

# Workshop: Farm Income Measures

## Current Farm Income Measures and Tools: Gaps and Issues

March 5<sup>th</sup> and 6<sup>th</sup>, 2007  
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Statistics Canada

# Outline

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- Evolution of Canadian Agriculture
- History of Farm Income Measures
- Concepts, Methods and Uses
- Data Quality Concerns and Conceptual Issues
- Where do we go from here?

# Evolution of Canadian Agriculture

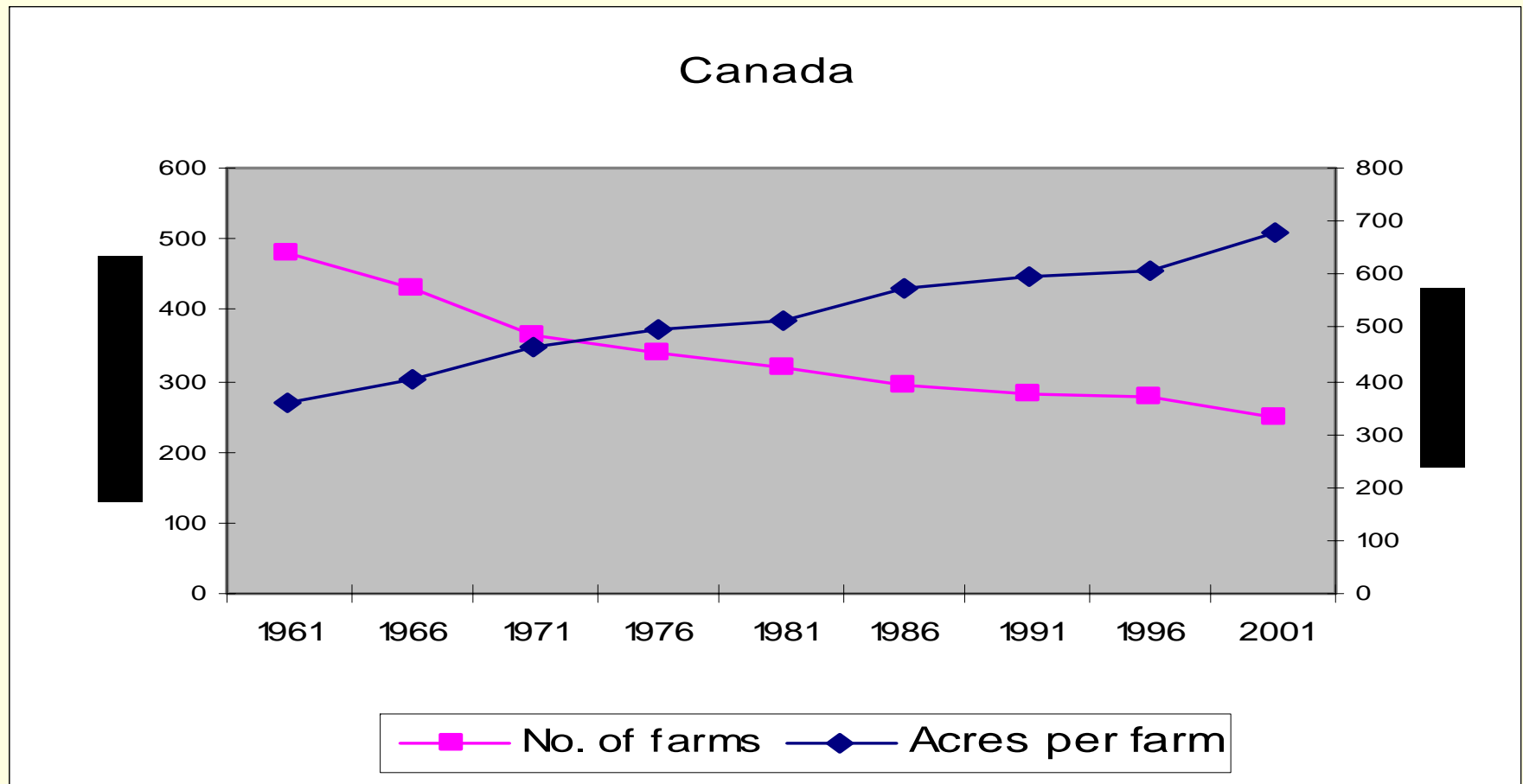
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## Farms

