CANADA'S
FOOD PRICE REPORT
10TH EDITION
2020

DALHOUSIE
UNIVERSITY

UNIVERSITY
of GUELPH

AUTHORS AND ADVISORS

DALHOUSIE UNIVERSITY MEMBERS

Dr. Sylvain Charlebois
(Lead Author and Project Lead for Dalhousie University)
Agri-Food Analytics Lab
sylvain.charlebois@dal.ca

Eamonn McGuinty
Agri-Food Analytics Lab
emcguinty@dal.ca

Dr. Vlado Keselj
Faculty of Computer Science
vlado.keselj@dal.ca

Janet Music
Agri-Food Analytics Lab
janet.music@dal.ca

Dr. Andrea Giusto
Department of Economics
andrea.giusto@dal.ca

Kathleen Kevany
Faculty of Agriculture
kkevany@dal.ca

Don Fiander
DalAnalytics
don.fiander@dal.ca

Joon Son
IBM Canada
youngjoon.son@ibm.com

Hyejung (Cathy) Bae
Applied Research, Nova Scotia
Community College
w0411909@nscc.ca

Emon Majumder
Applied Research, Nova Scotia
Community College
w0411567@nscc.ca

Jay Harris
Schulich School of Business, York
University
jay19@schulich.yorku.ca

UNIVERSITY OF GUELPH MEMBERS

Dr. Simon Somogyi
(Project Lead for University of Guelph)
Gordon S. Lang School of Business and Economics
ssomogyi@uoguelph.ca

Dr. Erna Van Duren
Gordon S. Lang School of Business and Economics
evandure@uoguelph.ca

Paul Uys
Ontario Agricultural College (OAC)
pauluys@uoguelph.ca

Dr. Francis Tapon
Gordon S. Lang School of Business and Economics
ftapon@uoguelph.ca

Dr. Jess Haines
Family Relations and Applied Nutrition
jhaines@uoguelph.ca

Dr. Graham Taylor
School of Engineering
gwtaylor@uoguelph.ca

Alexander Moksyakov
School of Engineering
amoksyak@uoguelph.ca

Canada's Food Price Report 2020 is a collaborative effort between Dalhousie University, led by the Faculties of Management and Agriculture, and the University of Guelph's Arrell Food Institute.

TABLE OF CONTENTS

EXPECTED HEADLINES FOR 2020

10-YEAR SNAPSHOT: SPECIAL EDITION

EXECUTIVE SUMMARY

This is the tenth edition of Canada's Food Price Report, published annually by Dalhousie University and the University of Guelph. In 2019, of the major food category predictions were met with the exception of **meat**, **seafood** and **vegetables**. In 2019, our models predicted Canadian families would spend up to **$12,157** on food. Based on the 2019 inflation rate to date, they are likely to spend **$12,180**, **missing our target by $23**. This model proves to be effective in predicting food costs for Canadians with our model for 2019 being 99.8% accurate. Unforeseen circumstances and events triggered higher prices for the three categories we misestimated. For the other five food categories, accurate predictions were made using the same historical data sources, machine learning algorithms and predictive analytics tools.

For 2020, the report uses the same categories of food and makes the following predictions:

2020 FOOD PRICE FORECASTS

Food Categories	Anticipated Changes (%)
Bakery	0% to 2%
Dairy	1% to 3%
Fruits	1.5% to 3.5%
Meat	4% to 6%
Other	0% to 2%
Restaurants	2% to 4%
Seafood	2% to 4%
Vegetables	2% to 4%
Total Increase in Food Prices	**2% to 4%**

Over the last ten years, this report has considered many market instruments and macro-economic factors in its forecasts: financial indicators, recession signals, currencies and Canada-specific information. In the 2019 report, two major categories to meat and seafood to were predicted to decrease in price because of a rise in the plant-based alternative protein category and the volatile seafood market. As seen in other forecasting models from different sectors, including capital and commodity markets, geopolitical, health and climate-related events are often hard to predict and include in pricing models. In 2019, we saw the three wrongly predicted categories impacted by outbreaks

of E. coli infections from romaine lettuce in Canada, African swine fever in the pork market and a continuously volatile seafood import market. While the 2019 prediction of a decrease in seafood prices was accurate, the cost of fish increased 5% during the year. Partly due to fish stocks being on the brink of global collapse, Canada faced some challenges with British Columbia salmon because of the rate of ecosystem change in the Pacific Ocean caused by rising water temperatures.[1] In fact, the 2019 report's models show a 23% increase in consumer price index (CPI) change for salmon and its affiliated products.[2] The ability to predict prices of food products where volatility is constant remains a challenge even as machine-learning methodology evolves and improves. A major limitation in Canada is the availability of data and analytical tools to apply to food and agriculture as it relates to consumers and household expenditures.

The 2020 forecast suggests overall food prices will increase **2 to 4%**. It also predicts that annual food expenditure for the average Canadian family will rise by **$487** from 2019 figures. Annually, this represents a total forecasted household expenditure on food of **$12,667.**

In retrospect, 2019 saw continued trade uncertainty, with the **United States (US)** taking an aggressive stance on **trade with China** by imposing significant tariffs on a multitude of products imported into the US. The repercussions continue to impact the global economy and the **tariff war** is expected to slow down in the coming months as the US enters an election year and China sees currency valuation risks on the horizon. In addition, many Canadians remain skeptical that the **United States–Mexico–Canada Agreement (USMCA)** trade deal will succeed as it continues to be scrutinized by leading experts. Our unpredictable relationship with our largest trading partner remains a question mark for many food industry participants in Canada. However, Canada continues to seek alternative opportunities through market diversification with the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**, which will link 11 countries representing **495 million**

---

1   Grant, S., MacDonald, B., & Winston, M. (2019). *State of Canadian Pacific salmon: Responses to*
      changing climate and habitats. Nanaimo, BC. Retrieved from https://waves-vagues.
      dfo-mpo.gc.ca/Library/40807071.pdf
2   Estimates based on Statistics Canada figures to 2019

consumers and **13.5% of global GDP**.[3] China also curtailed Canadian agricultural trade in 2019 causing canola and pork producers to falter with international market access. A diplomatic dispute has China barring the import of canola from major producers. Furthermore, China also slowed its Canadian pork imports due to threats of the global epidemic of **African swine fever** and further retaliatory measures on Canada. While this has been happening, **wheat exports** to China from Canada have skyrocketed in 2019 showing signs of optimism and global trade tensions maturing.[4]

The **Bank of Canada** left its target interest rates unchanged in 2019 at **1.75%.** This in turn has protected against some economic uncertainties and the anticipated global growth slowdown in coming years. As wages remain flat in Canada, inflation continues to rise, and affordability of food continues to be a challenge for Canadian households.

