Next Generation
of Agriculture and
Agri-Food Policy

Economic Backgrounder:
Changing trends in
the agri-food chain

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The Next Generation of Agriculture and Agri-Food Policy – A Federal, Provincial, and Territorial Initiative

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10% post-consumer content

Changing trends
in the agri-food chain

Key messages

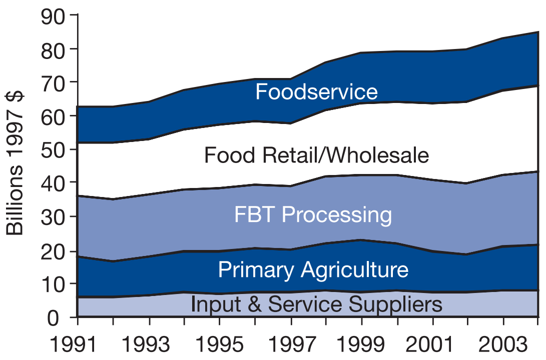
- The food processing and retailing sectors are important players in the Canadian economy.
- Globalization and technical change have led to continuous structural adjustments in the sector.
- The sector, through restructuring and innovation and by becoming more responsive to changing consumer and market demands, has managed to remain profitable and competitive.
- The future prosperity and competitiveness of the agri-food sector will depend on the continuing ability to adjust to the changing global environment through investments in R&D and innovation, capital infrastructure and human skills.

The Agri-food sector is an important part of the Canadian economy

Food processing is the second largest manufacturing industry in Canada, accounting for 9.6% of total manufacturing GDP. It also accounts for 1.7% of total GDP and employment. The food retail and wholesale sub-sector is also a significant part of the agri-food sector and the economy, accounting for 2.4% of total GDP and 3.6% of employment.

All components of the agri-food chain have been growing, but down-stream segments have been growing more quickly. For example, between 1991 and 2004, food processing grew at an average annual rate of 1.8%, compared to 3.7% for food retailing/wholesaling, 3% for food service and 1.2% for primary agriculture.

Figure 1: The Agriculture and agri-food system's contribution to GDP, 1991-2004



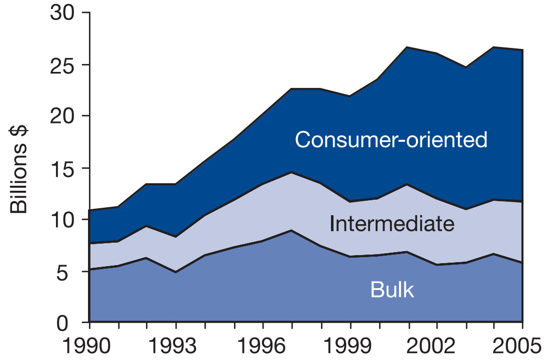
Source: Statistics Canada and AAFC calculations.

Growth in the agri-food sector is vital for the Canadian economy and has contributed to the growth in the agriculture and agri-food supply chain. For every dollar of GDP created in food processing, another $1.8 of GDP is created in the economy. Similarly, for every job created in food processing, another 2.4 jobs are created in the economy. Growth in the agri-food chain is particularly important for the primary sector since 43% of agricultural production is utilized by the food processing industry.

Exports continue to be critical for the agri-food sector

The food processing industry provides a value-added option for agricultural exports and has become increasingly export oriented. The growth in Canada's agri-food exports has been led by processed food exports, which have risen rapidly from $6 billion in 1992 to $18 billion in 2005.

Figure 2: Agriculture and agri-food exports sales, 1990-2005

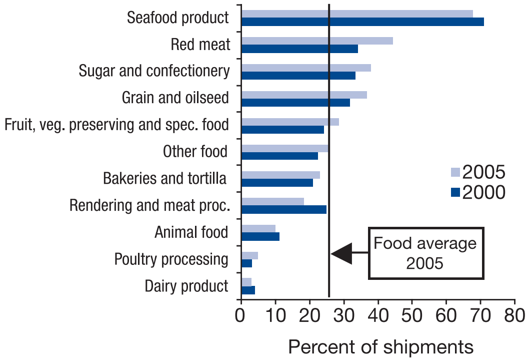


Source: Statistics Canada and AAFC calculations.

Canadian food processing exports represent about 25% of domestic production, compared to 6% for the US and 9% for G7 countries. Export orientation varies by industry. Some industries such as seafood processing produce primarily for export markets, while animal food is more domestically oriented.

Most of the Canadian food processing industries have increased their export intensities over time. The red meat industry, and in particular pork, is an example of an industry that has increased its exports significantly over time by improving its competitiveness.

Figure 3: Food manufacturing export intensities (2000 and 2005)



Source: Statistics Canada.

The U.S is the main market for Canadian agri-food products with 70% of food processing exports destined for the U.S. However, Japan is becoming an increasingly significant market for Canadian agri-food products, accounting for 10% of Canadian agri-food exports.

