternative Debt Asset and Debt Service Ratios

		Debt Asset Ratio								
		.1	.2	.3	.5	.7	.9	1.0	1.1	
Debt Service Ratio	.1	1	2	3	5	7	9	10	11	
	.2	.5	1	1.5	2.5	3.5	4.5	5	5.5	
	.3	.33	.7	1	1.7	2.3	3	3.33	3.7	
	.5	.2	.4	.6	1	1.4	1.8	2	2.2	
	.7	.14	.29	.43	.71	1	1.3	1.4	1.6	
	.9	.11	.22	.33	.64	.8	1	1.1	1.2	
	1.0	.1	.2	.3	.5	.7	.9	1	1.1	
	1.1	.09	.18	.27	.45	.64	.82	.91	1	

Source: Ashmead Economic Research Inc.

Insolvent farms are generally defined as those where the risk factor is greater than 1.2. In Table 3.4, these are generally those combinations of DAR and DSR to the right of the diagonal line on this table. As can be seen, even with a low DAR of 0.2, if there is no debt servicing capacity, this type of enterprise can be insolvent. Insolvent in this case does not necessarily mean bankrupt, but does mean that major asset and financial restructuring will have to take place. As well, a farm with almost no debt (DAR near zero) would not be considered insolvent when the Debt Service Ratio was extremely low.

In contrast, the stable farms are those which have a risk factor of less than 0.2. This is shown by the sectioned off area at the extreme lower left of Table 3.4. For the most part, these farms have DAR less than 0.2 and DSR of 1.0 or greater.

The farms with moderate stress are those with a risk factor between 0.2 and less than or equal to 0.5. This is shown on Table 3.4 as the next contained area to the right of the stable area.

The last group of farmers are those in the severe risk category with a risk factor greater than .50 and less than or equal to 1.2. This is the remaining area on Table 3.4 just to the left of the diagonal. This class shows either the ability to service about one half of their debts, or to manage to service the debt but with a very high DAR.

Thus, these risk factors can be grouped into four risk categories: insolvent, severe stress, moderate stress and stable. The risk ranges are summarized below with reference to Table 3.4. The higher the value on this table, the greater is the risk.

Risk Factor	
Insolvent*	> 1.2
Severe Stress	> .50 and ≤ 1.2
Moderate Stress	≥ .2 and ≤ .50
Stable	< 0.2

2.0 Relative Risk Comparison by Province, Enterprise and Income Group

These risk factors are now applied to the incidence of financial risk variability between 1987 and 1989. First, the general change will be assessed by regions between these two periods as shown in Table 3.5. With the exception of the Atlantic provinces and Ontario, the analysis shows that overall financial risk to farmers has decreased in 1989 to 91 percent of the level in 1987. All provinces exhibit stable financial characteristics with several exceptions. British Columbia in 1987 was in the moderate stress category but not in 1989. Quebec both in 1987 and 1989 showed equivalent financial stress.

Table 3.5
Estimated Average Risk by Province or Region, 1987 and 1989

	1987	1989	Percent Change in Risk Factor 1989/1987
British Columbia	.21	.15	-28.6
Alberta	.11	.09	-18.2
Saskatchewan	.12	.10	-16.7
Manitoba	.13	.08	-38.5
Ontario	.08	.09	+12.5
Quebec	.22	.20	-9.1
Atlantic	.05	.08	+60.0
Canada	.11	.10	-9.1

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

* See explanation on p. 24

Risk comparison will be more useful and dynamic when evaluated for more specific commodity groups as Table 3.6 demonstrates. The table shows considerable variation in the risk when viewed from the perspective of enterprise. The beef, hogs and the supply-managed industries have shown increases in risk while cash crop and other enterprises have shown a decline. The relative improvement in the cash crop industry is primarily a result of high government payments to farmers in 1989.

Table 3.6
Estimated Average Risk by Enterprise, 1987 and 1989

Enterprise	1987	1989	Percent Change In Risk Factor 1989/1987
Cash Crops	.12	.08	-33.3
Beef	.08	.09	+ 12.5
Hogs	.18	.20	+ 11.1
Supply Managed	.13	.14	+ 7.7
Other	.09	.04	-55.6
All Enterprises	.11	.10	-9.1

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

A third perspective on reviewing risk is to evaluate the level by income group. The farm population was divided into three equal groups by region, based on gross income level. The comparison of risk by enterprise and income group is shown in Table 3.7. Even more risk variability is apparent at this level of analysis. In the average of all enterprises the lowest income group also shows the lowest level of risk. This is not true of the low income groups in the hog and supply-managed enterprises, which have risk factors indicating that, as a whole, these groups are insolvent. The other two hog income groups fall within the moderate stress category. In general, medium and high income farmers appear to be more exposed to risk than ones with lower income. This is a function of their need to use proportionately more borrowed capital to expand and produce income.

Table 3.7
Estimated Average Risk by Enterprise and Income Group, 1989

Enterprise	Risk Factor by Income Group			Total
	Low Third	Medium Third	High Third	
Cash Crop	.05	.10	.08	.08
Beef	.08	.08	.11	.09
Hogs	I	.22 ^M	.20 ^M	.20
Supply Managed	I	.14	.14	.14
Other	.03	.09	.04	.04
All Enterprises	.05	.10	.10	.10

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

I = insolvent
M = moderate stress

3.0 Farmers by Risk Class

A key objective is to establish the number of farmers in each of the four stress categories (insolvent, severe stress, moderate stress and stable). This will be estimated in this section by enterprise, province and between years. Table 3.8 summarizes the number of farmers in each of these four groups in comparing the two years under review, making no allowance for any overall change in the number of farmers that might have occurred in the interval. Between 1987 and 1989, there was a shift of over 3000 farmers into the stable group with a decline in the numbers in the moderate and severe stress groups. There was some further increase in the insolvent group, probably because this group is increasingly isolated from the benefits of higher prices or government support.

Table 3.8
Estimate of Number of Farmers by Stress Category, 1987 and 1989

Stress Category	1987		1989		Change in Number of Farmers 1989/87
	Number	Percent	Number	Percent	
Insolvent	47,235	18.9	47,948	19.2	713
Severe Stress	29,658	12.0	26,524	10.6	-3134
Moderate Stress	30,506	12.2	29,777	11.9	-729
Stable	142,369	57.0	145,518	58.3	3149
Totals	249,768	100.00	249,768	100.00	

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

An alternative way of evaluating the number of farmers by stress category is to compare their percentage distribution by enterprise. Table 3.9 makes these comparisons. At the time of the 1990 FCC Farm Survey, the hog industry by far showed the highest incidence of financial stress. Surprisingly, the supply-managed industries were second in terms of overall risk level. Historically stable income has allowed for greater debt use. Recent international trade discussions have adversely affected this sector as evidenced by the beginning of the decline in quota value in 1989.

The farmers who will be forced to make severe adjustments are those in the insolvent group. It is not suggested that all of these farmers will become bankrupt or leave agriculture, but they can only be maintained in agriculture under artificial support conditions if market forces do not improve.

Table 3.9
Comparison of Farmers by Stress Class by Enterprise, 1989

Enterprise	Financial Stress Class					
	Number of Farmers	Insolvent	Severe Stress	Moderate Stress	Stable	Total
		Percent				
Cash Crop	128,827	19.4	12.4	9.3	59.0	100.0
Beef	58,699	16.3	14.1	10.4	59.2	100.0
Hog	9,635	28.6	17.2	14.3	39.8	100.0
Supply Managed	34,305	13.8	7.5	26.4	52.2	100.0
Other	17,303	28.9	6.3	11.0	53.7	100.0
All Enterprises	249,768	18.9	11.9	12.2	57.0	100.0

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

The number of farmers in the insolvent group is shown by region in Table 3.10. It continues to be apparent that the greatest number of farmers in financial difficulty is in the province of Saskatchewan where insolvency has increased between 1987 and 1989. A significant number of farmers are also in financial difficulty in Ontario. The trend toward improvement is evident in this province. The percentage of farmers that are insolvent in each province is provided in Table 3.11, which indicates that Manitoba still has the highest proportion of insolvent farmers among the provinces.

Table 3.10
Number of Insolvent Farmers by Region, 1987 and 1989

Region	1987		1989	
	Number	Percent	Number	Percent
British Columbia	2,419	5.1	2,419	5.0
Alberta	6,803	14.4	6,867	14.3
Saskatchewan	11,810	25.0	13,850	28.9
Manitoba	7,535	16.0	6,709	14.0
Ontario	10,441	22.1	9,615	20.1
Quebec	6,848	14.5	6,869	14.3
Atlantic	1,379	2.9	1,620	3.4
Canada	47,235	100.0	47,948	100.0

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

Table 3.11
Proportion of Total Farmers in Insolvent Class by Region, 1989

Region	Number of Farmers	Number Insolvent	Percent Insolvent
British Columbia	10,876	2,419	22
Alberta	50,982	6,867	13
Saskatchewan	59,210	13,850	23
Manitoba	24,196	6,709	28
Ontario	61,962	9,615	16
Quebec	35,458	6,869	19
Atlantic	7,084	1,620	23
Canada	249,768	47,948	19

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

4.0 Excess Debt

Another means of assessing the financial condition of farmers is to determine the amount of any excess debt held by specific enterprise or income categories. Excess debt is defined as that amount of debt which is not currently serviceable by income from all sources. This value is found by calculating, for each farm, the amount of income available for debt servicing. This income is then used to determine what amount of total debt could be serviced at current interest rates. This reflects the debt capacity of the business. This calculated debt is compared to the actual level of debt. If the debt capacity is greater than the actual amount of debt, there is no excess debt. If the actual debt is higher than the debt capacity, the difference is a measure of the excess debt on the farm. In summary :

$$\text{Excess Debt} = \text{Actual Debt} - \text{Debt Capacity}$$

The Farm Finance Model has been used to calculate the amount of excess debt on farms where debt exceeds debt capacity. Table 3.12 compares this amount of debt on a regional basis. One point to make from this table is that comparing the two years, the amount of excess debt has not changed significantly, but has remained at a high level of about \$4.8 billion. On a regional basis, however, there have been significant changes. Alberta and the Atlantic provinces show the greatest increases in excess debt, rising by \$104 and \$60 million respectively. Manitoba has shown a large decline (\$100 million) while most other provinces have remained nearly constant. This increase in excess debt in Alberta and the Atlantic provinces provides a leading indicator of future financial difficulties.

Province	1987	1988	Change
Canada	22,219.1	1,984.8	17,334.3
Atlantic	0,000.0	1,155.8	1,155.8
Quebec	3,329.7	670.1	2,659.6
Ontario	2,184.7	1,271.9	912.8
Manitoba	1,788.8	481.9	1,306.9
Saskatchewan	4,888.8	4,002.8	886.0
Alberta	2,318.2	1,242.8	1,075.4
British Columbia	1,020.7	318.4	702.3

Table 3.12
Amount of Excess Debt by Province, 1987 and 1989

Region	1987		1989		Change 1989 - 1987 (\$ Million)
	Amount (\$ Million)	Percent of Total	Amount (\$ Million)	Percent of Total	
British Columbia	348.0	7.2	316.4	6.5	-31.6
Alberta	1,141.0	23.7	1,244.9	25.5	103.9
Saskatchewan	889.0	18.4	897.6	18.4	8.6
Manitoba	562.4	11.7	461.9	9.5	-100.5
Ontario	1,266.8	26.3	1,271.3	26.0	4.6
Quebec	550.0	11.4	570.1	11.7	20.1
Atlantic	63.0	1.3	122.6	2.5	59.5
Canada	4,820.1	100.0	4,884.8	100.0	64.7

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

Table 3.13
Amount of Serviceable and Excess Debt by Region, 1989

Region	Total Debt	Excess Debt	Serviceable Debt (\$ Million)	Percent Serviceable
British Columbia	1,020.7	316.4	704.3	69
Alberta	5,314.5	1,244.9	4,069.6	77
Saskatchewan	4,968.8	897.6	4,071.2	82
Manitoba	1,786.9	461.9	1,325.0	74
Ontario	5,184.7	1,271.3	3,913.4	75
Quebec	3,329.7	570.1	2,759.6	83
Atlantic	613.8	122.6	491.2	80
Canada	22,219.1	4,884.8	17,334.3	78

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

An alternative means of evaluating the repayment of debt is to calculate the amount and proportion which is serviceable. From Table 3.13 we see that Quebec's debt is the most serviceable at 83 percent. Saskatchewan and the Atlantic provinces follow in the proportion serviceable. While the Saskatchewan level of serviceable debt may appear surprisingly high, it must be realized that the debt outstanding in that province has fallen by \$1.0 billion between 1988 and 1990. A large part of its excess debt problem has already been dealt with compared to other regions. The provinces of British Columbia, Alberta, Manitoba and Ontario have the lower proportions of serviceable debt and possibly the most debt adjustment yet to be made.

The incidence of excess debt is evaluated by enterprise. These results are shown in Table 3.14. It is apparent that the hog sector has demonstrated the greatest increase in risk as measured by the change in the amount of excess debt. In contrast, the cash crop industry has been stabilized in this period by government support payments. The "other enterprise" sector has shown the greatest decrease in the amount of excess debt. This category would include specialized type enterprises.