In 2020, the elephant in the room is climate change and its impact on our food systems. More specifically, Canadian food systems will be affected by changing weather patterns including droughts and forest fires, heavy precipitation, reduced freshwater access and rising sea levels.[5] Climate models suggest that Canada's agricultural regions will subsequently feel the impacts of a drier summer season and increased spring and winter precipitation.[6] Canadian farmers will face challenges in the future dealing with unpredictable **crop yields**, **heat-wave livestock threats**, **pasture availability** and **pest and disease outbreaks.**[7] Models also suggest that, if managed properly, climate change could help Canada improve **soil health** by enhancing **carbon sequestration processes** and reducing emissions of **greenhouse gases** through changes in

3   What is the CPTPP? (2019). Retrieved from https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/index.aspx?lang=eng

4   Dyer, E. (2019). Even as Beijing shuns Canada's canola, Canadian wheat sales to china soar. Retrieved from https://www.cbc.ca/news/politics/wheat-canola-china-canada-trade-1.5263313

5   Intergovernmental Panel on Climate Change (IPCC). (2019). *Climate change and land*. Retrieved from https://www.ipcc.ch/site/assets/uploads/2019/08/Edited-SPM_Approved_Microsite_FINAL.pdf

6   Climate Atlas of Canada. (2018). Agriculture and climate change. Retrieved from https://climateatlas.ca/agriculture-and-climate-change

7   Impact of climate change on Canadian agriculture. (2015). Retrieved from http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate-change-and-agriculture/future-outlook/impact-of-climate-change-on-canadian-agriculture/?id=1329321987305

land-use. Finally, as the federal government tries to implement the **carbon tax** across all provincial jurisdictions to curb greenhouse gas emissions, food prices will feel the repercussions from the government's roll-out of the policy tool.

The 2020 major food issues in Canada include **single-use plastic packaging** of food products and its impact on consumer perceptions and price changes, Canada's exports impacted by **protectionist** trade environments, **outbreaks of illness** from vegetables, and ongoing agri-food innovation within the supply chain giving rise to more customizable and tailored food options for consumers.

The 2020 projections of price changes by province are shown in the table. The provincial projections are derived using the same machine-learning approach used to forecast Canada's food prices:

2020 PROVINCIAL BREAKDOWN OF FOOD PRICES

Province	2019 Changes[8]	2020 Forecasts[9]
Alberta	⬆	⬇
British Columbia	⬆	⬆
Manitoba	–	⬆
New Brunswick	⬇	⬇
Newfoundland and Labrador	⬇	–
Nova Scotia	⬇	⬇
Ontario	⬆	–
PEI	⬇	⬆
Saskatchewan	⬆	⬇
Quebec	–	⬆

8   (⬆) Expected above-average food price increase, (⬇) Expected below-average food price increase, (–) Expected average food price increase. Lower confidence intervals at the provincial level.

9   (⬆) Expected above-average food price increase, (⬇) Expected below-average food price increase, (–) Expected average food price increase. Lower confidence intervals at the provincial level.
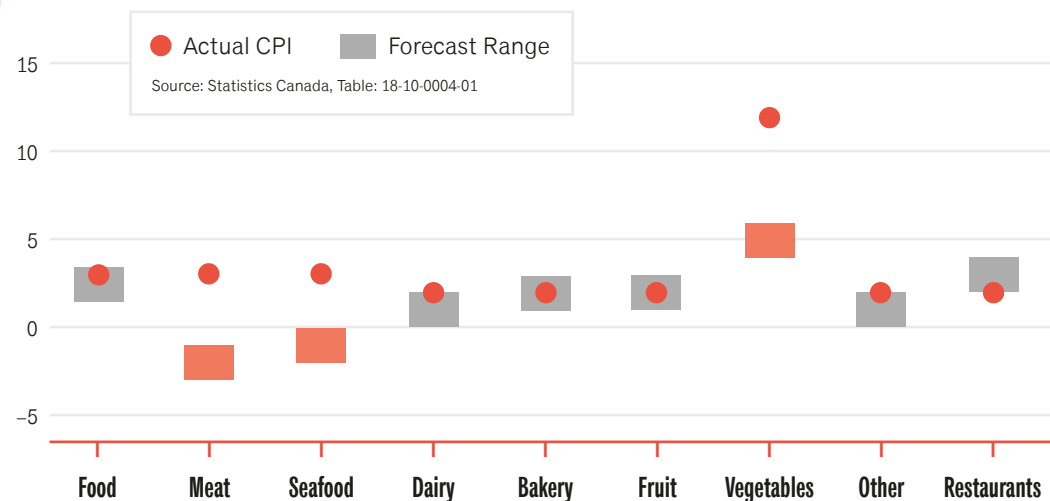
OVERVIEW OF 2019: HOW WE DID

The 2019 forecasts were accurate except for meat, seafood and vegetables. Prices for the remainder of the categories were directly in line with the Canada Food Price Report's projections:

FIGURE 1: 2019 YTD FORECAST RESULTS

TABLE 1: 2019 FOOD PRICE RESULTS

Categories	Anticipated Increase (Dec. '18)	Results (Oct. '18 to Sept. '19)[10]
Bakery	1% to 3%	2%
Dairy	0% to 2%	2%
Fruits	1% to 3%	2%
Meat	−3% to −1%	3%
Other	0% to 2%	2%
Restaurants	2% to 4%	2%
Seafood	−2% to 0%	3%
Vegetables	4% to 6%	12%
Total Food Categories Forecast	**1.5% to 3.5%**	**3.5%**

Meat, seafood and vegetable prices increased more than anticipated due to a series of events in Canada and globally. A weaker Canadian dollar helped exporters access foreign markets and gave incentives to importers to procure more from Canada. But a rise in

---

10   Estimates based on Statistics Canada figures to 2019

trade uncertainties with China weakened the market for pork exports, and African swine fever sent meat prices higher than anticipated because of tightening of the global pork supply. Vegetables saw increases due to outbreaks of *E. coli* with romaine lettuce impacting Canadian consumers and driving up prices of alternative leafy greens, while seafood remained a volatile and ecologically-at-risk sector.

CANADA'S FOOD GUIDE CHANGES

In 2019, we saw **Canada's Food Guide** go through a modern makeover. The new guide from **Health Canada** was released in early 2019 and offers broad advice about food choices and eating habits to support health. In general, Canada's Food Guide presents an equally weighted and simplified approach to encourage **plant-based** eating and recommends a reduction in daily meat and dairy intake.[11] The new guide reduces the food groups from four to three, supporting the premise that Canadians should focus on **fruits and vegetables**, **whole grains** and **proteins**.[12] The new guide combines **dairy and meat** along with **plant-based proteins** into a single category. The new approach is no longer about prescribing specific portions for Canadians. Rather, the intention of the 2019 guide is to make it less complicated and more actionable for consumers, including recommendations to reduce intake of certain foods and beverages, such as sugar-sweetened drinks and highly processed foods that contain sugar, sodium and saturated fats.