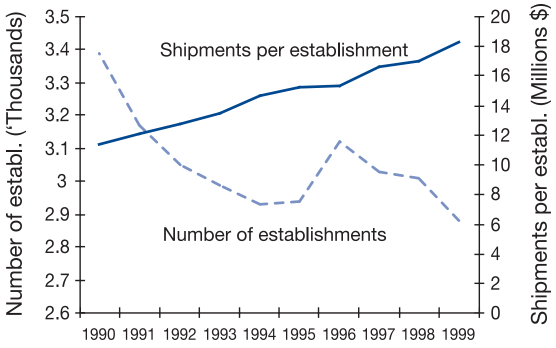
The challenge for the Canadian agri-food sector is to remain competitive in export markets by innovating, adapting and capitalizing on the opportunities stemming from the changing market and consumer demands.

The agri-food sector has undergone significant structural change

The agri-food sector has undergone structural changes and has become increasingly consolidated since the early 1990s in an effort to remain competitive in an increasingly globalized and integrated North American market.

As in primary agriculture, structural change and consolidation in the agri-food sector has led to fewer but larger-sized establishments.

Figure 4: Structure of the food processing sector (1990-1999)



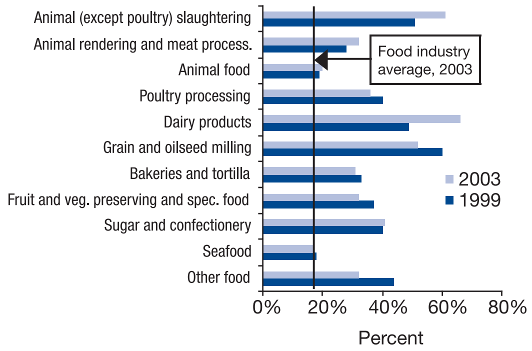
Note: Data has been adjusted to exclude retail bakeries.

Source: Statistics Canada.

In 1990, there were 3,700 food processing establishments in Canada with an average value of shipment of $12 million. By 1999, the number of establishments had declined to 3,100 while average shipment had increased to about $20 million. The largest 5% of food manufacturing establishments accounted for over 50% of sales in 2003 whereas the smallest 80% of establishments accounted for only 15% of sales.

Increased consolidation in food processing has not necessarily led to increased concentration across all food processing industries. For example, only meat, dairy processing, sugar and confectionery, and animal food reported increased market share for the top four firms between 1999 and 2003. In all other industries, the market share of the top four firms has declined.

Figure 5: Concentration ratio (CR4) in food processing

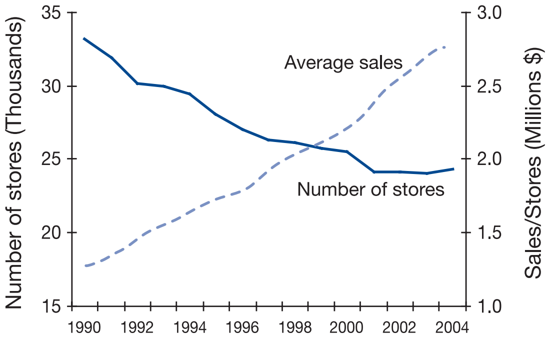


*This is a measure of the domestic output share of the top four firms.

Source: Statistics Canada.

The food retailing sub-sector has also seen an increase in consolidation and concentration. The number of food retail stores in Canada has declined from about 33,000 in 1990 to less than 24,000 in 2004, while the average sales per store more than doubled over the same period.

Figure 6: Number of Canadian food stores and average sales, 1990-2004



Source: Canadian Grocer, Statistics Canada and AAFC calculations.

The top five food retailers in Canada account for 60% of sales. While this share shows variation across regions, it remains lower than in some European countries. For example, the top five food retailers in Sweden account for almost 90% of sales.

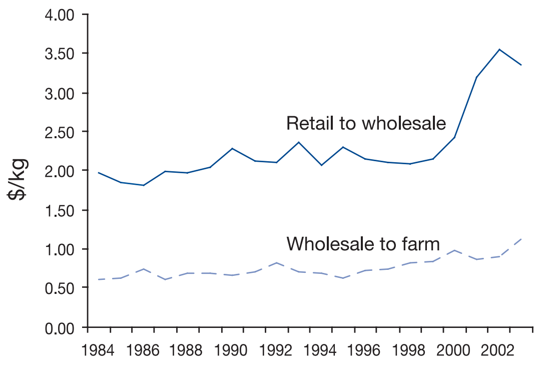
While the Canadian retail food sub-sector has become increasingly concentrated, there has also been a rise in competition from non-traditional retailers selling food such as drug stores, convenience stores and big box stores (e.g. Costco).

Increased concentration is often seen as an indicator of market power, which is cited as a cause of increased price spreads between the farm to wholesale to retail level. However, increased concentration does not necessarily mean significant price spreads.

Concentration in the food retail, processing and farm input sectors are not the only underlying cause of price spreads between farm and retail levels. Price spreads are influenced by a host of factors, such as demand and supply conditions, marketing costs and trade. The fact that many of the food processing industries face competition from imports makes it more difficult for them to exert market power even if they account for a significant share of domestic output.

