Ontario Beef Industry Research Strategy

FACT PACK
Purpose of the Fact pack

This document is designed to ensure that at the start of the research strategy development day, everyone in the room has a similar understanding of the sector and also the operating environment in which we are planning as well as some historic trends for important inputs for our business such as oil, and feed costs.

Please take the time to at least flick through this information as it will be information that we may wish to draw on during the day and it will be handy for you to be familiar with its contents.

1. Beef Sector Profile
2. Beef industry contribution to the Canadian Economy
3. Beef Canada's Beef Industry Fast Facts
5. Farmland values – short term trends
6. Oil Prices - trends
7. Future prediction on oil prices
8. Corn prices – trends US
10. Labour costs – trends Canada

Also as an attachment to the Fact Pack please find the National Beef Research Strategy.
**Beef Sector Profile**

The beef cattle industry in Ontario generates more than $900 million in market receipts (2011), second only to dairy in the livestock sector. For every dollar generated at the farm gate there is another 4 dollars generated through the beef supply chain.

The beef industry in Ontario consists of 14,000 cow–calf producers with the total number of cows at 317,000, plus 51,000 bred heifers. In addition there are 4000 feedlot producers, finishing 398,000 head. Most of the calves produced in Ontario are fed to slaughter weight within the province. The major sources of feedlot calves from outside Ontario are Saskatchewan and Alberta. The majority of cattle finished in Ontario are processed in the province, with up to 100,000 annually exported to the US for processing. Cattle from Quebec are also processed here in Ontario.

Beef is priced on a North American basis, with the dominant US market acting as the price setter. Canadian producers enjoyed a strongly competitive position in general when exporting to the US for most of the last 20 years, when the weakness of the Canadian dollar conferred a significant advantage to product produced in Canada but sold in the US dollar. However, the Canadian dollar has gained strength since its historic low of $0.63 in 2002, and is now trading at about par with the $US. Since Canada has been a major net exporter of cattle and beef to the US (up to 40% of Canadian production), a stronger Canadian dollar weakens Ontario’s competitive position with respect to US produced (and priced) cattle and beef. The at-par dollar has also resulted in increased imports of US beef into the Ontario market.

With the decrease in the currency exchange rate advantage, Ontario producers have become more apt at finding ways to lower their cost of production to remain viable. Some producers have left the industry.

Additional impediments to exports to the US include higher costs in Canada for specified risk material (SRM) removal, and the implementation of country of origin labeling (COOL) in the US which requires separate production runs and labeling of non-US produced product which effectively increases the costs for US processors when handling Canadian sourced product.

US beef exports to offshore destinations increased in 2010 and 2011 as trade to some nations was re-established after BSE restrictions. This had the effect of pulling beef out of the North American market, and strengthening US domestic prices. This in turn attracted beef from Canada into the US market, supporting the prices experienced by our producers in spite of dollar parity and trade “irritants”.
Industry Trends
Ontario beef cow numbers have been in decline since reaching a peak of 415,000 in 2004. A recent trend in Ontario has been the consolidation of beef cow numbers and associated land into fewer, larger operations.

The feedlot sector continues to contract, with approximately 200 feedlots feeding >50% of the cattle in the province. Efficiencies are found with larger scale feedlots (>1000 head; economies of scale and marketing power) and may also be found with smaller scale feedlots (<200 head; often associated with value chains and niche marketing).

The last seven years have seen a cumulative negative effect of rising input costs (petroleum, fertilizer etc.), BSE/SRM requirements, and low and/or declining prices for finished beef which have contributed significantly to the decline of the entire Ontario beef industry. The last 2 years have seen increased corn prices (+$5.00/bu) which have further eroded feedlot margins in the face of increased competition for calves. Increased feed cost was at least partially offset by increased market prices for slaughter animals (approx. $1.08/lb live wt for steers).

Slaughter of cattle in Federally inspected plants in Ontario has declined from 638,000 hd in 2004 to 576,000 in 2011. Slaughter of cattle in Provincially inspected plants in Ontario has declined from 190,000 hd in 2004 to 68,000 in 2010.

Source: Statistics Canada
However, Ontario farm gate prices for both calves and finished cattle improved significantly during 2010/2011 due to:

1. An overall reduction in cattle numbers in Ontario, Canada, and especially the US which reduced beef supply in North America.
2. The reopening of several overseas markets to beef from North America.
3. Increased global and domestic consumer demand for beef as the recovery from the global economic recession intensified.

