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Paper Commissioned by the Canadian Agri-Food Policy Institute (CAPI)

**Income From the Market and Government Payments
– a Canada/U.S. Aggregate Comparison**

By

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June, 2005

Note to the Readers

This study has been conceived and collaborated on by George Brinkman, Ph. D., a recently-retired professor of the University of Guelph and by Eric Grenon, senior economist, M.Sc., M.B.A., as an independent consultant based in Montreal. The authors thank the researchers and statisticians from various organizations for their help in clarifying crucial aspects of methodology and information reporting. The authors extend special thanks to John Groewenegen from JRG Consulting Group based in Guelph, for his timely and pertinent advice, his availability, comments and suggested revisions as the scope of this investigation evolved.

The reader should note this study portrays the view of the authors and does not represent the views of CAPI or any other organizations. This statement of the study was mandated inasmuch as it represents an independent view on the farm income issue and the comparison of methodology and how the data are reported between Canada and U.S. It should also be noted that during the research processes, other questions revealed themselves and the scope of the study became larger. The reader will find substantial data concerning aggregate farm income measurement reported in several tables. There is also a document annex which includes definitions of terms used in this research, as well as supporting tables which demonstrate trends over time and other supporting graphs. An example, the reader may find interesting aggregate measurement related to governmental support presented by commodity¹.

The purpose of the study is to better understand the nature and the key contributing factors of farm income at the aggregate level, between the United States (U.S.) and Canada, in order to find solutions to enhance the sector's performance while potentially diminishing direct or indirect government support, with the goal of increasing income from the market.

¹ The OECD Total Estimate Support (TSE) reported for high major commodity (or productions) where Canada and U.S. competed under the rules of WTO during the 1998-2003 : wheat, maize, oilseeds, beef and veal, pigmeat, poultrymeat, eggs, and milk.

Table of Contents

Note to the Readers	i
List of Key Tables / Graphs / Figures in the Report	iii
List of Supporting Graphs in the Document Annex of the Report	vi
1.0. Introduction	1
1.1. General Overview of the Farm Income Issue Between Canada and U.S.....	1
1.2. Research Questions and Hypotheses.....	1
1.2.1. Hypotheses and Questions To Be Addressed	2
1.3. Presentation of the Sections of the Report	3
2.0. Project Objectives, Conceptual Framework and Methodology	4
2.1. Goals and Objectives of the Research.....	4
2.1.1. Overall Goal	4
2.1.2. Objectives	5
2.2. Conceptual Framework Used in the Research	5
2.3. Methodology	8
3.0. Comparability of Methodology, Aggregate Measurement and Data Sources between Canada and U.S.	9
3.1. Sources on Farm Income Data	9
3.1.1. Canada.....	9
3.1.2. United States.....	10
3.2. Discussion of the Methodology and Comparability of Data	10
3.2.1. Definition of a Farm.....	11
3.2.2. The Inclusion of Imputed House Rents and Hired Wages.....	11
3.2.3. Farm Related Income in the U.S. versus Custom Work in Canada	12
3.2.4. The Treatment of Depreciation Charge	13
3.2.5. Direct Payments.....	15
3.2.6. “Market Income”	19
3.3. Aggregate Comparison of Farm Income Performance With Adjusted Data	20
3.3.1. Comparison Between Canada and the U. S.....	20
3.3.2. Comparison Between Canada, the Provinces and the U.S.....	24
4.0. Comparison of Income from the Market and from Government and Farm Sector Performance Between Canada and U.S.	26
4.1. Definitions of Concepts, Terms and Components used in the Research	26
4.1.1. Farm Income Terms	26
4.1.2. Balance Sheet of the Agriculture Sector	29
4.1.3. Financial Ratios.....	32
4.1.4. Value of Farm Capital, Depreciation Charge and expenses.....	39
4.2. Comparison of Income from the Market versus from Government Payments Between Canada and U.S. over Time.....	43
4.2.1. Income from the Market versus Government Payments as a Percent of Gross Income, Cash receipts and Net Income.....	43
4.2.2. Growth in Market Revenue, in Government Payments and in Expenses.....	47
4.2.3. Income from the Market versus Total Government Support.....	49
4.3. Comparison of Aggregate Farm Sector Performance Measure.....	62
4.3.1. Net Cash Income and Net Farm Income (Income Statement).....	62
4.3.2. Balance Sheet.....	64
4.3.3. Value of Farm Capital	66
4.3.4. Financial Ratios.....	68
5.0. Findings and Conclusions	71
6.0. Reference list	75
7.0. Annex	77

List of Key Tables / Graphs / Figures in the Report

List of Tables

Section 3.0

Table 1 : Direct Government Payments by Program in US, 1996-2004

Table 2 : Direct Government Payments by Program in Canada, 2003

Table 3 : Canadian Farm Income, 1981-2003 (\$ Billion)

Table 4 : US Total Farm Income 1980-2003 (\$ Billion)

Table 5. Ratio of 1997-2003 Average Percent of Income from Government Payments, Debt to Income and Equity to Income

Section 4.1

Table 6 : Canada and US : Income statement - Net Cash Income and Net Farm Income, 2003

Table 7 : Comparison of capital consumption in US and total Depreciation charges in Canada, 1980-2003

Table 8 : Balance Sheet of the Agricultural Sector Between Canada and US, 2003

Table 9 : Canada and US : Financial Ratios of the Agricultural Sector, 2003

Table 10 : Value of Farm Capital, Depreciation Charges and Value Per Unit of Capital in Canada, 2003

Table 11 : Comparison of Farm Expenses Between Canada and US, 2003

Section 4.2

Table 12 : Gross Cash Income between Canada and U.S., average year, 1971-2003

Table 13 : Ratios of Income from Gov Payments and Market Income, Canada and U.S., 1981-2003

Table 14 : Market Receipts, Government Payments, Expenses and Net Farm Income, average Year, 1980-2003

Table 15 : Canada and U.S.: Total Support Estimate, 1998-2003

Table 16 : Comparisons of PSE and GSEE Between Canada and U.S., 1998-2003

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and U.S., 1998-2003

Section 4.3

Table 18 : Income statement for Canada, average year, 1980-1987

Table 19 : Income statement for U.S., average year, 1980-2003

Table 20 : Balance Sheet of the Agricultural Sector for Canada, 1998-2003

Table 21 : Farm business balance sheet for the United States, 1998-2003

Table 22 : Value of farm capital, depreciation charges and value per unit of capital, 1981, 1991 and 2003

Table 23 : Farm Financial Ratios Between Canada and U.S., 1981-2003

Table 24 : Comparison of Farm expenses between Canada and U.S., 1980 to 2003

List of Key Graphs

Graph 1 : Index of Depreciation charge in Canada and Capital consumption in U.S., 1980 – 2003

Graph 2 : Percentage of Gross income from Gov Payments, between Canada and U.S., 1981-2003

Graph 3 : Percentage of Gov Payments in Net Farm income, between Canada and U.S., 1981-2003

List of Figures

Figure 1 : Conceptual Framework to Understand Income From the Market and From Government Between Canada and U.S.

List of Supporting Tables and Graphs in the *Document Annexes*

- Table A1 : Gross Farm Income Between Canada and U.S., 1981-2003
Table A2 : Capital, Debt and Equity Between Canada and U.S., 1981-2003
Table A3 : Comparison of Aggregate Measure of Farm Income Between Canada, the Provinces and U.S., 1997-2003
Table A4 : Adjustments to Aggregate US to Farm Income to Deduct Operators wages, Imputed House Rent and Associated Dwellings Cost, 1980 to 2003 (\$ 000)
Table A5: Canadian and U.S. : Farm Income, Net Government Payments and Market Income, 1981-2003
Table A6 : Canada : Income Statement, 1980-2005
Table A7 : United States : Income Statement, 1980-2005
Table A8 : Canada and U.S.: Total Support Estimate, 1998-2003
Table A9 : Canada and U.S.: Producer Support Estimate, 1998-2003
Table A10 : Canada and U.S.: General Services Support Estimate (GSSE), 1998-2003
Table A11 : Canada and United States : Gross Cash Income, 1971-2003
Table A12 : Canada and United States : Gross Cash Income, 2003 and Average
Table A13 : Market Income, Programs Payments and Expenses, 1980-2003
Table A13. Canada and United States : Program Payments and Farm Income 1998-2003
Table A14: Canada : Value of Farm Capital, Depreciation Charges and Value Per Unit of Capital, 1971-2003
Table A15 : Value Per Acre of Farm Land and Buildings in Canada and Provinces, 1971-2003
Table A16 : Canada Balance Sheet of the Agricultural Sector (set2), 1981-2003
Table A17 : Canada : Value of Farm Capital (With and Without Quota), 1981-2003
Table A18 : United States : Farm Business Balance Sheet, 1981-2003
Table A19 : Canada : Financial Ratios of the Agricultural Sector, 1981-2003
Table A20 : United States : Farm Financial Ratios (Liquidity, Solvency, Profitability, Efficiency), 1981-2003
Table A21 : Canada and United States : Comparison of Some Farm Financial Ratios, 1981-2003
Table A22. United States : Net Returns to Operators, 1998-2003
Table A23 : United States: Net Cash Income From Farming Operations, 1998-2003
Table A25. Value Added to the U.S. Economy by the Agricultural Sector Via the Production of Goods and Services, 1998-2003
Table A26 : US : Farm Income Indicators, 1990. (For use in comparing with the Value-added Accounting Concept in its Table Format)
Table A27 : US : Farm Production Expenses, 1980-2003
Table A28. United States and Canada : Ratio Expenses Incurred per Dollar of Sale, 1981-2003
Table A29. Canada and U.S. : Ratio Output / Input, 1981-2003
Table A30 : Canada : Balance Sheet of the Agricultural Sector and Farm Operator Households (Set 1), 1981-2003
Table A31 : Canada : Balance Sheet of the Agricultural Sector and Financial Ratios (Set 2), 1981-2003
Table A32 : Canada : Balance Sheet of Farm Businesses and Farm Operator Households (Set 3), 1981-2003
Table A33 : Canada : Balance Sheet of the Agricultural Sector (Set 4), 1981-2003
Table A34 : U.S. : Farm Production Expenses (including operator dwellings), 1980-2003
Table A35 : Canada : Farm operating expenses and depreciation charges in Canada, 1980-2003

List of Supporting Graphs in the Document Annex of the Report

- Graph 1 : Index of Farm Income Between Canada and U.S., 1981-2003
- Graph 2 : Index of Government Payments Between Canada and U.S., 1981-2003
- Graph 3 : Index of Market Income Between Canada and U.S., 1981-2003
- Graph 4 : Index of Farm Income, Net Gvt. Payments and Market Income in Canada, 1981-2003
- Graph 5 : Index of Farm Income, Program Payments and Market Income in U.S., 1981-2003
- Graph 6 : Index of Capital Between Canada and U.S., 1981-2003
- Graph 7 : Index of Farm Debt Between Canada and U.S., 1981-2003
- Graph 8 : Index of Equity Between Canada and U.S., 1981-2003
- Graph 9 : Index of Debt to Income Ratio Between Canada and U.S., 1981-2003
- Graph 10 : Index of Income to Equity Between Canada and U.S., 1981-2003
- Graph 11 : Index of Income to Assets Between Canada and U.S., 1981-2003
- Graph 12 : Debt to Income Ratio Between Canada and U.S., 1981-2003
- Graph 13 : Income to Equity to Income Ratio Between Canada and U.S., 1981-2003
- Graph 14 : Income to Assets Between Canada and U.S., 1981-2003

1.0. Introduction

1.1. General Overview of the Farm Income Issue Between Canada and U.S.

In recent years, the issue of farm income has been the focus of public discussion. Specifically, discussion has turned on the role and impact of government support, or agricultural subsidies, on the farm sector performance, as seen in comparison between Canada and U.S. or between Canada and other countries. in Canada², in U.S.³ and OECD⁴. There is ample information and research on all the topics related to the farm income issue. Also, several methodologies have been developed in order to judge the economic performance of the farm sector by country. In Canada, Statistics Canada (StatCan) and Agriculture and Agri-Food Canada (AAFC) are the main sources of data and methodology about farm income statistics. In the U.S., National Agriculture Statistics Services (NASS) and United States Department of agriculture (USDA) with the Economic Research Services (ERS) are the main sources of data. They collaborate on standardized methodology issues and comparative analysis.

Since 1980, Canadian aggregate farm incomes have shown little improvement, with declining overall incomes since 1996 despite record levels of government support in recent years. At the same time, aggregate farm incomes in the U.S. have shown steady improvement, doubling since 1984. This disparity in performance has raised a number of questions about the farm income concepts and measurement procedures used in the two countries in order to verify if the differences in performance are real or if they result only from differences in procedures. Furthermore, to verify causes and solutions, governments and industry need information and further knowledge on farm income Issues in order to compete with other countries and to sustain competitiveness of the sector in the long term.

1.2. Research Questions and Hypotheses

This study, Income from the Market and Government Payments – a Canada / U.S. Aggregate Comparison, is commissioned by Canadian Agricultural Policy Institute (CAPI) as part of the farm income project “Understanding Factors Affecting Current and Future Farm Income Prospects”. This investigation aims to bring a better understanding of the nature and dimensions of farm income and focuses on two major issues:

² **See in Canada** : Mussel A. and Ross B., George Morris Centre, To Tell the Truth on Farm Subsidies, April 16, 2001. , Biggs B. and Murray P. (Statistics Canada) and Dubman R., Erickson K. and Korb P., (USDA / ERS), Recent Changes in Farm Structure : Acanada –U.S. Comparison, July 2003. Hoppe R. and Banker D. (USDA / ERS) and Niekamp D. and Nakagawa (AAFC), Differences in Canadian and U.S. Farm Structure : What the Canadian Farm Typology Shows?, July 2003.

³ **See in USDA/ERS website** : Structural and Financial Characteristics of U.S. Farms : 2004 Family Farm Report ; Government Payments and the Farm Sector : Who Benefits and How Much ? ; Income, Wealth, and the Economic Well-Being of Farm Households, July 2002.

⁴ **See in OECD web site** : Tangermann S. (Director of OECD, Food, Agriculture and Fisheries Directorate) Farming support : the truth behind the numbers, OECD Observer, March 2004; Agricultural Support : How is it Measured and What does it Mean?, OECD Observer, June 2004; Farm Household Income : Towards Better Informed Policies, Octobre 2004.

1. Does the methodology used by Statistics Canada adequately measure net farm income at the aggregate level ?

This issue requires an investigation of the accuracy of the aggregate net farm income measurements used by Statistics Canada, and the resulting various financial measures derived from the measurement of farm income, debt and asset values. Measurement accuracy issues could include whether depreciation is based on current asset values, versus the book (acquisition) value, and whether all cash receipts are included.

2. Does U.S. agriculture obtain more income from the market than Canadian farmers ?

Governmental support is an important issue for farmers in both Canada and the U.S. Canadian farmers often express concern that the U.S. farm income is higher primarily because of U.S. governmental support, and that a “level playing field” is necessary for the Canadian farmer to compete with the U.S. farmer. This issue relates to the questions of whether an average farmer receives the same portion of net income from the market in both countries, or the same portion of government payments as cash receipts, and does this vary significantly by commodity grouping. This also includes an investigation of the type of government payments that are included in the farm income data.

1.2.1. Hypotheses and Questions To Be Addressed⁵

Does the methodology used by Statistics Canada adequately measure net farm income at the aggregate level?

- 1) Is the aggregate farm income measure a defensible measure of returns to farm operations across Canada?
- 2) What revenue and cost areas are not measured, and what are the consequences of not measuring these areas?
- 3) Are all of the various aggregate approaches to measure farm sector performance (net farm income, cash flow, value added) used by statistics Canada internally consistent?
- 4) What is the impact on aggregate farm income of depreciating assets at current market value versus using a proxy for book value?

⁵ Originally, the scope of the study concerned two main questions and the nine (9) hypotheses to be addressed. During the research, other questions and hypotheses emerged. All the hypotheses which emerged during the investigation are listed. Following is a description of the scope and focus of the original hypotheses : 1) How do Canadian and US farmers compare regarding government payments and income from the market as a percent of cash receipts and net income? 2) Is the aggregate farm income measure a defensible measure of returns to farm operations across Canada? 3) What revenue and cost areas are not measured, and what are the consequences of not measuring these areas? 4) Are all of the aggregate various aggregate approaches to measure farm sector performance (net farm income, cash flow, value added) used by statistics Canada internally consistent? 5) What is the impact on aggregate farm income of depreciating assets at current market value versus using a proxy for book value? 6) Are there implications of these measurement issues on the performance indicators that are used to judge the health of the sector? 7) How does aggregate farm income compare to aggregating the farm levels incomes measured through tax file data? 8) Should another approach be used to report aggregate sector performance? 9) How much gross income comes from the market versus government payments, with a Canada/ U.S. comparison?

- 5) How does aggregate farm income compare to aggregating the farm-level incomes measured through tax-filer data?
- 6) Are there implications of these measurement issues on the performance indicators that are used to judge the health of the sector?
- 7) What are the differences between the four sets of balance sheets used by Statistics Canada? What are the differences in assets and equity based on inclusion of quota?
- 8) Should another methodology be used to report aggregate sector performance?

Does US agriculture obtain more income from the market than Canadian farmer ?

- 1) How do Canadian and U.S. farmers compare regarding government payments and income from the market as a percent of cash receipts and net income?
- 2) How do different Canadian and U.S. rates of growth in market revenue, government payments, or expenses over the last 15 years explain why the U.S. net farm income has been increasing, versus decreasing in Canada.
- 3) How do Canadian and U.S. farmers compare regarding balance sheets and financial ratios?
- 4) How do Canadian and U.S. farmers compare regarding expenses incurred per dollar of sales (E/S ratio) ?
- 5) Should another approach be used to compare aggregate sector performance between Canada and U.S.?
- 6) What are the linkages and key findings of a Canada and U.S. comparison at the aggregate level for understanding the nature of farm income issues and what are the contributing factors ?
- 7) Should another approach be used to compare Canadian and U.S. performance in the agriculture sector?

1.3. Presentation of the Sections of the Report

The report begins with a brief introductory overview and a section on project objectives, framework, and methodology. The report then focuses on two main sections. The first section has been prepared by George Brinkman and provides a comparison and assessment of methodology and definitions of farm income concepts in Canada and the U.S. This section presents a comparison of performance using adjusted concepts to reflect similar definitions and procedures in both countries. This comparison shows that even after reconciling data procedures, the performance of Canadian farmers has been much weaker than in the U.S., and that Canadian farmers are much more vulnerable to rising interest rates and continued financial stress than U.S. farmers.

The second major section has been prepared by Eric Grenon and provides a detailed look at, and statistical summary of some of, the dimensions of Canadian and U.S. performance. This section provides a summary of key concepts, comparisons of Canadian and U.S. balance

sheets, financial data and ratios, and other measures. The section also provides graphs identifying trends in performance.

The report is also supported by further statistical tables in the Annex. Finally, summary findings and conclusions are presented.

2.0. Project Objectives, Conceptual Framework and Methodology

Before it is possible to establish whether Canada or U.S. farmers obtain more income from the market, or to make any comparison on farm income related measures at the aggregate level, it is necessary to understand the methodologies used by the organizations that collect the pertinent statistics. Effectively, Statistics Canada and Agriculture and Agri-Food Canada (AAFC) for Canada and National Agricultural Statistics Service (NASS) and U.S. Department of Agriculture / Economic Research Service (USDA/ERS) for U.S., are the main sources for data and methodology. However, in order to answer the hypothesis : “ Should another approach be used to report aggregate sector performance? ”, this study investigates another source of data and methodology related to agricultural support, relevant to make any international comparison on farm income and the role of agricultural support and policies between two or more countries, or potentially with a regional/continental scope.

Consequently, this study provides a thorough scope of the methodology in detail : observations and relevant comments, definitions of terms, components of aggregate measurement, how the information is presented and reported in Canada and in the U.S. and, adjustment of data. During our investigation regarding aspects of methodology as well as networking with economists and statisticians and other researchers, other hypothesis and resulting questions appeared. It was important to present in sufficient detail the fruits of this part of the investigation. It is clear that until differences in methodology used in both countries and the implications on the aggregate measurements are reconciled, adjustments required to make a consistent comparison will be unnecessarily problematic⁶.

2.1. Goals and Objectives of the Research

2.1.1. Overall Goal

To better understand the nature and the key contributing factors of farm income at the aggregate level between the United States (U.S.) and Canada in order to find solutions.

⁶ The data used in this study originate from different sources, (StatCan, USDA/ERS and OECD). The period of time where the data are reported and available used by those organizations are not the same. It is a constraint and also a choice by the authors to use similar but not the same periods of time for the tables and graphs in the report, where applicable and deemed relevant. The choice of period time is made to demonstrate a point or to show a trend over time. However, it should be noted, the period of time used to compare Canada and U.S. is the same for each individual table. It is perfectly consistent to use this method considering the scope of this study as well the questions and hypotheses to be addressed.

2.1.2. Objectives

1. Analyse the methodology used by Statistics Canada and Agriculture and Agri-Food Canada and by the United States Department of Agriculture (USDA) and for measuring aggregate income discuss the comparability of the farm income data.
2. Describe the aggregate farm income measures and their components in the United States and Canada.
3. Compare the performance between Canada, the provinces and the U.S. with adjusted data regarding the income from the market and government payments, as well as their assets, debts and equity.
4. Compare the performance and show the trends and differences of aggregate farm income measures between Canada and U.S. over time.
5. Identify key linkages and findings explaining the nature of the farm income issue and its contributing factors.
6. Discuss other approaches to report aggregate sector performance.
7. Suggest ideas to contribute to a better knowledge of the farm income issue.

2.2. Conceptual Framework Used in the Research

The overall CAPI research studies utilize the general conceptual framework of the national advantage or diamond framework developed by Michael E. Porter⁷ to assess and investigate national competitiveness and competitiveness of industries.

In order to compare the farm income aggregate measure from the market and governments payments between the U.S. and Canada implicitly utilizes three different concepts :

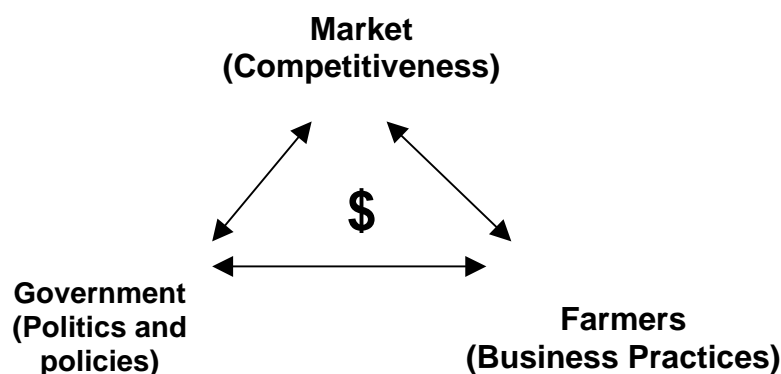
- Competitiveness and strategy in rural regions (Michael Porter)

⁷ Michael E. Porter is the Bishop William Lawrence University Professor, based at Harvard Business School. Professor Porter, the author of 17 books and over 125 articles, is a leading authority on competitive strategy, competitiveness and economic development of nations, states, and regions. Received B.S.E. with high honors in Aerospace and Mechanical Engineering from Princeton University (1969), M.B.A. (1971) and a Ph.D. in Business Economics (1973) from Harvard Business School. The Institute for Strategy and Competitiveness, led by Porter, studies competition and its implication for company strategy ; the competitiveness of nations, regions and cities; and solutions to social problems. Professor Porter's primary course for Harvard graduate students is a University-wide course, *Microeconomics of Competitiveness*, which is taught not only at Harvard but at 56 other universities around the world using video content and instructor support. It's core field is strategy, and this remains the primary focus of his research. His book, *Competitive Strategy : Techniques for Analyzing Industries and Competitors* is its 63rd printing and has been translated into 19 languages. *National Competitiveness*, building on *The Competitive Advantage of Nations*, Porter has published books about competitiveness on several countries, among them, Canada. Porter co-chairs the Global Competitiveness Report, an annual ranking of the competitiveness and growth prospects of more than 100 countries released by the World Economic Forum. Porter's ideas on clusters, first introduced in 1990, have given rise to a large body of research on new cluster-based economic development approaches and hundreds of public-private cluster initiatives throughout the world. Porter's research on clusters is summarized in *Clusters and Competition : New Agendas for Companies, Governments, and Institutions* (1998). Porter has extended his work on competitiveness to sub-national regions and rural competitiveness.

- Business models and best managerial practices among the players of the agricultural and agri-food industry
- Politics and policy intervention in the agricultural and agri-food sector

Figure 1 shows an illustration of the conceptual framework used in the research. It aims to address the two main questions of this research : How the methodology related to farm income data at the aggregate level used by Statistics Canada and by USDA/ERS are comparable and the implications of comparing data and measurements? And, how Canada and U.S. compare regarding income from the market and income from the government and subsequently, the implications on farm sector performance?

Figure 1: Conceptual Framework to Understand Differences in Income From the Market and From Government between Canada and U.S.



The nature of the farm income issue and contributing factors can be approached through an analysis of the farm income from the market and from government between the two countries, Canada and the U. . over time.