Table 3.14
Excess Debt by Enterprise, 1987 and 1989

Enterprise	1987		1989		Change 1989 - 1987 (\$ Million)
	Amount (\$ Million)	Percent of Total	Amount (\$ Million)	Percent of Total	
Cash Crop	2,668.4	55.4	2,693.3	55.1	24.8
Beef	1,044.5	21.7	1,014.2	20.8	-30.3
Hog	366.3	7.6	409.2	8.4	42.9
Supply Managed	421.3	8.7	480.5	9.8	59.2
Other	319.6	6.6	287.7	5.9	-31.9
Total	4,820.1	100.0	4,884.8	100.0	64.7

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

Finally, the level of excess debt is evaluated by income group. This is shown in Table 3.15. When measured on the basis of income group, it is apparent that the higher income groups displayed the most stress, given the dramatic increase in their excess debt. The low and medium income groups showed a decline in excess debt, which is partly due to off-farm income supporting the farm business.

Table 3.15
Excess Debt by Gross Income Group, 1987 and 1989

Gross Income Category	1987		1989		Change 1989 - 1987 (\$ Million)
	Amount (\$ Million)	Percent of Total	Amount (\$ Million)	Percent of Total	
Low Sales	871.6	18.1	809.0	16.6	-62.6
Medium Sales	2,139.8	44.4	1,995.0	40.8	-144.8
High Sales	1,808.7	37.5	2,080.8	42.6	272.1
Total	4,820.1	100.0	4,884.8	100.0	64.7

Source: Derived from Farm Credit Corporation, 1990 Farm Survey, by Ashmead Economic Research Inc.

C. SUMMARY

This chapter has made some key observations about the current condition of the agricultural industry, and how it has changed in the recent past.

The national farm debt remained almost constant between 1988 and 1990. On a provincial basis, however, we see that certain provinces such as Alberta and Quebec increased their share of the debt. Many of these higher debt values can be attributed to the effect of provincial credit programs. Saskatchewan and British Columbia reduced their share and amount of the debt.

Relative risk measurement indicates that, overall, financial risk has declined marginally between 1987 and 1989. On an enterprise basis, however, it has increased for hogs, remained nearly constant for beef and the supply-managed enterprises, and declined for cash crops and other enterprises. The contribution to any reduction in risk was partially due to the increase in real estate asset values of 1989, and which carried into 1990.

The number of farmers in financial stress changed between 1987 and 1989. Those in stable financial condition increased marginally from 57.0 percent in 1987 to 58.3 percent in 1989. This represents an increase of 3,149 farmers in the stable category. These numbers appear to have been drawn out of the severe and moderate stress categories, both of which declined.

The percentage of farms falling into the insolvent category increased by less than half a percentage point over this period. The farmers in the least secure risk group are becoming increasingly isolated from the balance of the agricultural population. Income improvements for the industry do not have a significant impact on this group. Their problems are too extensive. Proportionately, more farmers are in the insolvent group in Manitoba, followed by Saskatchewan and the Atlantic provinces.

The analysis of excess debt suggests it has remained high in the recent past, and has even risen for some enterprises such as hogs. The high sales group is exhibiting the most stress with excess debt jumping by almost \$300 million between 1987 and 1989. The amount of the Canadian farm debt which is serviceable under current economic conditions is estimated at 78 percent. Alternatively, 22 percent or \$4.9 billion is currently not serviceable.

A. BASE CASE PROJECTION

The analysis uses the Ashmead Economic Research Inc. Farm Finance Model to evaluate the impact of projected farm financial conditions on farm debt and financial stress.

The first projection uses the current estimates of income and expenses into 1992 which have been forecasted for the industry by Wharton Econometric Forecasting Associates (WEFA)¹¹. The combination of the Farm Finance Model and Wharton forecasts are used to produce a projected scenario of farm financial conditions in 1992. To derive a particular scenario, such as the base case, a particular pattern of income, interest rate, cost and price change is assumed. In the base case these assumptions are selected in line with future conditions that might reasonably be expected to prevail. Given

¹¹ The WEFA Group, *Canadian Agricultural Forecasting Group*, November 1990. The estimate has been used as it was disaggregated to report farm-level data.

CHAPTER FOUR

FUTURE SIMULATIONS

The previous two chapters have described a financial picture which has not changed significantly over the past few years. Farm debt remains high, with estimates that close to \$5.0 billion is in excess. Indications are that land values are artificially high given the earning capability of the industry. The current structure of the industry has been maintained at this level through income subsidization policies, interest subsidies and debt refinancing programs.

The future will bring significant changes with respect to income, government subsidization levels, input costs, interest rates, and other factors. Given the uncertainty the industry is presently experiencing, there is considerable difficulty in providing an accurate projection of farmers' debt position into the 1990's. Bearing in mind this qualification, the chapter will attempt to project a profile and analysis of the farm sector into 1992, under several alternative policy and economic conditions.

A. BASE CASE PROJECTION

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¹¹ The WEFA Group, Canadian Agricultural Forecasting Group, November 1990. This estimate has been used as it was disaggregated by region to facilitate the analysis.

the large number of uncertainties that enter into the picture, however, not all events that could impact on agriculture will necessarily be captured by the base case and so it is essential to also examine a number of alternative scenarios. In total, these projections should allow an appreciation of how the farm debt situation may evolve.

The base forecast projects that total cash receipts will increase from \$22.4 billion in 1989 to \$22.9 billion in 1992, representing a two percent increase in receipts. This includes all sources of government payments, which are forecast to decrease by 35 percent from \$3.27 billion in 1989 to \$2.12 billion in 1992. Overall increases in total cash receipts for farms of different types would vary from the total increase of two percent, with the following pattern of increase assumed by farm type: cash crop, 1 percent; cattle, 5 percent; hogs, 4 percent; supply-managed farms, 2 percent; and other types, 3 percent. The impact of the Gross Income Insurance Program and the Net Income Stabilization Account have not been reflected in these projections since much of the effect may be replacement income. However, the report does include a separate analysis of the effects of the GRIP in 1991-92.

Other assumptions of the base case projection are as follows: land values are projected to decline in most provinces and appropriate adjustments have been made to asset values by region¹².

The assumptions for the base case projection, and for the following simulations are found in Appendix B. The implications of the baseline projection are examined from the perspective of excess debt and distribution by risk class. Tables 4.1 and 4.2 examine the level of excess debt by region and enterprise respectively. This value represents the sum of excess debt only on farms that have excess debt. Excess debt is estimated to continue to rise from \$4.88 billion in 1989 to \$4.95 billion by 1992. This represents a 1.3 percent increase. Excess debt is expected to rise most significantly in Saskatchewan where it will increase by 7.7 percent. The province of Quebec shows the second highest increase in excess debt. The higher operating costs and debt to asset ratios in Quebec contribute to this outcome. The distribution of excess debt among provinces in 1992 is shown in Figure 4.1.

¹² "Land Value Forecasts", *Issues*, Vol. 1, Number 1, October, 1990.

Table 4.1
Excess Debt by Region, Base Case Projection, 1989 and 1992

Region	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt 1992
British Columbia	316.4	317.6	0.4	6.4
Alberta	1,244.9	1,223.6	-1.7	24.7
Saskatchewan	897.6	966.4	7.7	19.5
Manitoba	461.9	469.5	1.6	9.5
Ontario	1,271.3	1,248.7	-1.8	25.2
Quebec	570.1	597.2	4.8	12.1
Atlantic	122.6	123.9	1.1	2.5
Canada	4,884.8	4,946.9	1.3	100.0

Source: Ashmead Economic Research Inc.

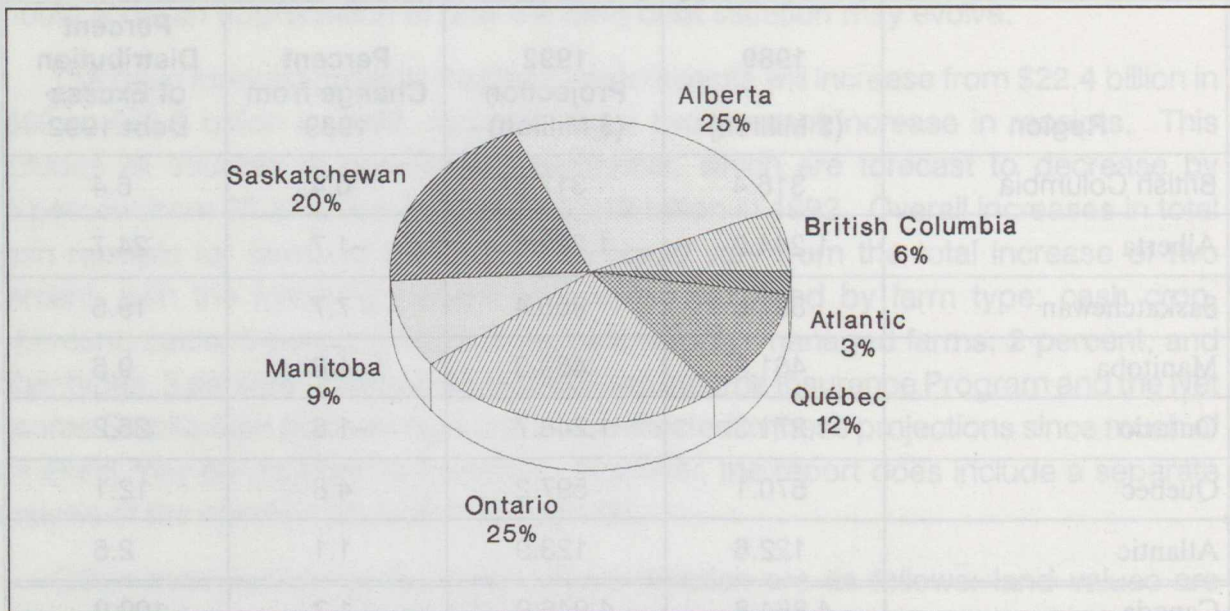
A high proportion of the excess debt remains within the cash crop enterprises and some further increase is projected in this scenario. (See Figure 4.2). The supply-managed industry, which has a relatively low level of excess debt in 1989, is anticipated to experience the greatest relative increase in excess debt from an enterprise perspective (See Table 4.2).

Table 4.3
Calculated Number of Farms by Risk Category, Base Case Projection, 1989 and 1992

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145,375	145,311	0.0
Moderate	42,947	42,945	-1.8
Severe	12,889	12,890	-0.1
Insolvent	47,948	47,953	0.0
Total	249,159	249,159	

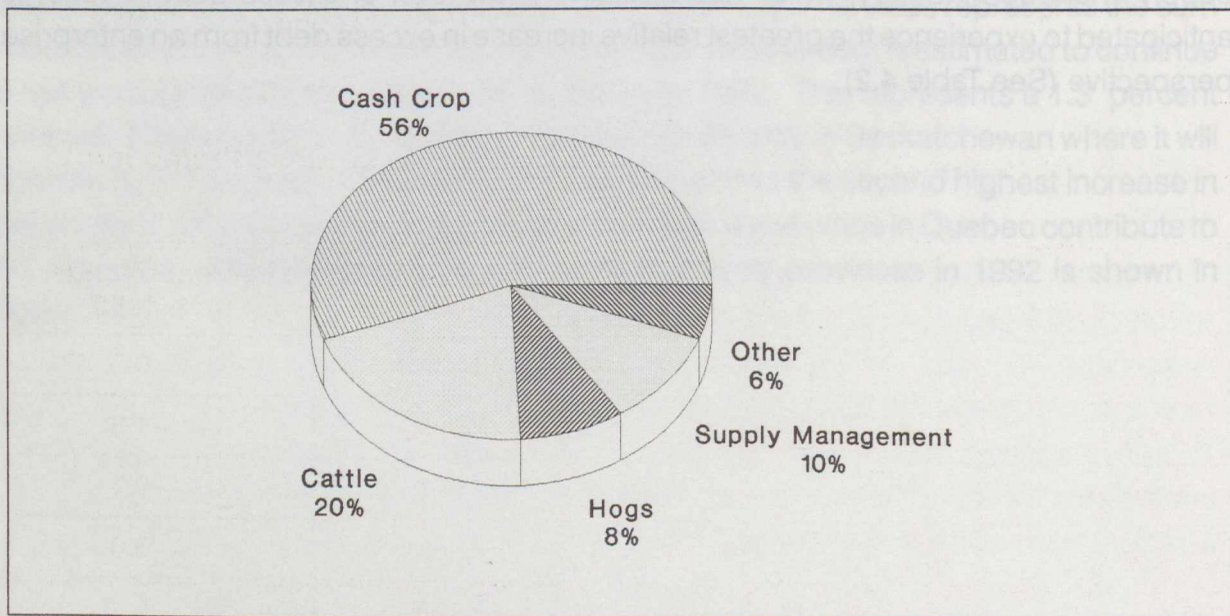
Source: Ashmead Economic Research Inc.