- Fewer
- Bigger
- More Complex
  - Integration
  - Contracts
- Labour → Capital

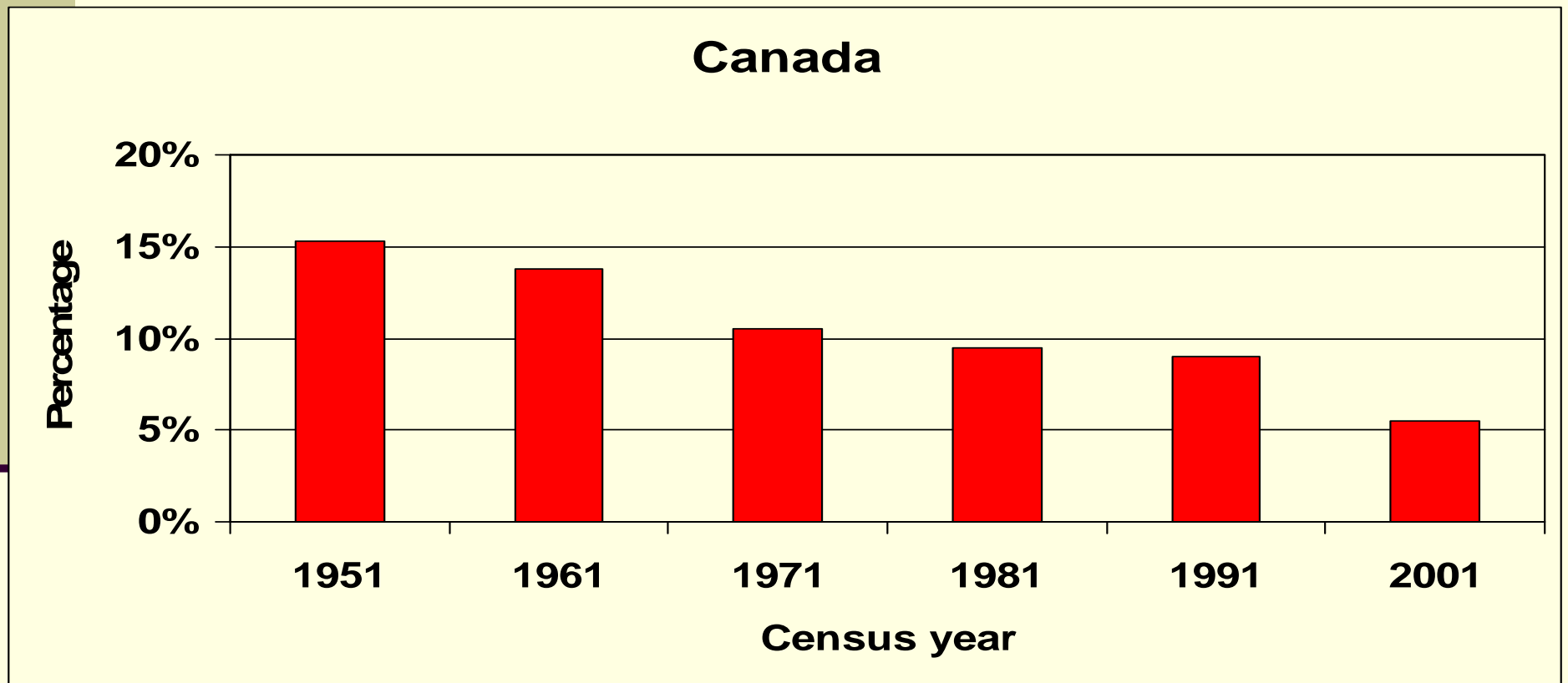
# Farm numbers and average farm size

*The trend towards fewer but larger farms continues...*



# Smallest percentage of farms needed to account for half of the agricultural sales

*...Sales becoming more concentrated in larger operations*



# History of Farm Income Measures

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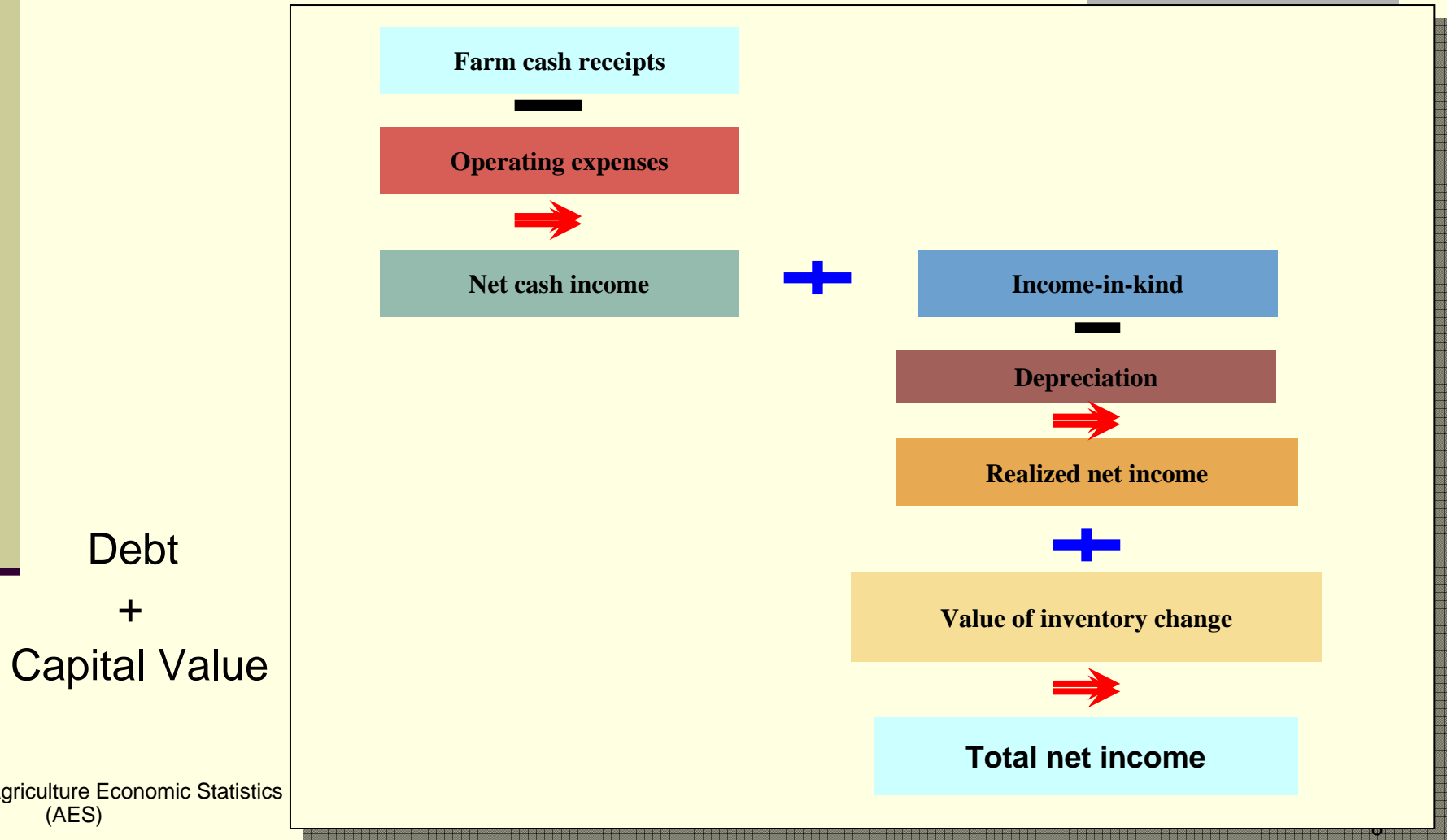
- Long history (1926)
- International Concepts
- System of National Accounts
- Good Indicator of Industry Health
- Changing Needs – Farm Level Data

# Agriculture Economic Statistics

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- Concepts
  - International SNA framework
  
- Methods
  - Survey, CEAG, Administrative (including tax)
  
- Uses
  - SNA
  - Government programs, legislation
  - International comparisons
  - Trade dispute resolutions
  - Producer organizations
  - Agri-business
  - Academia

# Aggregate Farm Income Measures





# Workshops in the 1980s

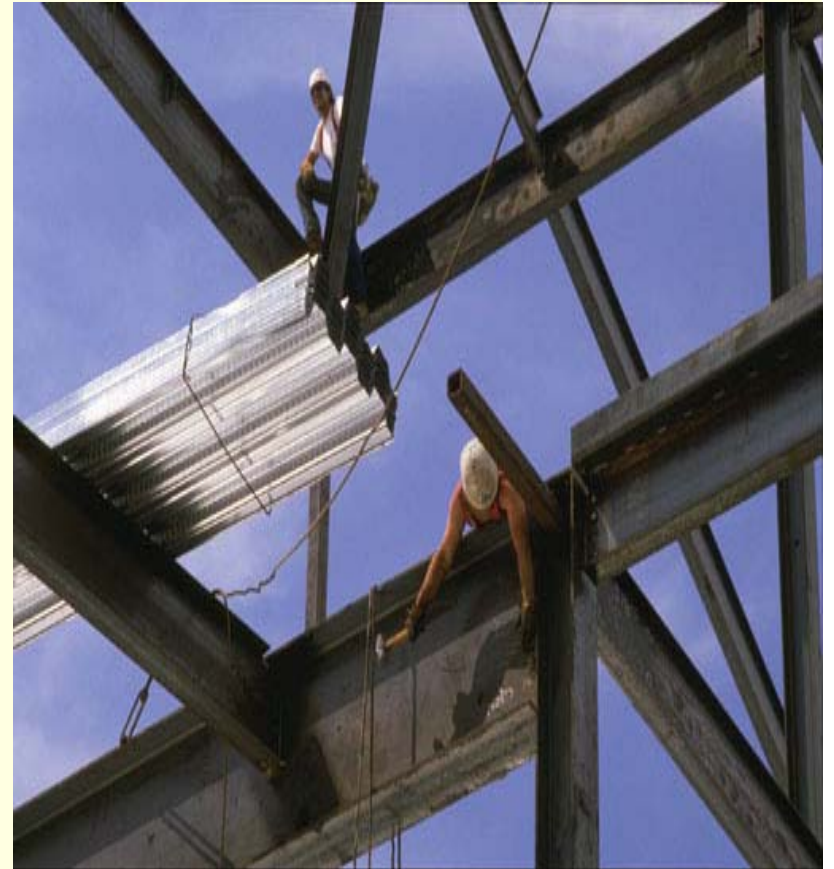
## *...Addressed the Changing Industry*

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- Traditional net income accounts developed in 30s & 40s
  - Concentration on research, production and marketing
  - Currently three measures of net income
    - Cash
    - Realized –agreed to focus on realized
    - Total
      - one indicator does not satisfy all
  
- Legacy...
  - Change in structure displays limitations
    - Farm wages to family
    - Corporations
    - Off-farm income
      - Need for other indicators due to change