Market competitiveness and performance issues involve

- Global competitiveness or how Canada and the provinces compete and compare among selected countries and states / regions
- Competitiveness and productivity of the farm sector and rural regions
- Strategies of Canada and provinces versus the U.S. and states to compete
- Regulation of the market
- Purchase of value from the agricultural and agri-food sector (``market income``)
- Transfers from consumers (one component of support)
- Transfers from taxpayers

Government politics and political issues involve

- Politics and dialogue on farm income issues among all the participants in the agriculture and agri-food sector in order to find solutions to the farm income issue in the long run
- Choices of policies and programs according between trade liberalization and market protection

- Implication of policies for the consumers, taxpayers and budget revenues

Farmers viability and business practice issues involve

- Reality of the farm business and how farmers compete in their market
- Best practices among farmers
- Performance and contribution of the farm sector at the aggregate level
- Sources of farm income

Professor Porter on Competitiveness in Rural Areas :

“ The economic performance of rural areas is lagging that of urban areas in the U.S. and also in many others parts of the world. While there have been many efforts to foster economic development in rural areas involving public and private investments, most have failed. There is a widely recognized need for new approaches to rural economic development, drawing on broader learning about the sources of competitiveness in the global economy⁸. Attempting to mitigate the generic deficiencies of regions will not be sufficient. Instead, each rural region needs a distinctive strategy that reflects its unique strengths, its particular mix of clusters, and which integrates its economy with the closest urban centers.”

We posit there is a similar link between the role of government policies and programs with an aim not only to enhancing competitiveness in the economy, but in the agriculture and agri-food sector specifically⁹. The components of the analytical framework used by the researchers of this working paper published 10 years ago (1995) represent the business systems developed by Porter’s ideas, especially using the determinant of national competitive advantage : factors conditions, demands conditions, relationships and support, structure and rivalry, and firm strategy.

The conceptual framework used for this research is inspired by Porter’s ideas on competitiveness and strategy in order to understand the numbers at the aggregate level and the role of government policies and programs to enhance competitiveness of the agri-food sector. Behind the statistics at the aggregate level on farm income issue, there exists ample data. The balance sheet of the agricultural sector and the financial ratios could help us judge the performance of the sector. Business practices among the agricultural enterprises influence farm sector performance at the aggregate level. Politics and policies that support the agricultural sector play a role in the performance of the sector and influence the way countries compete, even in individual sub-sectors of agricultural production. In fact, the level and the type of governmental support varies widely not only between Canada and the U.S., but also in Canada among type of production or type of farm.

In Canada, government, industry and research groups have initiated a dialogue¹⁰ on Farm income prospects in order to find solutions regarding the decline of farm income and how can

⁸ See, Michael E. Porter, Competitiveness in U.S. Rural Regions : Learning and Research Agenda, February 25, 2004.

⁹ See a working paper report completed for the Policy Branch of Agriculture and Agri-Food Canada in 1995 : Effect on Competitiveness of Government Interventions in the Agri-Food Sector in Canada and the U.S. A Conceptual Framework). Core Project Team (principal researchers) are Erna van Duren, U. of Guelph and Nancy Brown Andison, Price Waterhouse.

¹⁰ See : GPC, Farm Income Consultations, Final Report, National Summary Report, March 2005. This document is a synthesis of dialogue on farm income. The Canadian Federation of Agriculture (CFA) and members of the Canadian Agri-Food Policy Initiative (CAPI), a newly-formed independent policy institute, participated as presenters at the meetings, providing context for, and input to, the discussions. More than 450 producers, including representatives of

we increase income from the market. In the U.S., there is a lot of information available via the website of the USDA/ERS related the research priority of the Department of Agriculture¹¹. Likewise, the OECD provides a wealth of valuable, credible information : detailed database about governmental support in agriculture; rigorous methodology used to compare countries (economically diverse or similar); policies by commodities, to compare agriculture strong analysis. OECD has also previously initiated a seminal workshop¹² on farm income.

2.3. Methodology

The procedure used to address the main issues, questions and hypotheses first involved identifying the aggregate income data series used in Canada and the U.S. and then identifying the individual components and measurement techniques. Conceptual definitions were reviewed and workshops conducted with the Statistics Canada Farm Income and Prices Division and the U.S.D.A. (by conference call). Data sources, sampling procedures, concepts, and extrapolation procedures were all reviewed. Data were then adjusted to reconcile differences caused by definitions and data collection procedures to more accurately compare Canadian and U.S. aggregate farm income.

Additional analysis was then conducted to gain insight into differences in performance between Canada and the U.S. Key tables and graphs have been prepared to illustrate trends between Canada and the U.S. over the years in order to analyze further causes in performance between the two countries and to identify policy issues for farm income performance in Canada. Initial results were presented to Statistics Canada and the Statistics Canada Advisory Committee on Agriculture in May 2005 for confirmation.

commodity groups and farm organizations, attend the meetings. They were asked to consider what further policy thinking should be done to better the understanding of the issue and potential solutions. This report focused on solutions for getting more from the market in terms of costs and revenues (from the perspective of producers). However, it would be interesting to see the proposed policy and program solutions and their implications for consumers, taxpayers and budget government, using the methodology for estimates used by the OECD Total Support Estimate (TSE) and its components. The solutions to get more money from the market and the implications on competitiveness of the agriculture and agri-food sector as well on competitiveness of rural region in Canada are the basis of another important consideration.. See also, CAPI, Dialogue on Farm Income Prospects : Setting the Scene, for the Farm Income Meetings, January 17-29th, 2005.

¹¹ See in the USDA/ERS web site : research emphasis, databases (WTO agricultural trade policy commitments, Data base on farm income by states), publications related to farm income, briefing rooms).

¹² See in the OECD web site : Workshop on information needs for the Analysis of Farm Household Income. The objective of this Workshop, held in Paris from 29-30 April 2004, was to increase awareness of the data requirements for the purposes of addressing farm household income policies with a view to generating momentum for the development of data bases better adapted to the needs of policy-makers. See also : Producer and Consumer Support Estimates, OECD Database 1986-2003 ; OECD Agricultural Policies 2004 At a Glance.

3.0. Comparability of Methodology, Aggregate Measurement and Data Sources between Canada and U.S.

In making comparisons for farm income between Canada and the U.S. it is important that the data are comparable, using similar definitions, components, and data collection and calculation procedures. The following sections address the major components of farm income, debt, capital assets, and equity between the two countries and document adjustment procedures to produce comparable numbers.

3.1. Sources on Farm Income Data

3.1.1. Canada

The primary farm income series published by Statistics Canada is the aggregate net farm income series. This series is calculated by measuring overall sales and expenses from external sources (all cattle sold from farms, aggregate fertilizer purchases, etc.) regardless of farm size, type, or business organization, and are not derived by adding up individual farm data. As a consequence, the series captures all farm activity, including activity from small operations, minor crops, and sales/expenses from corporate farms and large, multi operation units. The primary source of these data is the Census, supplemented by the Farm Financial Survey and other sources for inter-census years.

The most common Canadian data series for reporting aggregate debt and capital values are Statistics Canada farm debt outstanding series (online catalogue 210-14 X1E) and value of farm capital series (online catalogue 21013 X1E). Data on farm debt outstanding provided by the Bank of Canada, Farm Credit Canada and the provincial and federal agencies are considered to be of very good quality at the provincial and national levels. Data on farm debt outstanding provided by credit unions are considered to be of good quality at the national level. The numbers and values of the various components of farm capital are estimated each year, until the data become available from the succeeding Census.

The estimates are then benchmarked to the Census and inter-census revisions are undertaken to adjust the estimates for the inter-census years. Equity values can also be calculated from these data by subtracting debt from capital. These data series, however, include the personal use portion of farm homes and vehicles, rather than focusing only on debt and capital for farming purposes. The capital series also excludes the value of quota. As a consequence the debt and capital series do not properly represent the full amount of debt and capital utilized for farming by Canadian farmers.

An alternative to the farm debt outstanding series and the value of farm capital series is the farm balance sheet series. Farm balance sheet data only go back to 1981 but still provide a long enough series to be meaningful for current comparisons.. For Canada, there are 4 different balance sheet sets that are calculated. Set 1 represents the balance sheet for the entire agricultural sector and farm operator households, and includes the assets and liabilities of both non-operator landlords and the personal assets of the operator for the farm house and vehicles. This set treats farm operator households and farm businesses as a single entity. In contrast, set 2, the balance sheet for the agricultural sector, includes the assets and liabilities owned by or leased

from non-operator landlords, but excludes the personal use portion of the farm house and vehicles. This set treats the farm operator households and farm businesses as separate entities, and reports all assets and liabilities for the farm business only.

Set 3 and 4 excludes the assets (and associated liabilities) owned by and leased from non-operator landlords. These sets therefore report only the farm operator assets and liabilities. Set 3 represents the balance sheet of farm businesses and farm operator households, and includes both the farm and personal use assets of the operator. Set 4 represents the balance sheet of farm businesses of farm operators, and excludes the personal use portion of farm houses and vehicles.

The four different balance sheet sets are reported for 2003 in the Annexes

- Set 1 reports the highest level of assets and equity, while set 4 reports the lowest level. Set 2 is the only balance sheet reported on the Statistics Canada website for catalogue 21016X1E, but Sets 1, 3 and 4 can be obtained directly from Statistics Canada. Set 2 is the preferred set for calculating debt, assets and equity for the agricultural sector since this set both excludes the personal use portion of farm houses and vehicles, and includes the value of quota. This set therefore represents more completely the debt, assets and equity used exclusively for farming, and is the most comparable measure to the balance sheet calculations used by the USDA. This set also is the most commonly reported by Statistics Canada.

3.1.2. United States

U.S. data for their aggregate farm income measures come from several sources. Data for farm revenues are derived from the National Agricultural Statistical Service (NASS) from a variety of surveys and are used to calculate aggregate revenues by commodity in a similar fashion to Canada. The major source of expenses and financial data is the ARMS survey, which is collected annually and adjusted to the U.S. Census. Adjustment factors are utilized to incorporate proper representation in the final data from small farms, minor crop production, corporate farms, and multi-unit operations. U.S. data sources and collection procedures are quite similar to those used in Canada, and likely do not create any significant conceptual differences in the respective aggregate farm income measures.

The U.S. debt, capital equity data are reported online as balance sheet data. These data are calculated in a similar fashion as in Canada by excluding the personal use component of the farm house and vehicles, and by including both assets and liabilities for farm operators and non-operator landlords. Since there is no quota value in the U.S. there is no reporting of quota assets. Comparisons of debt, capital and equity between Canada and the U.S. consequently should use the balance sheet information for each country, rather than the Canadian farm debt outstanding and value of farm capital series.

3.2. Discussion of the Methodology and Comparability of Data

The aggregate income series of both Canada and the U.S. are designed to measure earnings by farmers regardless of size (greater than \$1,000 in sales in the U.S.) and type of business organization (sole proprietorship, partnership, family or non-family corporation). The data also report the income as the earnings of active farm operators, rather than the returns to all

resources used in farming. As a consequence, payments made to non-farm landlords are not included as farm income, and are treated instead as an expense incurred by farm operators. The aggregate farm income measures therefore are designed to report earnings only to active farming participants.

Most of the components of farm income are similar between the U.S. and Canada, including sales, operating expenses, and government assistance. Our review of the respective concepts revealed 5 significant issues that deserve further analysis. These issues include:

- the definition of a farm,
- the inclusion of imputed house rents in U.S. aggregate farm income
- the inclusion of hired wages for the principal operator in U.S. aggregate farm income
- different procedures for calculating farm-related income/custom work, and
- the methodology for calculating depreciation.

In addition, direct payments from government and income from the market place will be discussed.

3.2.1. Definition of a Farm

Canada

In Canada, the definition of a farm includes all business units which produce farm products, with no lower cut off for small size. Farm income data come from three sources. The primary source is the Census as this represents the complete source for all respondents. The Farm Financial Survey is used to supplement the Census data, with all data readjusted to the Census benchmarks in census years. A third source is the tax-filer data base, but this source is not deemed as accurate as the Census because of under-reporting by small, low income farms, and large multi-unit operations where farming is not the major activity of the firm or large corporation.

United States

In the U.S. the definition of the farm is based on the U.S. census definition of a farm as an operation selling \$1,000 or more of sales. This definition of a farm consequently does not include farms with under \$1,000 in sales as are included in the Canadian definition of a farm, and therefore excludes smaller farms than in Canada. This exclusion could create a slight upward bias in aggregate U.S. farm incomes compared to Canada as most very small farms report losses in net farm income. The distribution of farms in the U.S., however, includes a greater percentage of small farms than found in Canada, which should reasonably offset the upward bias in aggregate U.S. farm income created by excluding farms with sales of under \$1,000. As a consequence, it is unlikely that the small differences in size of operation create significant conceptual differences in aggregate farm income measures between the two countries.

3.2.2. The Inclusion of Imputed House Rents and Hired Wages

The standard published (web site) measures of U.S. aggregate net farm income include both the imputed rental value from living in the personal use portion of the house as income and the

interest, insurance, taxes, maintenance and depreciation costs for the home as expenses. In Canada, imputed house rents and personal-house-use expenses are not included in the aggregate farm income measurements.

In addition, in the U.S., the wages paid to the principal operator on farms, including proprietorships, partnerships and corporations, are not deducted as hired wages, so are included in net farm income. This procedure is different from the Canadian procedure where all hired wages are deducted as expenses, even if paid to the principal operator. In both countries, wages paid to other family members and non-family members are treated as expenses.

To provide comparable measures between the U.S. and Canada, adjustments to U.S. aggregate net farm income measures need to be made for a) deductions for imputed house rents from income, b) deductions for costs of personal use of the house from expenses, and c) deductions for hired wages paid to the principal operator from income. These data are available from the USDA from unpublished sources and can be used to provide more comparable measurements. These adjustments are reported from 1980 to 2003 in Annex Table 4A and typically decrease U.S. aggregate net farm income by 12-15% since 1984, when the current procedure for calculating imputed house rents at lower levels than previously was instituted.

3.2.3. Farm Related Income in the U.S. versus Custom Work in Canada

In the U.S., a specific entry for farm-related income is included to account for such items as custom work and forestry sales, and thereby allow a full accounting of the value of all production originating from farm resources. Such production is only included if the establishment meets the official definition of a farm and the activity is reliant on resources that are part of farming activities. Income from custom work is included only if earned with equipment purchased and used primarily in the farm's production activities. Farm related income is reported as a separate gross value in the aggregate income accounts, and amounted to \$16.3 billion gross in 2003. The expenses associated with farm related income, however, cannot be separately identified in the U.S., so these expenses are included in aggregate production expenses. The net income from farm related income is then indirectly incorporated into total net farm income.

In Canada, forestry sales are incorporated as a separate income item and the associated expenses are included in aggregate production expenses in a similar fashion as done in the U.S. Custom work in Canada, however, is reported only as an expense without any reporting of income from custom work. Custom work in turn is reported in Canada in the aggregate value accounts as custom work receipts, valued at \$1,934,106 thousand in 2003. This may generate concern that the Canadian aggregate farm income accounts have underestimated net farm income by excluding income from custom work.

Close examination of the aggregate farm income methodology reveals that the Statistics Canada procedures do account for custom work, but that the procedure is done on a net basis rather than done on a gross income and gross expenses basis as done in the U.S.

Data collection procedures for custom work data in Canada differ somewhat from the aggregate industry approach used for other sales and expenses, however, because of difficulties in identifying expenses specifically associated with custom work. As an alternative, tax-filer data are used in Canada to identify custom work income and expenses. For 2003, gross custom work expenses were reported as \$2,652,938 thousand. These expenses are also indirectly incorporated in the value added accounts as expenses on inputs, but they are not identified as a

separate expense item. Custom work receipts reported by farmers amounted to \$1,934,106 thousand, which is also included directly as custom work receipts in the value added accounts. The difference, i.e. the excess of expenses over receipts, is a net custom work expense of \$718,832 thousand in 2003. The net expense of \$718,832 essentially represents the amount of custom work paid to non-farmers, compared to the \$1,934,106 thousand paid to farmers as an expense and offset by the \$1,934,106 thousand received by farmers as income. The net expense amount (\$718,832 for 2003) is then entered into the aggregate income accounts as a net custom work expense.

The final Canadian calculation is similar in results to the U.S. calculation. We report custom work on a net basis whereas the U.S. reports it on a gross basis subtracting gross expenses from gross income to eventually contribute a net value to aggregate net farm income. As a result, it would appear that no further adjustments are needed to either U.S. or Canadian aggregate income to account properly for custom work.

3.2.4 The Treatment of Depreciation Charge

The treatment of depreciation between the U.S. and Canada is an important consideration since depreciation in Canada in recent years has been increasing substantially relative to the U.S. as a farm expense and therefore as a determinant of income. For example, Tables 16 and 17 reported later show that depreciation increased over the 1996 to 2003 period at a rate of 3.6 % per year in Canada compared to 1.3 % per year in the U.S. By 2003, depreciation represented 13.4 % of total expenses after rebates in Canada, compared to 10.5 % for the U. S.

It is also important to distinguish between economic depreciation and capital cost allowance. Economic depreciation is based on the economic life of the asset, and represents the true “using up” of the asset. Capital cost allowance, in contrast, is based on a prescribed maximum schedule for writing off an asset, and may or may not represent the actual “using up” of the asset. In some cases, the CCA schedule may exceed the true economic depreciation and overestimate true depreciation, as taxation provisions may allow a greater depreciation rate than actually occurs. In other cases, the CCA may underestimate actual depreciation, since CCA is optional and may not be beneficial when incomes are at zero taxation levels, and may be deferred until later years.

Depreciation Calculations in US

In the U.S., depreciation charges are based on 1) replacement value rather than book value, 2) economic life rather than a taxation rate (such as for capital cost allowance), 3) and the declining balance method of calculation. The U.S. procedure is based on establishing pools of undepreciated capital in real dollars (in terms of some base year value) for each class of assets, and adding new capital purchases each year as identified in the ARMS survey to the pool in real dollars in terms of the base year value. The real dollar value of the capital pool is then depreciated according to the economic depreciation rate and declining balance to calculate a real value of depreciation. This depreciation value is then adjusted to the current nominal dollar value of the current year to reflect a nominal current replacement value of depreciation.

Depreciation Calculations in Canada

In Canada the depreciation values in the aggregate income statistics are also based on 1) replacement value rather than book value, 2) economic life (which may differ across provinces), and 3) a declining balance. The calculation procedure, however, is somewhat different than in the U.S. In Canada, the procedure involves first establishing a current market value of capital by asset class and then applying an economic life rate to the declining balance. Both the U.S. and Canadian depreciation procedures calculate a depreciation value based on current (replacement) values rather than book values.

Comparisons Between Depreciation in the Aggregate Income Measures and Tax- Filer Data

An alternative farm income data source in Canada is the tax filer data base. In the tax- filer data base, depreciation is approximated by a) taxation capital cost calculations based on book value rather than current replacement values and b) prescribed allowable CCA rates. An analysis by Brian Biggs of Statistics Canada showed that depreciation procedures used in the aggregate income calculations resulted on average in 9% greater overall depreciation than reported as CCA by farm tax filers over the 1994-2001 period. Capital cost allowance, however, actually represented a greater percentage of pre-depreciation tax-filer income over the 1994-2003 period (69%) than depreciation represented for pre-depreciation income for the aggregate income accounts (63%). Since tax-filer records historically have captured a lower portion of overall income (and therefore depreciation) than the aggregate income accounts because of underreporting by small farms and difficulties in capturing farm income from multi-unit large operations, a comparable capturing of all farm income and activity in the tax-filer records as found in the aggregate income statistics likely would show very similar levels of CCA and depreciation. Furthermore, the rate of change under the two procedures was nearly the same under the two procedures, averaging 4% under the tax filer data and 5% under the aggregate procedure over the 1994-2001 period, and averaging the same % change under both procedures from 1997-2001. These are remarkably small differences in overall values and rates of change given that CCA is based on book value and the aggregate depreciation is based on current values. These small differences also indicate that the lower “economic life” depreciation rates used in the aggregate income depreciation procedure likely do not over-estimate depreciation.

Our conclusion is that the procedures for calculating depreciation for the Canadian aggregate income accounts do not substantially differentiate depreciation from that used in the U.S. or tax filer records. As a consequence, we conclude that further adjustments in depreciation values between the U.S. and Canada are not necessary. Furthermore, we feel that net farm incomes should be reported after adjustment for depreciation. There are several reasons for this position:

1. Reporting farm incomes before depreciation implies that capital expenditures are free and that farm incomes are higher than they actually are when considering the costs of capital investments needed for long-term farm sustainability.
2. The most appropriate measure for comparing performance across industries is net income after depreciation. The income statements of companies prepared for shareholders start with receipts minus cost of goods sold and minus depreciation before reporting operating income as the first measure of income reported.

3. Cash income (before depreciation) typically is treated as the amount of income that farmers have to live off of. This typically is a misconception, as farmers with fixed debt obligations also must pay off the principal of their debt obligations. Depreciation and capital purchases are not the same, but tend to represent each other in the long run. If the farmer has made out-of-pocket capital purchases, he cannot report these items as an operating expense, and can only report them for accounting purposes as depreciation, even if he has already made the out-of-pocket purchase or will be paying principle payments. As a consequence, cash income must be treated as the income to both live off and to maintain capital.
4. It is sometimes argued that EBITA (earnings before interest, taxes, and amortization) or EBITDA (earnings before interest, taxes, depreciation, and amortization) is a better measure than net income for measuring operating efficiency and identifying earnings available to pay off debt. These measures, however, are most appropriate for making comparisons between operations with similar capital structure. Because of the diversity in agriculture, it is very difficult to make meaningful comparisons between different types of enterprises, even within the same sector. Comparing the EBITA or EBITAD for a cow calf operator on a land based operation with few depreciable assets and therefore limited depreciation (as land typically is not depreciated) with that of a green house operator with a huge percentage of capital tied up in depreciable assets is also meaningless.
5. Finally, farming is one of the most capital intensive industries in Canada. As a consequence, depreciation is a much greater share of expenses than for other industries. The general public simply does not have any idea that depreciation represents about 2/3 of pre-depreciation farm income. Reporting income before depreciation therefore provides a very misleading picture of farming to the general public and misrepresents the true viability/stress of the sector.

3.2.5. Direct Payments

In both the U.S. and Canada, direct government payments have become a very important source of income for farmers. Table 1 summarizes the amount of direct government payments by category for the U.S. from 1996 to 2004. The direct government payments included in the U.S. aggregate farm income numbers represent the basic payment-related income enhancing provisions of the U.S. Farm Bill legislation, consisting of production flexibility contracts, fixed direct payments, counter cyclical payments, loan deficiency payments and marketing loan gains, as well as conservation, ad hoc and emergency payments, and other programs. As a consequence, U.S. government payment calculations include both green and amber payments.¹

The basic direct government payments for Canada are summarized in Table 2, with payment numbers reported for 2003. These data are reported from Statistics Canada Online Catalogue No. 21-015-XIE. The major direct payments for Canada include NISA/CAIS payments, income disaster assistance, provincial stabilization programs, and crop insurance. Canada payment numbers also include rebates which reduce expenses, but these programs have typically amounted to only 2-4% of net payments and rebates. Producer premiums need to be deducted from gross payments to calculate only the net portion coming from government.

¹ Amber and green subsidies refer to the designation of the subsidies under the WTO. Amber subsidies refer to the more direct and stronger trade distorting subsidies, like price supports and payments to producers for individual commodities that distort the price and/or profitability of one commodity over another. Green subsidies refer to non-distorting or minimally distorting subsidies, like indirect support through environmental and conservation programs, and limited income support available to all producers regardless of which commodity they produce.

Table 1 : Direct Government Payments by Program in US, 1996-2004

Year	Current Programs										Total Direct	Pre-1996 commodity programs included in
	Production flexibility contracts ²	Fixed direct payments ³	Counter- cyclical payments ⁴	Loan deficiency payments	Marketing loan gains	Peanut quota buyout payments ⁴	Milk income loss payments ⁴	Conservatio n programs ⁵	Ad hoc and emergency programs ⁶	Miscellaneous programs ⁷		
<i>Billion dollars</i>												
1996	5.97	na	na	0.00	0.00	na	na	1.87	0.15	-0.65	7.34	-0.73
1997	6.12	na	na	0.00	0.00	na	na	1.77	0.16	-0.55	7.50	-0.57
1998	6.00	na	na	1.78	0.17	na	na	1.57	2.86	-0.01	12.38	-0.01
1999	5.05	na	na	5.92	0.90	na	na	1.60	7.92	0.13	21.51	0
2000	5.05	na	na	6.42	1.13	na	na	1.72	8.56	0.01	22.90	0
2001	4.04	na	na	5.46	0.71	na	na	1.93	8.51	0.07	20.73	0
2002	3.50	0.37	0.20	1.20	0.46	0.98	0.86	2.00	1.62	0.05	11.24	0
2003	-0.28	6.70	2.30	0.58	0.20	0.24	0.91	2.20	3.11	0.01	15.97	0
2004	0.00	5.24	1.12	2.86	0.13	0.02	0.21	2.35	0.56	0.01	12.49	0

Source : Economic Research Service/USDA. Table - Direct Government payments United States. 1996 - 2004. April 28. 2005.