The modernized guide was developed by a collection of working groups, committees and sessions with expert nutritionists and external stakeholders. However, it has been criticized for having excluded key industry stakeholders that would have ensured proper consultation and execution on the new public dietary guideline. Furthermore, critics have identified that food insecurity is present in Canada and that government should ensure that all Canadians have sufficient income to access the foods recommended in the new guide. A study conducted by both Dalhousie and Guelph Universities released in March 2019 concluded that food security and access will be an issue

> *For decades, Canadians have been told to eat from four collective food groups. The new guide puts Canadians in a position to blend modern foods with conventional nutrition.*

---

11   Hui, A. (2019). The new Canada's food guide explained: Goodbye four food groups and serving sizes, hello hydration. Retrieved from https://www.theglobeandmail.com/canada/article-new-canadas-food-guide-explained/

12   Canada's food guide. (2019). Retrieved from https://food-guide.canada.ca/

with the new food guide, over time.[13] Many Canadians report that they don't have the time, or the money, to follow the new national nutrition recommendations. In fact, over **4 million Canadians** are food insecure, including over **1.15 million children**.[14] The new guide emphasizes the impact of social conditions on eating and almost half of all food-insecure households in Canada consist of unattached individuals, living alone or with others.[15] Lastly, household food insecurity in Canada is tightly linked to **income**. As wages continue to stagnate and food prices inevitably rise, the federal government would be well advised to revise and implement policies that would to enable Canadian consumers to afford its new recommendations. There is broad consensus that government needs to take action on food insecurity through **income-based interventions** and the **federal poverty reduction strategy**. In 2017, we saw the launch of a **national food policy.** This could be the start of a new beginning by tackling society's biggest needs by providing safe, nutritious and diverse foods for our diets.[16]

> *"*
> *At a time when consumers are constantly in flux with household expenditure planning, Canada's Food Guide creates a sense of urgency to tweak dietary patterns. But these come with financial discomfort.*
> *"*

THE VEGETABLE DILEMMA

Canada's Food Price Report of 2019 predicted that the vegetable category would experience major price increases for this year and actual figures show that it has risen over 17% from the previous year.[17] Canadians have been paying a premium to eat healthy fresh vegetables. Partly due to weather conditions and supply shortages in some growing areas, Canada also saw a romaine lettuce E. coli outbreak affect prices of both alternative leafy greens and vegetables as a category. In early 2019, consumers were notified by the Public Health Agency of Canada (PHAC),

13   Charlebois, S. (2019). Release: New Canada's food guide offers a more affordable plate, and greater food security but that may not last. Retrieved from https://www.dal.ca/faculty/management/news-events/news/2019/03/14/release__new_canada___s_food_guide_offers_a_more_affordable_plate__and_greater_food_security_____but_that_may_not_last.html

14   Tarasuk, V., Mitchell, A., Dachner, N. (2014). Household food insecurity in Canada, 2012. Toronto: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from https://proof.utoronto.ca/

15   Crowe, K. (2019). The long road to a new Canada's food guide. Retrieved from https://www.cbc.ca/news/health/canada-food-guide-healthy-eating-food-processors-industry-dairy-beef-lobbying-1.4970122

16   Food policy for Canada. (2017). Retrieved from https://www.canada.ca/en/campaign/food-policy.html

17   Statistics Canada. (2019). Monthly average retail prices for food and other selected products. Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000201

Canadian Food Inspection Agency (CFIA), US Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention (CDC) of a multi-regional outbreak of E. coli linked to romaine lettuce and salads containing the same lettuce from the growing regions in Northern and Central California. In Canada, the provinces affected by the food-borne infections were principally Ontario, Quebec and New Brunswick.[18] Most recently, US health officials disclosed another outbreak of illness linked to romaine lettuce in early November 2019.[19] Many officials believe eliminating risk with raw vegetables is a difficult task and determining the source of contamination is rare.

> *As it becomes more difficult to mitigate risks due to climate change, we should expect more outbreaks and food safety recalls thus affecting food availability and affordability.*

CHINESE TRADE ENVIRONMENT: CANOLA, PORK AND AFRICAN SWINE FEVER

Canada faced some hurdles in 2019 with regards to its relations with China. Subsequent to Canada's position on its **extradition treaty with the US** for a high-level Chinese executive arrested on Canadian soil, China banned the importation of key Canadian food and agricultural products. It placed import limits on Canadian **canola products**, blaming **pest contamination**. China is the largest importer of Canadian canola and roughly **40%** of all production is exported.[20] Further to this, **soybeans** and **peas** faced export pressures, and the country announced a standstill on all **meat imports** from Canada. Canadian producers were informed that China would no longer accept pork products over concern about the validity of **export certificates**.[21] China represents the third biggest market for **pork exports**, behind **Japan** and the **United States**, worth over **$310M in 2019,** representing a **52.8%** increase in volume
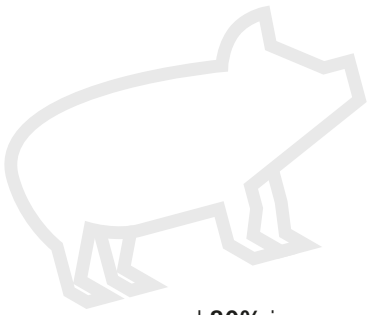
> *With new trade deals and more trade infrastructure investment, meeting global demand while developing a domestic food-price protection strategy in Canada will be challenging.*

18   Canadian Food Inspection Agency. (2019). Food safety investigation: Outbreak of E. coli infections linked to romaine lettuce. Retrieved from https://www.inspection.gc.ca/about-the-cfia/accountability/food-safety-investigations/outbreak-of-e-coli-infections-linked-to-romaine-le/eng/1543006275851/1543006276153

19   U.S. officials disclose recent food poisoning outbreak linked to romaine lettuce. (2019). Retrieved from https://globalnews.ca/news/6114840/romaine-lettuce-outbreak-us/

20   Market access. (2017). Retrieved from https://www.canolacouncil.org/markets-stats/market-access/

21   Canadian Pork Council. (2019). Canadian pork exports to China. Retrieved from https://www.cpc-ccp.com/canadian-pork-exports-in-china
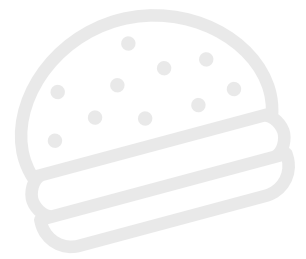
and **80%** increase in value over the same period in 2018.[22] As Canada looks to continue its prosperous agricultural trading activities around the world, market diversification strategies and softening Chinese relations will be a hope for 2020. In late 2019, it was announced that China was still buying Canadian canola through a backdoor strategy. Canada's exports to the **United Arab Emirates (UAE)** had seen a **533% increase** and China was using the UAE as a seed-crushing point during the diplomatic dispute.[23] Furthermore, **China and Brazil** have developed more co-operation agreements, meaning more agriculture and energy products exported by Brazil.[24] The co-operation agreements address the need for collaboration in science and technology in the areas of agriculture and natural resources, placing Brazil in a strategic position in the global economy.[25] Canada's agricultural potential in overseas markets face uncertainty, though it is a leading producer and supplier of highly valued crops, and the situation can be rectified in the future with proper leadership and co-operation strategies.

Further to **trade relations with China** and its impact on the Canadian pork industry, global development of the **African swine fever** outbreak threatened pork health. Even though the disease does not represent a threat to consumers, it can be transmitted to hogs via feed or feed ingredients imported from countries where the disease is present.[26] Pork prices rose as the disease spread through China, wiping out a large population of pigs and driving demand for pork from **North America.**[27] **China is responsible for half** of global pork consumption, meaning disruption in the nation's pig population creates demand from alternative sources. As China continues to battle this disease, it will need to import large amounts of pork, thus driving up the price of pork and meat in general.