# Integrated Accounts

- 6 accounts in total
- 3 developed
  - Value-added
  - Balance sheet
    - multiple versions if required
  - Cash flow
- 3 not developed
  - Capital flow
  - Farm capital value
  - Total income of farm operators

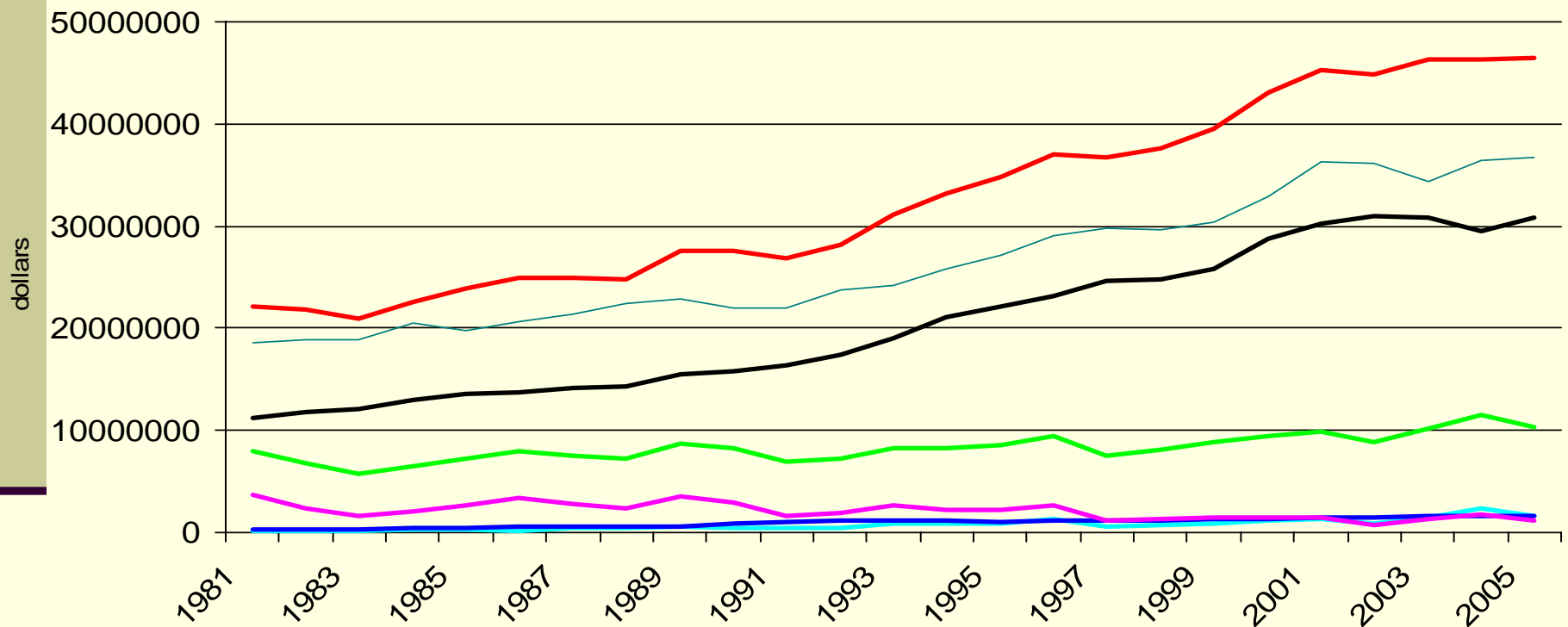


# Value-Added

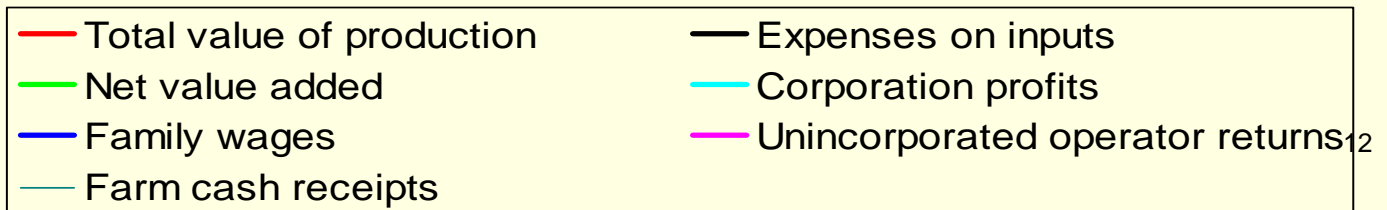
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- Designed to display sources of economic production
- Distributes the income earned to the factors of production
  - Labour and capital
- Economically sound, consistent with National Accounting principles

# Value Added Adds Perspective...



\*AES



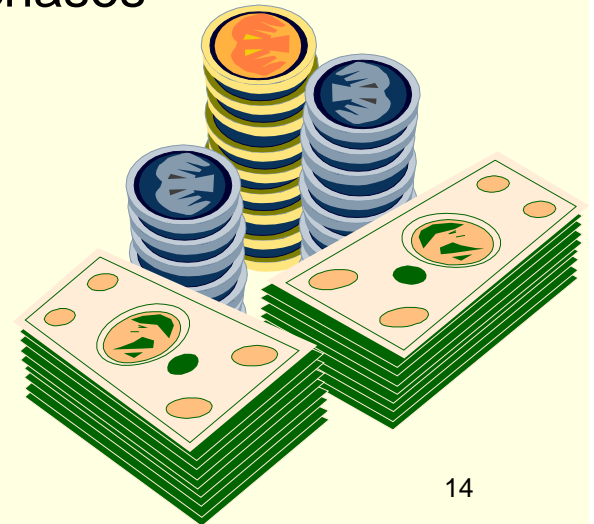
# Canadian Farm Balance Sheets

*Designed to display...*

- **Assets** – current assets, livestock and quota, machinery and real estate
- **Liabilities** – current and long-term basis
- **Equity**
- **Ratios** – some linked to value-added
  - Liquidity – Current, acid test, debt structure
  - Solvency – Leverage, equity, debt
  - Profitability –Capital turnover, return on assets, return on equity
  - Financial efficiency –Interest coverage