**Challenges, Issues, Opportunities**

Although prices have recently increased it can take up to four years for the cow-calf industry to respond with increased supply. This requires the retention of female calves for replacement, growing, breeding and calving; sending the new calves to feedlot about 30 months later. During the first year or two of herd expansion the number of calves going to market typically decreases as heifers are retained for breeding. The steers spend another 6-12 months in the feedlot before marketing.

A significant proportion of beef farmers are 60+ yrs of age, and will be exiting the business in the next 5 to 10 yrs. The industry is concerned that there are not enough younger people who want to take over the means of production to ensure that a viable industry is maintained.

A concern for many beef cow operators is the increasing price of land due to competition from cash croppers, who are responding to high crop prices. Former forage land is being converted to row crop production, with subsequent upwards pressure on all land values, including pasture and forage land rentals.

Protection of endangered wildlife species poses a concern for producers who have perennial forage and pasture land, as regulations to protect breeding habitat may interfere with farming practices.

The North American ethanol industry’s demand for corn has buoyed grain prices up, with corn currently in the $5.00/bu range. At this price level those feedlots which are buyers of grain face higher than average feed costs. Effects on individual operations depend on their land base’s potential crop yields and investment in cattle feeding infrastructure.

There has been some development of branded beef products and development of some small value chains. These have been successful on a small scale where the beef is produced and marketed locally. Value chains in beef are difficult to organize because of the segmentation of industry and splits in ownership along the supply chain. However, the flow of information on a large scale between industry sectors is lacking and presents a major challenge to the profitability of the industry as a whole.
**Beef Industry Current Research Priorities**

**Production Efficiency**

- Lower costs of production through production and feeding strategies, especially alternatives to corn and other grains in feedlot scenarios.
- Identifying key performance indicators of profit.
- Development of value chains and branded beef products
- Improving the feed efficiency of beef production
  - Genetic improvement
  - Feed management

**Environmental/Ecosystem Impact**

- Scientifically valid field studies to measure the impact of beef production on wildlife species at risk

**Product Quality Improvement**

- Improving meat quality and consistency to increase market value.
- Enhancing health attributes of product such as Omega-3 fatty acids

**Reproductive Technologies**

- Application of genomics in all areas of beef breeding and production.
- Reduced costs for sexed semen and embryos
The Behf Industry’s Contribution to the Canadian Economy
Prepared by: Canfax Research Services
October 2012

The “Economic Impacts of Livestock Production in Canada – A Regional Multiplier Analysis” was completed in October 2012 by Dr. Suren Kulshreshtha at the University of Saskatchewan with assistance from Oteng Mondongo and Allan Florizone. This publication was made possible with funding from the Alberta Beef Producers, Canadian Cattlemen’s Association and Saskatchewan Cattlemen’s Association. The full report is available at http://www.cattle.ca/cca-industry-analysis

The cattle and beef sector is an important driver of economic activity in Canada. However, that is not always apparent from looking at Farm Cash Receipts (FCR) alone. By only looking at direct sales, as represented by Farm Cash Receipts, the industry’s contribution is undervalued as it does not consider the spin-off effects created throughout the supply chain. As such for many years the Canadian cattle industry has been taking FCR for cattle and calves and using a multiplier of 4 to communicate the beef cattle industry’s broader contribution to the economy. The multiplier currently used was developed in 1992 and consequently does not take into account the expansion of the cattle feeding industry in Western Canada in the late 1990s and the expanding role of beef exports. Consequently the purpose of the study completed by Dr. Kulshreshtha et al. is to update the overarching multiplier, as well as look at other important multipliers which show how the Canadian cattle industry contributes to the overall economy in Canada.

Background

The researchers developed an input-output model for the Canadian cattle industry, taking into account regional aspects (East, West and Alberta), and four multipliers were calculated for each region and nationally:

1. An overarching production/sales multiplier that can be applied to a Farm Cash Receipts for beef cattle.
2. The overarching sales multiplier accounts for all economic activity at all levels in the supply chain. However, that results in double-counting occurring as one sector’s sale is another sectors purchase. Therefore the GDP multiplier removes the double-counting to accurately measure industry’s contribution to Canada’s GDP.
3. An employment multiplier that moves beyond just accounting for the number of beef cattle farmers as reported by the Agriculture Census and accounts for the number of jobs throughout the supply chain that the beef industry is responsible for.
4. An additional multiplier was generated to look at the impact of labor income, as income results in spending which spreads into other sectors in the economy and is an important source of activity.