> " *African swine fever is likely the most significant threat Canadian agriculture will face in 2020. It is just a matter of time until pork prices are severely affected once the disease hits North America.* "

22   Canadian Pork Council. (2019). Canadian pork exports to China. Retrieved from https://www.cpc-ccp.com/canadian-pork-exports-in-china

23   Robinson, A. (2019). China goes through UAE 'backdoor' to buy Canadian canola oil. Retrieved from https://www.bnnbloomberg.ca/china-goes-through-uae-backdoor-to-buy-canadian-canola-oil-1.1338813

24   Bloomberg News. (2019). Bolsonaro meets China's Xi in bid to balance ties with U.S. Retrieved from https://www.bloomberg.com/news/articles/2019-10-25/bolsonaro-to-meet-china-s-xi-in-bid-to-balance-ties-with-u-s

25   Mano, A. (2019). Brazil, China sign sanitary protocols for processed meat, cottonseed meal. Retrieved from https://business.financialpost.com/pmn/business-pmn/brazil-china-sign-sanitary-protocols-for-processed-meat-cottonseed-meal

26   Canadian Pork Council. (2019). African swine fever. Retrieved from https://www.cpc-ccp.com/african-swine-fever

27   Duhatschek, P. (2019). What African swine fever means for Canada's pork industry. Retrieved from https://www.cbc.ca/news/canada/kitchener-waterloo/what-african-swine-fever-means-for-canadas-pork-industry-1.5107638

THE RISE OF POPULISM AND GLOBAL GROWTH SLOWDOWN

The rise of populism and protectionism has had multiple impacts on the Canadian economy and its agriculture and food sectors. The global economy is riding sustained growth forecasts, but recent announcements by the **International Monetary Fund (IMF)** of its intention to cut growth forecasts for the global economy add uncertainty to our economic future. The IMF predicts a broad deceleration across the world's largest economies as trade tensions undermine expansion.[28] According to the international agency, the world economy will grow by **3% in 2019**, down from its initial estimate of **3.2%**, and 2020 will have a **3.4% growth rate,** down from **3.5%.**[29] Canada will see a decrease in growth forecasts as well with a rate of **1.5% in 2019** and **1.8% in 2020**.[30] Partly due to a rise in geopolitical tensions, the cuts display the economic repercussions of **higher trade tariffs**. With **Brexit**-filled media and a rise in **China-US trade tensions**, the global economic outlook is troubling for many. In Canada, the IMF forecast represents significant economic headwinds ahead. The global trade environment is expected to feel the effects of weaker trade flows and increased trade barriers for the foreseeable future.[31]

Canada has taken steps towards a more diversified and global footprint of trading activity in recent years. Even as new trade deals are signed, such as the **Comprehensive Economic and Trade Agreement (CETA)** with the EU, **USMCA** and the **CPTPP**, Canada still faces challenges with global headwinds impacting business investments.[32] For the agriculture and food sectors, demand is seen in infrastructure investments and overall business expenditures to expand capacity.[33] As US trade protectionism constrains some agriculture and food firms selling south of the border, food prices will be affected at the household level. Canadians are generally positive about trade and globalization, but it remains to be seen whether specific trade partners and new agreements can help domestic food security.[34]

> *With CETA, Canadians have not benefited from lower prices at the grocery store. Prices for cheese and other dairy products have not dropped — at least not yet.*

28   Kearns, J. (2019). The IMF cuts its global growth forecast for the fifth time in a row to the weakest in a decade. Retrieved from https://business.financialpost.com/news/economy/trade-woes-push-imf-global-growth-outlook-to-decade-low-of-3

29   Giles, C. (2019). IMF slashes global growth forecast on trade war fears. Retrieved from https://www.ft.com/content/078e2ca2-ef2a-11e9-bfa4-b25f11f42901

30   International Monetary Fund (IMF). (2019). *World economic outlook report.* Retrieved from https://www.imf.org/en/Publications/WEO

31   International Monetary Fund (IMF). (2019). *World economic outlook (July 2019).* Retrieved from https://www.imf.org/en/Publications/WEO/Issues/2019/07/18/WEOupdateJuly2019

32   Blackwell, T. (2018). Populism and protectionism holding back Canada's growth, EDC warns. Retrieved from https://business.financialpost.com/news/populism-and-protectionism-holding-back-canadas-growth-edc

33   Innovation, Science and Economic Development Canada (ISED). (2018). *Canada's economic strategy tables: The innovation and competitiveness imperative.* Ottawa, ON. Retrieved from https://www.ic.gc.ca/eic/site/098.nsf/eng/h_00020.html

34   Acquaviva, G., Barker, H. E. & Wolfe, R. (2018). What do Canadians think about trade and globalization? Retrieved from https://policyoptions.irpp.org/magazines/october-2018/what-do-

FOOD AND AGRICULTURE CORPORATE ACTIVITY

In Canada, major acquisitions and mergers are usually found in the resource-based sectors, financial services and technology-based companies.[35] However, in recent years, **food and beverage and agri-business** companies have been targets for acquisitions or mergers in Canada because of their critical role in the global economy. The world increasingly relies on countries like Canada for its food supply and emerging markets create optimism for domestic companies and their ability to access markets with high growth and rising incomes. Even as globalization goes through changes and market pressures, distances between producers and consumers are becoming smaller and advancements in technology are having immediate impacts on our food systems. Most Canadian companies in the food and agriculture sector are looking for new market opportunities, but also want to sell products and services at lower costs to consumers. Consolidation, in some instances, can truly create value for consumers and long-term performance for the sector.[36] In 2019, merger and acquisition activity ultimately depended on the state of the global economy. Lastly, the performance of **big food companies** has placed market capitalization figures of large enterprises under scrutiny over the years.[37] The rise of smaller, more agile enterprise caters to changes in global supply chains, economies and human health.

As 2020 approaches, we see stronger consumer preferences developing for food products. This trend creates opportunities for companies to explore new products and offerings to improve profitability, market share and growth trajectories. An example, and media darling story of 2019, was Beyond Meat's initial public offering (IPO). As the company continues to develop its business strategy, tailoring it to changes in demographics, its performance on the NASDAQ in 2019 surprised and disappointed many consumers and investors. With fears of more competition and doubts about corporate partnership successes, the company looks to maintain the first-mover advantage, leaving Canadian and global food manufacturers scrambling to maintain market share[38] Alternative proteins will see changes in the coming year, but pricing will stay relatively flat as brands try to establish sound business plans.

canadians-think-about-trade-and-globalization/

35   PwC Canada. (2019). M&A year in review and 2019 outlook. Retrieved from https://www.pwc.com/ca/en/services/deals/2019-outlook.html

36   Ringelberg, Josiah M., (2016). "Mergers and acquisitions in food and agribusiness: Returns, drivers, and long run performance". Open Access Theses. 992. https://docs.lib.purdue.edu/open_access_theses/992

37   de Yonge, J. (2019). Why your next big bet should be in food innovation. Retrieved from https://www.ey.com/en_us/disruption/why-your-next-big-bet-should-be-in-food-innovation

38   Shore, R. (2019). 3 reasons Beyond Meat is struggling to go beyond IPO. Retrieved from https://www.fool.com/investing/2019/10/30/3-reasons-beyond-meat-is-struggling-to-go-beyond-i.aspx

Competition from major food companies like Tyson Foods, Kellogg, Impossible Foods, Maple Leaf Foods and Nestlé will allow consumers to decide winners and losers in this newly created category of protein.[39]

Technology changes in food and agriculture have impacted the ways consumers purchase and cook food There has been improved efficiency in production, reduced waste and increased transparency along the supply chain. In 2017 we saw the acquisition of **Whole Foods** by **Amazon**, the first instance of a major technology company entering the food retail space, and in 2019 we saw major retailers make changes to their e-commerce business**. E-commerce** has enabled retailers to spot gaps in the market: **online marketplaces** can track products that shoppers search for but don't find, analyze which categories have **less competition** and find **prices** that can undercut traditional sources.[40] **Sobeys**' introduction of the "Smart Cart" in Oakville is an example of how grocers are exploring the use of **artificial intelligence (AI)** in retailing.