Figure 4.1
Percent Distribution of Excess Debt by Region, Base Case Projection, 1992



Source: Ashmead Economic Research Inc.

Figure 4.2
Percent Distribution of Excess Debt by Enterprise, Base Case Projection, 1992



Source: Ashmead Economic Research Inc.

Table 4.2
Excess Debt by Enterprise, Base Case Projection, 1989 and 1992

Enterprise	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt, 1992
Cash Crop	2,693.3	2,753.7	2.2	55.7
Cattle	1,014.2	993.6	-2.0	20.1
Hogs	409.2	418.2	2.2	8.5
Supply Management	480.5	499.4	3.9	10.1
Other	287.7	281.9	-2.0	5.7
Total	4,884.8	4,946.9	1.3	100.0

Source: Ashmead Economic Research Inc.

Within this baseline projection, with overall debt declining slightly, the proportion of farmers in the four risk classes shows only small shifts compared to 1989. (Table 4.3). What is noted primarily is that the number or proportion of farmers in the insolvent class, remains essentially unchanged. While there may be some further decline in the total number of farms, presumably representing some drop in the numbers in this group, it was not possible to take account of this in the analysis. The proportion of farmers in the moderate risk category decreases by 1.8 percent while those in the severe class decrease by 0.1 percent.

Table 4.3
Calculated Number of Farms by Risk Category, Base Case Projection, 1989 and 1992

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145,518	146,311	0.5
Moderate	43,697	42,905	-1.8
Severe	12,605	12,590	-0.1
Insolvent	47,948	47,963	0.0
Total	249,768	249,768	

Source: Ashmead Economic Research Inc.

This "most likely" baseline projection seems to indicate a continuance of the existing financial structure and difficulties within the agriculture industry. However, further analysis shows that this is a function of the continuing problems in the cash crop industry and to a lesser extent in Quebec. Cattle and other enterprises show some slight improvement. Overall, the debt of Canadian farmers is expected to marginally decline under the assumptions used in this simulation.

B. HIGHER INPUT COST PROJECTION

A potential risk for farmers is that although recent energy prices hikes have subsided, they could recur and contribute to unexpected fuel, fertilizer and chemical price increases. As well, other input costs have the potential to increase with inflation. While farmers can often adjust the use of such inputs, the impact will eventually be felt.

The base case situation outlined above has been recalculated to include a further input price shock. Specifically, this has been estimated by increasing total input costs by another three percentage points for the next two years over what was anticipated to occur in the base case. Input costs have increased at a modest rate over the 1980's. In the supply-managed sector, farm revenue increases by one percentage point over the base case due to cost of production formulas. There is a high probability that farmers are exposed as much to the risk of input price shock as they are to commodity price changes.

Table 4.4 shows the level of excess debt increasing to \$5.2 billion, under the "higher input cost" picture or by 6.3 percent, from the levels estimated in 1989. This compares with a 1.3 percent increase in the base case. The regional distribution of excess debt shown in Table 4.4 has not changed greatly from the base case.

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145.518	140.311	-3.6
Moderate	42.005	42.005	0.0
Severe	12.005	12.005	0.0
Total	199.528	194.321	-2.6

Table 4.4
Excess Debt by Region, Higher Costs Projection, 1989 and 1992

Region	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt 1992
British Columbia	316.4	343.3	8.5	6.6
Alberta	1,244.9	1,233.1	-0.9	23.8
Saskatchewan	897.6	1,043.8	16.3	20.1
Manitoba	461.9	499.8	8.2	9.6
Ontario	1,271.3	1,267.7	-0.3	24.4
Quebec	570.1	673.5	18.1	13.0
Atlantic	122.6	130.7	6.6	2.5
Canada	4,884.8	5,191.9	6.3	100.0

Source: Ashmead Economic Research Inc.

The central point of this evaluation of higher costs is the noticeable impact they could have on the provinces of Saskatchewan and Quebec. High operating costs relative to income have contributed to low net margins for farmers in both of these provinces, placing them at risk. Cost increases from any source such as inputs or interest rates could impact on the viability of these farmers.

As seen in Table 4.5, it is not only the supply-managed sector that is affected by higher costs. An increase in excess debt for hog enterprises is also evident. The increased share of the excess debt in these sectors in comparison to other enterprises is also shown in this table. They have accumulated higher debt to asset ratios and higher operating cost ratios than most other enterprises.

Table 4.5
Excess Debt by Enterprise, Higher Costs Projection, 1989 and 1992

Enterprise	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt, 1992
Cash Crop	2,693.3	2,856.1	6.0	55.0
Cattle	1,014.2	1,012.8	-0.1	19.5
Hogs	409.2	477.9	16.8	9.2
Supply Management	480.5	563.1	17.2	10.8
Other	287.7	281.9 ¹	-2.0	5.4
Total	4,884.8	5,191.9	6.3	100.0

¹ Under this projection, the excess debt of the "other" enterprise group does not change from the base case situation. Among farms in this group on which debt was substantially below debt capacity, an increase of 3 percentage points in operating costs did not move them into an excess debt position.

Source: Ashmead Economic Research Inc.

Table 4.6 shows a reduction in the stable group and increases in the other risk categories, indicating the increased severity of debt problems with higher input costs.

Table 4.6
Calculated Number of Farms by Risk Category, Higher Costs Projection, 1989 and 1992

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145,518	134,305	-7.7
Moderate	43,697	49,691	13.7
Severe	12,605	17,307	37.3
Insolvent	47,948	48,466	1.1
Total	249,768	249,768	

Source: Ashmead Economic Research Inc.

The potential for higher cost increases could pose as great a threat to the survival of many farmers as price declines. Prices of many commodities have been discounted for some time and the probability of further substantial price declines is low. Producers have cut back on input use and there is little room left for further adjustment. Therefore, cost increases might have large impacts on profitability.

C. OPTIMISTIC PROJECTION

Agriculture is laden with examples of disastrous conditions reversing themselves in a matter of one or two years. The early 1970's was one such example. In 1970 and 1971, grain inventories were at peak levels, prices were low and the long-term outlook for the industry was dismal. Events reversed themselves in 1972 and 1973, leading to a period of recovery which for the most part, lasted until the early 1980's.

An argument can be made for the same thing happening over the coming crop years. The failure of the GATT discussions contributing to the current low prices could set the stage for a price recovery in the grains industry. While world stocks of grains are low relative to the average for the past 10 years, North America, and possibly Europe, might not aggressively seed grains in 1991-92. The acreage in the U.S. set-aside program has doubled. The use of production enhancing inputs such as fertilizers and chemicals will be reduced. Furthermore, it is not likely that the favourable growing conditions experienced globally in 1990 will be repeated in 1991.

A grain price recovery is an important economic possibility to evaluate and in this context it is coupled with strength in other farm prices as well. This simulation has been examined under the following assumptions: (i) Total farm revenue in each of the type-of-farm categories is increased by 10 percentage points more than in the base case. (ii) Reflecting that grain is an input to the livestock sector, the operating expenses of these enterprises, and of the supply-managed industry, was increased by 2 percentage points. Off-farm income was reduced slightly. (iii) Total and long-term liabilities have been decreased by 5 percent from the base case. Asset values have been increased by 3 percentage points. The results of these changes are discussed below.

Table 4.7 illustrates the changes in excess debt by region and for Canada. The level of excess debt decreases nationally to \$4.35 billion, but with quite different regional characteristics. Excess debt moderates significantly in Saskatchewan and the Atlantic provinces. More modest improvements are shown in other provinces.

Table 4.7
Excess Debt by Region, Optimistic Projection, 1989 and 1992

Region	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt, 1992
British Columbia	316.4	295.5	-6.6	6.8
Alberta	1,244.9	1,160.8	-6.8	26.7
Saskatchewan	897.6	684.6	-23.7	15.8
Manitoba	461.9	416.9	-9.7	9.6
Ontario	1,271.3	1,186.0	-6.7	27.3
Quebec	570.1	505.9	-11.3	11.6
Atlantic	122.6	97.0	-20.9	2.2
Canada	4,884.8	4,346.7	-11.0	100.0

Source: Ashmead Economic Research Inc.

Table 4.8 shows how the excess debt would be adjusted and distributed by enterprise. Most important, the supply-managed and other industries would benefit the least from a 10 percent revenue increase. The cash crop and livestock sectors lead all enterprises in the amount of excess debt reduction.

Table 4.8
Excess Debt by Enterprise, Optimistic Projection, 1989 and 1992

Enterprise	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt, 1992
Cash Crop	2,693.3	2,395.2	-11.1	55.1
Cattle	1,014.2	885.6	-12.7	20.4
Hogs	409.2	350.9	-14.2	8.1
Supply Management	480.5	448.1	-6.7	10.3
Other	287.7	266.8	-7.2	6.1
Total	4,884.8	4,346.7	-11.0	100.0

Source: Ashmead Economic Research Inc.

The number of farmers by risk class (Table 4.9) shows some adjustment. The proportion in the moderate risk class falls by 19 percent and the severe group increases by 6 percent. There appears to be only marginal change in either the stable or insolvent group.

Table 4.9
Calculated Number of Farms by Risk Category, Optimistic Projection,
1989 and 1992

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145,518	154,569	6.2
Moderate	43,697	35,352	-19.1
Severe	12,605	13,396	6.3
Insolvent	47,948	46,451	-3.1
Total	249,768	249,768	

Source: Ashmead Economic Research Inc.

D. HIGHER INTEREST RATES AND INFLATION

As this study is focusing on farm debt, an important alternative to evaluate is the impact of higher interest rates and the accompanying inflation. While interest rates are expected to continue to moderate for most of 1991, however, it is interesting to examine the effect of financial and inflationary pressures which could lead to a resurgence in interest rates in 1992.

The assumption used in this analysis is that interest rates could move up markedly from current levels. It was assumed that the effective interest rates paid by farmers could increase by approximately one percentage point above the base case. The resulting impacts on debt payments were assessed. Finally, together with higher interest rates, a general inflation impact on operating costs was included. Operating costs in this context were increased by one and a half percentage points from the level used in the base case. Living expenses were increased by two percentage points. Revenues were increased by one percentage point over the base case for the supply-managed sector, stemming from cost of production formulas. The debt for this sector was increased by one percentage point. All other parameters remain as in the base case. The results of this analysis are summarized below.

On a national basis, excess debt rises to \$5.1 billion which exceeds the base case (Table 4.10). Again, Saskatchewan and Quebec show a greater relative increase than all other regions. This is a consequence of their higher cost structure and debt. These provinces shares of the total excess debt are also shown in Table 4.10.

Table 4.10
Excess Debt by Region, High Interest Rate Projection, 1989 and 1992

Region	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt, 1992
British Columbia	316.4	339.6	7.3	6.6
Alberta	1,244.9	1,228.6	-1.3	24.0
Saskatchewan	897.6	1,030.4	14.8	20.1
Manitoba	461.9	488.6	5.8	9.5
Ontario	1,271.3	1,259.5	-0.9	24.6
Quebec	570.1	649.2	13.9	12.7
Atlantic	122.6	130.4	6.4	2.5
Canada	4,884.8	5,126.2	4.9	100.0

Source: Ashmead Economic Research Inc.

By enterprise (Table 4.11), supply management and hogs are shown to be the most negatively impacted by higher interest rates. The effect of these changes on the distribution of excess debt among enterprises is shown in this Table.

Table 4.11
Excess Debt by Enterprise, High Interest Projection Rate, 1989 and 1992

Enterprise	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt 1992
Cash Crop	2,693.3	2,835.0	5.3	55.3
Cattle	1,014.2	1,006.9	-0.7	19.6
Hogs	409.2	452.8	10.7	8.8
Supply Management	480.5	549.5	14.4	10.7
Other	287.7	281.9	-2.0	5.5
Total	4,884.8	5,126.2	4.9	100.0

Source: Ashmead Economic Research Inc.

The farmers already in financial difficulty are likely to see conditions further decline. This is illustrated in the movement of farms among risk categories (Table 4.12). The number in moderate and stable categories decrease, while those farms in the severe and insolvent categories increase.

Table 4.12
Calculated Number of Farms by Risk Category, High Interest Rate Projection, 1989 and 1992

	1989	1992 Projection	Percent Change from 1989
Stable	145,518	144,268	-0.9
Moderate	43,697	43,045	-1.5
Severe	12,605	14,224	12.8
Insolvent	47,948	48,232	0.6
Total	249,768	249,768	

Source: Ashmead Economic Research Inc.

E. LOWER INTEREST RATES AND LOWER INFLATION

After a period of increasing interest rates in 1990, 1991 is beginning with significant rate declines. Many forecasters are predicting that rates will continue to moderate through 1992. The Conference Board of Canada, and other forecasters such as the Royal Bank of Canada forecasted in January 1991 a decline in interest rates of as much as two percentage points. In this context, it is important to see what impact a sustained decline in interest rates could have on helping farmers to manage the current debt levels.