# Cash Flow Accounts

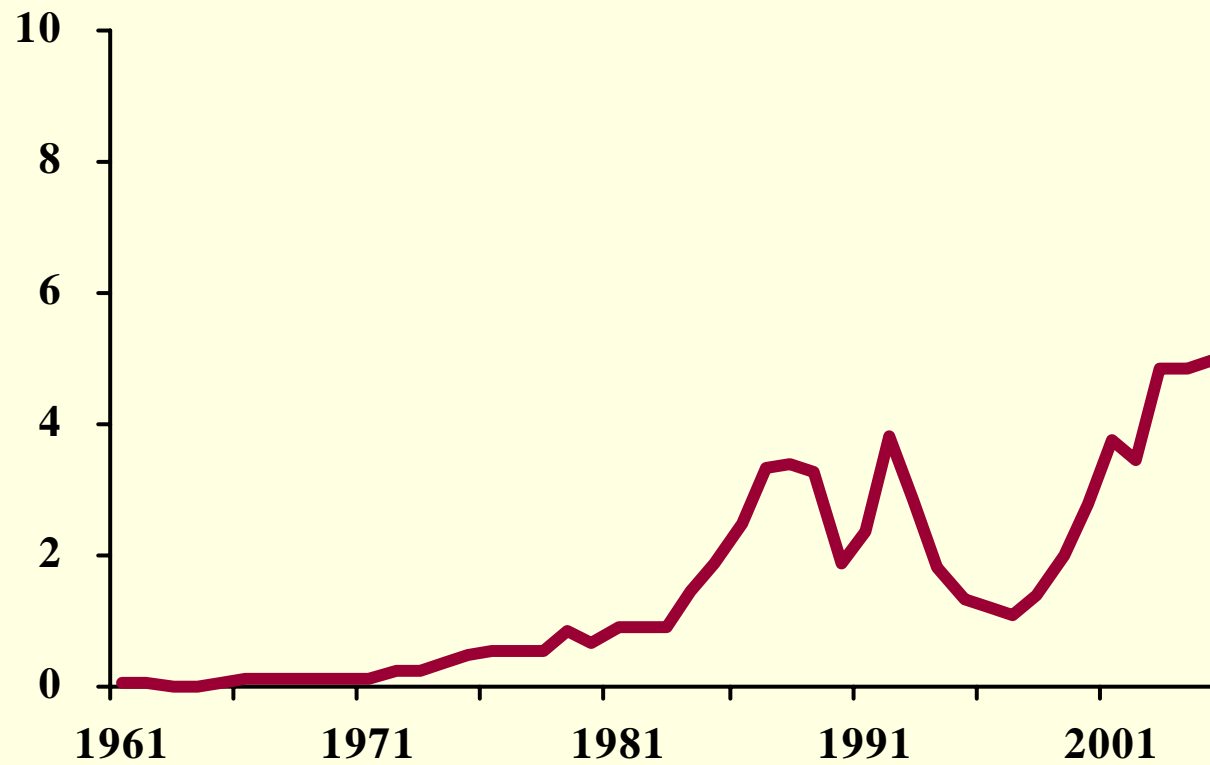
- Summarizes cash flows in and out of farm businesses
- Provincial and calendar year
- From transactions -cash sources and cash uses
- Accounts for change in debt and capital purchases
- Derives cash income and cash available



# Direct Government Payments in Canada - 1961-2005

*Increasing Government Expenditures Resulted In the Need for More Micro-Level data*

Billions  
of dollars



# Whole Farm Data

## *Responded to Demand*

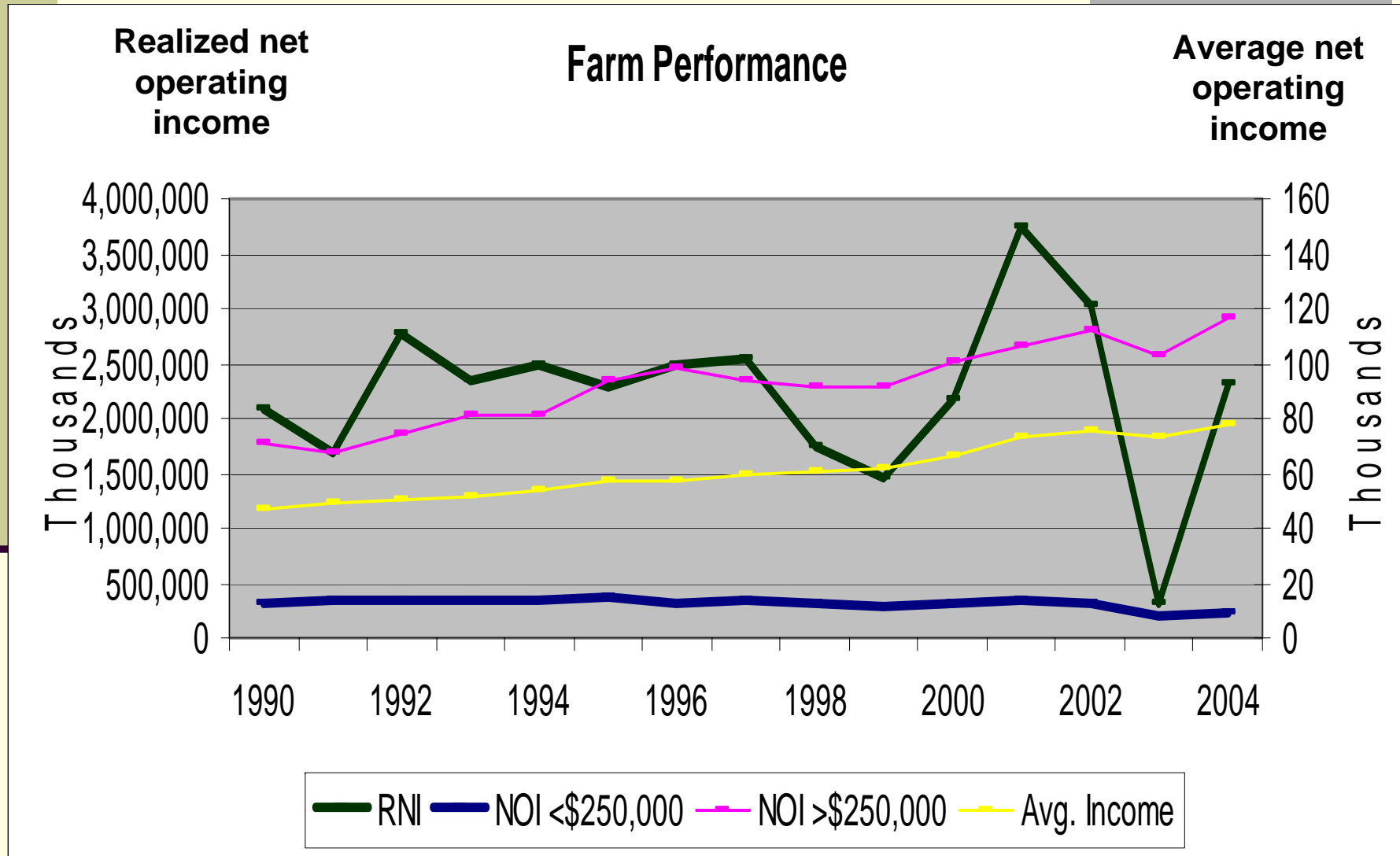
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- Demand for Farm Level Data
  - Type of farm, Size of farm
  - Threshold (\$10, 000)
- Methods
  - CAIS/TDP
  - Off-farm Income
  - Farm Financial Survey
- Uses
  - Policy analysis, Industry performance, Structure and Program development, and Evaluation
  - Typologies