> *With its 'smart cart' pilot, Sobeys is reminding us that AI's intrusion into the grocery world is real.*

Expectations of more tailored and customized diets, diversified plant-proteins, private labels, direct-to-consumer distribution, blockchain solutions for supply chains, connected food packaging and environmental sustainability provide both opportunities and challenges to the food and agriculture sector in Canada. Embracing consumer trends through technology can increase food prices in Canada by focusing on core health and wellness interests, growing concern for animal welfare and the rising prevalence of restrictive diets.

39   Katz, J. (2019). An incredible year for Impossible Foods. Retrieved from https://www.mckinsey.com/industries/agriculture/our-insights/an-incredible-year-for-impossible-foods

40   CB Insights. (2019). *Food and beverage trends to watch in 2019*. Retrieved from https://www.cbinsights.com/research/food-beverage-trends-2019/

CANADA'S FOOD PRICE REPORT: 2020 FORECAST

METHODOLOGY

In its **10th edition**, Canada's Food Price Report uses a predictive analytics model applying machine learning to support decisions about the future of food prices. The report, a collaborative effort by **Dalhousie University** and the **University of Guelph**, continues to focus on food prices in Canada while giving insight into industry trends. Dalhousie University's predictive analytics capabilities through the Faculties of Agriculture, Management and Computer Science have been applied to build the forecasts. The University of Guelph, known for its commitment to the agri-food sector, contributed to the analysis of prices using machine learning predictive analytics for the different categories of food and predicting the 2020 CPI changes. Both institutions provided public policy and business expertise to enhance the report.

The model developed consists of a **machine learning approach** to forecasting Canada's food prices in 2020. Using data from the **Federal Reserve Bank of St. Louis** (bonds, recession indicators, financial indicators, currencies and Canada-specific data), the design included **186,000 data points** and **453 variables** to forecast the major food categories price changes. The retrospective study runs for **411 months** from **June 1985 to August 2019**. Each food category is forecasted **15 steps** into the future and calculates the **Mean Absolute Error (MAE)** and the **Mean Absolute Percentage Error (MAPE)** at a **95% confidence level**. The algorithms used include Stacking and Vote (Ensemble Algorithms), Linear Regression (Multivariate Linear Regression), Multilayer Perceptron (Neural Network), SMOreg (Support Vector Machine), M5P (Decision Tree), M5Rules (Decision Rule) and XGBoost model.[41]

---

41   For a detailed study methodology, please refer to *"Canada's Food Price Report 2020: Supplemental Report"*.

2020 MACRO-ECONOMIC FACTORS AND DRIVERS

The report considers multiple macro-economic factors impacting the global landscape, the food and agriculture sector and Canada as a whole. Climate change, geopolitical conflicts, energy, materials, inflation, currencies, trade deals, food retail and manufacturing figures, and consumer debt and expenditures influenced our forecasts for 2020 food prices in Canada. The **United Nations Intergovernmental Panel on Climate Change (IPCC)** states that global agriculture remains highly vulnerable to climate change, which will impact food prices in both short- and long-term models. Furthermore, Canadian food prices face risks as macro-level drivers such as China–US trade relations, currency fluctuations, food price inflation, consumer household expenditures and a change in consumer preferences remain unpredictable.

TABLE 2: MACRO-ECONOMIC DRIVERS FOR CANADA'S FOOD PRICES IN 2020

Variables	Categories	Impact	Price Effects	Likelihood
Macro-Level	Climate Change	**Very Significant**	**Variable**	**Very Likely**
	Geopolitical Risks	**Very Significant**	**Variable**	**Very Likely**
	Input Costs	**Significant**	**Increase**	**Likely**
	Energy Costs	**Moderate**	**Variable**	**Likely**
	Inflation	**Moderate**	**Increase**	**Likely**
	Currencies and Trade Environment	**Significant**	**Increase**	**Very Likely**
Sectoral-Level	Food Retail and Distribution	**Significant**	**Decrease**	**Likely**
	Food Processing Figures	**Very Significant**	**Increase**	**Likely**
	Policies and Regulations	**Moderate**	**Increase**	**Very Likely**
	Consumer Awareness and Trends	**Moderate**	**Decrease**	**Likely**
Domestic-Level	Consumer Indebtedness	**Very Significant**	**Decrease**	**Very Likely**
	Consumer Disposable Income	**Very Significant**	**Decrease**	**Very Likely**

Canada's Food Price Report in 2019 was correct in stating the **Bank of Canada** would keep its interest rate steady all year at **1.75%** to sustain borrowing, lending and Canadian dollar valuation.[42] At the end of 2019, Bank of Canada economic growth forecasts dropped to **1.6% for 2020** down from its initial **1.7% estimate**.[43] **Inflation** for 2020 remains relatively similar to the previous year, but wages remain flat as

42   Bank of Canada. (2019). Policy interest rate: Recent data. Retrieved from https://www.bankofcanada.ca/core-functions/monetary-policy/key-interest-rate/

43   Carmichael, K. (2019). To stave off recession, the Bank of Canada and Parliament might have to work together. Retrieved from https://business.financialpost.com/news/economy/to-stave-off-recession-the-bank-of-canada-and-parliament-might-have-to-work-together

income levels continue to be in the shadow of personal debt levels in Canada.[44] Many believe the domestic debt-to-income ratio growth is linked to increased borrowing, which in part is correct, but income has not seen the growth needed to withstand economic challenges like inflation and increased costs of living. As food prices climb again for 2020, wage stagnation means consumers will be under more financial pressure.

A FRAGMENTED CANADA: PROVINCIAL OVERVIEW

TABLE 3: 2020 PROVINCIAL BREAKDOWN OF FOOD PRICES

Province	2019 Changes[45]	2020 Forecasts[46]
Alberta	⬆	⬇
British Columbia	⬆	⬆
Manitoba	–	⬆
New Brunswick	⬇	⬇
Newfoundland and Labrador	⬇	–
Nova Scotia	⬇	⬇
Ontario	⬆	–
PEI	⬇	⬆
Saskatchewan	⬆	⬇
Quebec	–	⬆

We are expecting **Alberta**, **Saskatchewan**, **New Brunswick** and **Nova Scotia** be experience below-average food inflation rates. Due to stronger economic forecasts, we are expecting **Quebec**, **PEI**, **Manitoba** and **British Columbia** to see higher than average food inflation rates.