Notes :

- (1) Amounts include only cash payments made directly to farmers, not including Farmer-owned Reserve Payments as these data are not available by State.
- (2) Production Flexibility Contract Payments were authorized by the Federal Agricultural Improvement and Reform Act of 1996 for 1996 through 2002 crops. These are also known as AMTA payments.
- (3) Direct Payments are authorized by the Farm Security and Rural Investment Act of 2002 for 2002 through 2007 crops. Direct Payments for the 2002 crops are reduced by the amount of fiscal year 2002 payment received under Production Flexibility Contracts. The Act also increases the number of crops authorized to receive Direct Payments.
- (4) Programs authorized by the Farm Security and Rural Investment Act of 2002.
- (5) Conservation programs include all programs which provide conservation payments to producers. In 2002, these programs include Agricultural Conservation Program, Auto Agricultural Conservation Program--Environment Long Term, Auto ANA Conservation Program--Annual, Auto Conservation Reserve Program--Cost Shares, Auto Environmental Quality Incentives Program, Auto LTA Conservation Program--Long Term, Colorado River Basin Salinity Control Program, Conservation Reserve Program--Annual Rental, Conservation Reserve Program--Cost Share, Conservation Reserve Program--Incentives, Emergency Conservation Program, Environmental Quality Incentives Program, Environment Quality Incentives Program--NRCS, Farmland Protection Program, Forestry Incentives Program--NRCS, Great Plains Program, Kalamath Basin Water Program, Soil and Water Conservation Assistance Program, Wetlands Reserve Program, Wetlands Reserve Program--NRCS, Wildlife Habitat Incentive Program.
- (6) Ad Hoc and emergency programs includes all programs providing disaster and emergency assistance payments to producers. In 2002, programs include Apple and Potato Quality Loss Assistance Program, Apple Market Loss Assistance Payments, Avian Influenza Indemnity, Programs, Crop Disaster Program, Crop Loss Disaster Assistance Program, Dairy Indemnity Program, Dairy Market Loss Program, Disaster Program, Disaster Reserve Assistance Program, Idaho OUST Program, Karnal Bunt Fungus Program, Lamb Meat Adjustment Assistance Program, Livestock Compensation Program, Livestock Emergency Assistance Program, Livestock Indemnity Program, Loan Deficiency Payments for Non-contract Production Flexibility Contract Growers, Marketing Loss Assistance Program, Noninsured Assistance Program, Nursery Market Losses Assistance Program--Florida, Oilseeds Payment Program, Pasture Flood Compensation Program, Pasture Recovery Program, Peanut

Marketing Assistance Program, Quality Losses Program, Supplemental Oilseed Payment Program, Supplemental Tobacco Marketing Loss Assistance Program, Tobacco Marketing Loss Assistance Program, TRI Valley Growers Program, Wool and Mohair Marketing Loss Assistance Program II--Apportioned, Wool and Mohair Marketing Loss Assistance Program III--Apportioned, and Wool and Mohair Marketing Loss Assistance Program.

- (7) Miscellaneous programs include all remaining programs. In 2002, these programs include Acreage Grazing Payments, Additional Interest Payments, Agricultural Management Assistance Payments, American Indian Livestock Feed Program--Apportioned, Cotton Deficiency Program, Feed Grain Deficiency Program, Finality Rule, Interest Payments, National Wool Act, Payment Limitation Refund, Rice Deficiency Program, Small Hog Operation Program, Sugar PIK Diversion Program, and Wheat Deficiency Program.
- (8) Commodity programs in effect prior to the 1996 Farm Bill include Cotton Deficiency Program, Feed Grain Deficiency Program, Feed Grain diversion Program, Rice Deficiency Program, Wheat Deficiency Program, and National Wool Act Program. The negative numbers are repayments by producers of unanticipated over payments under earlier programs.

Source : Economic Research Service/USDA.

Table 2 : Direct payments to agriculture producers in Canada, 2003

	page 1 / 2 thousand \$
Payments Enhancing Receipts	
Net Income Stabilization Account (NISA)	723,065
Income Disaster Assistance Program	
Agricultural Disaster Assistance Program (AIDA)	0
B.C. Whole Farm Insurance Program (WFIP)	6,691
Canadian Farm Income Program	189,836
Farm Income Disaster Program (FIDP)	203,599
Ontario Farm Income Disaster Program (OFIDP)	40,247
Ontario Whole Farm Relief Program (OWFRP)	-42,000
Total	440,331
Provincial Stabilization Programs	
Gross Payments	711,321
Producer Premiums	181,526
Net Payments	529,795
Private Sector Contribution to Program Funding	0,000
Crop Insurance	
Gross Payments	1,707,484
Producer Premiums	402,789
Net Payments	1,304,695
Dairy Subsidy	0
Other Payments	
2003 Transition Funding	430,266
Bovine Spongiform Encephalopathy Recovery Program	429,858
Farm Income Assistance Program (FIAP)	69,722
Ontario BSE Recovery Initiatives	43,274
Alberta Fed Cattle Competitive Bid Program	28,256
Fed Cattle Competitive Market Adjustment Program	24,332
Agricultural Revenue Stabilization Account	22,040
Crop Loss Compensation	20,985
Canada-Ontario Market Revenue Program	12,712
Producer Assistance 2003	10,541
Saskatchewan Fed Livestock Competitive Market Adjustment Program	10,000
Programme de soutien à l'industrie bovine suite à l'ESB	10,000
Manitoba Slaughter Deficiency Program	8,103
Waterfowl Damage	7,651
Compensation for Animal Losses	7,572
Manitoba BSE Feeder Assistance Program	6,263
Herd Retention Program	4,552
Saskatchewan Set-Aside Program	4,400
Canada Alberta Farm Income Assistance Program (CAFIAP)	3,207
Conservation Cover Program	2,678
Transitional Production Adjustment Program (TPAP)	1,568
Manitoba Drought Assistance Program	1,543
NS Beef Producer Assistance	1,500
PEI Cattle Marketing Initiative	0.39
Wildlife Compensation Companion program	0.39
Livestock Predation Compensation Program	0.28
Cull Animal Program	0.25
Alberta Farm Income Assistance Program	0.98
Alberta Winter Feed Program	0.7
Beef Transportation Assistance Program	0.062
Ontario Bridge Funding Payment (OBFP)	0.042
Western Grain Stabilization Program	-0.003
Tripartite Plan for Crop and Livestock Sectors	-0.069
Total Gross Payments	1,162,528
Producers Premiums	0
Net Payments	1,162,528
Total Payments	
Gross Payments	4,744,729
Producer Premiums	584,315
Net Payments	4,160,414

Table 2 : Direct payments to agriculture producers in Canada, 2003

	page 2 / 2
Rebates Reducing Expenses	thousand \$
Property Taxes	77,080
Wages	2,624
Interest	11,302
Electricity	0
Heating Fuel	2,133
Fuel	3,823
Fertilizer and Lime	0
Pesticides	4,172
Seed	0
Feed	0
Veterinary and A.I.	0
Livestock Purchases	0
Total Rebates	101,134
Total, Direct Payments and Rebates	
Gross Payments	4,845,863
Producer Premiums	584,315
Net Payments	4,261,548

Source : Statistics Canada, Direct payments to agriculture producers - Agriculture economic statistics - 2003, November 2004 - Catalogue No.21-015-XIE

Note : Unless indicated, there is no producer participation in the funding of the programs. See Explanatory Notes for brief program description.

3.2.6. “Market Income”

“Market income” is a term used here to describe the amount of income derived from sales as compared to direct government payments. There is no official calculation or definition for market income used by either Statistics Canada or the USDA, so this is a non-official calculation derived by subtracting direct government payments from total net farm income (after inventory change and depreciation).

It should be noted that “market income” does not represent income that is generated only in a free market with no government interference. Instead “market income” may be significantly influenced by government regulations, trade measures, price supports, and sales promotion. In Canada, the most significant impacts on “market income” are derived from protective tariffs for the supply management sector and wheat, which show up as higher prices and “market income”. In the U.S., “market income” benefits are derived from a variety of tariffs, price supports (although most of the price support benefit from the loan rate is reported as loan deficiency payments), acreage diversion, export enhancement, countervailing duties, and closure of the border to Canadian cattle due to BSE.

It also should be noted that government intervention in one country sometimes may be beneficial to the other country. For many years the U.S. loan rate served as the global price support, as U.S. production was “sold” to the CCC if the world price was below the loan rate, thereby removing commodities from the market and supporting global prices at the loan rate. The U.S. also sets aside roughly 40 million acres of crop land into the Conservation Reserve Program, thereby reducing production and increasing prices. Forty million acres of crop land is about 60% more crop acreage than Canada’s entire wheat acreage, so this set aside program has significant potential for enhancing global prices (or at least offsetting the adverse effects of other production incentives provided through the U.S. Farm Bill).

3.3. Aggregate Comparison of Farm Income Performance With Adjusted Data

Aggregate comparisons between Canada and the U.S. are provided in Tables 3, 4 and 5. Table 3 summarizes the performance of Canada from 1981 to 2003 for the period when balance sheet information is available. Table 4 summarizes the U.S. performance using the adjusted income data. Table 5 summarizes the performance of Canada and the provinces, and the U.S. using the adjusted income data.

These tables report income, debt, capital and equity over time, as well as two new measures of debt-to-income and equity-to-income ratios. The debt-to-income and equity-to-income ratios are presented here as alternative financial ratios to traditional financial measures of capital turnover, interest coverage, etc., as these traditional measures have not been widely understood and utilized in financial planning by farmers. The debt-to-income ratio is calculated as the ratio of debt divided by income, and represents the number of years of current farm income that would be needed to pay off the debt. This provide an easily understood measure of the debt burden.

The equity-to-income ratio is calculated as total farmer business equity divided by net farm income. This measure represents an easily understood measure of the return to the farmer's equity, and is the reciprocal of the % return on equity. The debt to income ratio is presented here because it more dramatically illustrates the differences in earnings relative to equity than ROE %, since farmers pay less attention to the difference between a ROE of 1% verses 2%, but readily note the difference between an equity-to-income ratio of 100:1 verses 50:1. In addition, the equity-to-income ratio more closely approximates the price-earnings ratio commonly used for stock market investments, whereby a 16:1 ratio is often considered as the sustainable rate. As a consequence, the equity-to-income ratio directs more of the attention to the level of equity relative to earnings than the ROE %, and thereby directs more attention to the price of land and other assets relative to farm income.

A capital-to-income ratio is not included here since this ratio tends to be misleading as a return to farm capital. To calculate an accurate overall return to farm capital, the farm income figures should also include returns to capital used in farming that is paid to non-farm owners. This adjustment should add farm rents and interest paid on farm capital to the aggregate income to measure the overall return to capital used in farming more accurately.

3.3.1. Comparison Between Canada and the U. S.

In these table U.S. net farm income has been adjusted to exclude imputed house rents and expenses and the value of hired wages paid to principal operators. The Canadian debt, capital (asset) and equity values are also based on balance sheet data rather than the farm debt outstanding and value of farm capital series. These data exclude personal use values of the farm home and vehicles and include quota, and are calculated in a similar fashion to the U.S. data.

Table 3 for Canada shows aggregate farm incomes demonstrating little overall improvement in nominal dollars during the 23-year period, ranging from \$1.3 to 3+ billion per year. Since 2001, income from the market place has been negative, and farmers have maintained positive overall incomes only because of record levels of government assistance. Using the balance sheet debt

levels results in about 9-14% less debt than reported under the farm debt outstanding series, but debt levels still increased by 172% from 1981 to 2003. Revised debt-to-income ratios since 1997 have ranged from 14.5 to 30.8. Using the revised data for equity (including quota) shows an increase in equity of 59.7% from 1981 to 2003, while debt-to-equity ratios ranged from 65.9 to 139.1 since 1997.

Table 4 for the U.S. shows a substantial decrease in aggregate income after adjustments until 1983, as the original 1980 - 1983 data show huge levels of income from imputed house rents ranging from \$11.0 to \$13.1 billion per year in aggregate and about \$6 - \$7 billion per year after deducting the expenses associated with the personal use portion of the house. Beginning in 1984, a new procedure was used, resulting in aggregate gross imputed rents reduced to only \$4.9 billion in 1984 and then gradually increasing to around \$11.9 billion in 2003. The overall adjustments since 1984 therefore have resulted in smaller reductions in income, generally in the 12 -15% range and \$3 - \$7 billion in aggregate. In contrast to Canada, aggregate incomes have shown a steady improvement over the years, increasing from \$23.7 billion in 1984 to \$52.5 billion in 2003. Direct government payments have played an important role, but have only accounted for 37.9% of income from 1997 to 2003 compared to 112.2% for Canada. Since 1981 U.S. debt for farming purposes has only increased by 11.4% compared to 172% for Canada, while equity increased 40.4%. From 1997 to 2003 debt-to-income and equity-to-income ratios only ranged from 3.4 to 6.4 and 19.6 to 34.6.

Using 2003 as an example, the data show that U. S. agriculture has generated a higher level of profitability than in Canada. This can be measured by the return on assets, measured as net income divided by assets, which was 1.2 % in Canada compared to 3.8 % in the U. S. When measured as a return on equity, the comparative data show a 1.4 % return in Canada, compared to 4.5 % in the U. S. (It should be remembered that this measure is based on current market of assets, and not the book value reported in financial statements). Alternatively, the equity-to-income ratio (a price to earnings measure) was 69:1 in Canada, compared to 22:1 in the U. S.

It would appear that the difference in performance between Canada and the U. S. is not due to higher levels of direct government payments in the U. S., but is due instead to growth in expenses exceeding growth in receipts in Canada, while the opposite has occurred in the U. S. It also should be noted that the higher rate of growth in expenses compared to receipts has not been caused by growth in interest expenses, despite the 172 % increase in debt from 1981 to 2003. Because of steadily declining interest rates since the early 1980s, total interest payments in 2003 actually were lower than in 1981, \$2,374 million in 2003 compared to \$2,510 million in 1981. Interest payments in the U. S. showed an even greater decline than in Canada, however, falling to \$12,758 million in 2003 from \$19,118 million in 1981.

Table 3 : Canadian Farm Income, 1981-2003 (\$ billion)

Year	Farm Income		Net Govt	"Market"	Farm	Debt to	Total	Farm	Equity	Income	
	Nominal\$	2003\$	Payment	Income	Debt ^a	Income	Assets ^a	Equity ^a	to	to Equity	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1981	3.7	7.8	0.9	2.9	16.1	4.3	130.3	114.2	240.0	30.6	3.24
1982	2.5	4.6	0.9	1.6	17.7	7.2	129.5	111.8	210.3	45.2	2.24
1983	1.6	2.8	0.8	0.8	18.7	11.7	125.7	107.1	190.4	67.0	1.49
1984	2.2	3.7	1.4	0.8	19.4	8.8	120.0	100.7	171.5	45.9	2.18
1985	2.8	4.6	1.9	0.9	20.1	7.2	114.6	94.4	154.7	33.8	2.97
1986	3.6	6.0	2.5	1.1	21.1	5.9	112.4	91.3	152.6	25.6	3.94
1987	3.1	4.6	3.4	-0.3	20.7	6.7	112.6	91.9	138.6	29.9	3.37
1988	2.7	4.0	3.4	-0.6	20.1	7.3	119.5	99.5	144.2	36.4	2.71
1989	4.0	5.6	3.0	1.0	19.7	4.9	127.7	108.0	149.1	26.7	3.70
1990	3.4	4.5	1.7	1.8	21.1	6.2	132.3	111.2	146.5	32.7	3.06
1991	2.0	2.5	1.9	0.1	21.8	11.0	137.6	115.8	144.4	58.4	1.73
1992	2.3	2.8	3.2	-0.8	21.7	9.3	139.5	117.8	144.6	50.8	1.95
1993	3.4	4.1	2.3	1.1	21.5	6.3	146.2	124.7	150.5	36.5	2.73
1994	3.0	3.6	1.4	1.6	22.4	7.5	156.2	133.9	161.1	44.6	2.24
1995	3.0	3.5	1.0	2.0	23.5	7.9	166.9	143.4	169.0	48.0	2.09
1996	3.8	4.4	0.9	3.0	25.2	6.6	177.1	151.9	176.2	39.8	2.50
1997	1.7	1.9	0.9	0.8	28.0	16.8	185.7	157.7	180.2	94.5	1.08
1998	2.0	2.3	1.1	0.9	30.8	15.4	194.1	163.2	184.8	81.4	1.23
1999	2.3	2.5	1.7	0.6	33.3	14.7	203.7	170.5	189.6	75.2	1.35
2000	2.4	2.7	2.4	0.0	35.7	14.5	211.4	175.7	190.3	71.4	1.37
2001	2.7	2.9	3.4	-0.7	37.7	13.9	217.1	179.3	189.4	65.9	1.51
2002	1.3	1.3	3.1	-1.8	40.9	30.8	225.6	184.7	189.8	139.1	0.70
2003	2.6	2.6	4.3	-1.6	43.8	16.6	226.1	182.4	182.4	69.3	1.43

Source: Statistics Canada. Agricultural Statistics Online Catalogue 21010 X1E for farm income. Catalogue 21012 X1E for government payments and Catalogue 21016 X1E for debt, assets, and equity. Nov. 04.

^a Debt, assets, and equity data exclude personal use of the farm house and vehicles and include quota.

Table 4 : US Total Farm Income 1980-2003 (\$ billion)

Year	Farm Income ^a	Govt. Payments	"Market" Income	Farm Debt	Debt to Income Ratio	Total Farm Capital	Equity	Equity to Income Ratio	Income to Equity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1980	10.1	1.3	8.8	162.4	16.1	1,000.4	838.0	83.0	1.21
1981	19.7	1.9	17.8	177.7	9.0	997.9	820.2	41.7	2.40
1982	15.7	3.5	12.2	183.9	11.7	962.5	778.5	49.5	2.02
1983	7.4	9.3	-1.9	186.2	25.1	959.3	773.1	104.1	0.96
1984	23.7	8.4	15.3	188.8	7.9	897.8	709.0	29.9	3.34
1985	26.3	7.7	18.6	172.2	6.5	775.9	603.8	23.2	4.36
1986	29.4	11.8	17.6	151.3	5.1	722.0	570.7	19.4	5.15
1987	35.7	16.7	19.0	138.5	3.9	756.5	618.0	17.3	5.78
1988	35.0	14.5	20.5	133.1	3.8	788.5	654.4	18.7	5.35
1989	42.4	10.9	31.5	131.0	3.1	813.7	682.7	16.1	6.21
1990	41.9	9.3	32.6	131.1	3.1	840.6	709.5	16.9	5.91
1991	35.9	8.2	27.7	131.9	3.7	844.2	712.3	19.8	5.04
1992	45.7	9.2	36.5	131.6	2.9	867.8	736.2	16.1	6.21
1993	41.6	13.4	28.2	134.3	3.2	909.2	774.9	18.6	5.37
1994	45.6	7.9	37.7	138.9	3.0	934.7	795.8	17.5	5.73
1995	33.7	7.3	26.4	143.0	4.2	965.7	822.8	24.4	4.10
1996	52.2	7.3	44.9	148.6	2.8	1,002.9	854.3	16.4	6.11
1997	45.7	7.5	38.2	156.9	3.4	1,051.3	894.4	19.6	5.11
1998	40.6	12.4	28.2	164.6	4.1	1,083.1	918.5	22.6	4.42
1999	41.1	21.5	19.6	167.7	4.1	1,138.8	971.1	23.6	4.23
2000	41.5	22.9	18.6	177.6	4.3	1,203.2	1,025.6	24.7	4.05
2001	43.4	20.7	22.7	185.7	4.3	1,255.9	1,070.2	24.7	4.06
2002	30.4	11.0	19.4	193.3	6.4	1,304.0	1,110.7	34.6	2.74
2003	52.5	15.9	36.6	198.0	3.8	1,374.9	1,176.9	22.4	4.46

Source: USDA website: www.ers.usda.gov/Data/FarmIncome/finfidmu.htm. and
www.ers.usda.gov/Data/FarmBalancesheet/fbsdmu.htm

^a Income data have been adjusted to remove imputed house rents, costs of personal housing, and wages

paid to the principle operator, derived from unpublished USDA data, in order to calculate U.S. net income under a similar procedure as used for Canadian net farm income.

3.3.2. Comparison Between Canada, the Provinces and the U.S.

Table 5 provides a comparison between Canada and the U.S. and between Canadian Provinces using the revised numbers and original Brinkman calculations for % of income derived from direct government, payments, debt to income, and equity to income presented at the November 2004 National Symposium on Farm Incomes sponsored by the Canadian Federation of Agriculture. This table shows a huge disparity in performance between the U.S. and Canada and between Canadian provinces in recent years, even after adjustments to U.S. income and to Canadian debt and equity. From 1997 to 2003, U.S. farmers only generated the equivalent of 37.9 % of their aggregate net farm income from direct government payments, compared to 112.2% for Canada and 146.8% to 184.5% for Ontario, Alberta, and Saskatchewan. Revised debt-to-income ratios averaged only 4.2:1 for the U.S. compared to 16.6:1 for Canada, and a high of 29.1 for Ontario. Revised equity-to-income ratios including quota in Canada averaged only 24.3:1 for the U.S. compared to 80.4:1 for Canada, and a high of 169.6:1 for Ontario.

In addition, as shown later in Tables 13, government payments as a percentage of cash receipts have been higher in Canada than in the U.S., averaging 8.5 % per year for Canada over the 1996 to 2003 period compared to 7.6 % per year for the U.S., and 10.3 % compared to 6.3 % respectively over the 1980 to 2003 period. The interest coverage ratio (net earnings before taxes divided by interest), which indicates the ability to pay off interest, also has been lower in Canada than in the U. S., amounting to 2.69 for Canada in 2003 compared to 5.1 in the U. S. However, interest coverage does not include capability to repay principal, which also has increased at a substantially higher rate in Canada than in the U.S. (172 % increase in debt from 1981 to 2003 in Canada compared to 11.4 % in the U.S.).

Table 5 also shows the original calculations for 1997-2003 to highlight the changes resulting from the adjustments to U.S. aggregate net income and to Canadian debt, assets and equity. These adjustments for the U.S. increase the % of income from direct government payments from 32.9% to 37.9% and the debt-to-income and equity-to-income ratios from 3.7:1 to 4.2:1 and 21.1:1 to 24.3:1, respectively. The adjustments to Canadian debt, assets and equity decrease the overall 1997-2003 Canadian debt-to-income ratio from 18.1:1 to 16.6:1, but the inclusion of quota increases the overall 1997-2003 Canadian equity-to-income ratio from 68.3:1 to 80.4:1.

This table shows that there are some differences in the procedures for calculating and reporting farm incomes between the U.S. and Canada, but that these differences create only relatively small distortions. Correcting for these differences does not account for the large differences in farm performance in the two countries, with the Canadian share of net farm income from direct government payments nearly 3 times as high as in the U.S. from 1997-2003, and our debt-to-income and equity-to-income ratios 3.95 and 3.3 times higher, respectively.

Table 5 also shows the high level of vulnerability of Canadian farmers to rising interest rates and falling land prices. With current interest rates at record lows, it is inevitable that interest rates will rise in the future. If interest rates rise rapidly and significantly, they could cause severe financial failure for many Canadian farmers, as we are about 4 times more vulnerable to rising interest rates than U.S. farmers. Furthermore, with equity-to-income ratios over the 1997-2003 period ranging over 100:1 in a number of provinces, we are also very vulnerable to a collapse in land values. Traditionally, the sustainable price-earnings ratio of stocks in the stock market is about 16:1. When labour earnings are deducted from farm incomes to generate only a return to capital, the price-earnings ratio of farm land often exceeds 200-400:1. This level is considerably

greater than the price-earnings ratio of technology stocks in the late 1990s to 2000 before the technology stock collapse, and shows just how vulnerable Canadian farmers are today.

Table 5. Ratio of 1997-2003 Average Percent of Income from Government Payments, Debt to Income and Equity to Income*

	% of Income from Government Payment		Farm Debt to Income		Equity to Income		Income to Equity	
	%		Ratio		Ratio		%	
	Revised	Original	Revised	Original	Revised	Original	Revised	Original
U.S.	37.9	32.9	4.2	3.7	24.3	29.3	4.12	3.41
Quebec	76.8	76.8	10.3	11.6	30.2	18.6	3.31	5.38
Newfoundland	27.7	27.7	9.8	10.6	40.2	29.5	2.49	3.39
Manitoba	54.0	54.0	10.1	10.7	37.4	31.3	2.67	3.19
New Brunswick	29.2	29.2	16.2	17.8	56.1	38.5	1.78	2.60
P.E.I.	107.4	107.4	22.0	23.9	70.0	52.9	1.43	1.89
Nova Scotia	73.0	73.0	22.0	25.1	81.6	58.0	1.23	1.72
Canada	112.2	112.2	16.6	18.1	80.4	68.3	1.24	1.46
Saskatchewan	184.5	184.5	15.8	16.7	88.6	75.5	1.13	1.32
British Columbia	32.1	32.1	13.8	16.9	101.6	105.7	0.98	0.95
Alberta	179.6	179.6	26.7	28.6	142.7	130.5	0.70	0.77
Ontario	146.8	146.8	29.1	32.0	162.6	137.6	0.62	0.73

* U.S. and Canadian income, debt, and equity data exclude personal use of the farm house and vehicles. Canadian debt and equity data include quota.

4.0. Comparison of Income from the Market and from Government and Farm Sector Performance Between Canada and U.S.

This section provides a further assessment of Canadian and U. S. Farm income components. It should be noted that the data presented in this section are based on the unadjusted data from the Statistics Canada and U.S.D.A. web sites and are not adjusted as was done in Tables 3 to 5 in section 3.0

4.1. Definitions of Concepts, Terms and Components used in the Research

4.1.1. Farm Income Terms

Table 6 summarizes and compares between U.S. and Canada the main aggregate measure of farm income reported in the income statement for the year 2003. Notably farm-related income for the U.S. is reported differently. Capital consumption and capital replacement are included in the total expenses for both the U.S. and Canada.