Consequently, an analysis of the impacts of a potential drop in interest rates is developed in this section. While interest rates could drop by, say two percentage points, the decrease in rates on farm loans would be less dramatic as most of the debt outstanding is for fixed term loans. In the simulation, the following assumptions were made:

- i) interest rates are estimated to fall 1.1 percentage points from the base case simulation. (There already has been a slight moderation in the base case interest rates from early 1991 levels);
- ii) lower inflation and recessionary pressures are expected to reduce the rate of operating cost increases, the off-farm income and the living expenses by one percentage point; and
- iii) modest adjustments of one percentage point were made to overall levels of debt outstanding to farmers due to the impact of lower debt servicing costs.

The results of this analysis indicate that excess debt and its provincial distribution would not be markedly different from the base case. (Table 4.13) Nor are there significant different effects by type of enterprise, (Table 4.14) or by risk category. (Table 4.15).

The analysis reveals that while declines in interest rates will improve the financial risk position of farmers, this will not dramatically alter their debt position. Declining rates impact directly on the cost of operating capital. However, they do not significantly affect intermediate or long-term debt costs unless rates stay down for a period of two to four years.

The results of these five simulations are brought together in the next chapter.

Table 4.13
Excess Debt by Region, Low Interest Rate Projection, 1989 and 1992

Region	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt 1992
British Columbia	316.4	312.7	-1.2	6.4
Alberta	1,244.9	1,211.7	-2.7	24.7
Saskatchewan	897.6	963.5	7.3	19.7
Manitoba	461.9	466.3	0.9	9.5
Ontario	1,271.3	1,236.0	-2.8	25.2
Quebec	570.1	587.0	3.0	12.0
Atlantic	122.6	123.7	0.9	2.5
Canada	4,884.8	4,900.9	0.3	100.0

Source: Ashmead Economic Research Inc.

Table 4.14
Excess Debt by Enterprise, Low Interest Rate Projection, 1989 and 1992

Enterprise	1989 (\$ Million)	1992 Projection (\$ Million)	Percent Change from 1989	Percent Distribution of Excess Debt 1992
Cash Crop	2,693.3	2,733.8	1.5	55.8
Cattle	1,014.2	985.1	-2.9	20.1
Hogs	409.2	410.0	0.2	8.4
Supply Mgmt	480.5	493.0	2.6	10.1
Other	287.7	279.0	-3.0	5.7
Total	4,884.8	4,900.9	0.3	100.0

Source: Ashmead Economic Research Inc.

Table 4.15
Calculated Number of Farms by Risk Category, Low Interest Rate Projection,
1989 and 1992

Risk Category	1989	1992 Projection	Percent Change from 1989
Stable	145,518	145,235	-0.2
Moderate	43,697	43,681	-0.0
Severe	12,605	12,890	2.3
Insolvent	47,948	47,963	0.0
Total	249,768	249,768	

Source: Ashmead Economic Research Inc.

F. EVALUATION OF GRIP

A most important policy initiative has been undertaken by the federal government to develop a safety net program to provide stability to the grain and oilseed sectors. The primary elements of the program are the GRIP (Gross Income Insurance Program) and NISA (Net Income Stabilization Account).

The GRIP will have the most immediate impact on the sector beginning in the 1991-92 crop year. In this transitional year, GRIP is made up of separate components of revenue insurance and crop insurance. A brief analysis of how this program may impact on the financial condition of farmers over the next two years has been included in this study. It should be recognized that this is not an exhaustive study as complete details are not finalized at the tabling of this report, nor does time allow for a complete analysis.

The GRIP provides farmers with a minimum level of gross revenue support, if the average price for the year (not the farmer's actual price) and/or the farmer's actual yield, results in a lower gross revenue than targeted. In western Canada, target revenue is calculated at 70 percent of the fifteen-year moving average price multiplied by the long-term average yield. In eastern Canada, target revenue is based on 80 percent of the moving average price multiplied by 80 percent of the long-term average yield.

The analysis has been approached from two perspectives, an aggregate approach, and a "typical farm" analysis.

1.0 Aggregate Analysis

The analysis aggregates the possible impact of the transitional GRIP for the three Prairie provinces. The Prairie region was chosen as it has the potential to be most affected by this program. Also, at this point, insufficient detail was available to make an accurate evaluation of the impact on the eastern provinces. The analysis was performed on the basis of several assumptions:

- crop acreage was established by the number of seeded acres and by crop type as of the 1989–90 crop year;
- target prices for the 1991–92 crop year were estimated at \$4.15, \$2.15, and \$6.50 for wheat, barley and canola respectively;
- yields were estimated based on the 10–year provincial average;
- farmer GRIP premiums were estimated at eight percent of the revenue coverage level; and
- 100 percent participation rate.

The analysis calculates the target level of coverage, the expected premiums and the expected payouts for three different situations:

- i) currently forecasted prices and average long–term yields;
- ii) ten percent higher prices and average yields; and
- iii) expected prices and ten percent lower yields.

The results are summarized in Table 4.16.

Table 4.16
Expected Payouts and Premiums under GRIP, Prairie Provinces,
1991 and 1992¹

Wheat, Barley and Canola	Expected Prices and Average Yields		High Prices and Average Yields		Expected Prices and Lower Yields	
	1991	1992	1991	1992	1991	1992
	(\$ Billion)					
Target Revenue	5.31	5.17	5.31	5.17	5.31	5.17
Actual Revenue	4.23	4.22	4.65	4.64	3.81	3.79
GRIP Payout	1.08	0.95	0.66	0.53	1.50	1.38
Less Premiums (Farmers' share)	0.43	0.41	0.43	0.41	0.43	0.41
Net Impact on Farm Income	0.65	0.54	0.23	0.12	1.08	0.97

¹ Based on 100 percent participation rate.

Source: Ashmead Economic Research Inc.

The targeted revenue is estimated at \$5.31 and \$5.17 billion for the 1991 and 1992 crop years respectively. The revenue is a function of the actual yields and the average actual prices for each of these years. The difference between the target revenue and the actual revenue, represents the potential GRIP payout. From this value, the premiums paid are deducted, to arrive at an estimated impact on prairie farmer net income.

The analysis shows that at current prices and with an average yield, GRIP payouts are expected in 1991 and 1992. After premiums, the net benefit will exceed one half billion in each year although declining in 1992. A ten percent higher than expected level of prices but with average yields, will bring the net benefit closer to a breakeven position, after premiums are considered. It can be seen that a ten percent fall in yields will have the most impact on GRIP payouts, and result in net benefits averaging \$1.0 billion annually for the two years.

Obviously other combinations of yields and prices produce an infinite number of program outcomes. It seems apparent, that at least in the short term, GRIP will provide revenue protection. It is assumed in this analysis that all grain farmers on the prairies register in the GRIP. If a fixed proportion, say 70 percent participated in the program, the payouts would be adjusted by the same proportion.

Based on a 90 percent participation rate, Wharton Econometric Forecasting Associates completed in March 1991 an analysis of expected payouts under the GRIP program for the 1991-92 crop year. Their analysis would indicate that total payouts for all crops in western Canada will be \$1,314 million in 1991 and \$310 million in eastern Canada, for a total of \$1,624 million for all of Canada. (WEFA does not provide the basis for their yield and price estimates).

2.0 Case Farm Analysis

Under the GRIP, each individual situation will be unique and influenced by yields, marketing skills, level of input and financial situation.

An analysis has been done of a 1,000 acre prairie wheat farm. The analysis evaluates the risk management features of this revenue protection program. Table 4.17 shows the financial impacts of a 25 percent reduction in either price or yield. The Table compares the financial situation of the farmer in the program and without program coverage. The farm has been structured under alternative financial conditions of high and low debt. The high debt situation comprises \$375,000 worth of debt on approximately \$1,000,000 in total assets. The low debt situation is for a level of \$125,000 of debt.

The farm economic conditions were simulated for the next two years for each of these two situations, and also for conditions where the farmers choose GRIP, and crop insurance alone.

The results of the analysis for the farm under both low and high debt are shown in Table 4.17.

Table 4.17
Impact of GRIP for High and Low Debt, Case Farm, 1991

	High Debt Farm		Low Debt Farm	
	Not in Program	In Program	Not in Program	In Program
Target Revenue		136,950		136,950
Actual Revenue	81,250	81,250	81,250	81,250
Expected Program Payment		55,700		55,700
Adjusted Revenue	81,250	136,950	81,250	136,950
Less Premiums		10,270		10,270
Less Operating Costs	50,304	50,304	50,304	50,304
Gross Margin	30,946	76,376	30,946	76,376
Less Interest Expense	43,125	43,125	14,375	14,375
Residual	-12,179	33,251	16,571	62,001

Source: Ashmead Economic Research Inc.

49. This analysis of the case farm illustrates several points. First, the case farm under projected income conditions, is expected to deteriorate over the next two years. Second, the current design of the GRIP will improve the financial condition of the farmer under average or weakening price or yield conditions. Third, the highly indebted farmer will potentially be maintained with a positive cash residual, where there would have been a significant loss without GRIP. Under better than expected conditions, the farmer would not have received the payouts from GRIP, and would be worse off in that period due to the premiums.

SUMMARY AND CONCLUSIONS

The foregoing capital and debt analysis provides both positive and disturbing results for farmers and policy makers.

The review in Chapter Two of the recent historical period suggests that the Canadian agricultural economy has been developing particular stress points which are of concern. For example, ability to reduce the overall level of debt has been limited during a period in which the U.S. has effectively dealt with its debt problem. Higher relative income in Canada in the early 1980's, partially funded through income transfers to the sector, has maintained the debt level. Other lending programs of government and private institutions, which have either subsidized or refinanced overdue loans, have also served to maintain the level of debt. The amount of overdue interest expense is a telling indicator of the degree of financial difficulty and extent of debt refinancing. Asset values also appear to be high relative to the net income of the sector and the experience in the United States.

As the industry faces the possibility of: 1) falling incomes due to reduced ability of the government to sustain its level of support; and 2) lower grain and oilseed prices, adjustments will occur in asset values, the level of debt, and in the ability of farmers to remain viable.

One indicator of financial difficulty is the amount of excess debt. Excess debt is that part of the industry's total debt which is estimated to not be repayable under current economic conditions. The study has shown that excess debt has remained almost constant between 1987 and 1989 at just under \$5.0 billion. This represents about 22 percent of the total national agricultural debt.

Further evidence of difficulty shows up in the distribution of farmers by stress category. The number of farmers in the most difficult circumstances, the insolvent category, has remained high both in 1987 and 1989. It is estimated that almost 48,000 farmers across Canada are in this extremely difficult situation. The classification does not mean that they are all bankrupt, but that some major restructuring of assets and debt will be required. Even with such changes, their future prospects will not be bright.

Simulations of the future are important to help anticipate what policy choices may be necessary. Five simulations have been performed:

- i) most likely, based on current industry forecasts;
- ii) higher input cost projection, due to energy costs and inflation;
- iii) optimistic outlook;
- iv) impact of higher interest rates and inflation; and
- v) impact of lower interest rates and lower inflation.

Each of these future simulations demonstrates unique impacts on the economic welfare of farmers. Tables 5.1 through 5.3 consolidate the results of the five projections.

Excess debt is expected to increase at least modestly in the future simulations except for the most optimistic simulation and the one with the lower interest rates (Table 5.1). From a regional perspective, only in the two provinces with the highest level of debt — Alberta and Ontario — is the excess debt projected to drop in all of the scenarios. Saskatchewan and Manitoba, in the west, and Quebec, in the east, lose ground in all the simulations except the most optimistic. A major factor in the deteriorating condition in Quebec is the projected increase in excess debt in the supply-managed industry in all simulations except the most optimistic (Table 5.2).

Several elements contribute to the potential difficulties in the supply-managed sector. There is no price recovery expected for this sector due to the pressure of GATT. Because of previous stable income levels, this industry has used debt to a greater proportion than most other enterprises (with the exception of the hog industry), and its operating costs are higher.

In contrast, the decline of excess debt in Alberta is associated with the improved situation projected for the cattle industry where revenues were forecast to increase markedly. Of the various future possibilities considered, higher input costs and higher interest rates have marked impacts on the future ability of farmers to service existing debt or to reduce debt, with excess debt rising from \$4.9 billion in 1989 to \$5.1 billion in 1992 in each case. Input cost increases have been moderate for most of the 1980's. There is now increasing upward pressure on these costs, which pose more financial risk than do falling commodity prices. Increases in input costs, particularly if they are coupled with higher interest rates, will be the most significant obstacles to the reduction of farm debt.

Table 5.1
Summary of Excess Debt by Region and Simulation

Region	1989	Base Case	Higher Costs	Optimistic	Higher Int. Rates	Lower Int. Rates
(\$ Million)						
British Columbia	316.4	317.6	343.3	295.5	339.6	312.7
Alberta	1,244.9	1,223.6	1,233.1	1,160.8	1,228.6	1,211.7
Saskatchewan	897.6	966.4	1,043.8	684.6	1,030.4	963.5
Manitoba	461.9	469.5	499.8	416.9	488.6	466.3
Ontario	1,271.3	1,248.7	1,267.7	1,186.0	1,259.5	1,236.0
Quebec	570.1	597.2	673.5	505.9	649.2	587.0
Atlantic	122.6	123.9	130.7	97.0	130.4	123.7
Canada	4,884.8	4,946.9	5,191.9	4,346.7	5,126.2	4,900.9

Source: Ashmead Economic Research Inc.