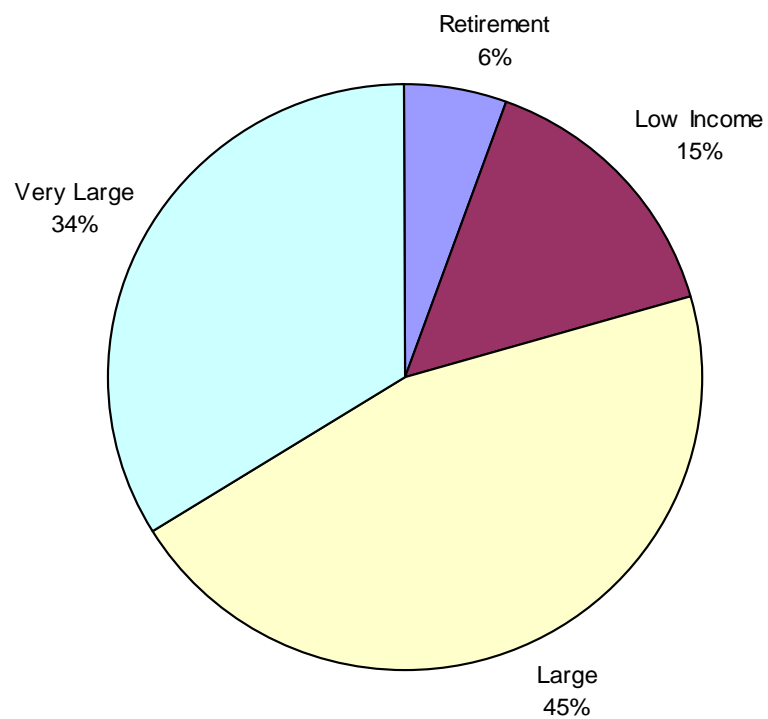
# Farm Performance

## *Aggregate, Farm Family Income*

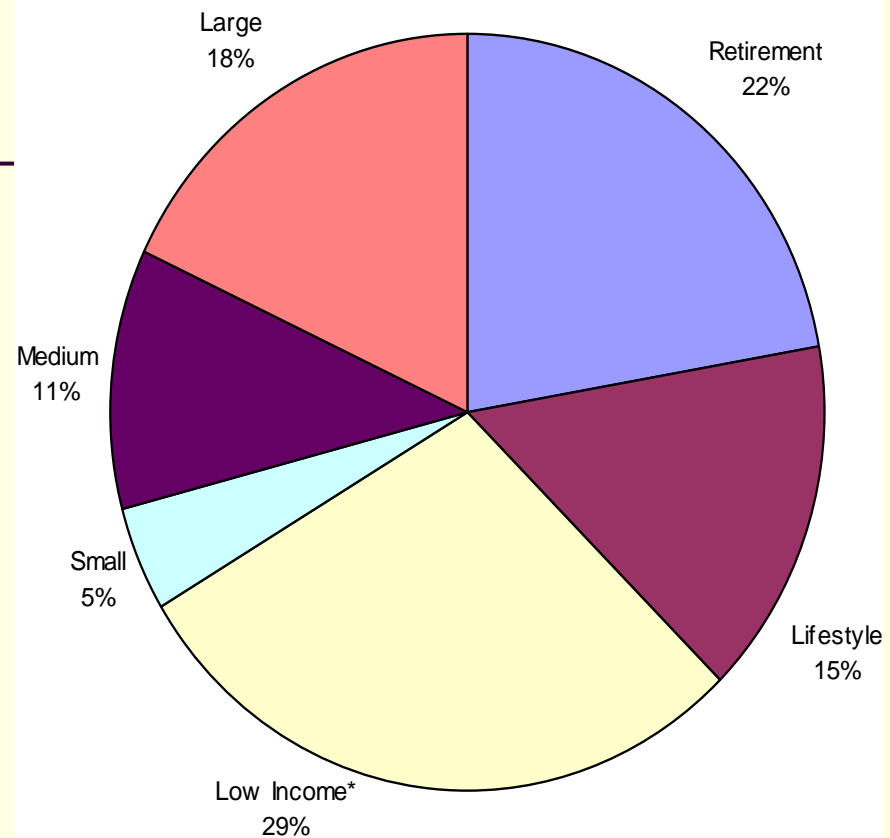


# Farm Typology

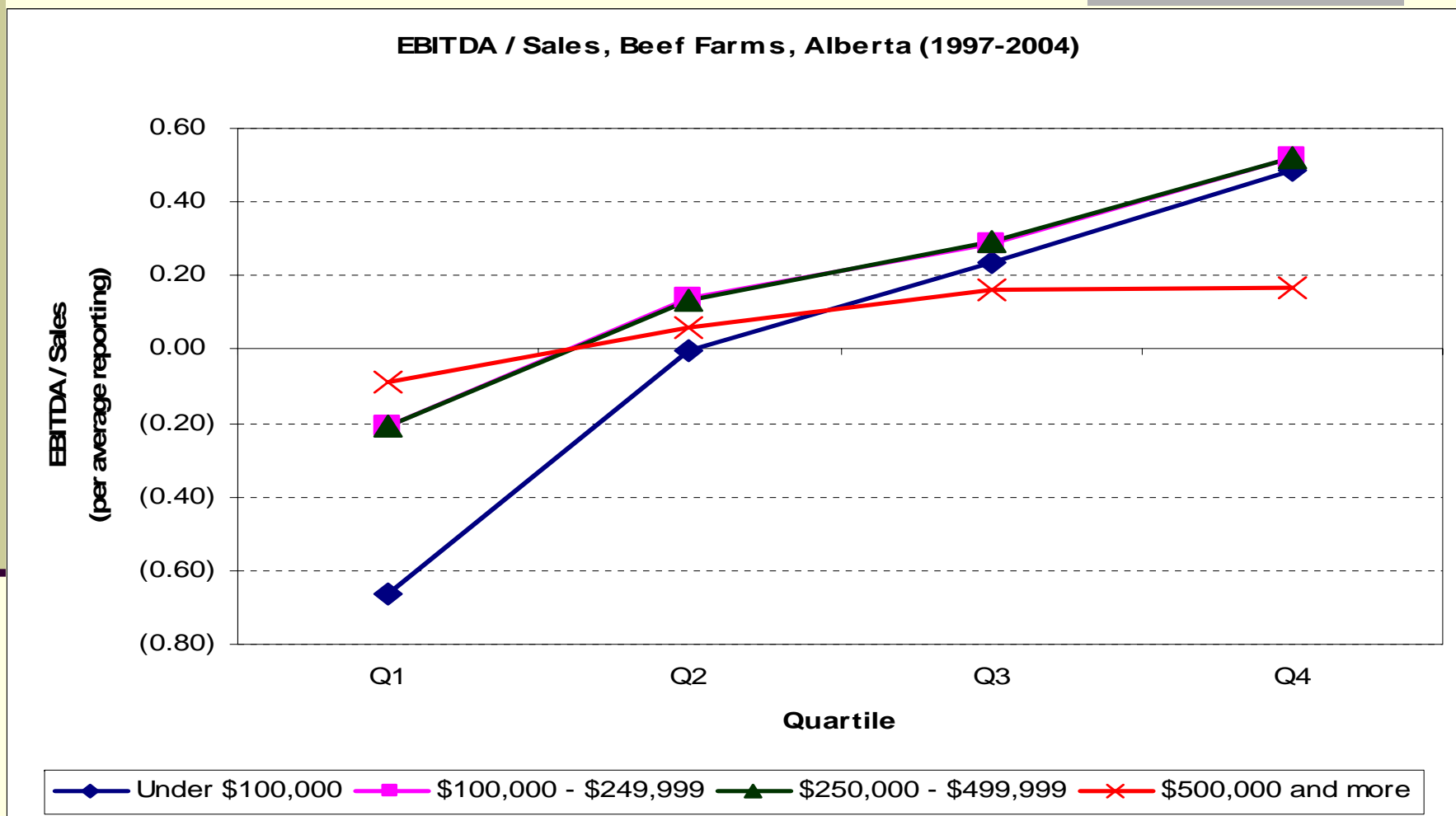
\$250,000 and over



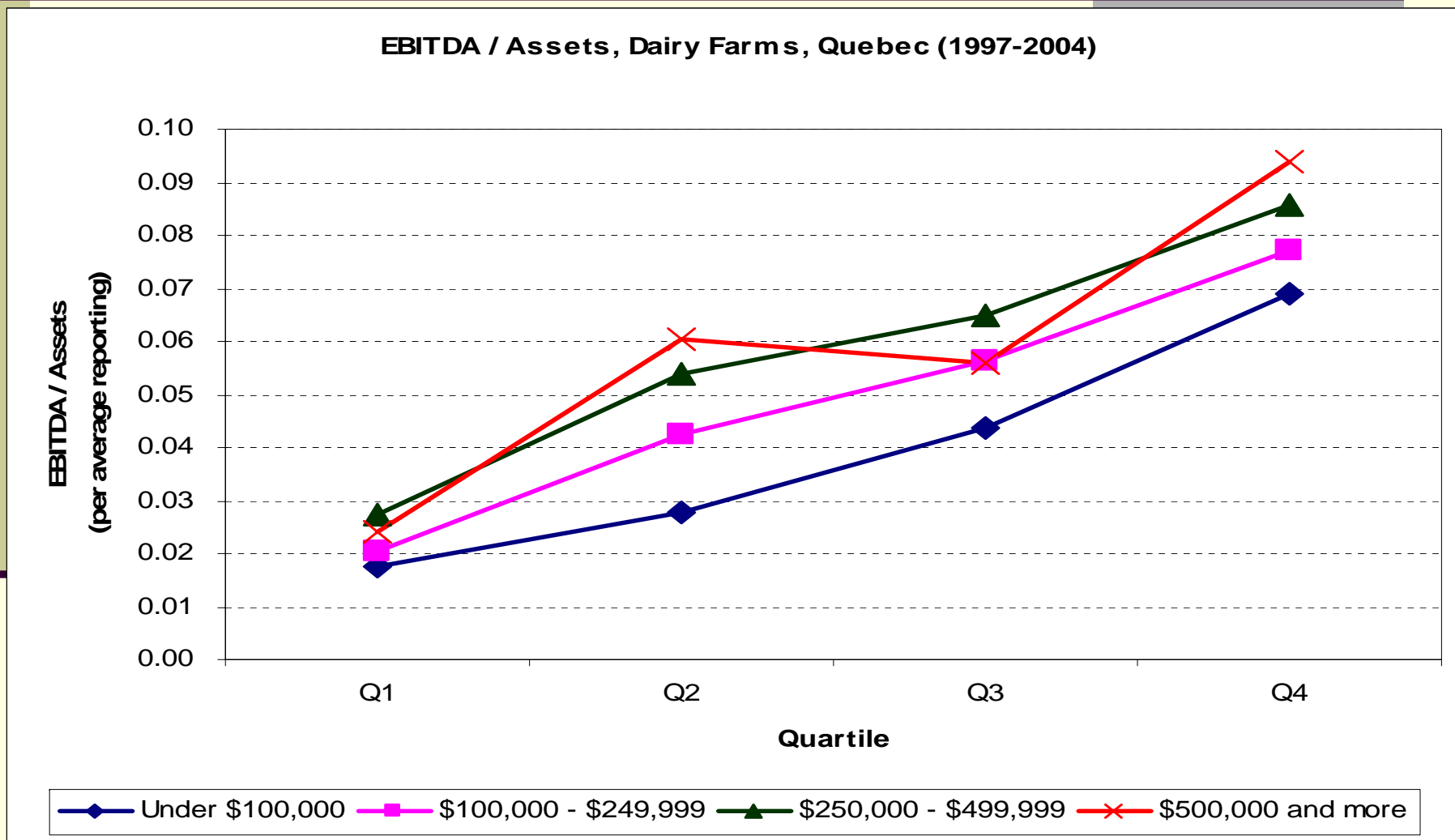
\$10,000 - \$249,999



# Earnings Before Interest, Taxes, Depreciation and Amortization



# Earnings Before Interest, Taxes, Depreciation and Amortization



# Other Farm Income

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- CEAG
- SNA
  - Income and Expenditure Accounts
  - GDP by Industry
  - Input-Output Accounts
- Longitudinal Administrative Data
- Farm Income Forecast
- Micro Simulation Model
- Benchmark Farms

# Data Quality Concerns and Conceptual Issues

*...have developed as the industry has changed....*

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- General Data Quality Concerns