The reader will find an explanation of key terms and their components, what they measure and the purpose of each aggregate measure in the annex 1.

The table 6 also shows different ratios for the year 2003:

- In Canada in 2003, 16.5 % of cash receipts and 14.2 % gross farm income were from government payments. This ratio was roughly double that of the U.S. at 7.5% and 7.0% respectively. In the U.S. 93% of gross farm income is from cash receipts compared to 8.5% for Canada.
- In Canada, government payments were almost two times higher than total net income at 184%. In the U.S., the government payments only represents 23.9% of total income. US net farm income is 3.7 times higher than government payments.

However, the situation could change over time. The reader will find government payments in relation with aggregate farm incomes over time in section 4.2.1.

Table 7 shows the evolution of total depreciation charges in Canada versus capital consumption in U.S.. In 2003, U.S. capital consumption was \$ 21.5 B in 1980 and only \$ 20.8 B in 2003. In Canada, total depreciation charges doubled during the same period from \$ 2.3 B to \$ 4.6 B.

Table 6 : Income Statement, Canada and the U.S., 2003

Canada		United States ^a	
	B \$		B \$
Cash income statement:		Cash income statement:	
1. Total market receipts	29.4	1. Cash receipts ¹	211.6
2. Program payments	4.8	2. Direct government payments ²	15.9
		3. Farm-related income ³	16.3
3. Total cash receipts (1+2)	34.2	4. Gross cash income (1+2+3)	243.9
4. Net operating expenses	29.8	5. Cash expenses ⁴	175.4
5. Net cash income (3-4)	4.4	6. Net Cash Income⁵ (4-5)	68.6
Farm income statement:		Farm income statement:	
6. Net cash income	4.4	7. Gross cash income (1+2+3)	243.9
7. Depreciation charges	4.6		
8. Income in kind	0.1	8. Nonmoney income ⁶	12.1
		9. Inventory adjustment	0.8
9. Realized Net Income (6-7+8)	0.0	10. Total gross income (7+8+9)	256.9
10. Value of inventory change	2.7	11. Total expenses	197.6
		<i>Capital replacement Including operator dwellings</i>	19.7
		<i>Total Capital consumption Including operator dwellings</i>	20.8
11. Total Net Income (9+10)	2.6	12. Net Farm Income (10-11)	59.2
Ratios in % :			
Gov. Payments / Cash receipts (2 / 1)	16.5	Gov. Payments / Cash receipts (2 / 1)	7.5
Gov. Payments / Gross farm income (2 / (1+2))	14.2	Gov. Payments / Gross farm income (2 / (1+2))	7.0
Cash receipts / Gross farm income (1 / (1+2))	85.8	Cash receipts / Gross farm income (1 / (1+2))	93.0
Gov. Payments / Net Farm Income (2 / 11)	184	Gov. Payments / Net Farm Income (2 / 12)	26.9

Sources : StatCan, Historical data (2003), Nos. 21-010-XIE to 21-018-XIE.

USDA / ERS, Income Statement

Notes :

a) Income Statement US :

(1) Crops includes CCC loans.

(2) Direct government payments include only payments made directly to farmers, including realized marketing loan gains.

In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments.

(3) Income from custom work, machine hire, recreational activities, forest product sales, and other farm sources.

(4) Excludes depreciation and perquisites to hired labor.

(5) Excludes farm households.

(6) Value of home consumption of farm products plus the imputed rental value of operator dwellings.

Table 7 : Comparison of capital consumption in U.S. and total Depreciation charges in Canada, 1980-2003

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
In billions \$												
Canada (total depreciation)	2.3	2.6	2.8	2.8	2.8	2.7	2.7	2.7	2.8	2.9	3.0	3.0
US (capital consumption)	21.5	23.6	24.2	23.8	21.0	19.4	17.7	17.2	17.6	18.1	18.1	18.2
Index (1980=100)												
Canada (total depreciation)	100	111	119	120	120	117	117	115	118	123	127	127
US (capital consumption)	100	110	113	111	98	91	83	80	82	84	84	85
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
In billions \$												
Canada (total depreciation)	3.0	3.1	3.2	3.5	3.7	3.9	4.1	3.4	4.3	4.5	4.5	4.6
US (capital consumption)	18.3	18.2	18.5	18.9	19.1	19.3	19.6	19.9	20.2	20.7	20.9	20.8
Index (1980=100)												
Canada (total depreciation)	128	130	138	147	159	168	175	146	184	190	192	196
US (capital consumption)	85	85	86	88	89	90	91	93	94	96	97	97

Notes : (1) Total depreciation (buildings + machinery) ; (2) Capital consumption

Sources : Statistics Canada, Farm operating expenses and depreciation charges, No 21-012-XIE.
USDA/ ERS, Farm production expenses.

4.1.2. Balance Sheet of the Agriculture Sector

4.1.2. Balance Sheet

The Canadian farm balance sheet has been designed to :

- record the value of farm business assets;
- record the value of farm business liabilities;
- record the value of equity for farm businesses;
- display standard financial ratios which are based on estimates from the balance sheet and the value added account;
- be based on the establishment concept;
- display the information as of December 31, by province.

Four different balance sheet accounts have been developed in order to separate the assets and liabilities of farm businesses from those of farm operator households and non-operator landlords. Non-operator landlords are individuals or businesses not engaged in the activity of farming who lease assets to farm operators.

The Canadian Balance Sheet of Agricultural Sector (set 2) account for all farm assets and liabilities used for business purposes in the production of agricultural products. The Balance Sheet of Agricultural Sector :

- treats the farm operator households and farm businesses as separate entities, so the personal portion of farm households' assets and liabilities are excluded.
- includes farm real estate assets leased from non-operator landlords and the liabilities outstanding on these assets ;
- also includes automobiles, trucks and farm machinery leased to farm operators.

The U.S. balance sheet provides an estimate of the value of the physical and financial assets in US Agriculture is a similar format to set 2 of the Canadian Balance Sheet series . The balance sheet is also useful in estimating the volume, value, and kinds of physical and financial resources that are available for agricultural production, or that could be released for non-farm purposes.

In US, the balance sheet, by providing measures of the assets and equity of the farm sector, is essential in estimating the profitability and efficiency of farms in the aggregate. Aggregate profitability measures combine income statement and balance sheets data in the calculation of rates of return to assets and to equity. Efficiency measures relate output per dollar of assets used in production.

Table 8 compares the balance sheet of agricultural sector (set 2) for Canada with the farm business balance sheet for US. The use of balance sheet and the components are described more in detail in the annex 1.

Graph 1 below show the evolution of the depreciation charge between both countries. The reader will find a more detailed explanation of balance sheets in Annex 1. Section 4.3.2 presents how the balance sheet evolved over years between both countries. The reader will find other

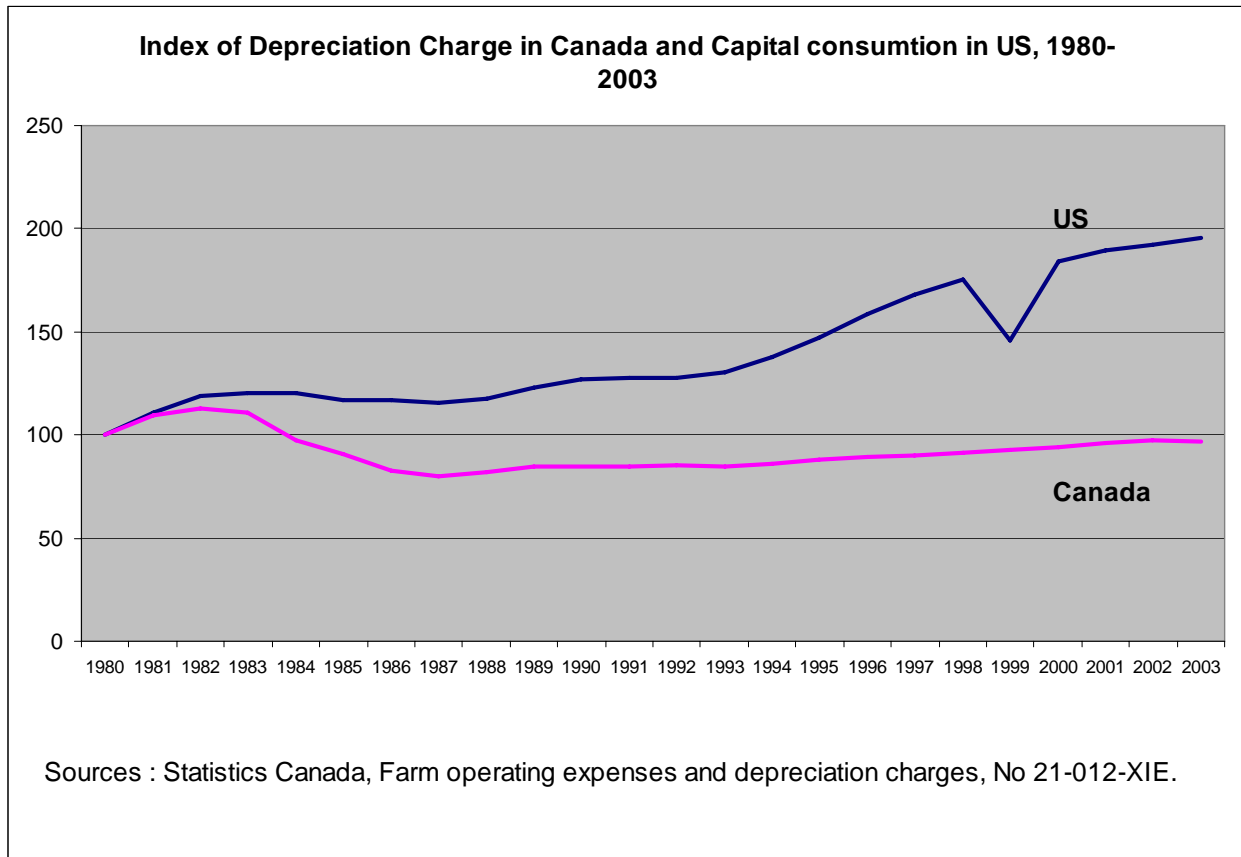
trends related to the value of farm capital and financial ratios in section 4.3.2. and 4.3.4. Also, some supporting graphs in Annex 3 shows the trends in assets, equity, etc.

Table 8 : Balance sheet of the agricultural sector between Canada and US, 2003

Canada		United States ^a	
At December 31		At December 31	
	B \$		B \$
Current assets (CA)	17.9	Farm assets	1,378.8
Cash, bonds and savings (C)	1.3	Real estate	1,111.8
Accounts receivable (AR)	1.9	Livestock and poultry ¹	78.5
Inventories	14.7	Machinery and motor vehicles ²	95.9
Poultry and market livestock	4.8	Crops ³	24.4
Crops	6.3	Purchased inputs	5.6
Inputs	3.5	Financial	62.4
Household contents	0.0		
Quota	23.6	Farm debt⁴	198.0
Breeding livestock	7.4	Real estate	108.0
Machinery	32.0	Farm Credit System	40.1
Autos	0.0	Farm Service Agency ⁵	2.8
Trucks	4.3	Commercial banks	35.1
Other machinery	27.0	Life insurance companies	11.6
Farm real estate	137.3	Individuals and others	18.3
Land	102.2	CCC storage & drying loans	0.0
Service buildings	26.2		
Homes	9.0	Nonreal estate	90.0
Other long-term assets	7.9	Farm Credit System	20.1
Total assets (TA)	226.1	Farm Service Agency ⁵	3.8
Current liabilities (CL)	9.2	Commercial banks	43.5
Long-term liabilities	34.6	Individuals and others	22.6
Total liabilities (TL)	43.8		
Equity (E)	182.4	Equity	1,180.8

Sources : Statistics Canada, Balance sheet of the agricultural sector, November 2004. Catalogue No. 21-016-XIE.
Economic Research Service/USDA. Farm business balance Sheet. 2003

Graph 1 : Index of Depreciation charge in Canada and Capital consumption in U.S. during 1980 to 2003



4.1.3. Financial Ratios

Table 9 presents the financial ratios used in U.S. and in Canada to aggregate the performance of the sector. To better understand this section, the definitions of these ratios follow.

It should be noted that the data presented in this section are based on the unadjusted data from Statistics Canada and U.S.D.A. web sites and are not adjusted as was done in Tables 3 to 5 in section 3.0. So, if we compare some ratios in this section with other ratios in the earlier section (with adjusted data), there are observable differences. Furthermore, it could be important to understand the definition of each ratio as well as how it is calculated.

The definition of ratios are not the same for U.S. and Canada with one exception. The U.S. also use more ratios than Canada. Some ratios are in common between Canada and U.S.

Here are some points of interest:

- Canada shows a higher debt and Equity Solvency Ratio than U.S.
- The U.S. times interest earned variable is close to Canada's interest coverage variable.
- Canada's capital turnover ratio of 0.19 is comparable to the U.S. asset turnover ratio.
- Solvency ratios are higher in Canada than in U.S. ; the higher the ratios, the greater the risks involved in investing in the operation.

The section 4.3.4 presents how the financial ratios over time between both countries.

Table 9 : Canada and U.S. : Financial ratios of the agricultural sector, 2003

Canada		US	
Liquidity Ratios			
Current (CA/CL)	1.94	1. Farm business debt service coverage	2.19
Acid test ((C+AR)/CL)	0.35	2. Debt servicing Ratio	0.15
Debt structure (CL/TL)	0.21	3. Times interest earned	5.81
Solvency Ratios			
Leverage (TL/E)	24.0%		
Debt (TL/TA)	19.4%	4. Debt to assets	14.4%
Equity (E/TA)	80.6%	5. Debt to equity	16.8%
Profitability Ratios			
Capital turnover (R/TA)	0.190	6. ROA ¹ from Current income	0.022
		7. ROA from Real capital gains	0.044
Return on assets ((NIBT+I)/ATA)	0.028	8. ROA total	0.066
		9. ROE ² Current income	0.015
		10. ROE Real capital gains	0.052
Return on equity (NIBT/AE)	0.022	11. ROE total	0.068
		12. Returns to assets to gross cash farm income	0.124
Financial Efficiency (%)			
		13. Gross ratio	71.88
Interest coverage ((NIBT+I)/I)	2.69	14. Interest to gross cash farm income	5.25
		15. Asset turnover ratio	0.18
		16. Net cash farm income to debt	40.25

Sources : Statistics Canada, Balance sheet of the agricultural sector, 1981-2003, November 2004. Catalogue No. 21-016-XIE.
Economic Research Service/USDA. Data Farm Balance Sheet : Table 1 and 2 - Farm sector financial ratios.

Notes : (1) ROA : Rates of return on assets. (2) ROE : Rates of return on equity.

* Financial ratios are not the same between US and Canada.

Although ratio analysis can assist in managing and analyzing a business, a proper financial analysis of the business requires more tools than just ratio analysis. Consequently, complete reliance upon such financial measures is a very unsound business practice. The four major types of financial ratios which have been calculated include: liquidity, solvency, profitability, and financial efficiency. The ratios calculated in the tables reflect an aggregate ratio for the agricultural sector. Users should note that the desired and actual value of the ratios will vary significantly according to the type of farming activity (livestock, crop, horticulture, etc.).

When developing and interpreting financial ratios, many limitations must be kept in mind, such as the method of asset valuation; the type, size, and cycle of the business; and the information used to prepare them. Ratios are most meaningful when compared between years. For further information on developing and interpreting financial ratios, refer to the Farm Accounting Standardization Manual. Users should be especially cautious in using estimates of accounts receivable and cash, bonds and savings data in the provinces of Manitoba, Saskatchewan, Alberta and British Columbia. The estimates of cash, bonds and savings in these provinces may

include the value of deferred grain receipts whereas these receipts are generally reported under "accounts receivable". This should not affect the aggregate estimates of current assets.

1. Farm Financial Ratios used In Canada

Liquidity

Refers to the ability of a business to meet financial obligations as they come due in the ordinary course of business. Three liquidity ratios are calculated using balance sheet values: the current ratio, the acid-test or quick ratio and the debt structure ratio.

Current ratio

The current ratio measures a business' ability to meet financial obligations as they come due, without disrupting normal operations. If the current ratio is greater than 1, the business is considered to be liquid. A ratio of less than 1 may indicate a potential liquidity problem. Users should note that a favourable liquidity position may be a misleading indicator of the ability of current assets to cover current liabilities because a significant portion of the current assets may be comprised of inventories which may not be easily converted to cash. Also, the value of the ratio may vary depending upon the production cycle, (eg. the ratio may obtain a significantly different result if calculated in the fall when inventories are typically high than in spring when inventories are usually depleted). The ratio is also limited in that it does not predict the timing or the adequacy of future cash flows.

Acid-test (quick) ratio

The acid-test (quick) ratio is a variation of the current ratio, and is defined as the ratio of cash, marketable securities, and accounts receivable to current liabilities. The exclusion of inventories in the calculation allows for an assessment of the "immediate" liquidity position of farm businesses. An acid-test ratio of 1 indicates that there are just enough assets of a very liquid nature to cover current liabilities. The desired value of the ratio varies according to type of farming activity. For example, the desired value of the ratio for a dairy operation will be different than for a grain operation. The ratio is also limited in that it does not predict the timing or the adequacy of future cash flows.

Debt structure ratio

The debt structure ratio measures the proportion of current liabilities to total liabilities. This ratio, in conjunction with the current ratio, will provide information on the relative solvency of a business. A high debt structure ratio may indicate solvency problems. However, this may not always be the case, especially for farm businesses with a relatively low value of long-term liabilities. In this case, businesses may have no solvency problems. Thus it is important to interpret this ratio in conjunction with the value of liabilities and cash flow from farming operations.

Solvency

Solvency refers to the financial measures that gauge the amount of debt of a business relative to the amount of capital invested in the business. Three solvency ratios are calculated using values

from the balance sheet: leverage, equity, and debt. These ratios are indicators of the risk involved in investing in the operation: the higher the debt, the greater the risk to all investors.

Leverage ratio

The leverage ratio is the value of total liabilities per dollar of equity. The ratio is a measure of the degree to which the creditors have financed the business as compared to the owners. The higher the ratio, the greater is the financing of the farm business by creditors. A leverage ratio of 0.5, for example, indicates that the farm operators have twice as much equity as debt. The higher the value of the leverage ratio, the greater the creditors have financed the farm businesses and thus the higher the risk. The desired value of the ratio will depend upon the income variability of farm businesses and other factors such as the risk associated with production, farm businesses with high income variability or business risk would desire a lower ratio.

Equity ratio

The equity ratio is the value of equity per dollar of total assets. The ratio measures the proportion of total assets financed by the owners, as opposed to that financed by creditors. The higher the ratio the more resources are supplied by the owners.

Debt ratio

The debt ratio is a measure of the extent of leverage being used by a business, or the proportion of total assets financed by debt. The higher the ratio, the higher is the financial risk.

Profitability

Profitability refers to the extent to which a business is able to generate profit from the utilization of the business resources. Profitability ratios are calculated using values from the balance sheet and the value added account because the two series are conceptually and methodologically related. The three calculated profitability ratios are: capital turnover, return on assets and return on equity.

Capital turnover ratio

The capital turnover ratio indicates the extent to which a business efficiently utilizes its assets to generate revenue. The higher the ratio the more efficiently assets are being used to generate revenue. The desired value of the capital turnover ratio will vary significantly by type of farming activity. Users should be aware that the ratio is a comparison of flows over stocks, that is, revenues cover an accounting period while total assets refer to a specific point in time. Therefore the ratio may be misleading in the event that total assets fluctuate significantly in one direction (either up or down) in the accounting period.

Return on assets ratio

The return on assets ratio is a measure of return on investment; it reflects earnings per dollar of both owned and borrowed capital. The higher the ratio, the greater is the return on assets.

Return on equity ratio

The return on equity ratio provides a measure of the return to the owner on the owner's investment in the business, as it reflects only the return per dollar of owned capital. Because the value of unpaid family and operator labour is not estimated, the usefulness and the interpretation of return on assets and return on equity may be influenced.

Comparisons of these ratios to other return on assets and return on equity ratios should not be made unless the method of calculating the ratios is the same. These ratios do not consider the unrealized capital gains that may be present in the value of assets such as farm land. The higher the value of return on equity, the greater is the return on investment. However, a high value for this ratio may signify a highly leveraged business. Therefore, interpretation of the significance of this ratio should be made in conjunction with other ratios. The return on assets ratio and the return on equity ratio reflect the different balance sheets. In sets 1 and 2, which include non-operator landlords, the returns include rent to non-operator landlords. In sets 1 and 3, which include the personal share of households, the returns include the family wages.

Financial efficiency

Financial efficiency refers to the extent to which a business is able to efficiently utilize the businesses resources.

Interest coverage ratio

The interest coverage ratio is one of the most widely used financial efficiency ratios for analyzing the ability of a business to pay the interest on debt. Similar to the return on assets or equity ratios, the interest coverage ratio reflects the inclusion or exclusion of non-operator landlords and the personal share of households.

2. Farm Financial Ratios used in US

Solvency Ratios

Debt/Asset Ratio

Is farm business debts divided by farm business assets, converted to as percent by multiplying by 100. It measures debt pledged against farm business assets indicating overall financial risk.

Debt/Equity Ratio

The Debt/Equity Ratio is farm business debt divided by farm business equity, converted to a percent by multiplying by 100. It measures the relative proportion of funds invested by creditors (debt) and owners (equity).

Liquidity ratios

Liquidity refers to the firm's capacity to generate sufficient cash to meet its financial commitments as they become due.

Farm business debt service coverage

Measures the farm business's ability to repay both interest (excluding operator dwellings) and principal.

$(\text{Net cash income} + \text{interest}) / (\text{Interest} + \text{principal payments})$

Debt servicing

Measures the share of the farm business's gross income needed to service debt.
 $(\text{Interest} + \text{principal payments}) / (\text{Gross Farm income})$

Times interest

Measures the farm business's ability to service debt (includes operator dwellings) out of net income earned.
 $(\text{Net farm income before interest and taxes}) / (\text{Interest Payments})$

Profitability ratios

Profitability can be measured in several ways. One approach measures profitability as the relationship between the level of profits earned during an accounting period (here, 1 year) and the level of resources committed to earn those profits. An example is the rate of return on farm assets from current income (or returns to farm assets/average value of farm business assets). Other approaches relate the level of profit to the volume of sales, such as the operating profit margin (or returns to farm assets/gross cash farm income).

Rate of return on assets:

Current income : measures how efficiently the farm business uses its assets; the per dollar return on farm assets from current income only. (Return to farm assets from current income/farm business assets).

Real capital gains : measures the per dollar return on farm assets from real capital gains. (real capital gains on farm business assets/farm business assets)

Rate of return equity:

From Current income : Returns to equity capital employed in farm business from current income, less interest (excluding operators dwellings)

From real capital gains : The per-dollar return on farm equity from real capital gains. (Real capital gains on farm business equity/farm business equity)

Operating profit margin: Measures profits earned per dollar of gross cash income. (Returns to farm assets/gross cash farm income).

Efficiency ratios

Financial efficiency refers to the firm's competence in performing its management functions. Or stated differently, financial efficiency refers to the efficiency with which various types of farm assets are managed.

Gross ratio : Measures the proportion of gross cash farm income absorbed by cash operating expenses. (Cash operating expenses/gross cash farm income).

Interest to gross cash income : Measures the share of gross cash farm income committed to interest payments (excludes operator dwelling)

Asset turnover : Measures the gross farm income generated per dollar of farm business assets.

Net cash farm income to debt (``debt burden ratio``) : Measures the burden placed on net cash farm income to retire outstanding debt. (Net cash farm income/Farm business debt).

4.1.4. Value of Farm Capital, Depreciation Charge and expenses

For Canada only, Table 10 shows the value of farm capital, depreciation charges and value per unit of capital in Canada. It also includes a calculation where quota is included or not. When quota is included, it represented 10.6% of farm capital value for a value of \$ 23 B in 2003.

Section 4.3.3 presents the value of farm capital and depreciation charges over time, for Canada.

Table 10 : Value of farm capital, depreciation charges and value per unit of capital in Canada, 2003

FARM CAPITAL AND DEPRECIATION CHARGES		Quota	
		<i>not included</i>	<i>included</i>
A. Value of farm capital¹	B \$	%	%
Livestock & poultry	13.7	6.9	6.2
Land & buildings	150.9	76.0	67.9
Machinery & equipment	34.0	17.1	15.3
Total value of farm capital	198.5	100	89.4
Value of quota ² (asset)	23.6		10.6
Total of farm capital (including value of quota)	222.1		100
B. Depreciation charges²	B \$	%	
Depreciation on buildings	1.0	22	
Depreciation on machinery	3.6	78	
Total depreciation charges	4.6	100	
C. Value per unit of capital¹			
Value per acre of farm land and buildings	\$/acre		
Canada	905		
Ontario	3,229		
BC	2,167		
Québec	2,003		
Maritimes	1,405		
West	560		
Value per head of livestock (Canada)	\$/head		
Total Cattle (excluding calves)	909		
Total Pigs	99		

Sources : Statistics Canada : (1) Value of farm capital, No 21-013-XIE.

(2) Farm operating and expenses and depreciation charges, No 21-012-XIE.