---

44   Gibillini, N. (2019). Poloz finds comfort in wage trends as Canada's job market heats up. Retrieved from https://www.bnnbloomberg.ca/poloz-finds-comfort-in-wage-trends-as-canada-s-job-market-heats-up-1.1340222

45   (⬆) Expected above-average food price increase, (⬇) Expected below-average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.

46   (⬆) Expected above-average food price increase, (⬇) Expected below-average food price increase, (–) Expected average food increase. Lower confidence intervals at the provincial level.

THE 2020 WATCH-LIST ITEMS

Overall, food prices could increase as much as 4% in 2020. **Vegetables**, **meat**, **seafood** and **fruit** will continue to face threats to prices. In 2019, an unsuccessful prediction of meat and seafood prices was combined with unforeseen macro-economic and ecological events. The anticipated rise in vegetable prices did not consider the rise in input costs and economically taxing events like illness outbreaks from romaine lettuce in Canada and the US. In 2020, all categories will see increased prices, particularly as consumer preferences change, trade wars continue, global growth decelerates, and wages stay constant while failing to adjust for inflation.

TABLE 4: 2020 FOOD PRICE FORECASTS

Food Categories	Anticipated Changes (%)
Bakery	0% to 2%
Dairy	1% to 3%
Fruit	1.5% to 3.5%
Meat	4% to 6%
Other	0% to 2%
Restaurants	2% to 4%
Seafood	2% to 4%
Vegetables	2% to 4%
Total Increase in Food Prices	**2% to 4%**

For the average family in Canada, based on a healthy food selection and following Canada's Food Guide, annual expenditures are anticipated to increase by **$487** in 2020 for a total household expense of **$12,667.** The main drivers behind this rise are increased prices for vegetables, fruit, meat and seafood. The rise of plant-based alternatives does give optimism for meat prices by creating a new class of substitutes, but global demand for meat outside Canada will increase domestic prices in 2020. Seafood is the world's fastest growing protein category and production uncertainties and ecological threats will impact prices for Canadian families. Seafood presents opportunities in Canada for more controlled growing environments, both in **natural biological stock** environments and in **aquaculture** to make products more price-friendly.

EXPECTED HEADLINES FOR 2020

SINGLE-USE PLASTIC PACKAGING FOR FOOD PRODUCTS

For 2020, a food industry without **single-use plastic packaging** is becoming more than just a discussion point. Consumers are placing pressure on **retailers, restaurants, distributors and manufacturers** to reduce and ultimately avoid the use of environmentally harmful disposable plastics used for food products. Plastic packaging has dominated the global solid waste problem, with single-use plastic food packaging being a major contributor. As Canadians increase their awareness of the environmental impacts of single-use plastics, the paradigm is shifting towards sustainable and green packaging for food products.[47] A Dalhousie University study in 2019 released astonishing numbers with regards to consumer perceptions and willingness to pay for green and alternative food packaging. The study identified **93.7%** of Canadian respondents as having strong personal motivation to reduce consumption of single-use plastic packaging. However, the same surveyed population was less inclined to pay more for alternative packaging solutions.

Most industry participants in the food industry are starting to tackle the issue of plastic waste: **Loblaws** announced a partnership in 2020 with **Loop**, a service company mirroring the historic milkman system for reuse of plastic containers; **Sobeys** will ban plastic bags in stores in February; **Metro and Walmart** will introduce high-level playbooks for plastic use reduction and implementing alternative solutions to cater to consumer demands for sustainable solutions.[48] Further, the **Government of Canada** will ban select single-use plastics by 2021.[49] Provinces of Newfoundland and Labrador, Nova Scotia and Prince Edward Island have passed legislation to ban single-use plastic bags.[50] Manitoba is next.
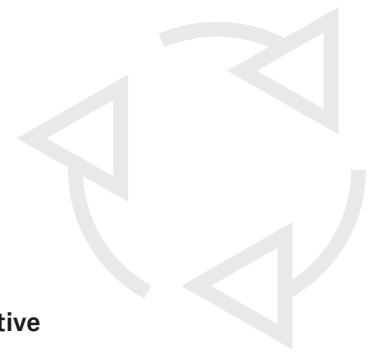
> *More than ever, plastics are a priority for the industry, but it remains unknown how changes to food safety and packaging practices will impact food prices.*

47 Charlebois, S., Walker, T., Music, J., & McGuinty, E. (2019). *The single-use plastics dilemma: Perceptions and possible solutions.* Halifax, NS. Retrieved from https://www.dal.ca/faculty/management/news

48 Sagan, A. (2019). Sobeys phasing out plastic bags from all stores by February 2020. Retrieved from https://www.theglobeandmail.com/business/article-sobeys-phasing-out-plastic-bags-from-all-stores-by-february-2020/

49 Government of Canada. (2019). Canada to ban harmful single-use plastics and hold companies responsible for plastic waste. Retrieved from https://pm.gc.ca/en/news/news-releases/2019/06/10/canada-ban-harmful-single-use-plastics-and-hold-companies-responsible

50 Rhodes, B. (2019). Nova Scotia to ban single-use plastic bags. Retrieved from https://www.cbc.ca/news/canada/nova-scotia/n-s-introduces-legislation-to-ban-single-use-plastic-bags-1.5298281

Canadian consumers face many changes in the coming year, and the impact of **alternative packaging** solutions could add to the overall price of food in 2020. The plastic waste paradigm is shifting but it is important to pay attention to the supply side of single-use plastic packaging for food. Large entities such as manufacturers, retailers and distributors often divert plastic waste to landfills as a cost-efficient method of doing business.[51] Governments and industry need to incentivize waste diversion from businesses and consumers to create secondary markets applying principles of the **circular economy.** In theory, applying circular economy methods can avoid punitive cost offsets to consumers for more expensive and environmentally friendly packaging solutions. Seeking sustainable alternatives requires a change in consumer behaviour and financial disincentives have shown positive results.[52] As long as prices for the consumer are not augmented, Canadians are likely to react well to certain policies and frameworks.[53]

CLIMATE CHANGE INTERVENTION AND CARBON TAXES

The **carbon tax** became a reality in 2019 for most Canadians. The federal carbon pricing scheme began in Ontario, New Brunswick, Saskatchewan and Manitoba on April 1 because these provinces were not in compliance with the new federal law. Other provinces already had programs in place. For Nunavut and Yukon, it began on July 1. Even though this new tax is paid by businesses, many believe it will have an impact on everything we consume, including food. However, the evidence that a carbon tax will increase food prices is weak, at best. Some reports published since 2012 suggest that the effect of a $50 per tonne carbon tax (slated for 2022 federally) would be a 3% increase in food prices. Given that food prices do go up 1%–2% a year, most years, that number is not unmanageable for most households. But it should also be noted that industry has invested in sustainable practices to offset the effects of the carbon tax.