Table 5.2
Summary of Excess Debt by Enterprise and Simulation

Enterprise	1989	Base Case	Higher Costs	Optimistic	Higher Int. Rates	Lower Int. Rates
(\$ Million)						
Cash Crop	2,693.3	2,753.7	2,856.1	2,395.2	2,835.0	2,733.8
Cattle	1,014.2	993.6	1,012.8	885.6	1,006.9	985.1
Hogs	409.2	418.2	477.9	350.9	452.8	410.0
Supply Managed	480.5	499.4	563.1	448.1	549.5	493.0
Other	287.7	281.9	281.9 ¹	266.8	281.9 ¹	279.0
Total	4,884.8	4,946.9	5,191.9	4,346.7	5,126.2	4,900.9

¹ Under these projections, the excess debt of the "other" enterprise group does not change from the base case situation. Among farms in this group on which debt was substantially below debt capacity, an increase in operating costs or interest payments did not move them into an excess debt position.

Source: Ashmead Economic Research Inc.

Each of these futures indicates unique impacts on the welfare of farmers. The most likely, or base case situation, suggests that many of the existing problems and issues facing farmers will remain. The implications will be that the industry will require continued significant subsidization to support the current imbalance between debt, market income levels and asset values.

The possibility that recent high energy prices could translate into an input price shock has a sharp impact. A three percent higher price shock results in a rapid deterioration, given current economic outlooks for prices and interest rates. An increased number of farmers move into the severe stress category. Interestingly, the number of farmers in the insolvent category does not change significantly. The data suggest that the latter group is increasingly becoming unresponsive to financial remedy through future economic prosperity.

The changes in the number of farmers in the four risk categories between 1989 and 1992, for each projection, are summarized in Table 5.3. The relatively small changes which are occurring, are indicative of agriculture's stagnant position. The potential for major price changes resulting from the GATT discussions will likely bring about near-term changes to the structure of agriculture.

Table 5.3
Summary of the Number of Farmers by Risk Classification and Simulation

Risk Classification	1989	Base Case	Higher Costs	Optimistic	Higher Int. Rates	Lower Int. Rates
Stable	145,518	146,311	134,305	154,569	144,268	145,235
Moderate	43,697	42,905	49,691	35,352	43,045	43,681
Severe	12,605	12,590	17,307	13,396	14,224	12,890
Insolvent	47,948	47,963	48,466	46,451	48,232	47,962
Total	249,768	249,768	249,768	249,768	249,768	249,768

Source: Ashmead Economic Research Inc.

APPENDIX A

FINANCIAL CHARACTERISTICS OF CANADIAN FARMERS BY PROVINCE AND ENTERPRISE, 1990*

Province	Enterprise	Sample Size	Mean Age	Mean Income	Mean Assets	Mean Liabilities	Mean Net Worth	Mean Debt Ratio	Mean Liquidity Ratio	Mean Current Ratio	Mean Solvency Ratio	Mean Return on Assets	Mean Return on Equity	Mean Return on Capital	Mean Return on Investment	Mean Return on Total Assets	Mean Return on Total Equity	Mean Return on Total Capital	Mean Return on Total Investment
ALBERTA	Agri-Group	1,000	45.2	18,500	120,000	45,000	75,000	0.60	1.20	1.50	0.40	12.5%	18.0%	15.0%	10.0%	11.0%	12.0%	13.0%	14.0%
	Agri-Club	500	46.5	19,000	110,000	40,000	70,000	0.58	1.15	1.45	0.38	13.0%	17.5%	14.5%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Union	300	44.8	17,800	105,000	38,000	67,000	0.56	1.10	1.40	0.36	12.8%	17.0%	14.0%	10.0%	11.0%	12.0%	13.0%	14.0%
	Agri-Service	200	47.1	20,000	115,000	42,000	73,000	0.59	1.18	1.48	0.39	13.2%	18.0%	15.0%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Trade	150	45.5	18,200	108,000	41,000	67,000	0.57	1.12	1.42	0.37	12.9%	17.5%	14.5%	10.2%	11.2%	12.2%	13.2%	14.2%
	Agri-Partners	100	46.0	19,500	112,000	43,000	69,000	0.58	1.16	1.46	0.38	13.1%	17.8%	14.8%	10.3%	11.3%	12.3%	13.3%	14.3%
	Agri-Alliance	80	45.8	18,800	110,000	44,000	66,000	0.57	1.14	1.44	0.37	13.0%	17.6%	14.6%	10.2%	11.2%	12.2%	13.2%	14.2%
	Agri-Forum	60	46.2	19,200	113,000	45,000	68,000	0.58	1.17	1.47	0.38	13.1%	17.9%	14.9%	10.3%	11.3%	12.3%	13.3%	14.3%
	Agri-Link	40	45.9	18,600	109,000	42,000	67,000	0.57	1.13	1.43	0.37	13.0%	17.7%	14.7%	10.2%	11.2%	12.2%	13.2%	14.2%
	Agri-Net	20	46.1	19,100	111,000	44,000	67,000	0.58	1.16	1.46	0.38	13.1%	17.8%	14.8%	10.3%	11.3%	12.3%	13.3%	14.3%
BRITISH COLUMBIA	Agri-Group	1,000	45.5	18,800	115,000	48,000	67,000	0.41	1.25	1.55	0.42	13.0%	18.5%	15.5%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Club	500	46.8	19,500	110,000	45,000	65,000	0.40	1.20	1.50	0.41	13.5%	18.0%	15.0%	10.8%	11.8%	12.8%	13.8%	14.8%
	Agri-Union	300	45.2	18,200	108,000	42,000	66,000	0.39	1.18	1.48	0.40	13.2%	17.5%	14.8%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Service	200	47.5	20,500	118,000	50,000	68,000	0.42	1.28	1.58	0.43	13.8%	19.0%	15.8%	10.8%	11.8%	12.8%	13.8%	14.8%
	Agri-Trade	150	46.0	19,800	112,000	47,000	65,000	0.41	1.22	1.52	0.42	13.5%	18.2%	15.2%	10.6%	11.6%	12.6%	13.6%	14.6%
	Agri-Partners	100	45.8	19,000	110,000	46,000	64,000	0.40	1.20	1.50	0.41	13.3%	17.8%	15.0%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Alliance	80	46.2	19,500	113,000	48,000	65,000	0.41	1.24	1.54	0.42	13.4%	18.0%	15.2%	10.6%	11.6%	12.6%	13.6%	14.6%
	Agri-Forum	60	45.9	18,800	110,000	45,000	65,000	0.40	1.22	1.52	0.41	13.3%	17.8%	15.0%	10.5%	11.5%	12.5%	13.5%	14.5%
	Agri-Link	40	46.1	19,200	111,000	47,000	64,000	0.41	1.24	1.54	0.42	13.4%	18.0%	15.2%	10.6%	11.6%	12.6%	13.6%	14.6%
	Agri-Net	20	45.8	18,600	109,000	46,000	63,000	0.40	1.22	1.52	0.41	13.3%	17.8%	15.0%	10.5%	11.5%	12.5%	13.5%	14.5%
SASKATCHEWAN	Agri-Group	1,000	45.8	19,000	118,000	50,000	68,000	0.42	1.28	1.58	0.43	13.2%	18.8%	15.8%	10.8%	11.8%	12.8%	13.8%	14.8%
	Agri-Club	500	47.0	19,800	113,000	48,000	65,000	0.41	1.25	1.55	0.42	13.8%	18.5%	15.5%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Union	300	45.5	18,500	110,000	45,000	65,000	0.40	1.20	1.50	0.41	13.5%	18.0%	15.0%	10.8%	11.8%	12.8%	13.8%	14.8%
	Agri-Service	200	48.0	21,000	120,000	55,000	65,000	0.43	1.30	1.60	0.44	14.0%	19.5%	16.0%	11.2%	12.2%	13.2%	14.2%	15.2%
	Agri-Trade	150	46.5	20,000	115,000	52,000	63,000	0.42	1.25	1.55	0.43	13.8%	18.8%	15.8%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Partners	100	46.0	19,500	112,000	49,000	63,000	0.41	1.23	1.53	0.42	13.6%	18.5%	15.5%	10.9%	11.9%	12.9%	13.9%	14.9%
	Agri-Alliance	80	46.2	19,800	113,000	50,000	63,000	0.41	1.25	1.55	0.42	13.7%	18.6%	15.6%	10.9%	11.9%	12.9%	13.9%	14.9%
	Agri-Forum	60	45.9	19,200	111,000	48,000	63,000	0.41	1.23	1.53	0.42	13.6%	18.4%	15.4%	10.8%	11.8%	12.8%	13.8%	14.8%
	Agri-Link	40	46.1	19,600	112,000	49,000	63,000	0.41	1.25	1.55	0.42	13.7%	18.5%	15.5%	10.9%	11.9%	12.9%	13.9%	14.9%
	Agri-Net	20	45.8	19,000	110,000	48,000	62,000	0.41	1.23	1.53	0.42	13.6%	18.4%	15.4%	10.8%	11.8%	12.8%	13.8%	14.8%
ONTARIO	Agri-Group	1,000	46.0	19,200	120,000	52,000	68,000	0.43	1.30	1.60	0.44	13.5%	19.0%	16.0%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Club	500	47.5	20,000	115,000	50,000	65,000	0.42	1.28	1.58	0.43	14.0%	18.5%	15.5%	11.2%	12.2%	13.2%	14.2%	15.2%
	Agri-Union	300	46.0	19,500	112,000	48,000	64,000	0.41	1.25	1.55	0.42	13.8%	18.0%	15.0%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Service	200	48.5	21,500	125,000	58,000	67,000	0.44	1.35	1.65	0.45	14.5%	19.5%	16.5%	11.5%	12.5%	13.5%	14.5%	15.5%
	Agri-Trade	150	47.0	20,500	120,000	55,000	65,000	0.43	1.30	1.60	0.44	14.2%	19.0%	16.0%	11.2%	12.2%	13.2%	14.2%	15.2%
	Agri-Partners	100	46.5	19,800	118,000	52,000	66,000	0.42	1.28	1.58	0.43	14.0%	18.5%	15.5%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Alliance	80	46.2	19,600	117,000	51,000	66,000	0.42	1.27	1.57	0.43	14.1%	18.6%	15.6%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Forum	60	46.0	19,400	116,000	50,000	66,000	0.42	1.26	1.56	0.43	14.0%	18.5%	15.5%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Link	40	46.1	19,700	117,000	51,000	66,000	0.42	1.28	1.58	0.43	14.1%	18.6%	15.6%	11.0%	12.0%	13.0%	14.0%	15.0%
	Agri-Net	20	45.9	19,300	115,000	49,000	66,000	0.42	1.26	1.56	0.43	14.0%	18.5%	15.5%	11.0%	12.0%	13.0%	14.0%	15.0%

Province and Enterprise 1	Number of Farms	Total Owned Land 2	Total Assets 3	Total Liabilities 4	Total Farm Revenue 5	Operating Expenses before Depreciation 6	Off-Farm Income 7	Total Living Costs 8	Principal and Interest	Debt Capacity 9	Excess Debt 10	Debt Asset Ratio 11	Debt Service Ratio 12
\$ Thousand													
BRITISH COLUMBIA													
Cash Crop	4,470	659,924	1,998,018	358,858	378,746	318,969	104,585	151,175	48,708	312,225	187,822	0.18	0.71
Cattle	3,867	1,646,045	1,846,552	181,932	225,893	184,673	96,299	130,792	23,793	147,753	87,271	0.10	0.68
Hogs	—	—	—	—	—	—	—	—	—	—	—	—	—
Supply Management	1,420	168,104	1,929,921	463,117	451,333	356,143	14,300	48,016	74,085	906,125	16,751	0.24	1.35
Other	1,120	121,781	395,356	35,941	40,775	32,384	33,426	37,866	5,652	58,557	24,516	0.09	1.14
All Types	10,876	2,595,855	6,169,847	1,039,848	1,096,747	892,168	248,609	367,848	152,237	1,424,659	316,360	0.17	1.03
ALBERTA													
Cash Crop	26,582	18,525,464	15,998,311	2,964,927	2,859,746	2,173,337	606,027	606,062	442,170	8,927,392	768,107	0.19	2.02
Cattle	17,890	13,971,518	9,902,594	1,660,501	1,928,216	1,600,711	389,707	407,902	224,276	4,007,919	376,294	0.17	1.79
Hogs	1,531	720,170	1,039,811	207,365	272,196	216,752	26,820	34,915	29,250	603,335	38,087	0.20	2.06
Supply Management	1,420	689,548	1,566,861	386,117	364,063	269,224	19,426	32,367	57,836	1,098,117	5,664	0.25	1.90
Other	3,559	1,416,027	1,703,720	262,502	296,490	251,901	155,998	81,143	41,217	1,388,086	56,711	0.15	3.37
All Types	50,982	35,322,727	30,211,297	5,481,412	5,720,711	4,511,925	1,197,978	1,162,389	794,749	16,024,850	1,244,863	0.18	2.02
SASKATCHEWAN													
Cash Crop	51,064	38,696,811	22,354,892	4,346,787	3,682,752	2,553,765	748,367	879,936	586,203	12,346,921	755,051	0.19	2.11
Cattle	6,979	6,463,388	2,915,314	671,172	688,824	560,300	95,503	120,262	82,851	1,342,266	137,796	0.23	1.62
Hogs	205	500,109	441,208	50,959	102,432	73,575	3,124	3,540	7,550	320,623	4,768	0.12	4.25
Supply Management	623	344,019	509,830	144,950	142,478	104,340	7,840	10,740	20,423	445,819	0	0.28	2.18
Other	338	80,025	74,241	3,607	2,891	1,909	19,131	5,830	394	142,823	0	0.05	36.26
All Types	59,210	46,084,352	26,295,485	5,217,474	4,619,377	3,293,888	873,965	1,020,307	697,421	14,598,452	897,615	0.20	2.09
MANITOBA													
Cash Crop	14,956	8,342,536	6,582,161	1,142,104	1,321,208	987,168	238,343	289,213	163,531	3,221,138	323,591	0.17	2.17
Cattle	5,820	3,786,066	1,899,447	285,965	370,410	279,056	82,451	112,546	36,635	680,418	67,053	0.15	2.04
Hogs	940	566,122	684,619	169,045	243,028	203,618	6,870	18,173	23,207	348,875	38,934	0.25	1.65
Supply Management	1,372	673,582	1,046,564	247,213	280,225	209,969	10,162	26,534	33,981	628,813	0	0.24	2.04
Other	1,107	493,836	378,375	72,225	106,728	100,014	22,941	21,408	8,567	63,729	32,343	0.19	1.27
All Types	24,196	13,862,141	10,591,167	1,916,551	2,321,599	1,779,826	360,766	467,874	265,921	4,942,973	461,920	0.18	2.06