  - Rapidly Changing Structure
- General Conceptual Issues
  - Coherence
  - Small Farms

# Issues – Small Farm Bias

## Receipts, Expenses and Net Cash Income by Sales Class, 2000

(\$ million)

<u>Sales Class</u>	<u>Sales</u>	<u>Expenses</u>	<u>Net Cash Income</u>
<b>&lt;10,000</b>	<b>235</b>	<b>627</b>	<b>(392)</b>
<b>10,000 - 24,999</b>	<b>692</b>	<b>897</b>	<b>(204)</b>
25,000 - 49,999	1,230	1,237	(6)
50,000 - 99,999	2,536	2,229	307
100,000 - 249,000	7,571	6,132	1,439
250,000 - 499,999	7,360	5,929	1,431
500,000 +	18,791	16,163	2,628
Total	38,416	33,213	5,203

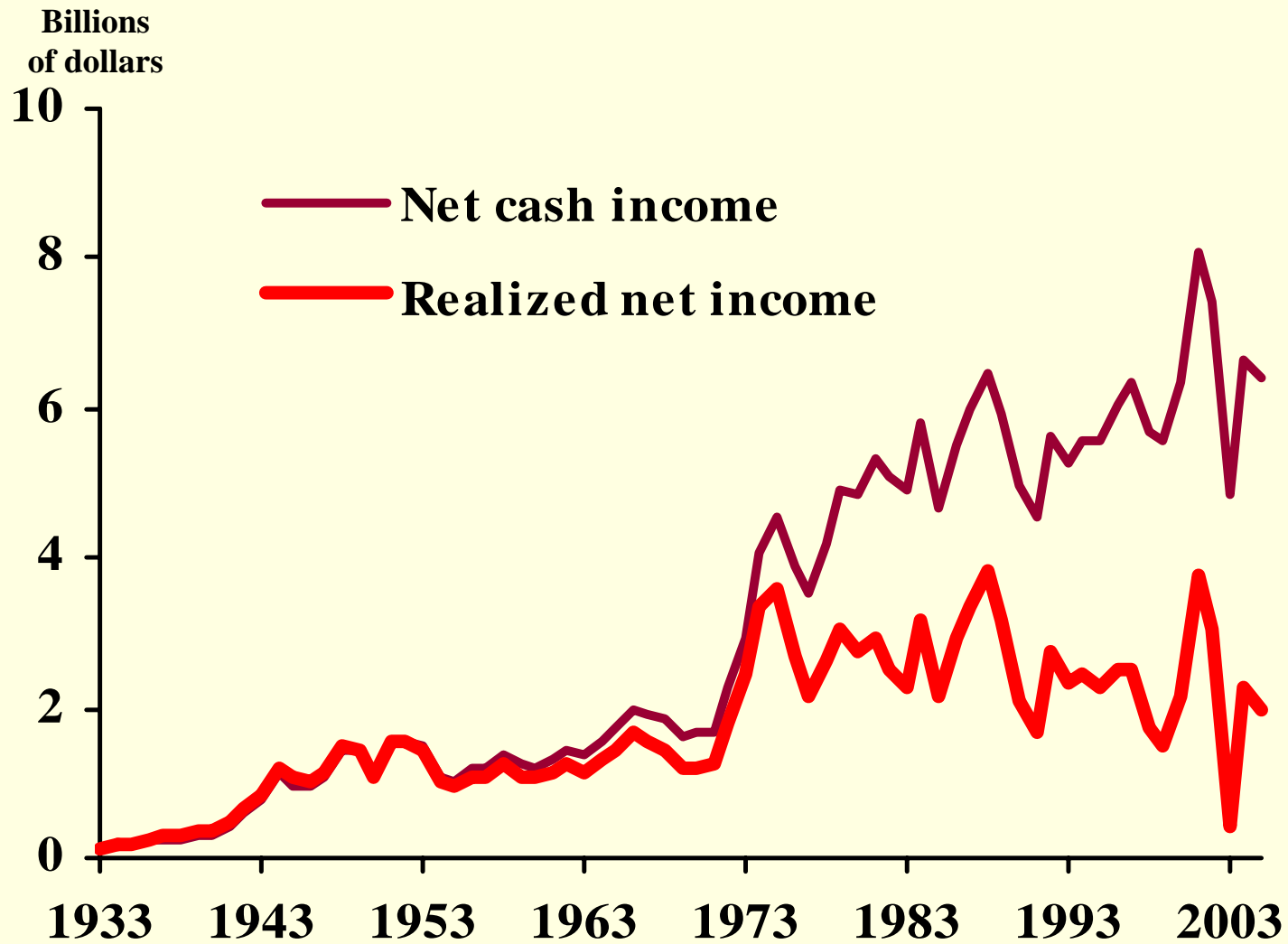
# Aggregate Data

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- Data Quality Concerns
  - Loss of Administrative Data
  - Depreciation
  - Residual Net Income
- Conceptual Issues
  - Family Wages