Every industry has both a direct impact on the economy made through sales, as well as secondary impacts which are a sum of indirect impacts and induced impacts. Indirect impacts are generated by the inputs it buys and the business it generates further down the supply chain. Induced impacts are created through spending of income within the region. There are also the jobs it creates in other sectors through the dollars spent by employees and through trade. Overall, there are six types of economic effects:

1. Input Change Effects, which result from the combination of various inputs used in the production process of a given sector;
(2) Labor Income Expenditures Effects, which result from the re-spending of wages, salaries, and profits from unincorporated business on consumer goods and services;

(3) Capital Expenditures Effects, which are a result of new investments in durable and semi-durable goods required to undertake new production of goods and services;

(4) Output Effects, which result from a change in the demand for various goods and services either within a region or from outside the region;

(5) Downstream Effects, which result from the marketing, transportation and primary processing and secondary processing activities triggered by production of various firms in the region; and

(6) Forward Linkages Effects, which result when a part of the output of a sector is purchased by another sector and additional value-added activities, are generated.

To illustrate the above point, let us take an example of producers using feed grains for livestock production. Assume that these feed grains are supplied from an adjoining crop farm and we can look at the chain of reaction that would take place as a result of this single decision of the livestock producer.

Seeing higher expected demand for feed grains from livestock production, the crop producer would likely add more area to these crops. In addition, the producer may decide to apply some fertilizer to a crop. The fertilizer is locally purchased, thereby putting additional money in the hands of the dealer. The dealer, in turn, must order this from the distributor, which would eventually be met by the manufacturer. During this process, money is generated through transportation of the product (going to various modes of transportation – railways or trucks), to government coffers through payment of taxes at various levels, and of course, in the hands of workers who work for the dealer and the distributor.

New demand at the manufacturer’s level has to be met through new production. This may require some expansion in plant capacity through investment in machinery and equipment, or simply expansion of the production level with given capacity of the plant. In either situations, inputs required for production of fertilizer will increase, which would increase demand for mining products (such as natural gas). The mining sector, having received new orders, would gear up to higher production levels and would demand more inputs required for its own production. Workers in the manufacturing and mining concerns would be compensated, thereby generating new incomes in the region. This new income would find its way to new purchases of various consumer goods and services. Each of these actions would add further to the economic growth of the region. Some of the goods and services may be imported from other parts of Canada or the world.

The nature of interdependencies that currently exist between a regional economy and cattle and calves sector can also be illustrated by the 2003 experience with BSE (Bovine Spongiform Encephalopathy) in Canada. This incidence caused the U.S. to close the border to Canadian cattle. This substantially reduced the demand for Canadian cattle, since the U.S. has been a major destination for Canadian feeder and slaughter animals. The lack of buyers affected many stockyards, trucking companies, and brokers. Reduced demand brought about more market pressures on price. A lack of sales of these animals meant that they were kept on farms longer. This led to higher feed demand. Lack of markets, lower prices, and higher feeding costs resulted in lower net income for cattle producers. This decreased family expenditures of these producers, resulting in lower demand for consumer goods. This reduction in cattle sales results in lesser transportation, wholesaling, and retailing activities. Government coffers were also affected since the tax revenue generated is reduced. Overall, various economic sectors in Canada were affected either directly or indirectly.
These two examples briefly illustrate the intricate and far-reaching relationships that exist in the complex economic systems of the beef cattle industry.

The combination of the direct impact (2011 FCR for Canada were $6.49 billion) along with these ripple effects throughout the economy result in the cattle industry being responsible for $33 billion worth of sales of goods and services either directly or indirectly (a multiplier of 5.2 up from the previous 4 used historically). These sales contribute $13 billion to the country’s Gross Domestic Product (GDP), which includes $8 billion through personal incomes1. Either directly or indirectly through induced income effects, the sector generates 228,811 jobs in the country2.