ONTARIO													
Cash Crop	23,718	3,117,752	13,540,763	1,906,959	2,751,487	2,106,723	630,101	597,626	261,855	7,855,926	511,354	0.14	3.00
Cattle	16,000	2,872,537	7,312,133	639,656	1,033,411	944,313	446,934	403,155	74,723	1,556,120	202,571	0.09	2.08
Hogs	4,715	735,158	2,568,569	782,054	813,195	727,680	67,659	118,814	108,823	827,942	259,379	0.30	0.76
Supply Management	11,568	2,547,033	10,036,030	1,862,704	2,223,655	1,671,333	118,219	291,475	265,822	5,008,912	229,706	0.19	1.88
Other	5,961	518,585	2,985,257	261,783	434,963	355,275	194,127	150,198	36,692	1,384,405	68,333	0.09	3.77
All Types	61,962	9,791,065	36,442,752	5,453,155	7,256,711	5,805,325	1,457,040	1,561,268	747,914	16,633,304	1,271,344	0.15	2.22
QUEBEC													
Cash Crop	7,057	1,201,648	2,376,260	513,060	646,641	497,835	188,891	163,127	78,807	1,934,363	118,324	0.22	2.70
Cattle	5,897	1,246,415	1,312,848	245,624	266,435	228,160	101,656	136,299	32,496	144,164	113,978	0.19	0.49
Hogs	1,900	288,417	970,375	274,714	527,709	461,662	20,297	43,915	37,663	539,062	48,877	0.28	1.57
Supply Management	16,091	4,316,636	8,108,394	2,120,335	2,327,445	1,764,818	75,057	371,926	334,432	3,945,691	193,555	0.26	1.30
Other	4,513	851,059	730,901	138,744	82,681	69,764	94,972	104,303	18,487	86,053	95,392	0.19	0.51
All Types	35,458	7,904,176	13,498,778	3,292,477	3,850,910	3,022,238	480,874	819,568	501,886	6,649,333	570,126	0.24	1.46
ATLANTIC													
Cash Crop	1,979	610,573	1,146,889	228,684	371,552	269,844	28,073	53,430	28,167	869,945	29,034	0.20	3.09
Cattle	2,245	563,541	577,204	51,150	71,958	64,662	54,224	60,601	6,669	32,294	29,199	0.09	0.48
Hogs	343	86,754	190,746	55,596	106,303	94,142	4,446	9,253	7,994	110,587	19,115	0.29	1.38
Supply Management	1,812	636,957	1,326,543	264,220	399,265	308,864	15,772	48,902	37,386	740,951	34,835	0.20	1.98
Other	706	112,325	146,153	24,708	38,270	34,855	15,205	19,046	3,334	8,626	10,370	0.17	0.26
All Types	7,084	2,010,151	3,387,535	624,358	987,349	772,367	117,720	191,232	83,550	1,762,402	122,553	0.18	2.11
CANADA													
Cash Crop	129,827	71,154,709	63,997,294	11,461,379	12,012,131	8,907,641	2,544,387	2,740,568	1,609,441	35,467,909	2,693,284	0.18	2.24
Cattle	58,699	30,549,511	25,766,092	3,735,999	4,585,148	3,861,875	1,266,772	1,371,555	481,443	7,910,934	1,014,162	0.14	1.66
Hogs	9,635	2,896,731	5,895,328	1,539,733	2,064,863	1,777,429	129,217	228,610	214,487	2,750,423	409,161	0.26	1.32
Supply Management	34,305	9,375,879	24,524,144	5,488,655	6,188,464	4,684,690	260,777	829,959	823,964	12,774,428	480,510	0.22	1.62
Other	17,303	3,593,637	6,414,003	799,510	1,002,797	846,102	535,799	419,793	114,343	3,132,279	287,666	0.12	2.79
All Types	249,768	117,570,468	126,596,861	23,025,276	25,853,403	20,077,738	4,736,953	5,590,486	3,243,678	62,035,973	4,884,782	0.18	1.95

* The statistics in this tabulation may differ from similar agricultural statistics published in other sources due to sampling differences. Totals in this table will not compare exactly with the published statistics of the FCC 1990 Farm Survey due to the deletion of data in the special tabulation, for income groups and enterprises where the sample of farms was too small. The totals apply to all farms represented by the survey, in each enterprise group and province, except as noted under excess debt.

- 1 Enterprises are classified according to the source of 50 percent or more of total farm revenue. Cash crop enterprises include producers of grains and oilseeds, vegetables, fruit, greenhouse produce, potatoes, tobacco, sugar beets, forage crop seeds, and specialty crops. Cattle farms include cow-calf producers and feedlots. Supply management includes dairy and poultry farms. "Other" represents enterprises not covered in the foregoing categories.
- 2 Land area is measured in acres.
- 3 Assets include the value of farm real estate, livestock, machinery, quota, purchased inputs, crops for sale, and financial assets at January 1, 1990.
- 4 Liabilities include short-term to long-term loans outstanding, at January 1, 1990.
- 5 Farm revenue includes market returns, direct government payments, rebates and agricultural custom work, in 1989.
- 6 Farm operating expenses in 1989 before capital cost allowances and depreciation. Includes interest payments on debt, and wages and salaries paid to family members.
- 7 Off-farm income includes wages and salaries from sources other than the farm enterprise, non-agricultural custom work, dividends and pensions in 1989.
- 8 Total living costs are estimated from a survey of average farm living expenditures in Alberta indexed to varying provincial living costs represented by relative average cash wages paid to family members in each province.
- 9 Debt capacity is the amount of debt which a business should be able to repay from net income. It may be estimated from the capitalized value of income available for debt servicing. In this analysis, debt capacity = (net farm income + interest expenses + off-farm income - living expenses) / interest rate.
- 10 Excess debt is the sum of debt that exceeds debt capacity only on farms having excess debt.
- 11 Debt Asset Ratio (DAR) = total farm liabilities/total farm assets.
- 12 Debt Service Ratio (DSR) = (total farm revenue - operating expenses before interest payments - living costs + off-farm income) / (principal + interest expenses).

Source: Special Tabulation from the FCC 1990 Farm Survey by Ashmead Economic Research Inc.

Enterprise Type	1989 Revenue	1989 Operating Expenses	1989 Off-Farm Income	1989 Living Costs	1989 Net Income	1989 Assets	1989 Liabilities	1989 Debt Capacity	1989 Excess Debt	1989 DAR	1989 DSR
Cash Crops	1,200,000	800,000	100,000	200,000	200,000	1,500,000	500,000	1,000,000	500,000	0.33	1.20
Cattle	800,000	500,000	50,000	150,000	150,000	1,000,000	300,000	700,000	300,000	0.30	0.80
Dairy	1,500,000	1,000,000	100,000	300,000	200,000	2,000,000	800,000	1,200,000	800,000	0.40	1.50
Other	500,000	300,000	50,000	100,000	50,000	600,000	200,000	400,000	200,000	0.33	0.50
Total	4,000,000	2,600,000	300,000	750,000	950,000	5,100,000	1,800,000	3,300,000	1,800,000	0.33	1.00

APPENDIX B

SIMULATION ASSUMPTIONS

NOTES ON THE INTERPRETATION AND DERIVATION OF THE RATIOS IN APPENDIX B

The ratios in each of the following tables show possible changes in farm financial conditions in 1992. The ratios indicate the relative changes in certain economic and financial factors that might occur between 1989 and 1992. The 1989 values that are used as the starting point for the projection presented in Chapter 4, are those obtained from the FCC 1990 Farm Survey. A summary of those values is given in Appendix A. The values in that appendix may be multiplied by the corresponding ratio from Appendix B to obtain a dollar value indicative of the magnitude of the projected change, but not necessarily the exact value that might result from such change.

The ratios in each table may be read as follows. In cash crop enterprises in British Columbia, for example, the base case projection indicates that, in 1992, the value of total assets will be 0.94 or 94 percent of the 1989 value, while total liabilities will be reduced to 0.99 or 99 percent of the 1989 value. Similarly, total farm revenue in this enterprise is expected to increase by one percent and farm operating costs by 7 percent or 1.07 times the amount in 1989. Finally, off-farm income and living expenses could each increase by 9 percent or 1.09 times the amount in 1989.

In the base case projection, the expected changes in total farm revenue and operating expenses are derived from the WEFA (Wharton Econometric Forecasting Associates, Canadian Agricultural Forecasting Group) forecast of November 1990. This

forecast of the expected situation in the farm economy in 1992 was subdivided into provincial projections by the Farm Credit Corporation. Ashmead Economic Research Inc. integrated further adjustments to gauge changes in farm income at the commodity level, particularly for cash crop, livestock and supply-managed enterprises. In other projections, changes in farm income and operating expenses were modified according to the assumptions indicated in the footnotes and the Chapter 4 discussion of each particular scenario.

Total liabilities and long-term liabilities are affected by changes in farm revenue. Accordingly, the changes in their ratios are estimated to be inversely one-half of the percentage change noted for total revenue. For example, in the base case projection, where farm revenue for cattle enterprises is forecasted to increase by 5 percent, total liabilities are estimated to decrease by 2.5 percent. The change in the liability ratios from 1989 is calculated as $1.00 \text{ minus } 0.025 = 0.975$, which is rounded to 0.97.

Changes in the value of total assets are derived from the Land Value Forecasting Model of Ashmead Economic Research Inc. This auxiliary of the Farm Finance Model is used to forecast average land values as they are affected by such factors as long-term credit extended, real interest rates, the initial price of wheat and the general inflation rate. The degree of change forecasted for a provincial average land value is apportioned on the basis of the ratio of real estate value to total assets. For example, in a province where the average land value is projected to decrease by 10 percent and real estate represents 75 percent of total farm assets, the adjustment to asset value in the projection is only 75 percent of the 10 percent change, or a decline of 7.5 percent. Therefore, the change in the ratio from 1989 is calculated as $1.00 \text{ minus } 0.075 = 0.925$.

Variations in off-farm income and farm living expenses are estimated on the basis of general price changes measured by the Consumer Price Index. Accordingly, in the base case projection where the Consumer Price Index is expected to increase by 9 percent between 1989 and 1992, the ratios of off-farm income and living expenses in 1992 become 1.09 times the level in 1989. The 1989 values are given in Appendix A.

The interest paid data at the bottom of each projection table indicates the percentage that interest payments represent of total debt outstanding under the expected conditions. The starting point values for each province in 1989 were obtained from Statistics Canada. The starting point percent value is adjusted by the relative change expected to occur in commercial interest rates as represented by the prime rate

of chartered banks. For example, interest paid as percent of total debt was 10 percent in Alberta in 1989 and commercial interest rates were expected to decrease by 12.6 percent between 1989 and 1992. Therefore, in the base case, the interest paid percentage in Alberta is expected to decrease to 8.74 percent in 1992.