(3) Balance sheet of the agricultural sector, No. 21-016-XIE

Table 11 : Comparison of Farm Expenses Between Canada and U.S., 2003

page 1 / 2

Farm operating expenses and depreciation charges in <u>Canada</u>	Value Million \$	Percentage of		
		total exp. (after rebates)	total operating exp. (after rebates)	tot gross operating exp.
Gross operating expenses				
1 Property taxes	656.3	1.9	2.2	2.2
2 Cash rent	934.4	2.7	3.1	3.1
3 Share rent	446.5	1.3	1.5	1.5
4 Cash wages, room and board	3,756.7	10.9	12.6	12.6
5 Interest	2,374.3	6.9	8.0	7.9
6 Repairs to buildings and fences	676.5	2.0	2.3	2.3
7 Electricity	684.6	2.0	2.3	2.3
8 Telephone	263.3	0.8	0.9	0.9
9 Heating fuel	480.0	1.4	1.6	1.6
10 Machinery fuel	1,519.3	4.4	5.1	5.1
11 Machine repairs and other	2,099.6	6.1	7.1	7.0
12 Business insurance	614.5	1.8	2.1	2.1
13 Custom work	718.8	2.1	2.4	2.4
14 Stabilization premiums	181.6	0.5	0.6	0.6
15 Crop and hail insurance	545.1	1.6	1.8	1.8
16 Fertilizer and lime	2,527.7	7.4	8.5	8.5
17 Pesticides	1,648.0	4.8	5.5	5.5
18 Commercial seed	1,154.7	3.4	3.9	3.9
19 Irrigation	21.6	0.1	0.1	0.1
20 Twine, wire and containers	421.0	1.2	1.4	1.4
21 Commercial feed	4,941.9	14.4	16.6	16.5
22 Livestock and poultry purchases	1,185.8	3.5	4.0	4.0
23 Artificial insemin. and veterinary fees	651.2	1.9	2.2	2.2
24 Legal and accounting fees	789.7	2.3	2.7	2.6
25 Other	577.6	1.7	1.9	1.9
26 Total gross operating expenses (1)	29,870.5	86.9	100.3	100
Rebates				
27 Property taxes	77.1	0.2	0.3	
28 Cash wages	2.6	0.0	0.0	
29 Interest	11.3	0.0	0.0	
30 Electricity				
31 Heating fuel	2.1	0.0	0.0	
32 Machinery fuel	3.8	0.0	0.0	
33 Fertilizer and Lime				
34 Pesticides	4.2	0.0	0.0	
35 Commercial seed				
36 Commercial feed				
37 Artificial insemin. and veterinary fees				
38 Livestock purchases				
39 Total rebates (2)	101.1	0.3	0.3	
40 Operating expenses (after rebates) (3) = (1)-(2)	29,769.4	86.6	100	
Depreciation				
41 Depreciation on buildings	1,017.9	3.0		
42 Depreciation on machinery	3,576,482	10.4		
43 Total depreciation (4)	4,594,352	13.4		
44 TOTAL EXPENSES (before rebates) (5) = (1) + (4)	34,464,9	100.3		
45 TOTAL EXPENSES (after rebates) (6) = (5) - (2)	34,363,8	100		

Source : Statistics Canada, Farm operating expenses and depreciation charges, No 21-012-XIE.

Table 11 : Comparison of Farm Expenses Between Canada and U.S., 2003

page 2 / 2

Farm Production Expenses in <u>US</u> (including operator dwellings)	Value Million \$	Percentage of			
		total prod. exp.	total cash exp.	tot operating exp.	%/ tot purchased inputs
1 Feed purchased	26,646	13.5	14.9	18.2	21.4
2 Livestock and poultry purchased	16,673	8.4	9.3	11.4	13.4
3 Seed purchased	9,278	4.7	5.2	6.3	7.4
4 Total Farm origin	52,596	26.6	29.5	36.0	42.1
5 Fertilizer and lime	9,987	5.1	5.6	6.8	8.0
6 Pesticides	8,381	4.2	4.7	5.7	6.7
7 Petroleum Fuel and oil	6,824	3.5	3.8	4.7	5.5
8 Electricity	3,097	1.6	1.7	2.1	2.5
9 Total Manufactured inputs	28,290	14.3	15.8	19.4	22.7
10 Repair and maintenance of capital items ¹	10,888	5.5	6.1	7.4	8.7
11 Machine hire and custom-work	3,417	1.7	1.9	2.3	2.7
12 Marketing, storage, and transportation expenses	7,155	3.6	4.0	4.9	5.7
13 Miscellaneous expenses ¹	22,456	11.4	12.6	15.4	18.0
14 Total other expenses¹	43,916	22.2	24.6	30.0	35.2
15 Total purchased inputs¹	124,802	63.1	69.9	85.4	100
16 Contract labor	3,103	1.6	1.7	2.1	
17 Cash wages	15,598	7.9	8.7	10.7	
18 Employers' contribution to Social Security	2,110	1.1	1.2	1.4	
19 Perquisites	560	0.3	0.3	0.4	
20 Total hired labor	18,267	9.2	10.2	12.5	
21 Total Contract and hired labor expenses	21,370	10.8	12.0	14.6	
22 Total operating expenses¹	146,172	74.0	81.9	100	
23 Interest on non-realestate debt	6,006	3.0	3.4		
24 Interest on real estate debt ¹	7,188	3.6	4.0		
25 Total Interest ¹	13,193	6.7	7.4		
26 Net rent received by nonoperators ³	12,930	6.5	7.2		
27 Property taxes ¹	6,771	3.4	3.8		
28 Total cash expenses¹	178,507	90.3	100		
29 Capital replacement ¹	19,735	10.0			
30 Accidental damage ¹	877	0.4			
31 Total Capital consumption¹	20,823	10.5			
32 Total production expenses¹	197,636	100			

Source : USDA/ ERS. Farm Production Expenses.

Note : (1) Including operator dwellings ; (3) Including landlord capital consumption.

4.2. Comparison of Income from the Market versus from Government Payments Between Canada and U.S. over Time

4.2.1. Income from the Market versus Government Payments as a Percent of Gross Income, Cash receipts and Net Income

Table 12 presents gross cash income for Canada and U.S. since 1971. On average for the period 1971-2003, 8.5% of gross cash income was from government payment in Canada, compared with 6.5% in U.S. In Canada, the ratios government payments to cash receipts and government payments to gross cash income are twice as high in Canada than in U.S. In general, the growth per year is higher in Canada than in US, except for government payments, which are growing faster in U.S. than in Canada. However, the importance of governments payments remain higher in Canada than in U.S. over the last 30 years.

For each decade, since 1971, government payments in Canada have been higher as a percentage of gross and net income than in U.S. For the most recent period (1993-2003), government payments in Canada were relatively high and in the same period, government payments in U.S. were relatively low.

Table 13 summarizes four aggregate farm income ratios between Canada and U.S. The ratios of government payments to Net Farm income are much higher than in U.S. For the period of 1980-2003, 89.7% of Net Farm Income in Canada came from government payments to only 27.1% for the U.S.

Graph 2 and graph 3 present the trends of two ratios over time between Canada and U.S. Graph 2 shows the percentage of gross income from government payments. The U.S. and Canada generally follow somehow of the same trend but diverge substantially since 2001. As seen on the graph, the peaks are higher in Canada than in the U.S.

Graph 3 presents the evolution of the ratio of government payments to net farm income. between Canada and US since 1980. The trend is more stable in the U.S. than in Canada. In fact, Canada and U.S. don't follow the same trend. The difference is very high between Canada and U.S. Since 1996, we can observe a substantial augmentation of the ratio of government payments to net farm income in Canada.

Table 12 : Gross Cash Income between Canada and U.S., average per year, 1971-2003

	Canada				US			
	average per year				average per year			
	1971-1981	1982-1992	1993-2003	1971-2003	1971-1981	1982-1992	1993-2003	1971-2003
1. Value (In Billions \$ Can and US)								
Cash receipts	10.2	18.9	28.1	19.1	99.9	151.3	194.4	148.5
Crops	4.7	8.5	13.0	8.7	49.4	73.6	98.9	73.9
Livestock and products	5.5	10.4	15.1	10.3	50.5	77.7	95.5	74.6
Government payments	0.5	2.4	2.4	1.8	1.9	10.0	13.4	8.4
Gross cash income	10.7	21.3	30.5	20.8	101.8	161.2	207.8	157.0
2. As a Percent of Gross Cash Income (%)								
Cash receipts	95.4	88.6	92.1	91.5	98.1	93.8	93.5	94.6
Crops	43.7	39.8	42.7	41.9	48.5	45.6	47.6	47.1
Livestock and products	51.6	48.9	49.4	49.6	49.6	48.2	46.0	47.5
Government payments	4.6	11.4	7.9	8.5	1.9	6.2	6.5	5.4
Gross cash income	100	100	100	100	100	100	100	100
3. Ratios (%)								
Gov. payments / Cash receipts	4.9	12.8	8.6	9.3	1.9	6.6	6.9	5.7
Gov. payments / Gross cash income	4.6	11.4	7.9	8.5	1.9	6.2	6.5	5.4
Cash receipts / Gross cash income	95.4	88.6	92.1	91.5	98.1	93.8	93.5	94.6
4. Index (1971=100)								
Cash receipts	226	417	621	421	189	287	369	282
Crops	251	453	697	467	222	330	444	332
Livestock and products	208	391	568	389	166	255	313	245
Government payments	387	1886	1879	1384	61	317	427	268
Gross cash income	230	457	656	448	182	288	372	281
5. Growth (%/year)								
Cash receipts	14.9	1.2	3.8	6.4	11.0	1.8	2.0	4.8
Crops	17.6	0.0	4.4	7.0	13.9	1.7	2.1	5.7
Livestock and products	13.1	2.3	3.5	6.1	9.1	2.0	2.1	4.3
Government payments	24.6	20.4	6.4	16.9	15.9	24.6	12.2	17.6
Gross cash income	15.2	2.3	3.5	6.7	10.4	2.2	2.2	4.8

Sources : Statistics Canada. Farm cash receipts - Agriculture economic statistics. 1971-2003.

ERS/USDA. Table - Net cash income from farming operations. July 14, 2003

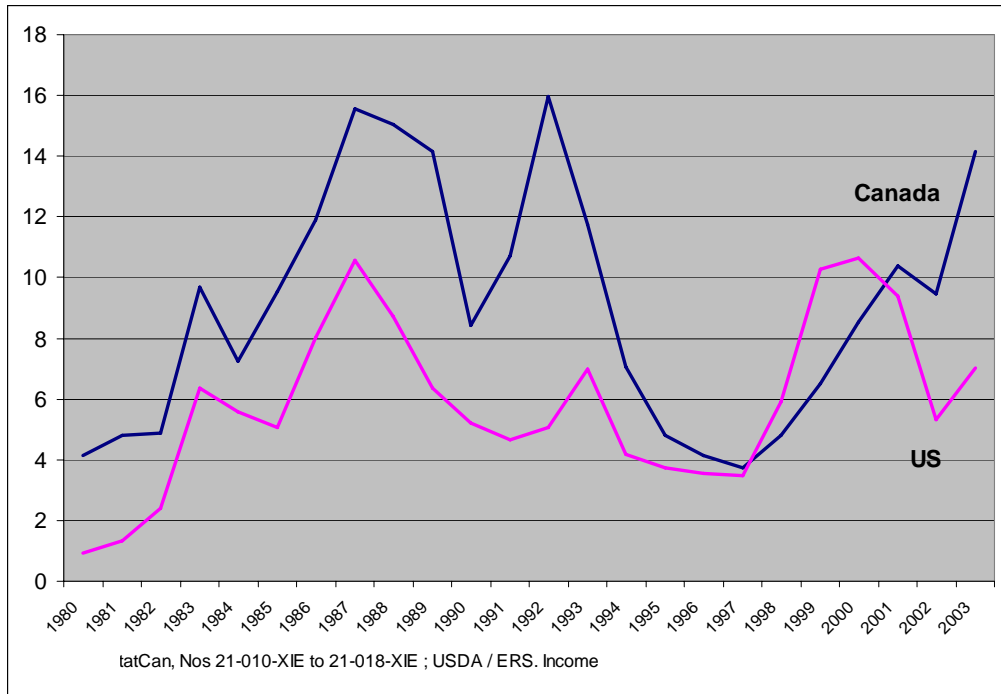
Note : * Farm related Income are not included for US in the comparison of gross cash income between US and Canada.

Table 13 : Ratios of Income from Governments Payments and Market Income, Canada and U.S., 1981-2003

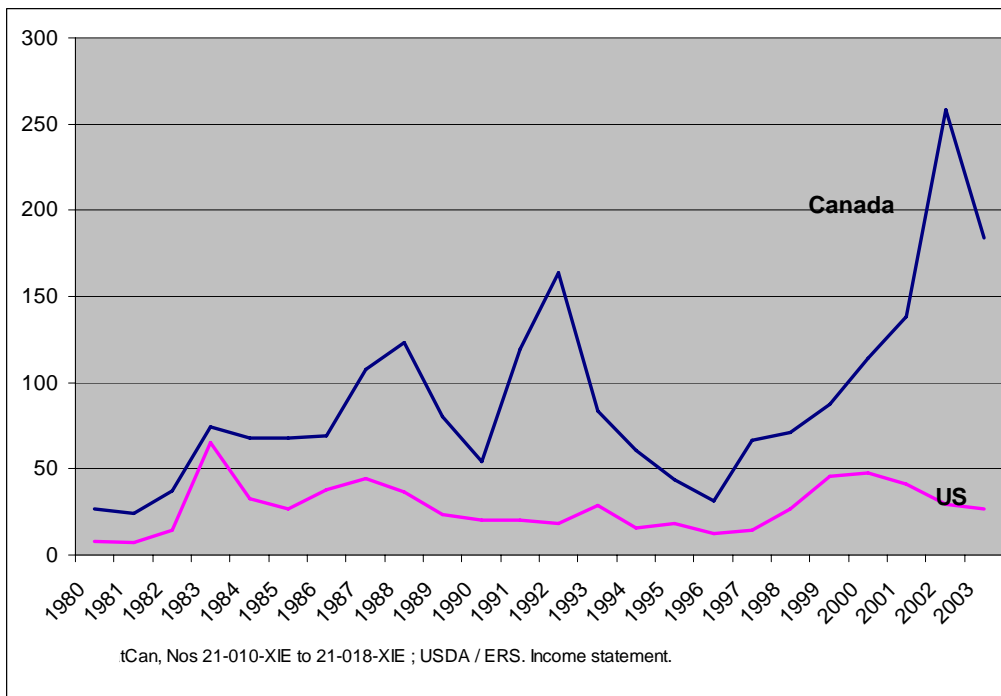
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	average per year			
																					1980-1987	1988-1995	1996-2003	1980-2003				
Value (In Billion \$ Can or US)																												
Canada																												
																	B \$ Can				B \$ Can							
Cash receipts	15.3	17.6	18.0	17.9	19.0	17.9	18.2	18.0	19.1	19.7	20.1	19.6	19.9	21.3	24.1	25.8	27.9	28.7	28.3	28.4	30.2	32.6	32.7	29.4	17.7	21.2	29.8	22.9
Crops	7.0	8.8	8.5	8.8	9.2	8.1	7.9	7.3	8.3	8.8	8.9	8.7	8.6	9.0	11.5	13.1	14.0	14.1	13.8	13.2	13.1	13.6	14.6	13.2	8.2	9.6	13.7	10.5
Livestock and products	8.3	8.9	9.5	9.1	9.8	9.8	10.3	10.7	10.8	10.9	11.3	10.9	11.4	12.3	12.5	12.7	13.9	14.6	14.4	15.2	17.1	19.0	18.2	16.2	9.5	11.6	16.1	12.4
Government payments	0.7	0.9	0.9	1.9	1.5	1.9	2.5	3.3	3.4	3.2	1.9	2.4	3.8	2.8	1.8	1.3	1.2	1.1	1.4	2.0	2.8	3.8	3.4	4.8	1.7	2.6	2.6	2.3
Gross cash income	16.0	18.5	18.9	19.9	20.5	19.8	20.6	21.3	22.4	22.9	22.0	22.0	23.7	24.2	25.9	27.1	29.1	29.8	29.7	30.4	33.0	36.3	36.2	34.2	19.4	23.8	32.3	25.2
Total Net Income	2.5	3.7	2.5	2.6	2.2	2.8	3.6	3.1	2.7	4.0	3.4	2.0	2.3	3.4	3.0	3.0	3.8	1.7	2.0	2.3	2.5	2.7	1.3	2.6	2.9	3.0	2.4	2.7
United States																												
																	B \$ US				B \$ US							
Cash receipts	139.7	141.6	142.6	136.8	142.8	144.0	135.4	141.8	151.3	160.5	169.3	168.0	171.5	178.3	181.4	188.2	199.4	207.9	196.4	187.7	192.1	200.1	195.1	211.6	140.6	171.1	198.8	170.1
Crops	71.7	72.5	72.3	67.2	69.9	73.9	63.8	65.8	71.6	76.9	80.2	82.2	85.7	87.8	93.1	101.0	106.5	111.4	102.2	92.1	92.5	93.4	101.3	106.2	69.6	84.8	100.7	85.0
Livestock and products	68.0	69.2	70.3	69.6	72.9	70.1	71.6	76.0	79.6	83.6	89.1	85.8	85.8	90.5	88.3	87.2	92.9	96.5	94.2	95.7	99.6	106.7	93.8	105.5	70.9	86.2	98.1	85.1
Government payments	1.3	1.9	3.5	9.3	8.4	7.7	11.8	16.7	14.5	10.9	9.3	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.4	21.5	22.9	20.7	11.0	15.9	7.6	10.1	14.9	10.9
Gross cash income*	141.0	143.5	146.1	146.1	151.2	151.7	147.2	158.5	165.7	171.4	178.6	176.2	180.6	191.7	189.3	195.5	206.8	215.4	208.8	209.3	215.0	220.8	206.0	227.6	148.2	181.1	213.7	181.0
Net Farm Income	16.1	26.9	23.8	14.3	26.0	28.5	31.1	38.0	39.6	46.5	46.3	40.3	49.7	46.7	51.3	39.6	57.9	51.3	46.5	47.1	47.9	50.6	37.3	59.2	25.6	45.0	49.7	40.1
Ratios in %																												
Canada																												
																	Percentage				%							
Government payments / Cash receipts	4.3	5.1	5.1	10.7	7.8	10.6	13.5	18.4	17.7	16.5	9.2	12.0	19.0	13.3	7.6	5.1	4.3	3.9	5.0	7.0	9.3	11.6	10.5	16.5	9.4	12.6	8.5	10.2
Government payments / Gross cash income	4.1	4.8	4.9	9.7	7.2	9.5	11.9	15.6	15.0	14.2	8.4	10.7	16.0	11.8	7.1	4.8	4.1	3.7	4.8	6.5	8.5	10.4	9.5	14.2	8.5	11.0	7.7	9.1
Cash receipts (market) / Gross cash income	95.9	95.2	95.1	90.3	92.8	90.5	88.1	84.4	85.0	85.8	91.6	89.3	84.0	88.2	92.9	95.2	95.9	96.3	95.2	93.5	91.5	89.6	90.5	85.8	91.5	89.0	92.3	90.9
Gov payments / Net Farm Income	26.5	23.9	37.2	74.1	67.7	67.7	68.9	107.8	123.4	80.3	54.4	119.2	163.5	83.3	60.8	43.7	31.5	66.4	70.9	87.1	114.1	138.3	258.3	184.0	59.2	91.1	118.8	89.7
United States																												
																	Percentage				%							
Government payments / Cash receipts	0.9	1.4	2.4	6.8	5.9	5.4	8.7	11.8	9.6	6.8	5.5	4.9	5.3	7.5	4.3	3.9	3.7	3.6	6.3	11.5	11.9	10.4	5.6	7.5	5.4	6.0	7.6	6.3
Government payments / Gross cash income	0.9	1.3	2.4	6.4	5.6	5.1	8.0	10.6	8.7	6.4	5.2	4.7	5.1	7.0	4.2	3.7	3.5	3.5	5.9	10.3	10.7	9.4	5.3	7.0	5.0	5.6	7.0	5.9
Cash receipts (market) / Gross cash income	99.1	98.7	97.6	93.6	94.4	94.9	92.0	89.4	91.3	93.6	94.8	95.3	94.9	93.0	95.8	96.3	96.5	96.5	94.1	89.7	89.3	90.6	94.7	93.0	95.0	94.4	93.0	94.1
Gov payments / Net Farm Income	8.0	7.2	14.6	65.2	32.5	27.0	38.0	44.1	36.5	23.4	20.1	20.4	18.4	28.7	15.4	18.4	12.7	14.6	26.6	45.7	47.8	40.9	29.4	26.9	29.6	22.7	30.6	27.6

Sources : Statistics Canada, Farm cash receipts - Agriculture economic statistics, 1971-2003.

Graph 2 : Percentage of Gross income from Gov't. Payments, between Canada and the U.S., 1981-2003



Graph 3 : Percentage of Government Payments in Net Farm income, between Canada and the U.S., 1981-2003



4.2.2. Growth in Market Revenue, in Government Payments and in Expenses

Table 14 shows the difference over years between the growth of Market income, programs payments, expenses and net farm income between Canada and U.S. Expenses are growing faster in Canada than in the U.S., compared to market receipts. Program payments seem to grow faster in U.S. than in Canada but the program payments are more important as a percentage of market receipts in Canada.

Furthermore, it should be noted that beginning the index with 1985=100 distorts the more recent performance. For example, if we start the index with year 1985=100, then, the growth of government payments in Canada will be higher than in the U.S.

While expenses are growing faster in Canada than in the U.S., net farm income is growing rapidly in the U.S., while remaining relatively stable in Canada.

Section 4.3.5 provides more information relative to the expense side in order to understand why Canada's expenses are increasing much faster than in the U.S. The reader also can consult the supporting tables on farm expenses : table A35 and table A35.

Table 14 : Market Receipts, Government Payments, Expenses and Net Farm Income, average per year, 1980-2003

	average per year				
	1980-1987	1988-1995	1996-2003	1980-2003	2003
Value (In Billion \$ Can or US)					
Canada					
1. Market Receipts	17.7	21.2	29.8	22.9	29.4
2. Government Payments	1.7	2.6	2.6	2.3	4.8
3. Total expenses ¹	16.7	21.3	30.3	22.8	34.4
4. Operating expenses ¹	14.0	18.3	26.1	19.5	29.8
5. Total Net Income	2.9	3.0	2.4	2.7	2.6
US					
1. Market Receipts	140.6	171.1	198.8	170.1	211.6
2. Program Payments	7.6	10.1	14.9	10.9	15.9
3. Total production expenses ²	125.7	154.0	190.0	156.6	197.6
4. Total cash expenses ²	105.5	137.2	171.5	138.1	178.5
5. Net Farm Income	25.6	45.0	49.7	40.1	59.2
Index (1980=100)					
Canada					
1. Market Receipts	116	139	194	150	192
2. Government Payments	257	391	391	347	736
3. Total expenses ¹	125	159	226	170	256
4. Operating expenses ¹	127	165	235	176	269
5. Total Net Income	116	120	95	110	106
US					
1. Market Receipts	101	122	142	122	151
2. Program Payments	590	784	1 160	844	1 241
3. Total production expenses ²	94	116	143	118	148
4. Total cash expenses ²	94	122	153	123	159
5. Net Farm Income	159	279	308	248	367

Sources : Statistics Canada, Historical data (2003), Nos. 21-010-XIE to 21-018-XIE.
ERS / USDA, Income Statement

Notes

(1) The value is before rebates. In Canada, total expenses = gross operating expenses - rebates + total depreciation charges. For year 2003 rebates are \$ 101 M and total depreciation charges (buildings and machinery) are \$ 4,594 M. Therefore, total gross operating expenses are \$ 34,364 B after rebates and \$ 34,465 before rebates. Rebates represented only 0.29% of total gross operating expenses. Total depreciation charges represented 13.4% of total expenses.

Note : (2) Including operator dwellings

4.2.3. Income from the Market versus Total Government Support

The OECD¹³ has, since 1987, measured support to agriculture using the Producer Support Estimate (PSE) and Consumer Support Estimate (CSE). With the reform of agricultural policies in OECD countries, the number and complexity of policy measures has increased significantly and the OECD classification of policy measures has evolved. The basis of the OECD classification system presented here is the grouping of policy measures according to their implementation criteria — independent of their objectives and effects. A given objective may be achieved through different measures and the economic impacts depend on the way they are implemented.

The principal indicators of total Government Support (OECD) are :

1. Producer Support Estimate (PSE)
2. Market Price Support (MPS)
3. Producer Nominal Protection Coefficient (NPCp)
4. Producer Nominal Assistance Coefficient (NACp)
5. Consumer Support Estimate (CSE)
6. Consumer Nominal Protection Coefficient (NPCc)
7. Consumer Nominal Assistance Coefficient (NACc)
8. General Services Support Estimate (GSSE)
9. Total Support Estimate (TSE)

For more details, a brief description of the principal variables is given in Annex 1.

Table 15 compares the Indicators of Total Government Support between Canada and the U.S. Over the 1998-2003 period, Canada supported its agriculture sector with an average of \$10.5 B Canadian. Therefore, 62% of its support was from taxpayers and 38% from consumers. The Total Support Estimate (TSE) for US was \$192 B, of which 81% of support came from taxpayers and only 21% from consumers.

During 1998 to 2003, while the OECD percentage of PSE in the U.S. decreased from 22% to 18%, it increased in the same proportion in Canada, passing from 17% to 21%. But, on average for the 1998-2003 period, the OECD percentage PSE in U.S. was higher than in Canada, 22% and 19%, respectively.