**Multipliers**

In terms of farm level net activity, the impact of the Canadian beef cattle industry on the national economy is high. If production in the beef cattle sector increases by $1, output of all goods and services in the economy increase by $4.2 for an overarching production/sales multiplier of 5.22. For every $1 contributed to the GDP, another $0.916 dollars are generated by other sectors for a total GDP multiplier of 1.916. Similarly every job in the sector yields another 3.56 jobs elsewhere in the economy, resulting in an employment multiplier of 4.56 person-years on a full-time equivalent basis. For every $1 of income received by workers and farm owners, another $2.08 are created elsewhere – resulting in an income multiplier of 3.08. For every million dollars in cattle sales, 26 to 27 workers are employed in the Canadian economy.

**Multipliers broken out by sector**

All sub-sectors of the industry contribute to the economy and consequently multipliers can be estimated for each sub-sector. At the same time it is important to note that the sum total of all of the individual sub-sector multipliers does not result in the total industry multiplier. Individual sub-sector multipliers will not add up to the total, as it will result in some values being double counted. Consequently when an aggregate multiplier is developed it is typically smaller to remove any double counting. The following contributions estimated are for the 2011 calendar year:

- The *cow/calf* sector, with $1.68 billion in sales, contributed $714 million to GDP including $440 million in wages and supported 14,259 full-time equivalent jobs.
- The backgrounding sector, with $8.2 billion in sales, contributed $3.0 billion to GDP including $1.85 billion in wages and supported 68,218 equivalent full-time jobs.
- The *feedlot* sub-sector, with $9.86 billion in sales, contributed $4.1 billion to GDP including $2.69 in labor income and 82,687 full-time jobs.
- The *processing* sub-sector generates another level of economic activity, with an estimated $31.7 billion in sales of goods and services (direct, indirect and induced), it contributed $12.4 billion to GDP including $7.1 billion in wages and the employment of 196,690 workers that are directly or indirectly related to cattle slaughtering and meat processing.

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1. The difference between the $33 billion in sales and the $13 billion that goes towards GDP is double-counting. The GDP removes all double-counting when one sector purchases goods from other sectors, whereas sales of goods sis a gross measure of economic activity and does include double-counting of goods.

2. It should be noted that multipliers are affected by the magnitude of direct impacts (farm cash receipts). For example, when an industry is experiencing negative returns (as occurred over the last decade) they still create jobs and ripple effects throughout the economy. Consequently this contribution is divided by a smaller gross sales and shows up as higher multipliers than if the industry was experiencing positive returns.
Regionally

Cattle production in Western Canada and its subsequent processing activities represent a total of $24 billion in sales and a net contribution to the regional GDP of $8.8 billion in 2011. Directly or indirectly employment of over 127,000 workers is related to farm level production and processing.

Cattle production in Eastern Canada along with the substantial processing activities in the region, represented a total of $8 billion in sales; contributing $2.6 billion to the regional GDP. Overall, 63,907 workers are associated with the sector (including paid owners of unincorporated businesses). While Western Canada has significantly more beef production, the large population in Eastern Canada supports a substantial processing industry which contributes to the economic activity in the region. In addition, a large dairy industry contributes to the beef production in the area.

Note the regions do not add up to the Canadian total due to inter-regional trade and rounding.

Alberta

In Alberta alone, the cattle sector generated in 2011 a total of $16.9 billion in sales, contributing $6 billion to the provincial GDP; including $3.6 billion in labor income. Through direct, indirect and induced effects, the sector is responsible for generating 62,612 full-time equivalent jobs.

In terms of farm level net activity, the effect on the provincial economy is high. For every dollar contributed by the sector to the GDP, the provincial GDP increases by another $5.16 for a total multiplier of 6.16. Similarly every job in the sector yields another 2.7 jobs elsewhere in the economy, resulting in an employment multiplier of 3.7 person-years.

All sub-sectors of the industry contribute to the economy. Caution should be used when interpreting the below breakdown by sub-sector. They will not add up to the total as some double counting is removed when aggregating.