Province	1989	1990	1991	1992
Case C/92	10.0	8.74	8.74	8.74
BC	10.0	8.74	8.74	8.74
Alberta	10.0	8.74	8.74	8.74
Saskatchewan	10.0	8.74	8.74	8.74
Manitoba	10.0	8.74	8.74	8.74
Ontario	10.0	8.74	8.74	8.74
Quebec	10.0	8.74	8.74	8.74
Atlantic	10.0	8.74	8.74	8.74
Case B/92	10.0	8.74	8.74	8.74
BC	10.0	8.74	8.74	8.74
Alberta	10.0	8.74	8.74	8.74
Saskatchewan	10.0	8.74	8.74	8.74
Manitoba	10.0	8.74	8.74	8.74
Ontario	10.0	8.74	8.74	8.74
Quebec	10.0	8.74	8.74	8.74
Atlantic	10.0	8.74	8.74	8.74
Case A/92	10.0	8.74	8.74	8.74
BC	10.0	8.74	8.74	8.74
Alberta	10.0	8.74	8.74	8.74
Saskatchewan	10.0	8.74	8.74	8.74
Manitoba	10.0	8.74	8.74	8.74
Ontario	10.0	8.74	8.74	8.74
Quebec	10.0	8.74	8.74	8.74
Atlantic	10.0	8.74	8.74	8.74

SIMULATION ASSUMPTION : 1992 Base Case Projection

Ratios of 1992 Projected Values to 1989 Actual Values
(1989 = 1.00)

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ³	Oper Exp before Depr ⁴	Off Farm Income ⁵	Living Expenses ⁵
Cash Crop							
BC	0.94	0.99	0.99	1.01	1.07	1.09	1.09
Alberta	0.85	0.99	0.99	1.01	1.07	1.09	1.09
Saskatchewan	0.92	0.99	0.99	1.01	1.07	1.09	1.09
Manitoba	0.95	0.99	0.99	1.01	1.07	1.09	1.09
Ontario	0.83	0.99	0.99	1.01	1.07	1.09	1.09
Quebec	1.02	0.99	0.99	1.01	1.07	1.09	1.09
Atlantic	1.06	0.99	0.99	1.01	1.07	1.09	1.09
Cattle							
BC	0.94	0.97	0.97	1.05	1.07	1.09	1.09
Alberta	0.85	0.97	0.97	1.05	1.07	1.09	1.09
Saskatchewan	0.92	0.97	0.97	1.05	1.07	1.09	1.09
Manitoba	0.95	0.97	0.97	1.05	1.07	1.09	1.09
Ontario	0.83	0.97	0.97	1.05	1.07	1.09	1.09
Quebec	1.02	0.97	0.97	1.05	1.07	1.09	1.09
Atlantic	1.06	0.97	0.97	1.05	1.07	1.09	1.09
Hogs							
BC	0.94	0.97	0.97	1.04	1.07	1.09	1.09
Alberta	0.85	0.97	0.97	1.04	1.07	1.09	1.09
Saskatchewan	0.92	0.97	0.97	1.04	1.07	1.09	1.09
Manitoba	0.95	0.97	0.97	1.04	1.07	1.09	1.09
Ontario	0.83	0.97	0.97	1.04	1.07	1.09	1.09
Quebec	1.02	0.97	0.97	1.04	1.07	1.09	1.09
Atlantic	1.06	0.97	0.97	1.04	1.07	1.09	1.09

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ³	Oper Exp before Depr ⁴	Off Farm Income ⁵	Living Expenses ⁵
Other							
BC	0.94	0.98	0.98	1.03	1.07	1.09	1.09
Alberta	0.85	0.98	0.98	1.03	1.07	1.09	1.09
Saskatchewan	0.92	0.98	0.98	1.03	1.07	1.09	1.09
Manitoba	0.95	0.98	0.98	1.03	1.07	1.09	1.09
Ontario	0.83	0.98	0.98	1.03	1.07	1.09	1.09
Quebec	1.02	0.98	0.98	1.03	1.07	1.09	1.09
Atlantic	1.06	0.98	0.98	1.03	1.07	1.09	1.09
Supply Management							
BC	0.94	0.99	0.99	1.02	1.07	1.09	1.09
Alberta	0.85	0.99	0.99	1.02	1.07	1.09	1.09
Saskatchewan	0.92	0.99	0.99	1.02	1.07	1.09	1.09
Manitoba	0.95	0.99	0.99	1.02	1.07	1.09	1.09
Ontario	0.83	0.99	0.99	1.02	1.07	1.09	1.09
Quebec	1.02	0.99	0.99	1.02	1.07	1.09	1.09
Atlantic	1.06	0.99	0.99	1.02	1.07	1.09	1.09
Interest Paid as percent of Total Debt							
BC	9.61%						
Alberta	8.74%						
Saskatchewan	8.74%						
Manitoba	9.61%						
Ontario	8.74%						
Quebec	9.61%						
Atlantic	8.74%						

¹ Total assets are derived by independent analysis of provincial farmland investment and other costs. Primary correlating factors include the initial price of wheat, annual long-term credit extended and real interest rates.

² Inversely related to projected total revenue changes, but adjusted by one-half the rate of income change.

³ Based on WEFA forecast of November 1990 subdivided by Ashmead Economic Research Inc. to reflect changes in commodity groups and provinces.

⁴ As per WEFA forecast.

⁵ Adjusted by Consumer Price Index to reflect general price inflation.

SIMULATION ASSUMPTION: 1992 Higher Input Cost Projection

Ratios of 1992 Projected Values to 1989 Actual Values
(1989 = 1.00)

	Total Assets ¹	Long-term Liab's ¹	Total Liab's ¹	Total Farm Rev ²	Oper Exp before Depr ³	Off Farm Income ¹	Living Expenses ¹
Cash Crop							
BC	0.94	0.99	0.99	1.01	1.10	1.09	1.09
Alberta	0.85	0.99	0.99	1.01	1.10	1.09	1.09
Saskatchewan	0.92	0.99	0.99	1.01	1.10	1.09	1.09
Manitoba	0.95	0.99	0.99	1.01	1.10	1.09	1.09
Ontario	0.83	0.99	0.99	1.01	1.10	1.09	1.09
Quebec	1.02	0.99	0.99	1.01	1.10	1.09	1.09
Atlantic	1.06	0.99	0.99	1.01	1.10	1.09	1.09
Cattle							
BC	0.94	0.97	0.97	1.05	1.10	1.09	1.09
Alberta	0.85	0.97	0.97	1.05	1.10	1.09	1.09
Saskatchewan	0.92	0.97	0.97	1.05	1.10	1.09	1.09
Manitoba	0.95	0.97	0.97	1.05	1.10	1.09	1.09
Ontario	0.83	0.97	0.97	1.05	1.10	1.09	1.09
Quebec	1.02	0.97	0.97	1.05	1.10	1.09	1.09
Atlantic	1.06	0.97	0.97	1.05	1.10	1.09	1.09
Hogs							
BC	0.94	0.97	0.97	1.04	1.10	1.09	1.09
Alberta	0.85	0.97	0.97	1.04	1.10	1.09	1.09
Saskatchewan	0.92	0.97	0.97	1.04	1.10	1.09	1.09
Manitoba	0.95	0.97	0.97	1.04	1.10	1.09	1.09
Ontario	0.83	0.97	0.97	1.04	1.10	1.09	1.09
Quebec	1.02	0.97	0.97	1.04	1.10	1.09	1.09
Atlantic	1.06	0.97	0.97	1.04	1.10	1.09	1.09

	Total Assets ¹	Long-term Liab's ¹	Total Liab's ¹	Total Farm Rev ²	Oper Exp before Depr ³	Off Farm Income ¹	Living Expenses ¹
Other							
BC	0.94	0.98	0.98	1.03	1.10	1.09	1.09
Alberta	0.85	0.98	0.98	1.03	1.10	1.09	1.09
Saskatchewan	0.92	0.98	0.98	1.03	1.10	1.09	1.09
Manitoba	0.95	0.98	0.98	1.03	1.10	1.09	1.09
Ontario	0.83	0.98	0.98	1.03	1.10	1.09	1.09
Quebec	1.02	0.98	0.98	1.03	1.10	1.09	1.09
Atlantic	1.06	0.98	0.98	1.03	1.10	1.09	1.09
Supply Management							
BC	0.94	0.99	0.99	1.03	1.10	1.09	1.09
Alberta	0.85	0.99	0.99	1.03	1.10	1.09	1.09
Saskatchewan	0.92	0.99	0.99	1.03	1.10	1.09	1.09
Manitoba	0.95	0.99	0.99	1.03	1.10	1.09	1.09
Ontario	0.83	0.99	0.99	1.03	1.10	1.09	1.09
Quebec	1.02	0.99	0.99	1.03	1.10	1.09	1.09
Atlantic	1.06	0.99	0.99	1.03	1.10	1.09	1.09
Interest Paid as percent of Total Debt							
BC	9.61%						
Alberta	8.74%						
Saskatchewan	8.74%						
Manitoba	9.61%						
Ontario	8.74%						
Quebec	9.61%						
Atlantic	8.74%						

¹ Unchanged from the base case.

² Unchanged from the base case, except for a one percentage point increase in farm revenue of the supply managed enterprises attributed to their cost of production formulas.

³ Further input price shock, driven by oil prices, increases costs by an additional 3 percentage points over the base case.

SIMULATION ASSUMPTION: 1992 Optimistic Projection

Ratios of 1992 Projected Values to 1989 Actual Values
(1989 = 1.00)

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ³	Oper Exp before Depr ⁴	Off Farm Income ⁵	Living Expenses ⁵
Cash Crop							
BC	0.97	0.94	0.94	1.11	1.07	1.09	1.09
Alberta	0.88	0.94	0.94	1.11	1.07	1.09	1.09
Saskatchewan	0.95	0.94	0.94	1.11	1.07	1.09	1.09
Manitoba	0.98	0.94	0.94	1.11	1.07	1.09	1.09
Ontario	0.85	0.94	0.94	1.11	1.07	1.09	1.09
Quebec	1.05	0.94	0.94	1.11	1.07	1.09	1.09
Atlantic	1.09	0.94	0.94	1.11	1.07	1.09	1.09
Cattle							
BC	0.97	0.92	0.92	1.16	1.09	1.09	1.09
Alberta	0.88	0.92	0.92	1.16	1.09	1.09	1.09
Saskatchewan	0.95	0.92	0.92	1.16	1.09	1.09	1.09
Manitoba	0.98	0.92	0.92	1.16	1.09	1.09	1.09
Ontario	0.85	0.92	0.92	1.16	1.09	1.09	1.09
Quebec	1.05	0.92	0.92	1.16	1.09	1.09	1.09
Atlantic	1.09	0.92	0.92	1.16	1.09	1.09	1.09
Hogs							
BC	0.97	0.92	0.92	1.14	1.09	1.09	1.09
Alberta	0.88	0.92	0.92	1.14	1.09	1.09	1.09
Saskatchewan	0.95	0.92	0.92	1.14	1.09	1.09	1.09
Manitoba	0.98	0.92	0.92	1.14	1.09	1.09	1.09
Ontario	0.85	0.92	0.92	1.14	1.09	1.09	1.09
Quebec	1.05	0.92	0.92	1.14	1.09	1.09	1.09
Atlantic	1.09	0.92	0.92	1.14	1.09	1.09	1.09

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ³	Oper Exp before Depr ⁴	Off Farm Income ⁵	Living Expenses ⁵
Other							
BC	0.97	0.93	0.93	1.12	1.07	1.09	1.09
Alberta	0.88	0.93	0.93	1.12	1.07	1.09	1.09
Saskatchewan	0.95	0.93	0.93	1.12	1.07	1.09	1.09
Manitoba	0.98	0.93	0.93	1.12	1.07	1.09	1.09
Ontario	0.85	0.93	0.93	1.12	1.07	1.09	1.09
Quebec	1.05	0.93	0.93	1.12	1.07	1.09	1.09
Atlantic	1.09	0.93	0.93	1.12	1.07	1.09	1.09
Supply Management							
BC	0.97	0.94	0.94	1.12	1.09	1.09	1.09
Alberta	0.88	0.94	0.94	1.12	1.09	1.09	1.09
Saskatchewan	0.95	0.94	0.94	1.12	1.09	1.09	1.09
Manitoba	0.98	0.94	0.94	1.12	1.09	1.09	1.09
Ontario	0.85	0.94	0.94	1.12	1.09	1.09	1.09
Quebec	1.05	0.94	0.94	1.12	1.09	1.09	1.09
Atlantic	1.09	0.94	0.94	1.12	1.09	1.09	1.09
Interest Paid as percent of Total Debt							
BC	9.61%						
Alberta	8.74%						
Saskatchewan	8.74%						
Manitoba	9.61%						
Ontario	8.74%						
Quebec	9.61%						
Atlantic	8.74%						

¹ Inflated by 3 percentage points over the base case.

² Reduced by 5 percent from the base case.

³ All commodity sectors experience a recovery in prices equivalent to 10 percentage points above the base case.

⁴ Cattle, hogs and supply-managed enterprises have operating expenses increased by 2 percentage points to reflect higher feed costs.

⁵ Unchanged from the base case.