There is no conclusive evidence of concentration leading to price spreads in the agri-food sector. There are cases where concentration and price spread move together and cases where they move in opposite directions. In the red meat processing industry, for example, the market share of the top four firms increased from 28% to 32% in Canada between 1999 and 2003. At the same time, wholesale to farm price spreads for beef products increased, in real terms, from around $0.8/kg in 1999 to about $0.94/kg in 2003. This may have been influenced by the border closure after Bovine Spongiform Encephalopathy (BSE) in May 2003.

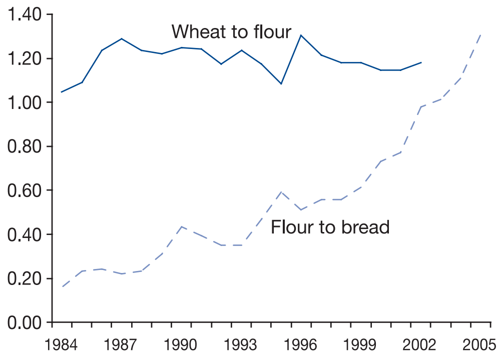
Figure 7: Real price spread for beef (1997 $)



Source: Statistics Canada and AAFC calculations.

On the other hand, in the case of grains and oilseed milling, the market share of the top four firms decreased from 60% to 52% in Canada between 1999 and 2003. At the same time, the trend in price spreads, between wheat and flour had remained relatively stable since the 1990s, while the price spread between flour and bread has increased due to the service component.

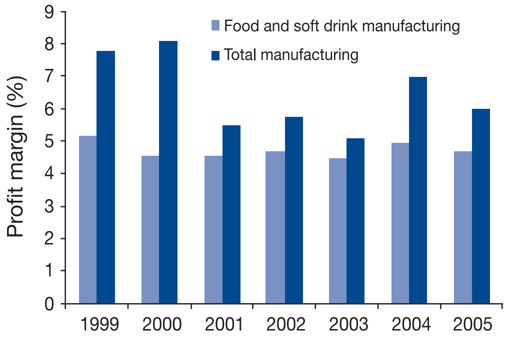
Figure 8: Real price spread for wheat (1997 $)



Source: Statistics Canada and AAFC.

Industry restructuring has allowed profit margins in food processing to remain relatively stable, but below total manufacturing.

Figure 9: Profit margins in food and total manufacturing



Note: Profit margins are measured by operating profits over operating revenues before taxes.

Source: Statistics Canada, Quarterly Survey of Financial Statistics for Enterprises.

Profitability varies by industry and decreased for most food manufacturing industries between 1999 and 2003. The dairy processing industry is the only major industry which recorded an increase in profit margins between 1999 and 2003. Fruits and vegetables saw a significant decline in profit margin from 9.8% in 1999 to 6.6% in 2003.

Profit margins for food retailing have also remained relatively stable at around 3% over the past five years but below those in food processing.

Profit margins are challenged by rising input costs. The cost of materials and supplies is the most important input cost in the food processing industry. On average, for every dollar of shipments, more than $0.65 is spent on materials and supplies, and of this amount, 53% is spent for inputs from primary agriculture. Cost of materials and supplies as a share of shipments increased for most food processing industries between 1999 and 2003.

Energy costs, which account for only 2% of the total cost of production, are increasing faster than all other components. This, in most part, is due to the increases in world oil prices, which increased by 140% between 2003 and 2006.

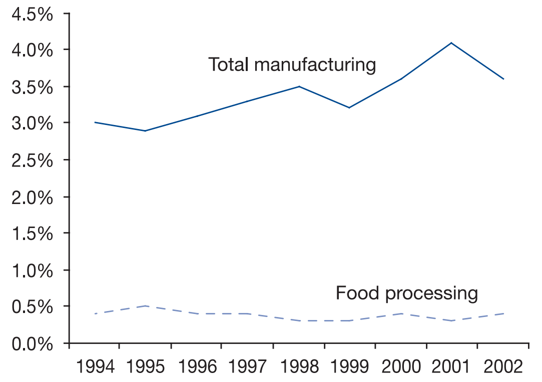
The cost of labour, on the other hand, decreased for all food manufacturing industries between 2000 and 2003. This reflects the impacts of tech-nological change on labour productivity.

Productivity growth remains critical to the future performance of the agri-food sector

Multifactor productivity growth in food processing has surpassed that of the general economy and other OECD countries, but has been below primary agriculture, at 1.8% a year between 1997 and 2003.

A key to productivity growth is investment in R&D and innovation. R&D expenditures in food processing as a ratio of value added are stable at below 1%, whereas the average for total manu-facturing is 3.5%.

Figure 10: R&D intensity in food processing and total manufacturing, Canada (1994 to 2002)



Source: Statistics Canada, R&D in Canadian Industry Survey.

OECD data shows that private sector investments in R&D in food, beverage and tobacco processing have historically been lower in Canada than in other major developed countries.

The food processing industry in Canada, as the user of primary products, has been a major beneficiary of the R&D and innovation taking place in the primary agriculture sector, as well as in other manufacturing industries and in parent companies located in other countries.

The 2005 Survey of Innovation, Logging and Manufacturing, shows that the food manufacturing industry is doing as well as total manufacturing in terms of the incidence of innovation. About 66% of food processing establishments innovated.

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