- The *cow/calf* sector with $461 million in sales, contributed $196 million to GDP including $124 million in wages and supporting 3,158 full-time equivalent jobs.
- The *backgrounding* sector, with $4.02 billion in sales, contributed $1.3 billion to GDP including $804 million in wages and supporting 16,502 equivalent full-time jobs.
- The *feedlot* sub-sector, with $3.9 billion in sales, contributed $1.7 billion to GDP including $1.17 in labor income and 25,484 full-time jobs.
- The *processing* sub-sector generates another level of economic activity, with an estimated $11 billion in sales of goods and services, it contributed $3.7 billion to the provincial GDP and the employment of 31,116 workers in the province. For every job in this sub-sector (approximately 4,489), two to five jobs are created in the economy.
Canada’s Beef Industry

Fast Facts

June 2012

PRODUCTION

83,000
Farms and Ranches with Beef Cattle
2006 Agriculture Census

12.5 million
Total Cattle and Calves
Up 0.5% from 2011
(includes 1.43 million dairy cattle)
Statistics Canada Jan 2012

4.23 million
Beef Cows
Down 1% versus year ago
Statistics Canada Jan 2012

Average # of Head per Beef Farm
Jan 1, 2012

Canada
B.C.
Alberta
Sask
Manitoba
Ontario
Quebec
Atlantic

0 50 100 150 200

Beef Cows by Province
January 1, 2012
(breeds cows = 4.23 mil)

Average Cost of Production vs.
Average Returns on an Alberta 550 lb Calf

Did you know...

✓ The average beef cow herd size in Canada is 63.
   -2011 Agriculture Census

✓ There are a lot of small cattle farms ... • 61% of the farms have 19% of the beef cows and each of these farms has less than 47 cows
• 26% of the farms have 33% of the beef cows and each of these farms has between 47 and 122 cows
• 13% of the farms have 48% of the beef cows and each of these farms has over 122 cows
   -2006 Agriculture Census

✓ Canada fed 2.9 million cattle in 2011 (finished to market weight) down 13% from 2010.
   -Canfax, Statistics Canada, AAFC

✓ Western Canada finishes 75% of all cattle in Canada
   -Canfax

✓ In 2011, Canada produced 3.02 billion pounds of beef, down 14% from 2010.
   -Statistics Canada, Canfax

✓ Cattle and calf cash receipts in 2011 totaled $6.49 billion, up 5.5% from 2010.
   -Statistics Canada

✓ Beef production contributed $25.96 billion to Canada’s economy in 2011, up 5.5% from 2010.
   -Canfax, Statistics Canada 2011
WHERE CANADA TRADES

Beef & Cattle Exports – 2011
742 billion pounds (336 million kgs)

WHERE CANADA FITS

Top 10 Beef Producing Nations - 2012p

Canada produces 2.1% of the world's beef supply.
Worldwide Beef Production is estimated at 57 million metric tonnes in 2012.

Top 10 Beef Exporting Nations - 2012p
(Excludes Live Slaughter Exports)

Total world exports in 2012 are estimated at 8.7 million metric tonne and Canada is projected to be the 6th largest beef exporter in the world (excluding live cattle exports).

Canadian Beef Consumption

What are we really eating?
44.2 lbs. (20.1 kg) per person yearly
Down 0.9% versus last year

Statistics Canada, Livestock stats, retail wt.

1 metric tonne = 2,204.6 lbs.
Cattle Price 12 Year Trends – US

US Monthly Average Cattle Farm Price Received for the 2000 - 2012 Calendar Year(s)

Labour Costs Trends - Canada
Corn Price Trends - US

US Monthly Average Corn Farm Price Received
for the 2000 - 2013 Calendar Year(s)


Soy Bean Trends – US

US Monthly Average Soybeans Farm Price Received
for the 2000 - 2012 Calendar Year(s)

Oil Prices Trends

World Bank sees slow oil price decline to $80/b in 2025

London (Platts)--12Jun2013/1147 am EDT/1547 GMT

International oil prices are likely to decline slowly between now and 2025 to $80/barrel, a level consistent with the real cost of producing oil from Canada's tar sands, the World Bank said Wednesday in its Global Economic Prospects report. But the bank also warned that a major oil supply disruption caused by political turmoil in the Middle East could send prices spiking by $50/b or more. The World Bank, which uses a simple average of Dubai, Brent and West Texas Intermediate crudes, expects the oil price to decline to $102.40/b this year and to $101/b in 2014 and 2015 from $105/b in 2012. It currently bases its long-term oil price assumptions on an estimated $80/b for Canadian oil sands output. However, "there are a number of risks to the baseline forecasts," the Bank said.