When measured as a percentage of production in Table 16, however, Canada's PSE measure only 20.5% of production over the 1998-2003 period, compared to 25.1% for the U.S.

¹³ OECD, Methodology for the Measurement of Support and Use in Policy Evaluation.

Table 15 : Canada and U.S.: Total Support Estimate, 1998-2003

No	Components of Total Support Estimate	Units	Canada							US						
			1998	1999	2000	2001	2002	2003	average/year 1998-2003	average/year 1998-2003	1998	1999	2000	2001	2002	2003
1	Total value of production (at farm gate)	C/US B \$	28.3	28.4	30.2	32.6	32.6	32.6	30.8	190.6	190.1	183.8	189.3	198.1	190.5	192.0
2	Total value of consumption (at farm gate)	C/US B \$	20.2	20.4	22.2	23.4	24.0	21.8	22.0	182.0	172.1	171.6	175.6	185.2	180.4	207.4
3	Total Support Estimate (TSE)	C/US B \$	7.1	7.4	8.2	8.3	9.7	9.6	8.4	95.2	92.0	100.3	93.5	99.8	91.5	94.1
4	Producer Support Estimate (PSE)	C/US B \$	5.2	5.5	6.2	6.1	7.1	6.9	6.2	47.8	48.3	55.9	49.7	53.0	40.8	38.9
5	General Services Support Estimate (GSSE)	C/US B \$	2.0	1.9	2.0	2.2	2.6	2.6	2.2	25.1	22.8	23.3	22.9	25.1	26.7	29.6
6	Transfers to consumers from taxpayers	C/US B \$	0	0	0	0	0	0.1	0.0	22.3	20.8	21.1	20.9	21.6	24.0	25.6
7	Verification (sum)	C/US B \$	7.1	7.4	8.2	8.3	9.7	9.6	8.4	95.2	92.0	100.3	93.5	99.8	91.5	94.1
8	Transfers from consumers	C/US B \$	3.2	3.2	3.2	3.1	3.8	3.0	3.2	20.4	25.5	23.7	16.2	22.2	17.6	16.9
9	Transfers from taxpayers	C/US B \$	4.0	4.3	5.1	5.4	6.2	6.7	5.3	76.8	68.5	78.7	78.8	79.6	76.0	79.4
10	Budget revenues (-)	C/US B \$	-0.1	-0.2	-0.2	-0.2	-0.4	-0.1	-0.2	-2.0	-2.1	-2.1	-1.4	-2.0	-2.0	-2.2
11	Verification (sum)	C/US B \$	7.1	7.5	8.2	8.3	9.7	9.6	8.4	95.2	92.0	100.3	93.5	99.8	91.5	94.1
12	Consumer Support Estimate (CSE)	C/US B \$	-3.2	-3.2	-3.2	-3.1	-3.8	-2.9	-3.2	2.0	-4.7	-2.7	4.7	-0.6	6.4	8.7
13	Transfers to producers from consumers (-)	C/US B \$	-3.1	-3.1	-3.0	-2.9	-3.4	-2.9	-3.1	-18.4	-23.4	-21.6	-14.8	-20.2	-15.6	-14.7
14	Other transfers from consumers (-)	C/US B \$	-0.1	-0.1	-0.2	-0.2	-0.4	-0.1	-0.2	-2.0	-2.1	-2.1	-1.4	-2.0	-2.0	-2.2
15	Transfers to consumers from taxpayers	C/US B \$	0	0	0	0	0	0.1	0.0	22.3	20.8	21.1	20.9	21.6	24.0	25.6
16	Excess feed cost	C/US B \$	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Verification (sum)	C/US B \$	-3.2	-3.2	-3.2	-3.1	-3.8	-2.9	-3.2	2.0	-4.7	-2.7	4.7	-0.6	6.4	8.7
18	Percentage PSE	%	17	18	19	17	20	19	18	22	22	26	22	23	19	18
19	Percentage CSE	%	-16	-16	-14	-13	-16	-14	-15	1	-3	-2	3	0	4	5
20	Consumer NAC		1.19	1.18	1.17	1.15	1.19	1.16	1.17	1.28	1.29	1.34	1.28	1.30	1.23	1.22
21	Producer NAC		1.21	1.22	1.23	1.21	1.24	1.23	1.22	0.98	1.03	1.02	0.97	1.00	0.96	0.95
22	Total Support Estimate (TSE)	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100
23	Producer Support Estimate (PSE)	%	72	74	76	73	73	72	74	50	52	56	53	53	45	41
24	General Services Support Estimate (GSSE)	%	28	26	24	27	27	27	26	26	25	23	24	25	29	31
25	Transfers to consumers from taxpayers	%	0	0	0	0	0	1	0	23	23	21	22	22	26	27
26	Verification (sum)	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100
27	Transfers from consumers	%	45	43	39	37	40	31	39	21	28	24	17	22	19	18
28	Transfers from taxpayers	%	56	58	63	65	65	70	63	81	75	78	84	80	83	84
29	Budget revenues (-)	%	-1	0	-2	-2	-4	-1	-2	-2	-2	-2	-2	-2	-2	-2
30	Verification (sum)	%	100	100,9	100	100	100	100	100	100	100	100	100	100	100	100
31	Consumer Support Estimate (CSE)	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100
32	Transfers to producers from consumers (-)	%	98	98	95	95	90	100	96	-934	502	806	-314	3512	-245	-170
33	Other transfers from consumers (-)	%	2	2	5	5	10	3	5	-101	45	80	-31	350	-32	-26
34	Transfers to consumers from taxpayers	%	0	0	0	0	0	-3	0	1135	-447	-786	445	-3762	377	295
35	Excess feed cost	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Verification (sum)	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100
37	Ratios	%														
38	TSE / Value of Production	%	25%	26%	27%	26%	30%	29%	27,2%	50,0%	48%	55%	49%	50%	48%	49%
39	Transfers from consumers / Value of Production	%	11%	11%	11%	10%	12%	9%	10,6%	10,7%	13%	13%	9%	11%	9%	9%
40	Transfers from taxpayers / Value of Production	%	14%	15%	17%	17%	19%	20%	17,1%	40,3%	36%	43%	42%	40%	40%	41%
41	Budget revenues (-) / Value of Production	%	0%	0%	-1%	-1%	-1%	0%	-0,5%	-1,0%	-1%	-1%	-1%	-1%	-1%	-1%

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Table 16 demonstrates the active components of Producer Support Estimate (PSE) and General Services Support Estimate (GSEE). Of particular interest, one may extract interesting statistics as concern Canadian expenditure of \$516 M Cdn versus \$687 M U.S. Canada applies 23% of its expenses reported under the GSSE in comparison with only 3% for U.S. The inspection services based on total value of production for Canada was \$30.8 B Cdn, while \$192 B in the U.S. The implications associated with the impact of the embargo on Canadian beef related to our few cases of mad cow disease are even more telling in the context of food safety in international trade under the World Trade Organization (WTO) and under the North American Free Trade Agreement (NAFTA). Paradoxically, June 24, 2005, the American government announced a second case of mad cow disease in the U.S. while it is the U.S. who imposed an embargo on Canada. Perhaps a punishment for seeming over-vigilance which the public deem insufficient? This table shows that Canada expends far more than U.S. in food inspection in order to protect their consumers and international buyers including a vast majority of Americans buyers. One ponders seriously how the U.S. government and U.S. producer lobbies can pretend their agri-food products are safer than Canadian agri-food products while the U.S. consecrates only 3% of GSSE to food and agri-product inspection, while Canada provides 23% in the same period. Another possible explanation for this discrepancy could be that the inspection services in the U.S. are far more cost efficient and productive. If this were demonstrated to be true, there is certainly place to gain efficiency and reduce the cost of food inspection.

Table 17 shows a comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by commodity between Canada and U.S. for the 1998-2003 period.

Table 16 : Comparisons of PSE and GSEE between Canada and U.S., 1998-2003*

Components of PSE and GSEE	In million \$ Can or US						average per year		
	1998	1999	2000	2001	2002	2003	1998-2003	% / value of production	
Total value of production (at farm gate)									
Canada - Total value of production	28,265	28,381	30,152	32,563	32,6	32,621	30,764		
US - Total value of production	190,082	183,777	189,318	198,081	190,469	192,014	190,624		
Producer Support Estimate (PSE)									
Canada - PSE	5,170	5,512	6,198	6,115	7,087	6,915	6,166	100%	20.0%
1. Market price support	3,150	3,105	3,039	2,932	3,471	2,858	3,093	50%	10.1%
2. Payments based on output	352	490	480	364	229	418	389	6%	1.3%
3. Payments based on area planted/animal numbers	234	285	474	671	1	477	560	9%	1.8%
4. Payments based on historical entitlements	0	0	811	810	844	1,314	630	10%	2.0%
5. Payments based on input use	489	487	509	483	479	489	489	8%	1.6%
6. Payments based on input constraints	0	0	0	0	0	2	0	0%	0%
7. Payments based on overall farming income	949	1,002	778	888	725	1,112	909	15%	3.0%
8. Miscellaneous payments	-5	143	107	-34	124	245	97	2%	0.3%
US - PSE	48,273	55,874	49,700	52,991	40,849	38,878	47,761	100%	25.1%
1. Market price support	23,378	21,575	14,791	20,219	15,594	14,695	18,375	38%	9.6%
2. Payments based on output	4,251	10,517	10,226	9,355	2,146	3,020	6,586	14%	3.5%
3. Payments based on area planted/animal numbers	2,851	2,818	3,510	2,862	5,830	4,293	3,694	8%	1.9%
4. Payments based on historical entitlements	8,470	10,939	10,530	8,739	6,516	5,229	8,404	18%	4.4%
5. Payments based on input use	6,116	6,633	6,986	7,534	6,919	7,212	6,900	14%	3.6%
6. Payments based on input constraints	1,954	1,808	1,778	1,918	2,044	1,972	1,913	4%	1.0%
7. Payments based on overall farming income	1,252	1,585	1,877	2,364	1,798	2,456	1,889	4%	1.0%
8. Miscellaneous payments	0	0	0	0	0	0	0	0%	0%
General Services Support Estimate (GSSE)									
Canada - GSSE	1,968	1,927	1,973	2,225	2,576	2,564	2,206	100%	7.2%
1. Research and development	389	406	422	442	405	493	426	19%	1.4%
2. Agricultural schools	284	268	228	247	301	195	254	12%	0.8%
3. Inspection services	394	447	481	518	614	640	516	23%	1.7%
4. Infrastructure	343	374	399	441	636	536	455	21%	1.5%
5. Marketing and Promotion	558	431	443	578	619	700	555	25%	1.8%
6. Public stockholding	0	0	0	0	0	0	0	0%	0%
7. Miscellaneous	0	0	0	0	0	0	0	0%	0%
US - GSSE	22,838	23,327	22,901	25,125	26,735	29,618	25,091	100%	13.2%
1. Research and development	2,095	2,188	2,235	2,410	2,609	2,687	2,371	9%	1.2%
2. Agricultural schools	0	0	0	0	0	0	0	0%	0%
3. Inspection services	621	626	670	683	751	768	687	3%	0.4%
4. Infrastructure	3,362	3,536	3,289	4,560	3,840	3,976	3,761	15%	2.0%
5. Marketing and Promotion	15,055	15,128	14,489	15,175	17,241	19,884	16,162	64%	8.5%
6. Public stockholding	38	62	81	122	119	129	92	0%	0%
7. Miscellaneous	1,667	1,786	2,137	2,174	2,174	2,174	2,019	8%	1.1%

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Notes :

(*) Source : Bob Friesen, Canadian Federation of Agriculture.

With regards to our discussions about relative support levels, here are the OECD numbers taking out the disputed OECD MPS but including the WTO notified MPS support.

If we compare the TSE but only include WTO notified MPS (2002 - Pre-BSE):

Canada ~\$Cdn 6,592 million
Percentage of Gross Farm Receipts ~20.5%

U.S. ~ \$US 81,417 million
Percentage of Gross Farm Receipts ~42.9%

Included, the latest compared Canada-U.S. WTO notified numbers for 2000 (AMS, de minimus and green box spending):

Canada total support: Cdn\$4,613 million
% of value of production: 14.5%

U.S. total support: \$74,200 million
% of value of production: 39.2%

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

Page 1 / 4

A. Level of Production, Production Price, Value of Production and Value of Consumption	In millions \$ Can or US						average year (1998-2003)			
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of production	% / PSE
1. Level of production (000 t)							000 t			
Canada - Total level of production										
1. Wheat	24,082	26,960	26,536	20,568	16,198	22,000	22,724			
2. Maize	8,952	9,161	6,954	8,389	8,995	9,583	8,672			
3. Oilseeds	10,380	11,579	9,908	6,652	6,513	8,606	8,940			
4. Beef and veal	1,571	1,529	1,497	1,614	1,739	1,351	1,550			
5. Pigmeat	1,731	1,904	2,002	2,177	2,343	2,532	2,115			
6. Poultrymeat	801	840	877	930	932	897	879			
7. Eggs	336	353	373	386	392	391	372			
8. Milk	8,233	8,301	8,205	8,263	8,074	7,989	8,178			
US - Total level of production										
1. Wheat	69,327	62,569	60,745	53,261	44,062	63,603	58,928			
2. Maize	247,892	239,561	251,855	241,491	228,816	261,076	245,115			
3. Oilseeds	74,598	72,230	75,060	78,680	74,816	66,733	73,686			
4. Beef and veal	11,354	11,662	11,830	11,526	11,954	11,606	11,655			
5. Pigmeat	8,623	8,758	8,597	8,691	8,929	9,022	8,770			
6. Poultrymeat	15,128	15,990	16,363	16,757	17,273	17,426	16,489			
7. Eggs	4,714	4,894	4,980	5,066	5,113	5,104	4,978			
8. Milk	71,396	73,800	76,023	75,07	77,021	77,066	75,063			
2. Producer price (at farm gate)							\$/t			
Canada - Producer price (C\$/t)										
1. Wheat	141	125	135	160	170	119	142			
2. Maize	122	117	125	139	159	137	133			
3. Oilseeds	327	247	248	306	351	339	303			
4. Beef and veal	3,080	3,278	3,697	4,023	3,708	5,077	3,810			
5. Pigmeat	1,268	1,255	1,672	1,755	1,398	1,517	1,478			
6. Poultrymeat	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.			
7. Eggs	1,385	1,352	1,372	1,421	1,468	1,57	1,428			
8. Milk	482	487	507	518	529	555	513			
US - Producer price (US\$/t)										
1. Wheat	97	91	96	102	131	123	107			
2. Maize	76	72	73	78	91	96	81			
3. Oilseeds	181	170	167	161	203	266	191			
4. Beef and veal	2,328	2,482	2,640	2,754	2,538	3,231	2,662			
5. Pigmeat	1,006	887	1,258	1,317	972	1,103	1,090			
6. Poultrymeat	1,006	887	1,258	1,317	972	1,103	n.a.			
7. Eggs	942	876	873	877	834	1,092	916			
8. Milk	340	317	273	332	269	278	301			
3. Total value of production (at farm gate)										
Canada - Total value of production	28,265	28,381	30,152	32,563	32,600	32,621	30,764	100%		
1. Wheat	3,400	3,363	3,571	3,289	2,756	2,609	3,165	10.3%		
2. Maize	1,094	1,068	871	1,167	1,433	1,313	1,157	3.8%		
3. Oilseeds	3,395	2,864	2,458	2,034	2,288	2,921	2,660	8.6%		
4. Beef and veal	4,839	5,013	5,535	6,492	6,449	6,857	5,864	19.1%		
5. Pigmeat	2,195	2,389	3,349	3,821	3,276	3,841	3,145	10.2%		
6. Poultrymeat	1,605	1,561	1,606	1,758	1,686	1,750	1,661	5.4%		
7. Eggs	466	478	511	548	575	614	532	1.7%		
8. Milk	3,967	4,046	4,162	4,282	4,268	4,432	4,193	13.6%		
9. Other productions	7,303	7,600	8,09	9,173	9,869	8,284	8,387	27.3%		
US - Total value of production	190,082	183,777	189,318	198,081	190,469	192,014	190,624	100%		
1. Wheat	6,750	5,702	5,848	5,440	5,764	7,829	6,222	3.3%		
2. Maize	18,932	17,164	18,343	18,729	20,899	25,181	19,875	10.4%		
3. Oilseeds	13,513	12,288	12,521	12,663	15,202	17,777	13,994	7.3%		
4. Beef and veal	26,431	28,944	31,227	31,740	30,344	37,494	31,030	16.3%		
5. Pigmeat	8,674	7,766	10,818	11,442	8,679	9,948	9,554	5.0%		
6. Poultrymeat	17,899	18,012	16,875	19,524	16,184	18,078	17,762	9.3%		
7. Eggs	4,439	4,287	4,345	4,445	4,263	5,575	4,559	2.4%		
8. Milk	24,271	23,364	20,782	24,891	20,699	21,407	22,569	11.8%		
9. Other productions	69,172	66,250	68,559	69,207	68,436	48,726	65,058	34.1%		
4. Total value of consumption (at farm gate)										
Canada - Total value of consumption	20,208	20,386	22,188	23,418	24,02	21,764	21,997	100%		
1. Wheat	1,133	1,046	1,012	1,183	1,406	878	1,110	5.0%		
2. Maize	1,103	1,065	1,300	1,650	1,997	1,479	1,432	6.5%		
3. Oilseeds	1,871	1,425	1,512	1,433	1,646	1,931	1,636	7.4%		
4. Beef and veal	3,088	3,377	3,782	3,992	3,620	5,222	3,847	17.5%		
5. Pigmeat	1,280	1,350	1,755	1,889	1,503	1,513	1,548	7.0%		
6. Poultrymeat	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
7. Eggs	490	486	514	545	557	597	532	2.4%		
8. Milk	3,999	4,121	4,362	4,514	4,77	4,757	4,421	20.1%		
9. Other productions	7,244	7,515	7,951	8,213	8,519	5,386	7,471	34.0%		
US - Total value of consumption	182,042	172,082	171,559	175,639	185,215	180,36	177,816	100%		
1. Wheat	3,660	3,234	3,493	3,339	4,016	4,084	3,637	2.0%		
2. Maize	14,189	13,792	14,428	15,593	18,421	19,968	16,065	9.0%		
3. Oilseeds	8,830	8,065	8,208	8,186	9,661	11,709	9,110	5.1%		
4. Beef and veal	28,056	30,589	33,002	34,012	32,334	39,666	32,943	18.5%		
5. Pigmeat	8,353	7,624	10,641	11,043	8,442	9,715	9,303	5.2%		
6. Poultrymeat	14,931	15,26	14,272	16,29	13,845	15,634	15,039	8.5%		
7. Eggs	3,682	3,608	3,662	3,734	3,601	4,724	3,835	2.2%		
8. Milk	24,657	23,68	20,968	25,523	20,784	21,899	22,918	12.9%		
9. Other productions	75,684	66,229	62,886	57,919	74,111	52,963	64,965	36.5%		

Source : OECD, *Producer and Support Consumer Estimates* - Database 1986-2003.

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

Page 2 / 4

B. Producer Support Estimate (PSE) by Commodity	In millions \$ Can or US						average year (1998-2003)			
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of production	% / Total PSE
Canada - Total PSE	5,170	5,512	6,198	6,115	7,087	6,915	6,166	100%	20.0%	100%
1. Market price support	3,150	3,105	3,039	2,932	3,471	2,858	3,093	50.2%	10.1%	100%
2. Payments based on output	352	490	480	364	229	418	389	6.3%	1.3%	100%
3. Payments based on area planted/animal numbers	234	285	474	671	1	477	560	9.1%	1.8%	100%
4. Payments based on historical entitlements			811	810	844	1,314	630	10.2%	2.0%	100%
5. Payments based on input use	489	487	509	483	479	489	489	7.9%	1.6%	100%
6. Payments based on input constraints										
7. Payments based on overall farming income	949	1,002	778	888	725	1,112	909	14.7%	3.0%	100%
8. Miscellaneous payments	-5	143	107	-34	124	245	97	1.6%	0.3%	100%
US - Total PSE	48,273	55,874	49,700	52,991	40,849	38,878	47,761	100%	25.1%	100%
1. Market price support	23,378	21,575	14,791	20,219	15,594	14,695	18,375	38.5%	9.6%	100%
2. Payments based on output	4,251	10,517	10,226	9,355	2,146	3,020	6,586	13.8%	3.5%	100%
3. Payments based on area planted/animal numbers	2,851	2,818	3,510	2,862	5,830	4,293	3,694	7.7%	1.9%	100%
4. Payments based on historical entitlements	8,470	10,939	10,530	8,739	6,516	5,229	8,404	17.6%	4.4%	100%
5. Payments based on input use	6,116	6,633	6,986	7,534	6,919	7,212	6,900	14.4%	3.6%	100%
6. Payments based on input constraints	1,954	1,808	1,778	1,918	2,044	1,972	1,913	4.0%	1.0%	100%
7. Payments based on overall farming income	1,252	1,585	1,877	2,364	1,798	2,456	1,889	4.0%	1.0%	100%
8. Miscellaneous payments										
1. Canada - Wheat PSE	338	395	582	632	745	628	553	100%	17.5%	9.0%
1. Market price support						193	32	0.5%	0.1%	1.0%
2. Payments based on output	13	14	24	19	9	19	16	0.3%	0.1%	4.2%
3. Payments based on area planted/animal numbers	57	66	105	186	422	137	162	2.6%	0.5%	29.0%
4. Payments based on historical entitlements			256	210	120	68	109	1.8%	0.4%	17.3%
5. Payments based on input use	76	74	74	74	65	54	70	1.1%	0.2%	14.3%
6. Payments based on input constraints								0.0%	0.0%	19.9%
7. Payments based on overall farming income	197	204	124	149	120	127	153	2.5%	0.5%	16.9%
8. Miscellaneous payments	-5	37	-1	-7	9	28	10	0.2%	0.0%	10.6%
1. US - Wheat PSE	4,186	5,724	5,390	4,088	3,261	2,657	4,218	100%	67.8%	8.8%
1. Market price support								0.0%	0.0%	0.0%
2. Payments based on output	517	975	847	190	28	148	451	10.7%	7.2%	6.8%
3. Payments based on area planted/animal numbers	254	554	534	548	1,236	750	646	15.3%	10.4%	17.5%
4. Payments based on historical entitlements	3,037	3,863	3,655	2,992	1,642	1,243	2,739	64.9%	44.0%	32.6%
5. Payments based on input use	212	188	203	194	201	291	215	5.1%	3.5%	3.1%
6. Payments based on input constraints	121	96	95	97	100	124	105	2.5%	1.7%	5.5%
7. Payments based on overall farming income	45	48	57	66	54	102	62	1.5%	1.0%	3.3%
8. Miscellaneous payments										
2. Canada - Maize - PSE	97	170	284	206	131	223	185	100%	16.0%	3.0%
1. Market price support										
2. Payments based on output	31	74	99	104	56	102	78	42.0%	6.7%	20.0%
3. Payments based on area planted/animal numbers	39	62	112	49	38	73	62	33.6%	5.4%	11.1%
4. Payments based on historical entitlements			41	31	10	7	15	8.1%	1.3%	2.4%
5. Payments based on input use	9	10	9	7	10	13	10	5.3%	0.8%	2.0%
6. Payments based on input constraints								0.0%	0.0%	6.0%
7. Payments based on overall farming income	18	22	17	16	11	22	18	9.5%	1.5%	1.9%
8. Miscellaneous payments		1	5	-1	5	6	3	1.5%	0.2%	2.8%
2. US - Maize - PSE	7,255	8,893	9,275	6,848	5,337	4,316	6,987	100%	35.2%	14.6%
1. Market price support										
2. Payments based on output	1,540	2,559	2,719	1,269	103	137	1,388	19.9%	7.0%	21.1%
3. Payments based on area planted/animal numbers	972	565	782	551	1,786	968	937	13.4%	4.7%	25.4%
4. Payments based on historical entitlements	3,699	4,762	4,649	3,802	2,151	1,613	3,446	49.3%	17.3%	41.0%
5. Payments based on input use	581	565	640	660	731	896	679	9.7%	3.4%	9.8%
6. Payments based on input constraints	338	295	302	337	368	386	338	4.8%	1.7%	17.6%
7. Payments based on overall farming income	125	147	183	229	198	317	200	2.9%	1.0%	10.6%
8. Miscellaneous payments										
3. Canada - Oilseeds PSE	310	278	418	465	412	283	361	100%	13.6%	5.9%
1. Market price support										
2. Payments based on output	5	16	14	12	5	9	10	2.8%	0.4%	2.6%
3. Payments based on area planted/animal numbers	63	62	107	195	219	89	122	33.9%	4.6%	21.9%
4. Payments based on historical entitlements			166	135	69	44	69	19.1%	2.6%	11.0%
5. Payments based on input use	67	46	42	40	39	35	45	12.4%	1.7%	9.2%
6. Payments based on input constraints								0.0%	0.0%	15.3%
7. Payments based on overall farming income	178	135	83	88	72	86	107	29.7%	4.0%	11.8%
8. Miscellaneous payments	-4	19	6	-5	8	20	7	2.0%	0.3%	7.6%
3. US - Oilseeds - PSE	2,381	3,915	4,852	4,667	2,554	4,095	3,744	100%	26.8%	7.8%
1. Market price support										
2. Payments based on output	1,279	2,859	3,580	3,611	187	205	1,954	52.2%	14.0%	29.7%
3. Payments based on area planted/animal numbers	362	342	517	266	964	1,267	620	16.6%	4.4%	16.8%
4. Payments based on historical entitlements					466	1,503	328	8.8%	2.3%	3.9%
5. Payments based on input use	410	399	427	423	526	626	468	12.5%	3.3%	6.8%
6. Payments based on input constraints	241	210	204	218	267	271	235	6.3%	1.7%	12.3%
7. Payments based on overall farming income	89	105	124	148	144	223	139	3.7%	1.0%	7.4%
8. Miscellaneous payments										