## Net Cash Income and Realized Net Income in Canada 1933-2005



# Residual

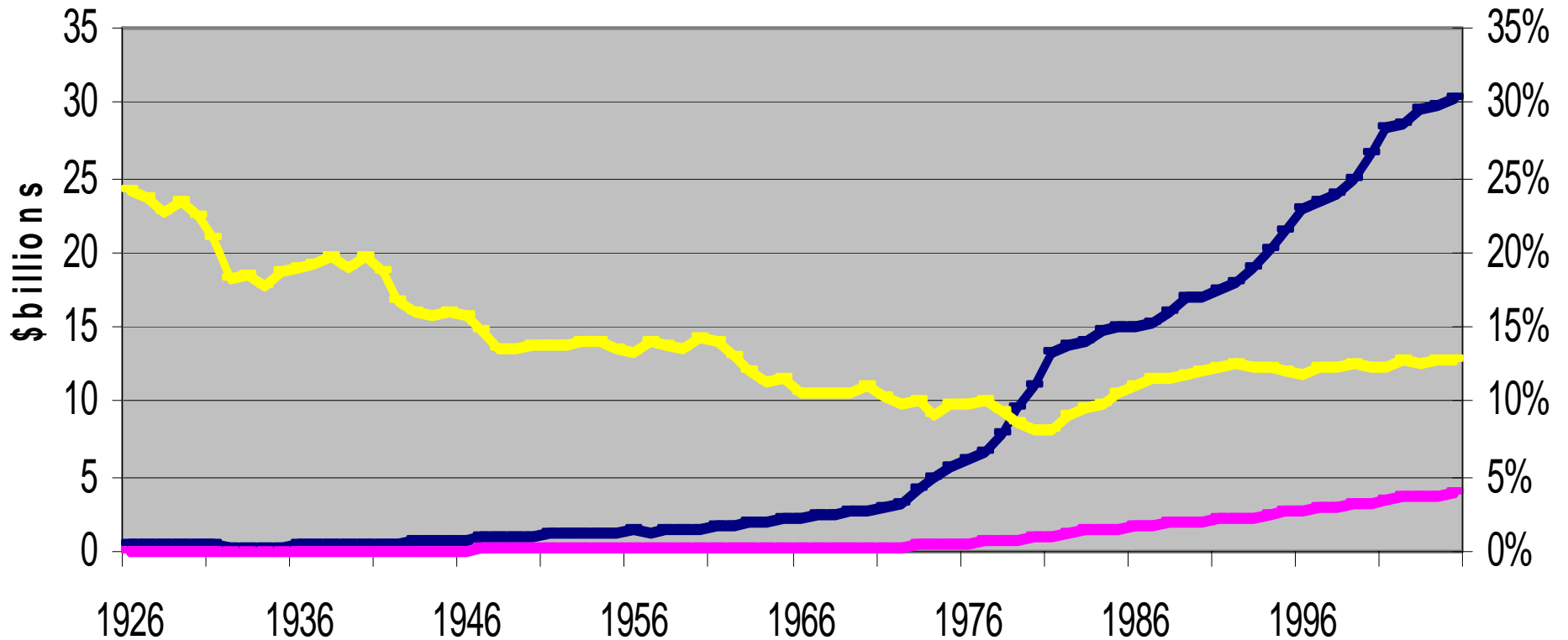
Example of Impact of Cash Receipts Revision on Income Measures

Item	Estimate	Revised estimate	Revision
	million \$	million \$	%
Cash receipts	30,000	30,300	+ 1.0
- Expenses	24,000	24,000	
= Net cash income	6,000	6,300	+ 5.0
+ Income-in-kind	155	155	
- Depreciation	3,700	3,700	
= Realized net income	2,455	2,755	+ 12.2
Value of inventory change (VIC)	+ 200	+ 200	
= Total net income	2,655	2,955	+ 11.3