"Downside risks include weak oil demand if growth prospects deteriorate sharply, especially in emerging economies where most of the demand growth is taking place," it said. "Over the longer term, oil demand could be dampened further if the substitution between crude oil and other types of energy accelerates."

The economies of oil-exporting countries are particularly vulnerable to shifts in oil prices, the Bank said. "In such an instance government revenues and current account balances would come under pressure," it said. The bank expects growth in the Middle East and North Africa region to slow to 2.5% this year from 3.5% in 2012, reflecting a second year of recession in Iran, subdued growth in Egypt and a "modest pickup" in Algeria. But if real oil prices were to fall to $80/b by the middle of next year -- the faster decline coming from "a shift in expectations about future prices" resulting from rising production and reserves in the US and other non-OPEC countries -- oil exporters in the Middle East and North Africa would see GDP fall by 1.4% relative to the baseline and current account balances deteriorate by 3.5% in 2014. "In the current environment, regional oil exporters will no longer be able to rely on high and rising prices, but will increasingly need to rely on increased output. This in turn necessitates reforms that would allow them to invest heavily in infrastructure, and exploration to raise current production levels which have stagnated or been steadily declining in recent years," the bank said. "However, private capital and FDI inflows may fail to materialize because of security risks, poor legal
environments for investment and political uncertainty to varying degrees in Algeria, Iraq, Libya and Yemen and international sanctions in the case of Iran. Iraq, according to government estimates, needs capital spending of $30 billion annually on energy infrastructure to meet its oil production targets, the bank said. But it added that progress on this front was likely to be slow because of payment disputes with the Kurdish Regional Government and delays in passing a law governing oil and gas development. Algeria’s efforts to raise private investment for upstream exploration, including shale gas, and refining, may also prove challenging given the political uncertainty generated by the presidential election scheduled for spring 2014 and reversals in investor-friendly provisions in investment laws, the bank said. The response of OPEC, and of Saudi Arabia in particular, will be key to the outlook for prices, the Bank said. "A key uncertainty in the outlook is how OPEC (notably, Saudi Arabia) reacts to changing global demand and non-OPEC supply conditions. Since 2004 when crude oil prices started rising, OPEC has responded to subsequent price weakness by cutting supply, but has not been as willing to intervene when prices increase. However, as non-OPEC supplies continue to come on stream and demand moderates in response to higher prices, the sustainability of this approach may come under pressure," it said.
**Ontario Farmland Values**

Farmland values in Ontario increased an average of 11.9% in the second half of 2012, following gains of 16.3% and 7.2% in the previous two reporting periods. Farmland values in Ontario have risen for the past 20 years.

Some cash crop producers leveraged their current land holdings to purchase less expensive land in other locations, such as in Northern Ontario, yet the resulting impact on farmland values was relatively modest. The southwestern, central and southern regions saw significant increases in the second half of 2012. Most areas experienced a high number of private transactions as well as those occurring through the tendering process or property auctions.

In most areas, the demand for farmland outweighed available supply, driving prices higher. Demand was strong from the dairy industry and large intensive livestock enterprises that need land to meet nutrient management and cropping requirements. Cash crop operators also wanted to grow their land base due to higher commodity prices and good crop yields.

With the current strong demand and prices for land, some producers planning to exit the industry chose to liquidate their land holdings instead of collecting rental income.

Spring 2013 Ontario Farmland Values
National farmland values trends

The average value of Canadian farmland increased 10.0% during the second half of 2012, following average increases of 8.6% and 6.9% in the previous two six-month reporting periods.

Farmland values remained stable or increased in all provinces. Quebec experienced the highest average increase at 19.4%, followed by Manitoba at 13.9% and Ontario at 11.9%.

Saskatchewan and Alberta experienced 9.7% and 7.2% average increases respectively, followed by Nova Scotia at 6.8%, Prince Edward Island at 5.7% and British Columbia at 0.4%.

Average farmland values were unchanged in New Brunswick and Newfoundland and Labrador.

Canadian farmland values have continued to rise over the last decade. The current average national increase of 10.0% is the highest since FCC began reporting on farmland values in 1985. The second highest increase occurred in the first half of 2012, at 8.6%. The last time the average value decreased was by 0.6% in 2000.