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

Page 3 / 4

B. Producer Support Estimate (PSE) by Commodity	In millions \$ Can or US						average year (1998-2003)			
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of production	% / Total PSE
4. Canada - Beef & veal PSE	432	432	514	534	825	1 507	707	100%	12.1%	11.5%
1. Market price support	60				70		22	3.1%	0.4%	0.7%
2. Payments based on output	82	87	90	64	64	105	82	11.6%	1.4%	21.1%
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements			86	106	320	954	244	34.6%	4.2%	38.8%
5. Payments based on input use	100	108	116	116	114	118	112	15.8%	1.9%	22.9%
6. Payments based on input constraints										
7. Payments based on overall farming income	192	213	213	264	245	293	237	33.5%	4.0%	26.0%
8. Miscellaneous payments	-2	24	9	-16	11	37	11	1.5%	0.2%	11.0%
4. US - Beef & veal - PSE	945	1,299	1,427	1,668	1,390	1,197	1,321	100%	4.3%	2.8%
1. Market price support	-2				131		22	1.6%	0.1%	0.1%
2. Payments based on output										
3. Payments based on area planted/animal numbers	2	2	3		2		2	0.1%	0.0%	0.0%
4. Payments based on historical entitlements										
5. Payments based on input use	775	1,056	1,125	1,303	985	883	1,021	77.3%	3.3%	14.8%
6. Payments based on input constraints	10	16	17	16	19	17	16	1.2%	0.1%	0.8%
7. Payments based on overall farming income	159	225	282	349	254	297	261	19.7%	0.8%	13.8%
8. Miscellaneous payments										
5. Canada - Pigmeat PSE	166	296	275	219	211	356	254	100%	8.1%	4.1%
1. Market price support						-18	-3	-1.2%	-0.1%	-0.1%
2. Payments based on output	58	153	118	60	34	104	88	34.7%	2.8%	22.7%
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements				2	53	52	18	7.0%	0.6%	2.8%
5. Payments based on input use	38	41	57	56	48	59	50	19.6%	1.6%	10.2%
6. Payments based on input constraints										
7. Payments based on overall farming income	71	91	88	102	61	129	90	35.6%	2.9%	9.9%
8. Miscellaneous payments	0	10	13	-1	14	30	11	4.3%	0.3%	11.4%
5. US - Pigmeat - PSE	442	321	476	527	385	367	420	100%	4.4%	0.9%
1. Market price support	-2							-0.1%	0.0%	0.0%
2. Payments based on output										
3. Payments based on area planted/animal numbers	123						21	4.9%	0.2%	0.6%
4. Payments based on historical entitlements										
5. Payments based on input use	260	250	363	384	297	265	303	72.2%	3.2%	4.4%
6. Payments based on input constraints	3	5	7	6	6	6	5	1.3%	0.1%	0.3%
7. Payments based on overall farming income	57	67	107	137	82	96	91	21.7%	1.0%	4.8%
8. Miscellaneous payments										
6. Canada - Poultrymeat PSE	60	34	41	35	56	123	58	100%	3.5%	0.9%
1. Market price support	36	9	11	14	26	43	23	39.7%	1.4%	0.7%
2. Payments based on output										
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements										
5. Payments based on input use	23	22	22	21	20	22	22	37.1%	1.3%	4.4%
6. Payments based on input constraints										
7. Payments based on overall farming income						46	8	13.1%	0.5%	0.8%
8. Miscellaneous payments	2	3	9	0	9	13	6	10.1%	0.4%	6.1%
6. US - Poultrymeat - PSE	663	753	753	933	718	677	749	100%	4.2%	1.6%
1. Market price support	1	8	9	34			9	1.2%	0.0%	0.0%
2. Payments based on output										
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements										
5. Payments based on input use	537	579	566	655	553	490	563	75.2%	3.2%	8.2%
6. Payments based on input constraints	7	11	10	11	12	10	10	1.4%	0.1%	0.5%
7. Payments based on overall farming income	118	155	167	233	153	177	167	22.3%	0.9%	8.9%
8. Miscellaneous payments										

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

B. Producer Support Estimate (PSE) by Commodity	In millions \$ Can or US						average year (1998-2003)			
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of production	% / Total PSE
	7. Canada - Eggs PSE	90	94	107	132	185	86	116	100%	21.7%
1. Market price support	84	87	97	127	175	58	104	90.4%	19.6%	3.4%
2. Payments based on output										
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements										
5. Payments based on input use	6	6	6	6	7	7	6	5.4%	1.2%	1.3%
6. Payments based on input constraints										
7. Payments based on overall farming income						17	3	2.4%	0.5%	0.3%
8. Miscellaneous payments	0	1	3	0	3	5	2	1.8%	0.4%	2.2%
7. US - Eggs - PSE	164	177	191	205	189	166	182	100%	4.0%	0.4%
1. Market price support	-1									
2. Payments based on output										
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements										
5. Payments based on input use	133	138	146	149	146	120	139	76.1%	3.0%	2.0%
6. Payments based on input constraints	2	3	3	2	3	3	3	1.4%	0.1%	0.1%
7. Payments based on overall farming income	29	37	43	53	40	43	41	22.5%	0.9%	2.2%
8. Miscellaneous payments										
8. Canada - Milk PSE	2,434	2,407	2,362	2,233	2,416	2,745	2,433	100%	58.0%	39.5%
1. Market price support	2,250	2,243	2,203	2,137	2,321	2,513	2,278	93.6%	54.3%	73.7%
2. Payments based on output	120	92	62	30			51	2.1%	1.2%	13.0%
3. Payments based on area planted/animal numbers										
4. Payments based on historical entitlements			9	10	16	22	9	0.4%	0.2%	1.5%
5. Payments based on input use	62	63	64	55	57	64	61	2.5%	1.5%	12.4%
6. Payments based on input constraints										
7. Payments based on overall farming income						115	19	0.8%	0.5%	2.1%
8. Miscellaneous payments	2	9	23	1	23	31	15	0.6%	0.4%	15.3%
8. US - Milk - PSE	15,191	13,918	9,715	14,310	9,841	10,992	12,328	100%	54.6%	25.8%
1. Market price support	14,288	12,591	8,586	12,273	8,917	8,217	10,812	87.7%	47.9%	58.8%
2. Payments based on output		209	122	673		1,796	467	3.8%	2.1%	7.1%
3. Payments based on area planted/animal numbers	2	2	2		1		1	0.0%	0.0%	0.0%
4. Payments based on historical entitlements										
5. Payments based on input use	730	900	786	1,053	713	710	815	6.6%	3.6%	11.8%
6. Payments based on input constraints	10	15	13	13	15	15	13	0.1%	0.1%	0.7%
7. Payments based on overall farming income	160	202	206	297	195	255	219	1.8%	1.0%	11.6%
8. Miscellaneous payments										
9. Canada - Other productions PSE	1,242	1,407	1,616	1,658	2,106	1,852	1,647	100%	17.9%	24.3%
1. Market price support	720	766	728	655	878	958	784	42.5%	7.6%	20.6%
2. Payments based on output	43	54	72	74	60	78	63	4.2%	0.8%	16.3%
3. Payments based on area planted/animal numbers	75	96	150	240	537	178	213	14.2%	2.5%	38.0%
4. Payments based on historical entitlements			252	316	255	167	165	11.0%	2.0%	26.2%
5. Payments based on input use	109	116	119	108	118	118	115	7.7%	1.4%	23.4%
6. Payments based on input constraints						1		0.0%	0.0%	58.8%
7. Payments based on overall farming income	293	336	254	269	216	279	275	18.3%	3.3%	30.2%
8. Miscellaneous payments	2	38	41	-4	41	74	32	2.1%	0.4%	33.0%
9. US - Other productions - PSE	17,046	20,874	17,620	19,746	17,174	14,410	17,812	100%	27.4%	37.3%
1. Market price support	9,094	8,976	6,196	7,911	6,547	6,478	7,534	42.3%	11.6%	41.0%
2. Payments based on output	914	3,915	2,958	3,612	1,828	734	2,327	13.1%	3.6%	35.3%
3. Payments based on area planted/animal numbers	1,135	1,353	1,672	1,497	1,841	1,310	1,468	8.2%	2.3%	39.7%
4. Payments based on historical entitlements	1,734	2,314	2,227	1,944	2,257	871	1,891	10.6%	2.9%	22.5%
5. Payments based on input use	2,476	2,561	2,732	2,713	2,768	2,931	2,697	15.1%	4.1%	39.1%
6. Payments based on input constraints	1,222	1,157	1,128	1,218	1,255	1,141	1,187	6.7%	1.8%	62.1%
7. Payments based on overall farming income	470	598	708	851	678	945	709	4.0%	1.1%	37.5%
8. Miscellaneous payments										

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

* Comas are used as decimals for this table.

C. Components of Consumer Support Estimate (CSE) by Commodity	Canada							average year (1998-2003)			US						average year (1998-2003)			Page 1 / 4
	Million \$ Can						M \$	%	% / value of prod. / cons.	Million \$ US						M \$	%	% / value of prod. / cons.		
	1998	1999	2000	2001	2002	2003				1998	1999	2000	2001	2002	2003					
Total Producer Support Estimate (PSE)	5 170	5 512	6 198	6 115	7 087	6 915	6 166	100%	20,0%	48 273	55 874	49 700	52 991	40 849	38 878	47 761	100%	25,1%		
Total value of production	28 265	28 381	30 152	32 563	32 600	32 621	30 764	100%		190 082	183 777	189 318	198 081	190 469	192 014	190 624	100%			
Total value of consumption	20 208	20 386	22 188	23 418	24 020	21 764	21 997	100%		182 042	172 082	171 559	175 639	185 215	180 360	177 816	100%			
1. Wheat																				
2 Value of production	3 400	3 363	3 571	3 289	2 756	2 609	3 165	10,3%		6 750	5 702	5 848	5 440	5 764	7 829	6 222	3,3%			
3 Value of consumption	1 133	1 046	1 012	1 183	1 406	878	1 110	5,0%		3 660	3 234	3 493	3 339	4 016	4 084	3 637	5,0%			
4 Producer Support Estimate (PSE)	338	395	582	632	745	628	553	100%	17,5%	4 186	5 724	5 390	4 088	3 261	2 657	4 218	100%	67,8%		
5 Consumer Support Estimate (CSE)¹							45	8	100%	0,7%	709	664	654	643	675	830	696	100%	19,1%	
6 Transfers to consumers from taxpayers (+)							85	14	189%		709	664	654	643	675	830	696	100%		
7 Transfers to producers from consumers (-)							72	12	160%											
8 Other transfers from consumers (+)																				
9 Excess feed cost (-)							-32	-5	-71%											
10 Verification (sum)							45	8	100%		709	664	654	643	675	830	696	100%		
11 Market transfer²							40	7	100%	0,6%										
12 Transfers to producers from consumers (+)							72	12	180%											
13 Other transfers from consumers (+)																				
14 Excess feed cost (-)							-32	-5	-80%											
15 Verification (sum)							40	7	100%											
16 Budgetary transfers³							206	34	100%	3,1%	709	664	654	643	675	830	696	100%	19,1%	
17 Transfers from consumers							120	20	59%											
18 Transfers from taxpayers							85	14	41%		709	664	654	643	675	830	696	100%		
19 Price levies (-) (+)																				
20 Verification (sum)							206	34	100%		709	664	654	643	675	830	696	100%		
2. Maize																				
2 Value of production	1 094	1 068	871	1 167	1 433	1 313	1 157	3,8%		18 932	17 164	18 343	18 729	20 899	25 181	19 875	10,4%			
3 Value of consumption	1 103	1 065	1 300	1 650	1 997	1 479	1 432	6,5%		14 189	13 792	14 428	15 593	18 421	19 968	16 065	9,0%			
4 Producer Support Estimate (PSE)	97	170	284	206	131	223	185	100%	16,0%	7 255	8 893	9 275	6 848	5 337	4 316	6 987	100%	35,2%		
5 Consumer Support Estimate (CSE)										2 569	2 659	2 741	2 875	3 143	3 238	2 871	100%	17,9%		
6 Transfers to consumers from taxpayers (+)										2 569	2 659	2 741	2 875	3 143	3 238	2 871	100%			
7 Transfers to producers from consumers (-)																				
8 Other transfers from consumers (+)																				
9 Excess feed cost (-)																				
10 Verification (sum)																				
11 Market transfer																				
12 Transfers to producers from consumers (+)																				
13 Other transfers from consumers (+)																				
14 Excess feed cost (-)																				
15 Verification (sum)																				
16 Budgetary transfers										2 569	2 659	2 741	2 875	3 143	3 238	2 871	100%	17,9%		
17 Transfers from consumers																				
18 Transfers from taxpayers										2 569	2 659	2 741	2 875	3 143	3 238	2 871	100%			
19 Price levies (-) (+)																				
20 Verification (sum)										2 569	2 659	2 741	2 875	3 143	3 238	2 871	100%			

Source : OECD, *Producer and Support Consumer Estimates* - Database 1986-2003.

Notes : (1) CSE = + Transfers to consumers from taxpayers - Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)
 (2) Market transfer = + Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)
 (3) Budgetary transfers = + Transfers from consumers + Transfers from taxpayers + Price levies (-)

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

* Comas are used as decimals for this table.

C. Components of Consumer Support Estimate (CSE) by Commodity	Canada						average year (1998-2003)			US						average year (1998-2003)		
	Million \$ Can						M \$	%	% / value of prod. / cons.	Million \$ US						M \$	%	% / value of prod. / cons.
	1998	1999	2000	2001	2002	2003				1998	1999	2000	2001	2002	2003			
1 3. Oilseeds																		
2 Value of production	3 395	2 864	2 458	2 034	2 288	2 921	2 660	8,6%		13 513	12 288	12 521	12 663	15 202	17 777	13 994	7,3%	
3 Value of consumption	1 871	1 425	1 512	1 433	1 646	1 931	1 636	7,4%		8 830	8 065	8 208	8 186	9 661	11 709	9 110	5,1%	
4 Producer Support Estimate (PSE)	310	278	418	465	412	283	361	100%	13,6%	2 381	3 915	4 852	4 667	2 554	4 095	3 744	100%	26,8%
5 Consumer Support Estimate (CSE)										320	319	320	332	366	396	342	100%	3,8%
6 Transfers to consumers from taxpayers (+)										320	319	320	332	366	396	342	100%	
7 Transfers to producers from consumers (-)																		
8 Other transfers from consumers (+)																		
9 Excess feed cost (-)																		
10 <i>Verification (sum)</i>										320	319	320	332	366	396	342	100%	
11 Market transfer																		
12 Transfers to producers from consumers (+)																		
13 Other transfers from consumers (+)																		
14 Excess feed cost (-)																		
15 <i>Verification (sum)</i>																		
16 Budgetary tranfers										320	319	320	332	366	396	342	100%	3,8%
17 Transfers from consumers																		
18 Transfers from taxpayers										320	319	320	332	366	396	342	100%	
19 Price levies (-) (+)																		
20 <i>Verification (sum)</i>										320	319	320	332	366	396	342	100%	
1 4. Beef & veal																		
2 Value of production	4 839	5 013	5 535	6 492	6 449	6 857	5 864	19,1%		26 431	28 944	31 227	31 740	30 344	37 494	31 030	16,3%	
3 Value of consumption	3 088	3 377	3 782	3 992	3 620	5 222	3 847	17,5%		28 056	30 589	33 002	34 012	32 334	39 666	32 943	18,5%	
4 Producer Support Estimate (PSE)	432	432	514	534	825	1 507	707	100%	12,1%	945	1 299	1 427	1 668	1 390	1 197	1 321	100%	4,3%
5 Consumer Support Estimate (CSE)	-39				-39		-13	100%	-0,3%	2 739	2 734	2 743	2 849	2 993	3 394	2 909	100%	8,8%
6 Transfers to consumers from taxpayers (+)										2 739	2 734	2 743	2 849	3 132	3 394	2 932	101%	
7 Transfers to producers from consumers (-)	39				39		13	-100%						131		22	1%	
8 Other transfers from consumers (+)																		
9 Excess feed cost (-)																		
10 <i>Verification (sum)</i>	-39				-39		-13	100%		2 739	2 734	2 743	2 849	3 001	3 394	2 910	100%	
11 Market transfer	39				39		13	100%	0,3%					139		23	100%	0,1%
12 Transfers to producers from consumers (+)	39				39		13	100%						131		22	94%	
13 Other transfers from consumers (+)														9		1	6%	
14 Excess feed cost (-)										2						0	1%	
15 <i>Verification (sum)</i>	39				39		13	100%		2				139		24	101%	
16 Budgetary tranfers	22				31		9	100%	0,2%	2 739	2 734	2 743	2 849	3 132	3 394	2 932	100%	8,9%
17 Transfers from consumers	22				31		9	100%										
18 Transfers from taxpayers										2 739	2 734	2 743	2 849	3 132	3 394	2 932	100%	
19 Price levies (-) (+)																		
20 <i>Verification (sum)</i>	22				31		9	100%		2 739	2 734	2 743	2 849	3 132	3 394	2 932	100%	

Source : OECD, *Producer and Support Consumer Estimates* - Database 1986-2003.

Notes : (1) CSE = + Transfers to consumers from taxpayers - Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(2) Market transfer = + Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(3) Budgetary tranfers = + Transfers from consumers + Transfers from taxpayers + Price levies (-)

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

* Comas are used as decimals for this table.

C. Components of Consumer Support Estimate (CSE) by Commodity	Canada							US						Page 3 / 4					
	Million \$ Can							average year (1998-2003)			Million \$ US						average year (1998-2003)		
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of prod. / cons.	1998	1999	2000	2001	2002	2003	M \$	%	% / value of prod. / cons.	
1 5. Pigmeat																			
2 Value of production	2 195	2 389	3 349	3 821	3 276	3 841	3 145	10,2%		8 674	7 766	10 818	11 442	8 679	9 948	9 554	5,0%		
3 Value of consumption	1 280	1 350	1 755	1 889	1 503	1 513	1 548	7,0%		8 353	7 624	10 641	11 043	8 442	9 715	9 303	5,2%		
4 Producer Support Estimate (PSE)	166	296	275	219	211	356	254	100%	8,1%	442	321	476	527	385	367	420	100%	4,4%	
5 Consumer Support Estimate (CSE)										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%	19,6%	
6 Transfers to consumers from taxpayers (+)										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%		
7 Transfers to producers from consumers (-)																			
8 Other transfers from consumers (+)																			
9 Excess feed cost (-)																			
10 Verification (sum)										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%		
11 Market transfer																			
12 Transfers to producers from consumers (+)																			
13 Other transfers from consumers (+)																			
14 Excess feed cost (-)						-18	-3	-4		2						0	0		
15 Verification (sum)						-18	-3	-4		2						0	0		
16 Budgetary transfers										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%	19,6%	
17 Transfers from consumers										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%		
18 Transfers from taxpayers																			
19 Price levies (-) (+)																			
20 Verification (sum)										1 702	1 699	1 705	1 770	1 946	2 109	1 822	100%		
1 6. Poultrymeat																			
2 Value of production	1 605	1 561	1 606	1 758	1 686	1 750	1 661	5,4%		17 899	18 012	16 875	19 524	16 184	18 078	17 762	9,3%		
3 Value of consumption	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		14 931	15 260	14 272	16 290	13 845	15 634	15 039	8,5%		
4 Producer Support Estimate (PSE)	60	34	41	35	56	123	58	100%	3,5%	663	753	753	933	718	677	749	100%	4,2%	
5 Consumer Support Estimate (CSE)										1 306	1 298	1 301	1 330	1 494	1 619	1 391	100%	9,3%	
6 Transfers to consumers from taxpayers (+)										1 307	1 304	1 309	1 359	1 494	1 619	1 399	101%		
7 Transfers to producers from consumers (-)										1	6	8	29			7	1%		
8 Other transfers from consumers (+)																			
9 Excess feed cost (-)																			
10 Verification (sum)										1 306	1 298	1 301	1 330	1 494	1 619	1 391	100%		
11 Market transfer										1	6	8	29			7	100%	0,0%	
12 Transfers to producers from consumers (+)										1	6	8	29			7	100%		
13 Other transfers from consumers (+)																			
14 Excess feed cost (-)										1						0	2%		
15 Verification (sum)																7	102%		
16 Budgetary transfers										1 307	1 305	1 310	1 365	1 494	1 619	1 400	100%	9,3%	
17 Transfers from consumers										0	1	1	6			1	0%		
18 Transfers from taxpayers										1 307	1 304	1 309	1 359	1 494	1 619	1 399	100%		
19 Price levies (-) (+)																			
20 Verification (sum)										1 307	1 305	1 310	1 365	1 494	1 619	1 400	100%		

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Notes : (1) CSE = + Transfers to consumers from taxpayers - Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(2) Market transfer = + Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(3) Budgetary transfers = + Transfers from consumers + Transfers from taxpayers + Price levies (-)

Table 17 : Comparison of Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) by Commodity between Canada and US, 1998-2003

* Comas are used as decimals for this table.

C. Components of Consumer Support Estimate (CSE) by Commodity	Canada							US										
	Million \$ Can						average year (1998-2003)			Million \$ US						average year (1998-2003)		
	1998	1999	2000	2001	2002	2003	M \$	%	% / value of prod. / cons.	1998	1999	2000	2001	2002	2003	M \$	%	% / value of prod. / cons.
1 7. Eggs																		
2 Value of production	466	478	511	548	575	614	532	1,7%		4 439	4 287	4 345	4 445	4 263	5 575	4 559	2,4%	
3 Value of consumption	490	486	514	545	557	597	532	2,4%		3 682	3 608	3 662	3 734	3 601	4 724	3 835	2,2%	
4 Producer Support Estimate (PSE)	90	94	107	132	185	86	116	100%	21,7%	164	177	191	205	189	166	182	100%	4,0%
5 Consumer Support Estimate (CSE)	-88	-88	-98	-126	-170	-61	-105	100%	-19,8%	308	307	308	320	352	381	329	100%	8,6%
6 Transfers to consumers from taxpayers (+)										308	307	308	320	352	381	329	100%	
7 Transfers to producers from consumers (-)	84	87	97	126	170	61	104	-99%										
8 Other transfers from consumers (+)																		
9 Excess feed cost (-)																		
10 Verification (sum)	-84	-87	-97	-126	-170	-61	-104	99%		308	307	308	320	352	381	329	100%	
11 Market transfer	88	88	98	126	170	61	105	100%	19,8%									
12 Transfers to producers from consumers (+)	84	87	97	126	170	61	104	99%										
13 Other transfers from consumers (+)	4	2	1				1	1%										
14 Excess feed cost (-)						-5	-1	-1%		1						0	0	
15 Verification (sum)	88	88	98	126	170	56	104	99%		1						0	0	
16 Budgetary transfers				1	5	2	1	100%	0,2%	308	307	308	320	352	381	329	100%	8,6%
17 Transfers from consumers				1	5	2	1	100%										
18 Transfers from taxpayers										308	307	308	320	352	381	329	100%	
19 Price levies (-) (+)																		
20 Verification (sum)				1	5	2	1	100%		308	307	308	320	352	381	329	100%	
1 8. Milk																		
2 Value of production	3 967	4 046	4 162	4 282	4 268	4 432	4 193	13,6%		24 271	23 364	20 782	24 891	20 699	21 407	22 569	11,8%	
3 Value of consumption	3 999	4 121	4 362	4 514	4 770	4 757	4 421	20,1%		24 657	23 680	20 968	25 523	20 784	21 899	22 918	12,9%	
4 Producer Support Estimate (PSE)	2 434	2 407	2 362	2 233	2 416	2 745	2433	100%	58,0%	15 191	13 918	9 715	14 310	9 841	10 992	12 328	100%	54,6%
5 Consumer Support Estimate (CSE)	-2 270	-2 287	-2 310	-2 254	-2 597	-2 700	-2403	100%	-54,4%	-11 695	-9 945	-5 838	-9 651	-5 728	-4 910	-7 961	100%	-34,7%
6 Transfers to consumers from taxpayers (+)										2 821	2 816	2 825	2 934	3 226	3 495	3 020	-38%	
7 Transfers to producers from consumers (-)	2 252	2 245	2 204	2 138	2 323	2 515	2280	-95%		14 289	12 591	8 586	12 273	8 917	8 217	10 812	-136%	
8 Other transfers from consumers (+)																		
9 Excess feed cost (-)																		
10 Verification (sum)	-2 252	-2 245	-2 204	-2 138	-2 323	-2 515	-2280	95%		-11 468	-9 775	-5 761	-9 340	-5 691	-4 722	-7 793	98%	
11 Market transfer	2 270	2 287	2 310	2 254	2 597	2 700	2403	100%	54,4%	14 516	12 761	8 663	12 585	8 954	8 406	10 981	100%	47,9%
12 Transfers to producers from consumers (+)	2 252	2 245	2 204	2 138	2 323	2 515	2280	95%		14 289	12 591	8 586	12 273	8 917	8 217	10 812	98%	
13 Other transfers from consumers (+)	18	42	106	116	274	185	123	5%		227	170	77	311	37	189	168	2%	
14 Excess feed cost (-)										1						0	0%	
15 Verification (sum)	2 270	2 287	2 310	2 254	2 597	2 700	2403	100%		14 518	12 761	8 663	12 585	8 954	8 406	10 981	100%	
16 Budgetary transfers	-1	-2	0	-1	-2	-2	-2	100%	0,0%	2 821	2 816	2 825	2 934	3 226	3 495	3 020	100%	13,2%
17 Transfers from consumers										2 821	2 816	2 825	2 934	3 226	3 495	3 020	100%	
18 Transfers from taxpayers																		
19 Price levies (-) (+)	-1	-2	0	-1	-2	-2	-2	100%										
20 Verification (sum)	-1	-2	0	-1	-2	-2	-2	100%		2 821	2 816	2 825	2 934	3 226	3 495	3020	100%	

Source : OECD, Producer and Support Consumer Estimates - Database 1986-2003.