> *Those who claim that a carbon tax increases the cost of food for consumers in Canada have not closely looked at the data. Industry is absorbing most of the costs by focusing on operational efficiencies.*

51   Peters, D. (2019). Beyond plastic: How Ontario retailers are ditching single-use packaging. Retrieved from https://www.tvo.org/article/beyond-plastic-how-ontario-retailers-are-ditching-single-use-packaging

52   Xanthos, D., & Walker, T. R. (2017). *International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review* doi: https://doi.org/10.1016/j.marpolbul.2017.02.048

53   Charlebois, S., Walker, T., Music, J., & McGuinty, E. (2019). *The single-use plastics dilemma: Perceptions and possible solutions.* Halifax, NS. Retrieved from https://www.dal.ca/faculty/management/news

Food prices are unquestionably affected by climate change. Canada has made aggressive pledges and set targets to reduce carbon emissions and curb its industries' impact on **climate change**. Canada continues with its incremental implementation of the **Pan-Canadian Framework on Clean Growth and Climate Change** as the leading strategy for reducing emissions and has faced significant provincial pushback.[54] To take more climate action, the government needs to address emissions levels in Canada as they are currently above the targeted 30% reduction levels beyond year 2030, far from the **Paris Agreement** goals of 2016.[55] Additionally, Canada's fragmented views have led to strong challenges from provincial governments around the constitutionality of the carbon pricing system.[56]

Roughly **10% of Canada's greenhouse gas emissions** are from **crop and livestock production**, excluding emissions from the use of **fossil fuels** or from **fertilizer production**.[57] The carbon reduction paradigm in Canada could place the food and agriculture sector at a cost disadvantage as it compares to our neighbours south of the border.[58] While the sector battles many climate-related issues, deals with global population growth, and increased demand for more and higher quality food products, the real question is how this can be done sustainably. We are expecting this dilemma to intensify even more in 2020.

RETAILING AI

Grocery giant Sobeys unveiled in 2019 what it calls Canada's first **"smart" shopping cart** at a store in Ontario. Sobeys has partnered with US-based Caper for this pilot project. Essentially, the cart you pick up as you enter the store will have high-tech devices attached to it. These will allow customers to shop, get recipe ideas, obtain information on where to get ingredients, weigh and pay for their food. It has built-in GPS so you can find whatever you need in the store. Great idea for people looking for some assistance and who want to be on their way as soon as they can. The "smart cart" enables shoppers to pay without dealing with lineups and cashiers.

54   Climate action tracker: Canada. (2019). Retrieved from https://climateactiontracker.org/countries/canada/
55   Climate Change Performance Index (CCPI). (2019). Canada 2019. Retrieved from https://www.climate-change-performance-index.org/country/canada-2019
56   Ljunggren, D. (2018). Canada's Trudeau vows to impose carbon tax, opponents push back. Retrieved from https://ca.reuters.com/article/domesticNews/idCAKCN1MX2CR-OCADN
57   Agriculture and Agri-Food Canada (AAFC). (2016). Greenhouse gases. Retrieved from http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate-change-and-agriculture/greenhouse-gases/?id=1329321969842
58   Mussell, A., Bilyea, T., & Zafiriou, M. (2019). *Efficient agriculture as a greenhouse gas solution provider*. Ottawa, ON. Retrieved from https://capi-icpa.ca/wp-content/uploads/2019/09/2019-09-20-CAPI-paper-Efficient-Ag-GHG-Solutions-Provider_WEB.pdf

History has shown that AI does not completely replace human capital, but it instead, amends employees' roles in order to devote more time developing strategy, new leads, and building relationships with vendors. Currently, the grocery sector is lagging in such technological developments. While largely hidden from consumers, experts and industry dealers warn that without uptake of AI advancements, potential for growth and development will be lost and retail sector will continue to lag. AI will enable retailers to better understand consumer psychology, maximizing inventory management and improving the retail experience for consumers. Unlike large retailer such as **Amazon**, the grocery sector fails to recognize the value in AI technology. Now, as the retail environment plays catch-up, we should expect to see more AI-driven initiatives in 2020.

The challenge for food retailers is hiring and retaining personnel while offering a great shopping experience for consumers. Although self-checkout lanes made their way into grocery stores almost 20 years ago, adoption by shoppers has been slow. While the usage rate of self-checkouts in Canada increased 17% this past year alone, they do require some work by consumers. Many have wondered whether shoppers should be compensated for work traditionally done by store employees.

> *The cost to equip a store with multiple sensors like Amazon Go uses can be prohibitive, especially for a low-margin industry like the grocery business. Grocers will look for technologies that allow a bricks-and-mortar outfit to adopt state-of-the-art technology without costly adjustments to infrastructure.*

What Sobeys and Caper are proposing does not face a similar ethical dilemma. The consumer's role doesn't really change if the technology works and offers a frictionless experience. It's a step forward, and we are expecting other retailers to consider similar options in 2020.

10-YEAR SNAPSHOT: SPECIAL EDITION

The 10th edition of Canada's Food Price Report acknowledges major trends and changes over the past decade. The most notable and impactful moments in Canada's food price history during that period include the **beef price shock in 2015**, the **dairy proteins (diafiltered milk)** loophole and the impact of US imports, and the **bread price-fixing scheme** which took place over 14 years from 2001 to 2015. These significant events demonstrated the vulnerability of Canada's food industry and its inability to be proactive in a volatile market. Furthermore, food prices in the **bakery, meat** and **dairy** categories increased during this period and underwent market corrections after official inquiries by authorities.

BEEF PRICES AND AVAILABILITY IN 2015

2015 saw beef prices climb to all-time highs. The increase in meat prices generally led consumers to look at alternative sources of protein, which drove up the price of chicken and pork to new levels. Beef prices shot up in 2015 due to a combination of **drought**, **disease outbreaks** and **global demand**. The year saw tight cattle supplies and surprisingly strong consumer demand. Drought in California and extreme weather in the corn belt raised the price of feed, and massive droughts in Texas, Oklahoma, Kansas, Colorado and New Mexico directly impacted prices at the consumer level.[59] In 2015, despite financial success, the beef industry faced challenges as it continued to lose market share in Canada.[60] Changes in consumer eating habits, increased demand for transparency and sustainability and concern about animal welfare and processing had started to influence how consumers were buying meat.
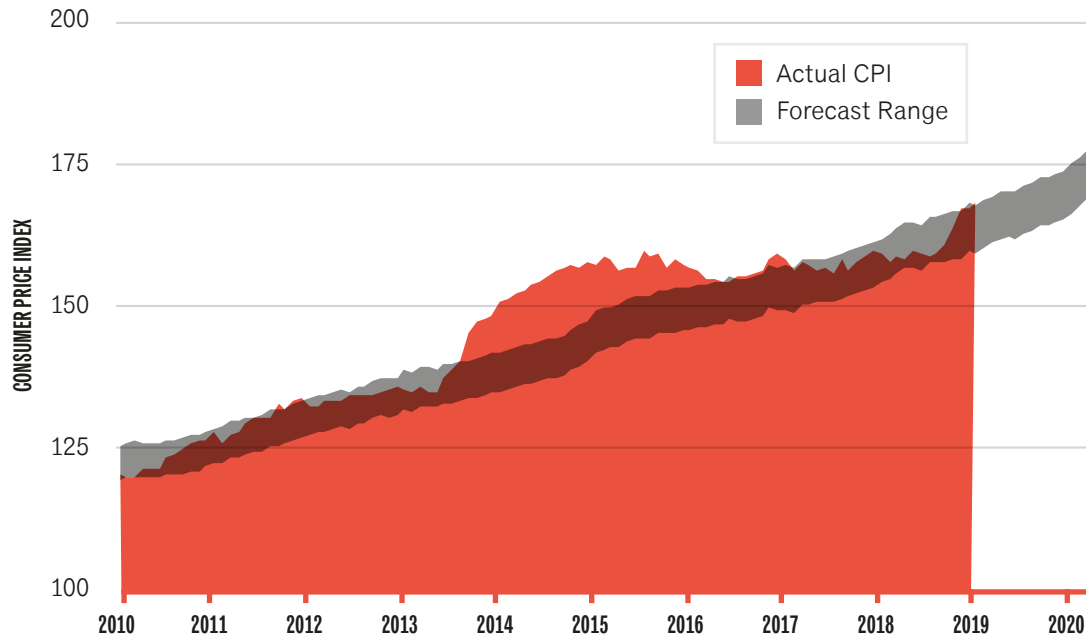
---