SIMULATION ASSUMPTION: 1992 Higher Interest Rates and Inflation Projection

Ratios of 1992 Projected Values to 1989 Actual Values
(1989 = 1.00)

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ²	Oper Exp before Depr ³	Off Farm Income ¹	Living Expenses ⁴
Cash Crop							
BC	0.94	0.99	0.99	1.01	1.085	1.09	1.11
Alberta	0.85	0.99	0.99	1.01	1.085	1.09	1.11
Saskatchewan	0.92	0.99	0.99	1.01	1.085	1.09	1.11
Manitoba	0.95	0.99	0.99	1.01	1.085	1.09	1.11
Ontario	0.83	0.99	0.99	1.01	1.085	1.09	1.11
Quebec	1.02	0.99	0.99	1.01	1.085	1.09	1.11
Atlantic	1.06	0.99	0.99	1.01	1.085	1.09	1.11
Cattle							
BC	0.94	0.97	0.97	1.05	1.085	1.09	1.11
Alberta	0.85	0.97	0.97	1.05	1.085	1.09	1.11
Saskatchewan	0.92	0.97	0.97	1.05	1.085	1.09	1.11
Manitoba	0.95	0.97	0.97	1.05	1.085	1.09	1.11
Ontario	0.83	0.97	0.97	1.05	1.085	1.09	1.11
Quebec	1.02	0.97	0.97	1.05	1.085	1.09	1.11
Atlantic	1.06	0.97	0.97	1.05	1.085	1.09	1.11
Hogs							
BC	0.94	0.97	0.97	1.04	1.085	1.09	1.11
Alberta	0.85	0.97	0.97	1.04	1.085	1.09	1.11
Saskatchewan	0.92	0.97	0.97	1.04	1.085	1.09	1.11
Manitoba	0.95	0.97	0.97	1.04	1.085	1.09	1.11
Ontario	0.83	0.97	0.97	1.04	1.085	1.09	1.11
Quebec	1.02	0.97	0.97	1.04	1.085	1.09	1.11
Atlantic	1.06	0.97	0.97	1.04	1.085	1.09	1.11

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ²	Oper Exp before Depr ³	Off Farm Income ¹	Living Expenses ⁴
Other							
BC	0.94	0.98	0.98	1.03	1.085	1.09	1.11
Alberta	0.85	0.98	0.98	1.03	1.085	1.09	1.11
Saskatchewan	0.92	0.98	0.98	1.03	1.085	1.09	1.11
Manitoba	0.95	0.98	0.98	1.03	1.085	1.09	1.11
Ontario	0.83	0.98	0.98	1.03	1.085	1.09	1.11
Quebec	1.02	0.98	0.98	1.03	1.085	1.09	1.11
Atlantic	1.06	0.98	0.98	1.03	1.085	1.09	1.11
Supply Management							
BC	0.94	1.00	1.00	1.03	1.085	1.09	1.11
Alberta	0.85	1.00	1.00	1.03	1.085	1.09	1.11
Saskatchewan	0.92	1.00	1.00	1.03	1.085	1.09	1.11
Manitoba	0.95	1.00	1.00	1.03	1.085	1.09	1.11
Ontario	0.83	1.00	1.00	1.03	1.085	1.09	1.11
Quebec	1.02	1.00	1.00	1.03	1.085	1.09	1.11
Atlantic	1.06	1.00	1.00	1.03	1.085	1.09	1.11
Interest Paid as percent of Total Debt							
BC	10.57%						
Alberta	9.61%						
Saskatchewan	9.61%						
Manitoba	10.57%						
Ontario	9.61%						
Quebec	10.57%						
Atlantic	9.61%						

¹ Unchanged from the base case.

² Unchanged from the base case, except Supply Managed, which increased by one percentage point.

³ All enterprises have a 1.5 percentage point increase in operating costs relative to the base case because of the inflationary impact of higher interest rates on purchased inputs.

⁴ Living expenses increased by 2 percentage points over the base case for all enterprises to adjust for the inflationary impact of higher interest rates.

SIMULATION ASSUMPTION: 1992 Lower Interest Rates and Lower Inflation Projection

Ratios of 1992 Projected Values to 1989 Actual Values
(1989 = 1.00)

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ¹	Oper Exp before Depr ³	Off Farm Income ³	Living Expenses ³
Cash Crop							
BC	0.94	0.98	0.98	1.01	1.06	1.08	1.08
Alberta	0.85	0.98	0.98	1.01	1.06	1.08	1.08
Saskatchewan	0.92	0.98	0.98	1.01	1.06	1.08	1.08
Manitoba	0.95	0.98	0.98	1.01	1.06	1.08	1.08
Ontario	0.83	0.98	0.98	1.01	1.06	1.08	1.08
Quebec	1.02	0.98	0.98	1.01	1.06	1.08	1.08
Atlantic	1.06	0.98	0.98	1.01	1.06	1.08	1.08
Cattle							
BC	0.94	0.96	0.96	1.05	1.06	1.08	1.08
Alberta	0.85	0.96	0.96	1.05	1.06	1.08	1.08
Saskatchewan	0.92	0.96	0.96	1.05	1.06	1.08	1.08
Manitoba	0.95	0.96	0.96	1.05	1.06	1.08	1.08
Ontario	0.83	0.96	0.96	1.05	1.06	1.08	1.08
Quebec	1.02	0.96	0.96	1.05	1.06	1.08	1.08
Atlantic	1.06	0.96	0.96	1.05	1.06	1.08	1.08
Hogs							
BC	0.94	0.96	0.96	1.04	1.06	1.08	1.08
Alberta	0.85	0.96	0.96	1.04	1.06	1.08	1.08
Saskatchewan	0.92	0.96	0.96	1.04	1.06	1.08	1.08
Manitoba	0.95	0.96	0.96	1.04	1.06	1.08	1.08
Ontario	0.83	0.96	0.96	1.04	1.06	1.08	1.08
Quebec	1.02	0.96	0.96	1.04	1.06	1.08	1.08
Atlantic	1.06	0.96	0.96	1.04	1.06	1.08	1.08

	Total Assets ¹	Long-term Liab's ²	Total Liab's ²	Total Farm Rev ¹	Oper Exp before Depr ³	Off Farm Income ³	Living Expenses ³
Other							
BC	0.94	0.97	0.97	1.03	1.06	1.08	1.08
Alberta	0.85	0.97	0.97	1.03	1.06	1.08	1.08
Saskatchewan	0.92	0.97	0.97	1.03	1.06	1.08	1.08
Manitoba	0.95	0.97	0.97	1.03	1.06	1.08	1.08
Ontario	0.83	0.97	0.97	1.03	1.06	1.08	1.08
Quebec	1.02	0.97	0.97	1.03	1.06	1.08	1.08
Atlantic	1.06	0.97	0.97	1.03	1.06	1.08	1.08
Supply Management							
BC	0.94	0.98	0.98	1.02	1.06	1.08	1.08
Alberta	0.85	0.98	0.98	1.02	1.06	1.08	1.08
Saskatchewan	0.92	0.98	0.98	1.02	1.06	1.08	1.08
Manitoba	0.95	0.98	0.98	1.02	1.06	1.08	1.08
Ontario	0.83	0.98	0.98	1.02	1.06	1.08	1.08
Quebec	1.02	0.98	0.98	1.02	1.06	1.08	1.08
Atlantic	1.06	0.98	0.98	1.02	1.06	1.08	1.08
Interest Paid as percent of Total Debt							
BC	8.51%						
Alberta	7.64%						
Saskatchewan	7.64%						
Manitoba	8.51%						
Ontario	7.64%						
Quebec	8.51%						
Atlantic	7.64%						

¹ Unchanged from the base case.

² Reduced by one percentage point from the base case for expected reduction in debt.

³ Reduced by one percentage point from the base case to reflect the effects of lower inflation.

MINUTES OF PROCEEDINGS

A copy of the relevant Minutes of Proceedings and Evidence of the Standing Committee on Agriculture (*Issue No. 56, which includes this report*) is tabled.

[Text]

Respectfully submitted,

The Standing Committee on Agriculture met in camera at 9:14 o'clock a.m. this day, in Room 209, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Vic Althouse, Harry Brightwell, Maurice Foster, Rod Laporte, Gabriel Larrivée, Ken Monteith, Lyle Vanciel, Geoff Wilson.

HARRY BRIGHTWELL,

Chairman.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dekers, Research Coordinator.

The Committee commenced consideration of its draft report on Canadian farm debt.

On motion of Ken Monteith, it was agreed, — That the Standing Committee on Agriculture authorize a working group, composed of Harry Brightwell, Maurice Foster, and Vic Althouse, to make the necessary modifications to the Committee's draft report on farm debt; and that this report be tabled, with the unanimous consent of the members of the working group, in the House, or if the House stands adjourned, with the Clerk of the House.

On motion of Lyle Vanciel, it was agreed, — That, in addition to the 550 copies printed by the House, the Committee print 1,500 copies of its report.

At 10:52 o'clock a.m., the Committee adjourned to the call of the Chair.

TUESDAY, APRIL 9, 1991

(69)

The Standing Committee on Agriculture met in camera at 9:41 o'clock a.m. this day, in Room 269, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Harry Brightwell, Maurice Foster, Al Horning, Rod Laporte, Ken Monteith, Greg Thompson, Lyle Vanciel, Geoff Wilson.

Acting Members present: Don Boudria for Ralph Ferguson, Suzanne Duplessis for Gabriel Larrivée, Len Gustafson for Ken Hughes.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dekers, Research Coordinator; Economic Consultant John A. Dawson.

MINUTES OF PROCEEDINGS

TUESDAY, MARCH 26, 1991

(68)

[Text]

The Standing Committee on Agriculture met *in camera* at 9:14 o'clock a.m. this day, in Room 209, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Vic Althouse, Harry Brightwell, Maurice Foster, Rod Laporte, Gabriel Larrivée, Ken Monteith, Ross Stevenson, Lyle Vanclief, Geoff Wilson.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dakers, Research Coordinator.

The Committee commenced consideration of its draft report on Canadian farm debt.

On motion of Ken Monteith, it was agreed, —That the Standing Committee on Agriculture authorize a working group, composed of Harry Brightwell, Maurice Foster, and Vic Althouse, to make the necessary modifications to the Committee's draft report on farm debt; and that this report be tabled, with the unanimous consent of the members of the working group, in the House, or if the House stands adjourned, with the Clerk of the House.

On motion of Lyle Vanclief, it was agreed, —That, in addition to the 550 copies printed by the House, the Committee print 1,500 copies of its report.

At 10:52 o'clock a.m., the Committee adjourned to the call of the Chair.

TUESDAY, APRIL 9, 1991

(69)

The Standing Committee on Agriculture met *in camera* at 9:41 o'clock a.m. this day, in Room 269, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Harry Brightwell, Maurice Foster, Al Horning, Rod Laporte, Ken Monteith, Greg Thompson, Lyle Vanclief, Geoff Wilson.

Acting Members present: Don Boudria for Ralph Ferguson, Suzanne Duplessis for Gabriel Larrivée, Len Gustafson for Ken Hughes.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dakers, Research Coordinator. *Economic Consultant:* John A. Dawson.

The Committee resumed consideration of its draft report on Canadian farm debt. (See *Minutes of Proceedings and Evidence of Tuesday, March 26, 1991, Issue No. 56*).

At 11:18 o'clock a.m., the Committee adjourned to the call of the Chair.

THURSDAY, APRIL 11, 1991

(70)

The Standing Committee on Agriculture met *in camera* at 10:15 o'clock a.m. this day, in Room 269, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Harry Brightwell, Maurice Foster, Al Horning, Ken Hughes, Rod Laporte, Joe McGuire, Ken Monteith, Ross Stevenson, Greg Thompson, Lyle Vanclief.

Acting Member present: André Harvey for Gabriel Larrivée.

Other Member present: Len Gustafson.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dakers, Research Coordinator. *Economic Consultants:* Ralph Ashmead and John A. Dawson.

The Committee resumed consideration of its draft report on Canadian farm debt. (See *Minutes of Proceedings and Evidence of Tuesday, March 26, 1991, Issue No. 56*).

At 11:26 o'clock a.m., the sitting was suspended.

At 12:11 o'clock p.m., the sitting resumed.

At 1:05 o'clock p.m., the Committee adjourned to the call of the Chair.

AFTERNOON SITTING

(71)

The Standing Committee on Agriculture met *in camera* at 3:40 o'clock p.m. this day, in Room 269, West Block, the Chairman, Harry Brightwell, presiding.

Members of the Committee present: Harry Brightwell, Maurice Foster, Rod Laporte, Ken Monteith, Lyle Vanclief.

Other Member present: Len Gustafson.

In attendance: From the Research Branch of the Library of Parliament: Len Christie, Research Officer and Sonya Dakers, Research Coordinator. *Economic Consultants:* Ralph Ashmead and John A. Dawson.

The Committee resumed consideration of its draft report on Canadian farm debt.
(See *Minutes of Proceedings and Evidence of Tuesday, March 26, 1991, Issue No. 56*).

At 5:35 o'clock p.m., the Committee adjourned to the call of the Chair.

Carmen DePape
Clerk of the Committee