Notes : (1) CSE = + Transfers to consumers from taxpayers - Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(2) Market transfer = + Transfers to producers from consumers + Other transfers from consumers - Excess feed cost (-)

(3) Budgetary transfers = + Transfers from consumers + Transfers from taxpayers + Price levies (-)

4.3. Comparison of Aggregate Farm Sector Performance Measure

4.3.1. Net Cash Income and Net Farm Income (Income Statement)

Table 18 and table 19 show and compare net cash income and net farm income for Canada and U.S., over time.

Canada shows a higher growth than in the U.S. concerning cash receipts and net operating expenses. It also reveals weak growth concerning net cash income. The U.S. present a higher growth than Canada for programs payments, net cash income and net farm income.

During the period 1980 to 2003, net operating expenses increased much faster than market receipts in Canada. In U.S., cash receipts increased at a slightly higher rate than total expenses.

Table 18 : Income statement for Canada, average per year, 1980-1987

Components	Average year					Average year			
	2003	1980-1987	1988-1995	1996-2003	1980-2003	1980-1987	1988-1995	1996-2003	1980-2003
	<i>In Billions \$</i>					<i>% / year</i>			
Cash income statement:									
1. Total Market Receipts	29.4	17.7	21.2	29.8	22.9	0.4	4.7	1.8	3.0
2. Program Payments	4.8	1.7	2.6	2.6	2.3	30.3	-5.8	20.0	14.4
3. Total Cash Receipts (1+2)	34.2	19.4	23.8	32.3	25.2	2.4	3.1	3.1	3.5
4. Net Operating Expenses	29.8	14.0	18.3	26.1	19.5	2.6	4.3	4.2	4.5
5. Net Cash Income (3-4)	4.4	5.4	5.5	6.2	5.7	2.7	-0.1	-0.9	0.8
Farm income statement:									
6. Net Cash Income	4.4	5.4	5.5	6.2	5.7	2.7	-0.1	-0.9	0.8
7. Depreciation charges	4.6	2.7	3.1	4.2	3.3	0.7	3.1	3.6	3.0
8. Income in kind	0.1	0.2	0.1	0.1	0.2	-8.8	3.1	-2.0	-1.7
9. Realized Net Income (6-7+8)	0.0	2.9	2.6	2.1	2.5	5.4	-1.2	-4.9	-0.4
10. Value of inventory change	2.7	0.0	0.4	0.2	0.2	362	-65	-95	21
11. Total Net Income (9+10)	2.6	2.9	3.0	2.4	2.7	-0.5	3.8	8.9	6.5

Sources : Statistics Canada, Historical data (2003), Nos. 21-010-XIE to 21-018-XIE.

Table 18 : Income statement for U.S., average year, 1980-2003

	Average year					Average year			
	2003	1980-1987	1988-1995	1996-2003	1980-2003	1980-1987	1988-1995	1996-2003	1980-2003
	<i>In Billions \$</i>					<i>% / year</i>			
Cash income statement:									
1. Cash receipts¹	211.6	140.6	171.1	198.8	168.3	0.3	3.6	1.6	1.9
2. Direct government payments ²	15.9	7.6	10.1	14.9	10.6	53.5	-7.0	17.2	19.8
3. Farm-related income ³	16.3	4.8	8.6	14.1	8.8	20.5	6.8	5.9	10.6
4. Gross cash income (1+2+3)	243.9	152.9	189.8	227.8	187.8	2.1	2.8	2.2	2.4
5. Cash expenses ⁴	175.4	113.0	135.2	168.8	137.4	0.4	3.9	1.9	2.1
6. Net Cash Income⁵ (4-5)	68.6	39.9	54.6	58.9	50.4	7.3	0.6	3.8	3.8
Farm income statement:									
7. Gross cash income (1+2+3)	243.9	152.9	189.8	227.8	187.8	2.1	2.8	2.2	2.4
8. Nonmoney income ⁶	12.1	9.6	8.5	11.0	9.6	-6.7	7.9	2.6	1.6
9. Inventory adjustment	0.8	-1.6	0.8	1.0	0.0				
10. Total gross income (7+8+9)	256.9	160.9	199.0	239.7	197.4	2.0	2.9	2.7	2.5
11. Total expenses	197.6	135.3	154.0	190.0	158.1	-0.2	3.5	1.8	1.8
<i>Capital Consumption</i>	<i>20.8</i>	<i>21.0</i>	<i>18.2</i>	<i>20.1</i>	<i>19.8</i>	<i>-3.4</i>	<i>1.2</i>	<i>1.2</i>	<i>-5.3</i>
12. Net Farm Income (10-11)	59.2	25.6	45.0	49.7	39.3	19.7	1.6	8.3	9.5

Source : ERS/USDA. Income Statement.

4.3.2. Balance Sheet

Tables 20 and 21 present the balance sheet for Canada (set 2) and U.S. from 1998 to 2003. The most notable difference between the two balance sheets is the inclusion of quota in Canada. The value of quota reported in the balance sheet increased from \$14.8 in 1998 to \$23.6 B in 2003. The value of quota represented 7.6 % of total assets in 1998 and 9.0% in 2003.

Farm real estate over the 1998-2003 period averaged 60.4 % of the total assets in Canada versus 79% in U.S. Regarding debt, Canadian farm liabilities consist of 21% current debt and 79% long term debt. In U.S., it is presented in another way, 52% is real estate and 48 % is non-real estate.

Table 20 : Balance sheet of the agricultural sector for Canada (set 2), 1998-2003

December 31	Average year		1998	1999	2000	2001	2002	2003
	1998-2003	%						
			<i>In Billions \$</i>					
Total assets (TA)	100	213.0	194.1	203.7	211.4	217.1	225.6	226.1
Current assets (CA)	8.7	18.4	16.4	17.2	19.2	19.7	20.3	17.9
Quota	9.0	19.2	14.8	17.6	18.2	18.8	22.1	23.6
Breeding livestock	4.2	9.0	8.1	9.1	9.8	9.9	9.6	7.4
Machinery	14.5	30.9	29.5	30.2	30.9	31.2	31.7	32.0
Farm real estate	60.4	128.6	119.2	122.8	126.7	131.1	134.2	137.3
Other long-term assets	3.3	6.9	6.2	6.8	6.6	6.4	7.6	7.9
Total liabilities (TL)	100	37.0	30.8	33.3	35.7	37.7	40.8	43.8
Current liabilities	21	7.6	5.6	6.6	7.5	8.2	8.5	9.2
Long term liabilities	79	29.4	25.2	26.7	28.3	29.5	32.3	34.6
Equity (E)		176.0	163.2	170.5	175.7	179.3	184.7	182.4
Solvency ratios								
Debt/equity (TL/E)		0.21	0.19	0.20	0.20	0.21	0.22	0.24
Debt/assets (TL/TA)		0.17	0.16	0.16	0.17	0.17	0.18	0.19
Equity / assets (E/TA)		0.83	0.84	0.84	0.83	0.83	0.82	0.81

Source :

Statistics Canada, Balance sheet of the agricultural sector. November 2004. Catalogue No. 21-016-XIE.

Notes :

Including non-operator landlords and excluding personal share of households ('000 of dollars)

1. As of 1991, household contents are included with other machinery.

Table 21 : Farm business balance sheet for United States, 1998-2003

December 31	Average year		1998	1999	2000	2001	2002	2003
	1998-2003							
	%		<i>In Billions \$</i>					
Farm assets (TA)	100	1 227.4	1 083.4	1 138.8	1 203.2	1 255.9	1 304.0	1 378.8
Real estate	79.1	971.3	840.4	887.0	946.4	996.2	1 045.7	1 111.8
Livestock and poultry ¹	6.1	74.3	63.4	73.2	76.8	78.5	75.6	78.5
Machinery and motor vehicles ²	7.5	92.0	89.8	89.8	90.1	92.8	93.6	95.9
Crops ³	2.2	26.5	29.9	28.3	27.9	25.2	23.1	24.4
Purchased inputs ⁴	0.4	4.9	5.0	4.0	4.9	4.2	5.6	5.6
Financial assets	4.8	58.4	54.7	56.5	57.1	58.9	60.4	62.4
Farm debt⁵ (TL)	100	181.2	164.6	167.7	177.6	185.7	193.3	198.0
Real estate	52.3	94.8	83.1	87.2	91.1	96.0	103.4	108.0
Farm Credit System	18.0	32.5	26.8	28.0	29.7	32.9	37.8	40.1
Farm Service Agency ⁶	1.9	3.4	3.8	3.6	3.4	3.3	3.2	2.8
Commercial banks	16.7	30.3	25.2	27.6	29.8	31.1	33.1	35.1
Life insurance companies	6.1	11.0	9.9	10.6	11.1	11.2	11.4	11.6
Individuals and others	9.7	17.6	17.4	17.4	17.2	17.5	17.9	18.3
Nonreal estate	47.7	86.4	81.5	80.5	86.5	89.7	90.0	90.0
Farm Credit System	9.9	17.9	16.4	15.5	16.7	19.2	19.7	20.1
Farm Service Agency ⁶	2.3	4.1	4.2	4.3	4.2	4.2	4.0	3.8
Commercial banks	24.0	43.6	42.2	41.4	44.9	45.0	44.3	43.5
Individuals and others	11.5	20.8	18.7	19.4	20.8	21.3	21.9	22.6
Equity (E)		1 046.2	918.7	971.1	1 025.6	1 070.2	1 110.7	1 180.8

Notes :

(1) The U.S. total exceeds the sum of the states because NASS does not release state data for some minor producing states due to disclosure issues. Horses, mules, and broilers are not included.

(2) Includes only farm share value for trucks and autos.

(3) All non-CCC crops held on farms plus the value above loan rate for crops held under CCC.

(4) Data for the value of purchased inputs are unavailable before 1984.

(5) Excludes debt for nonfarm purposes.

(6) Farmers Home Administration prior to 1994.

Sources :

ERS/USDA. Balance Sheet.

4.3.3. Value of Farm Capital

Table 22 presents the value of Farm Value of farm capital, depreciation charges and value per unit of capital for Canada for the period 1981-2003. This table also includes the value of quota and the value per unit of capital by provinces. Those measurements, seen as contributing factors help to illustrate the nature of the farm income issue.

Table 22 : Value of farm capital, depreciation charges and value per unit of capital, Canada, 1981, 1991 and 2003

	1981	1991	2003	1981	1991	2003
	B \$			Index, 1981=100)		
A. Value of farm capital¹ (B \$)						
Livestock & poultry	9.7	11.0	13.7	100	114	141
Land & buildings	103.3	93.7	150.9	100	91	146
Machinery & equipment	17.4	23.3	34.0	100	134	195
Total value of farm capital	130.4	128.0	198.5	100	98	152
Value of quota ² (asset)	4.4	7.6	23.6	100	173	536
Total of farm capital (included value of quota)	134.8	135.6	222.1	100	101	165
B. Depreciation charges² (B \$)						
Depreciation on buildings	0.535	0.626	1.018	100	117	190
Depreciation on machinery	2.078	2.369	3.576	100	114	172
Total depreciation charges	2.613	2.995	4.594	100		176
C. Value per unit of capital¹						
Value per acre of farm land and buildings (\$/acre)						
Canada	615	560	905	100	91	147
Ontario	1695	2303	3229	100	136	191
Québec	666	918	2003	100	138	301
Maritimes	694	906	1405	100	131	203
West	464	345	560	100	74	121
BC	1191	1190	2167	100	100	182

Sources : Statistics Canada : (1) Value of farm capital, No 21-013-XIE.

(2) Farm operating and expenses and depreciation charges, No 21-012-XIE.

(3) Balance sheet of the agricultural sector, No. 21-016-XIE

Sources : Stat Can, Catalogue 21-013-XIE, 21-012-XIE and 21-016-XIE, Nov. 2004

(2) Farm operating and expenses and depreciation charges, No 21-012-XIE.

(3) Balance sheet of the agricultural sector, No. 21-016-XIE

Between 1981 and 2003, the growth of capital and quota were very different. Value of quota increased by 536 % and value of total farm capital by 152 %. We also observe how the increase in the price of land in different parts of Canada contributes to the farm income issue.

Since 1991, the price per unit of land increased by an average of 147 % in Canada. However, there are differences in value and growth by province. In Quebec we observe the fastest growth of land price. Possible explanations for these differences include the pressure of environmentalists to retain more land and/or a higher level of support by provincial governments that encourage farmers to buy more land and more quota in order to increase their profitability.

4.3.4. Financial Ratios

Table 23 compares the financial performance between Canada and U.S. from 1990 to 2003. An average performance for this period (1990-2003) showed the following differences :

- a. Higher debt structure ratio in Canada (0.19) than in U.S. (0.19) ;
- b. Higher debt to assets ratio in Canada (16%) than in U.S. (14.9%) ;
- c. Higher debt to equity ratio in Canada (19.1%) than in U.S. (17.6%) ;
- d. Lower equity ratio in Canada (84%) than in U.S. (85,1%) ;
- e. Lower Interest* coverage ratio in Canada (2.78) than in U.S.

* Do not capitalize the Interest.

The financial performance of the farm sector in the U.S. is superior than in Canada.

Table 23 : Farm financial ratios between Canada and U.S., 1981-2003

																average year
At December 31	unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1990-2003
Canada																
a. Debt structure (CL/TL)	ratio	0.19	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.18	0.20	0.21	0.22	0.21	0.21	0.19
b. Debt (TL/TA)	%	16.0	15.8	15.5	14.7	14.3	14.1	14.2	15.1	15.9	16.3	16.9	17.4	18.1	19.4	16.0
c. Leverage (TL/E)	%	19.0	18.8	18.4	17.2	16.7	16.4	16.6	17.7	18.9	19.5	20.3	21.0	22.1	24.0	19.1
d. Equity (E/TA)	%	84.0	84.2	84.5	85.3	85.7	85.9	85.8	84.9	84.1	83.7	83.1	82.6	81.9	80.6	84.0
e. Interest coverage ((NIBT+I)/I)	ratio	3.06	2.37	2.75	3.54	3.15	3.07	3.61	2.53	2.55	2.53	2.42	2.56	2.11	2.69	2.78
United States																
a. Debt servicing Ratio	ratio	0.15	0.15	0.14	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.15	0.15
b. Debt to assets	%	15.6	15.6	15.2	14.8	14.9	14.8	14.8	14.9	15.2	14.7	14.8	14.8	14.8	14.4	14.9
c. Debt to equity	%	18.5	18.5	17.9	17.3	17.5	17.4	17.4	17.5	17.9	17.3	17.3	17.4	17.4	16.8	17.6
d. Equity (E/TA)	%	84.4	84.4	84.8	85.2	85.1	85.2	85.2	85.1	84.8	85.3	85.2	85.2	85.2	85.6	85.1
e. Interest to gross cash farm income	ratio	6.98	6.38	5.78	5.30	5.75	6.00	5.90	5.69	5.97	5.99	6.30	5.62	5.69	5.25	5.90

Sources : Economic Research Service/USDA. Data Farm Balance Sheet : Table 1 and 2 - Farm sector financial ratios.
 Statistics Canada, Balance sheet of the agricultural sector, 1981-2003. November 2004. Catalogue No. 21-016-XIE.

Table 23 : Comparison of Farm expenses between Canada and U.S., 1980 to 2003

This table could be add on request.

5.0. Findings and Conclusions

The findings and conclusions are organized into three general categories that address data and concepts, performance, and use of farm income concepts.

5.1. Concepts, Data Sources, and Measurement Procedures

The overall conclusion of this section is that there are only limited differences in critical concepts, data sources, and measurement procedures between Canada and the U.S. Most farm income components and measurement procedures are treated in a similar fashion, even though some concepts are not reported with the same title, and different procedures are used to arrive at essentially the same final measurement (i. e. reporting some concepts on a net basis compared to reporting both the gross receipts and expenses to derive a net basis). There are a few exceptions, but most cases where differences were expected were shown after careful analysis to generate similar end results. The exceptions and cases reviewed in detail are summarized below.

- The definition of a farm differs slightly between Canada and the U.S., with Canada including all farms with farm sales and the U.S. including only farms with more than \$1,000 in sales. The share of small farms (under \$25,000 in sales) is significantly higher in the U.S., however, so the difference in cutoffs in sales likely has a minimal effect in the overall aggregate numbers.
- Inclusion in the U.S. income numbers of a) payments made to the farm operator for hired farm work, and b) imputed house rents that are excluded in Canada were identified as the two areas of significant difference in income calculations between the two countries. Adjusting (deducting) these values from the aggregate U.S. farm income numbers reduces U.S. aggregate farm income by about 12 to 15 % since 1984 when the current procedure for measuring imputed house rents at a lower value than 1983 and earlier was instituted.
- Custom work is reported differently in Canada and the U.S., but the effect on the bottom line is similar. In Canada, custom work is reported only on a net basis as an expense, since Canadian farmers hire custom work from off farm sources as well as from farmers. U.S. custom work is included in “other farm income” and is incorporated both as part of other farm income revenue and as part of operating expenses to generate a final net effect.
- Depreciation is based in both Canada and the U.S. on current (replacement) values, actual economic life of the asset, and the declining balance method of calculation. This may result in slightly higher levels of depreciation than if book values (original purchase cost) were used, but comparisons with tax-filer records where book value is used show only a 9 % greater level of depreciation in the aggregate accounts and similar yearly rates of change in recent years, despite greater coverage of farm activity under the aggregate income measurements than found in the tax-filer data.
- Direct payments are reported in a similar fashion in both Canada and the U.S. and exclude market induced benefits of price supports and tariffs, etc., that affect prices for such sectors as supply management in Canada and BSE protected cattle in the U.S.

- Market revenue is not an official concept but is calculated here as the portion of income derived through sales rather than government payments. It should be noted that market revenue can be influenced by government involvement other than direct payments.
- Balance sheet data are available to show the impact of resources used for farm business activity (excluding the personal use portion of farm homes and vehicles) in order to make comparable Canadian and U.S. assessments. Statistics Canada farm balance sheets include quota, whereas the Statistics Canada series on the value of farm capital does not.
- There are four sets of farm balance sheets calculated by Statistics Canada which alternatively include and exclude resources provided by non-farm landlords and include and exclude the personal use portion of farm homes and vehicles. By excluding the assets held by non-farm landlords, the current market value of farm business assets (also excluding the personal use portion) decreases from \$226 B to \$180 B, and equity from \$182.5 B to \$139 B.
- The statistical procedures used by Statistics Canada for the various farm income concepts, farm balance sheets, and value added accounts, etc., are all internally consistent and utilize the same data sources and basic statistics. The concepts may differ according to definition and what is included in the measurement, but the overall data are still consistent.

5.2 Farm Performance

- Generally the U.S. has performed much better than Canada in recent years with a doubling of aggregate farm incomes since 1984 compared to stagnant aggregate incomes in Canada.
- Government payments have represented a higher percentage of both cash receipts and net farm income in Canada than in the U.S. As a percentage of cash receipts, government payments represented 10.2 % of cash receipts for Canada compared to 6.3 % for the U. . from 1980 to 2003, and 8.5 % compared to 7.5 % from 1996 to 2003. Based on adjusted net farm income values, government payments in Canada exceeded incomes by 12.2 % over the 1997 to 2003 period, while government payments only represented 37.9 % for the U.S.
- Aggregate debt (excluding the personal use portion) over the 1981 to 2003 period increased by 172 % in Canada compared to only 11.6 % in the U.S. It would appear that Canadian farmers have responded to the declining Canadian dollar up until 2003 by capitalizing the higher Canadian dollar prices of internationally traded products into higher land prices, with huge increases in land values. The result of increasing debts and stagnant incomes has been increasing debt-to-income ratios for Canada. After adjustments to income to deduct imputed house rents and paid operator wages, and to debt to deduct the personal use portion, the debt-to-income ratio over the 1997 to 2003 period averaged 18.1:1 for Canada, compared to only 3.7:1 for the U. S. This means that Canadian farmers are about 4 times more vulnerable to rising interest rates than U.S. farmers.

- The return on capital and farm equity in Canada is falling and much lower than in the U.S. Revised equity-to-income ratios (as a crude price earnings measurement) averaged 80.4:1 over 1997 to 2003 for Canada compared to 24.3:1 for the U.S. Return on equity (including the farm labour portion of income as a return to equity) correspondingly averaged 1.24 % for Canada compared to 4.12 % for the U.S.
- The explanation of poorer performance in Canada compared to the U.S, appears to be from growth in Canadian farm expenses at a faster rate than farm receipts, compared to the opposite result in the U. S. The faster growth of expenses over receipts in Canada has not been due to increasing interest payments, however, as total interest payments were \$2,510 million in 1981 compared to \$2,374 million in 2003, primarily because of declining interest rates over the last two decades. Since 1981, the biggest increases have been in twine, wire and containers (492%), custom work (469%), telephone (384%), commercial seed (376%), cash wages (348%), pesticides (341%), crop and hail insurance (319%), business insurance (310%), and heating fuel (310%). Big- ticket items like fertilizer and lime (233%), commercial feed (229%), livestock purchases (220%), machinery repairs (198%), and machinery fuel (147%) also have been significant.
- It also should be recognized that although net government payments represent a higher percentage of both gross receipts and cash income in Canada than in the U.S., the U.S. has provided more overall support for their agriculture sector than Canada. Over the 1998-2003 period the OECD Total Support Measure for the U.S. averaged \$95.2 billion per year, or 50% of the value of production. In Canada, the TSE measure averaged \$8.5 billion per year, or 28% of production. For Canada, the PSE measure averaged 20.5% of production per year, compared to 25.1% for the U.S. For the PSE measure, Canada had a slightly higher % of production from market price support measures (10.5% compared to 9.6%) but the U.S. had higher support for payments based on output, input use, and historical entitlements. The U.S. also spent nearly double the percentage of production on General Services Support (GSSE) than Canada, at 13.2% compared to Canada's 7.2%. The biggest differences in the GSSE measure was for marketing and promotion, where the U.S. spent 8.5% of production compared to 1.8% for Canada.

5.3 Use of Farm Income and Financial Concepts

- We conclude that the aggregate farm income measure is the best farm income measure available and obtainable with reasonable costs, and is a defensible measure of returns to farm operators across Canada and for comparisons with the U.S. Tax-filer data represent an alternative source of measurement, but problems of underreporting by smaller farms and difficulties in appropriately identifying farm components of revenue and expenses in large, multi-unit operations make tax-filer data less reliable and result in lower income figures.
- We also conclude that farm income data should be reported after deductions for depreciation expenses for both individual farms and the aggregate sector. Justification includes the following reasons:
 1. Excluding depreciation implies that depreciable assets are free.
 2. Company Earning Reports represent income after depreciation.

3. Cash income before depreciation does not just represent income to live off of, but also must be used to maintain capital and fund payment of loan principal.
 4. EBITDA is most appropriate to comparing operating efficiency for firms with similar capital structures and is not as applicable to a complete sector like agriculture where farms have very different capital structures.
 5. Farming is one of the most capital-intensive industries in Canada. The general public is not aware that depreciation represents about 2/3 of pre-depreciation income.
- For many years we have had a number of concepts and ratios available for farmers to use—liquidity ratios, capital turnover ratios, current ratios, interest coverage, EBIT, EBITDA, etc.,--but these measures are still not widely understood or utilized by farmers. Some measures, such as return on equity (ROE), aren't even correct, as we measure ROE as farm income (which includes both the return to capital and the return to equity) divided by equity, instead of dividing just the capital return by equity. The important message here is that these measures have not been utilized effectively by farmers because they do not understand them. We have not done a good job of developing new measures that are more farmer friendly so that farmers will use them, instead of insisting that farmers incorporate complex measures into their business planning that most do not understand. For example, interest coverage is defined in the Canadian balance sheets as $\text{EBIT} + I$ (interest) divided by Interest. First, farmers don't understand EBIT, and then the interest coverage measurement isn't fully appropriate for many farmers because it doesn't include payment of principal. New farmer-friendly measures need to be developed so that farmers will more readily utilize appropriate financial planning tools.
 - Two recently developed farmer-friendly measures are introduced here to help communicate better with farmers. The first is the debt-to-income ratio, which represents the easily comprehended concept of the number of years of current net farm income that would be required to pay off the farmer's debt. The second measure is the equity-to-income ratio, which measures the investment relative to earnings in a price-earnings format rather than the traditional ROE to get farmers to focus more on the price of assets and thereby become more conscious of over-capitalization. Further farmer-friendly measures are also needed.

6.0. Reference list

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See table in Annex for more detailed about the references

- Farm Income Policy
- Glossary
- Briefings rooms in Farm Income Issues Related
- Data Base in Farm Income

Other references

7.0. Annex

It is in another Document.