# Cash Wages vs Operating Expenses

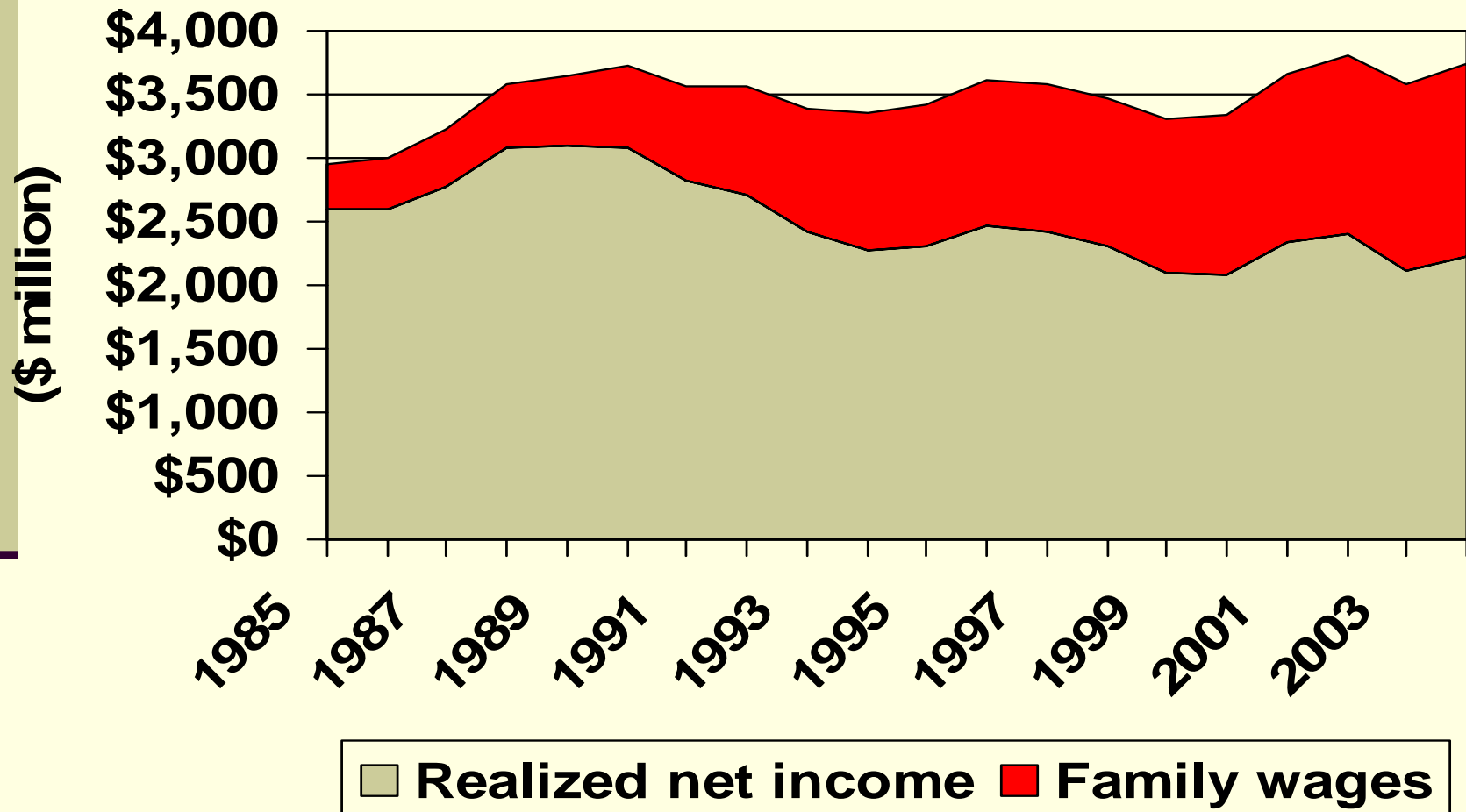
Operating expenses

Cash wages to operating expenses

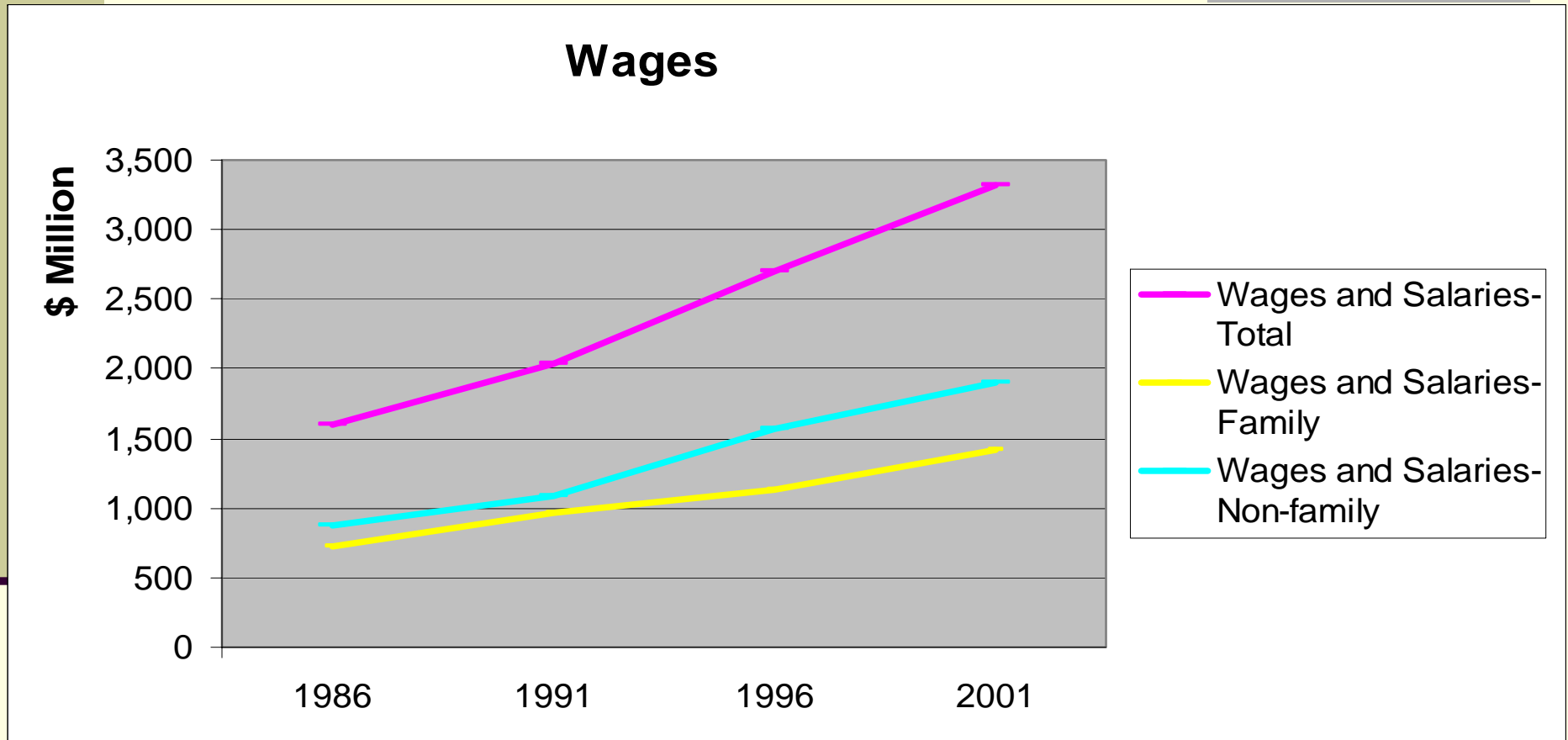


- Total Operating Expenses after Rebates
- Cash Wages & Room & Board (After Rebates)
- % of Cash Wages to Operating Expenses

# Five-year Moving Average RNI and Family Wages



# Census : Family Wages



# Farm Level Data

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- Data Quality Concerns
  - Sampling and Non-Sampling issues
  - Increase in Electronic Reporting (Tax)
  - Respondent Burden (FFS)
  - Collection Costs (FFS)
  
- Conceptual Issues
  - Timing
  - Coherence Among Sources

# Staggered Release Dates

*...Media Focus on Aggregate Net Income*

Date Released	Reference Period (p=prelim.; r=revised)	Data series
May 25, 2005	2004p	Net Farm Income, Farm Debt, Capital Value (AES)
June 15, 2005	2004p	Balance sheet, Cash flow statement, Value added account (AES)
November 25, 2005	2005r	Net Farm Income, Farm Debt, Capital Value (AES)
December 2, 2005	2004p	Farm Operating revenues and expenses (WFDB)
December 8, 2005	2003	Total income of farm families (WFDB)
December 9, 2005	2004	Farm Financial Survey (FFS)
January 18, 2006	2004r	Balance sheet, Cash flow statement, Value added account (AES)
March 14, 2006	2004r	Farm Operating revenues and expenses (WFDB)

WFDB = Whole Farm Database

AES = Agriculture Economic Statistics

FFS = Farm Financial Survey

# Farm Income Media Focus

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Farm income measures are a key element of agricultural policy in Canada. The focus on aggregate farm income measures in the media portrayed the agricultural sector in Canada as one in crisis

“The next generation of federal agricultural and agri-food policy framework will need to address dwindling farm incomes if Canada hopes to stem the death of farm operations in Canada”  
Moncton Times 2007.02.2007

“The nose dive in the provincial farm economy continues despite a rise in optimism fueled by a sharp jump in grain and oilseed prices over the last few months” Ontario Farmer  
2007.02.13

“Another predictable drop in farm income underscores the need to quickly implement a new aid package for farmers, said Paul Mistele, vice president of Ontario Federation of Agriculture”  
London Free Press 2006.11.25



# Media Coverage

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- Issues related to farm income dominate media coverage for agriculture.
- Canadian Media Coverage last 3 months

## Searches:

- Farm Income-----166 articles
- Farm Policy-----90 articles
- Agricultural Trade-----58 articles
- Farm Renewal-----2 articles
- Farm Family Income--1 article

# Next Steps

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- Conclusions, wrap-up....
  - Wealth of information
  - Evolving Agriculture → Evolving Measures
  - Going Forward → Farm Income and Performance Measures to accurately reflect industry change and user needs.

# Moving Forward...

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**Different Users → Different Uses : How can we improve?**

- *What complementary indicators can we publish to provide a more complete picture of the industry?*
- *Do we need to integrate information releases to clarify coherence?*
- *Do we need to report on the different dimensions of Agriculture separately;*
  - *Commercial?*
  - *Social/Family/Rural?*