59   Stieber, Z. (2015). Beef prices projected to keep rising in 2015—but there's good news. Retrieved from https://www.theepochtimes.com/beef-prices-projected-to-keep-rising-in-2015-but-theres-good-news_1317919.html

60   Bakx, K. (2016). Beef prices begin sudden fall from record highs. Retrieved from https://www.cbc.ca/news/canada/calgary/beef-industry-prices-eating-habits-retail-chicken-1.3454160

BREAD PRICE-FIXING SCANDAL

Between **2001 and 2015**, the CPI for bread had risen by **96%**.[61] According to the **Competition Bureau of Canada**, two Canadian bread companies colluded with five grocery retailers to boost bread prices and forced other retailers to increase their prices simultaneously.[62] In 2017, Loblaws disclosed this to the public, two years after it approached the Competition Bureau to admit its participation and receive immunity from prosecution. As a result, Loblaws offered Canadian bread-buyers a $25 gift card.[63] The investigation is still ongoing. Class-action lawsuits allege companies overcharged consumers an estimated **$5 billion** over the duration of the scheme.[64]
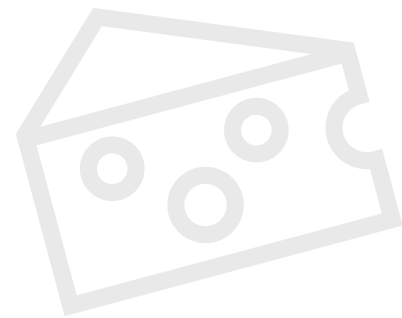
> *When they learned about the bread price-fixing scheme, most Canadians were disappointed at first but almost immediately moved on when Loblaws rolled out its $25 gift card strategy. It was well executed.*

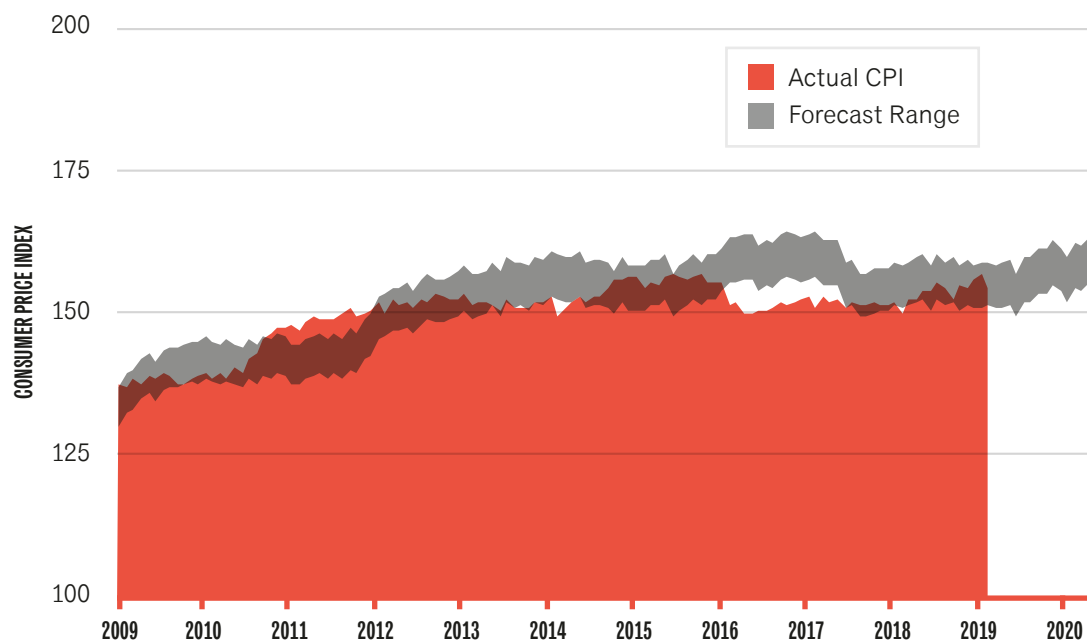61   Estimates based on Statistics Canada figures to 2015

62   Pecman, J. (2018). Shining a light into the shadows: What price-fixing investigations tell Canadians. Retrieved from https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04335.html

63   Sagan, A. (2017). How to register to receive $25 Loblaw card after bread price-fixing arrangement admission. The Canadian Press, Dec 19, 2017.

64   Strauss, M. (2018). Group accused of bread price-fixing granted delay on class-action suit. Retrieved from https://www.theglobeandmail.com/business/article-group-accused-of-bread-price-fixing-

FIGURE 3: BAKERY PRICES IN CANADA (AUGUST 2009 TO NOVEMBER 2020)

DAIRY PROTEINS FROM THE UNITED STATES

In Canada, a supply management system is used to regulate **dairy**, **poultry** and **egg** production, prices and imports.[65] This same system allows producers to use their quotas to produce and sell product in the identified agricultural sub-sectors.[66] To protect consumers from large price swings, the system coordinates prices producers receive but does not control retail prices. Ultimately, the system protects Canadian production from international markets by placing significant tariffs on imported dairy products.

Over the last decade, **diafiltered (ultrafiltered) milk** has been popular with processors, particularly cheese producers, because it has a high protein content, enabling higher yields with less waste.[67] Diafiltered milk production plants were built along the border to service Canadian demand. Given its demand in Canada, the dairy protein import phenomenon
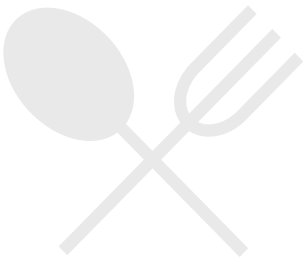
granted-delay-on-class-action-suit/

65   Heminthavong, K. (2018). *Canada's supply management system.* Ottawa, ON. Retrieved from https://lop.parl.ca/sites/PublicWebsite/default/en_CA/ResearchPublications/201842E

66   Johnson, K. (2017). Dairy 101: The Canada-U.S. milk spat explained. Retrieved from https://ipolitics.ca/2017/04/22/dairy-101-the-canada-u-s-milk-spat-explained/

67   Edwards, K. (2018). The truth about dairy farming in Canada. Retrieved from https://www.macleans.ca/economy/the-truth-about-dairy-farming-in-canada/
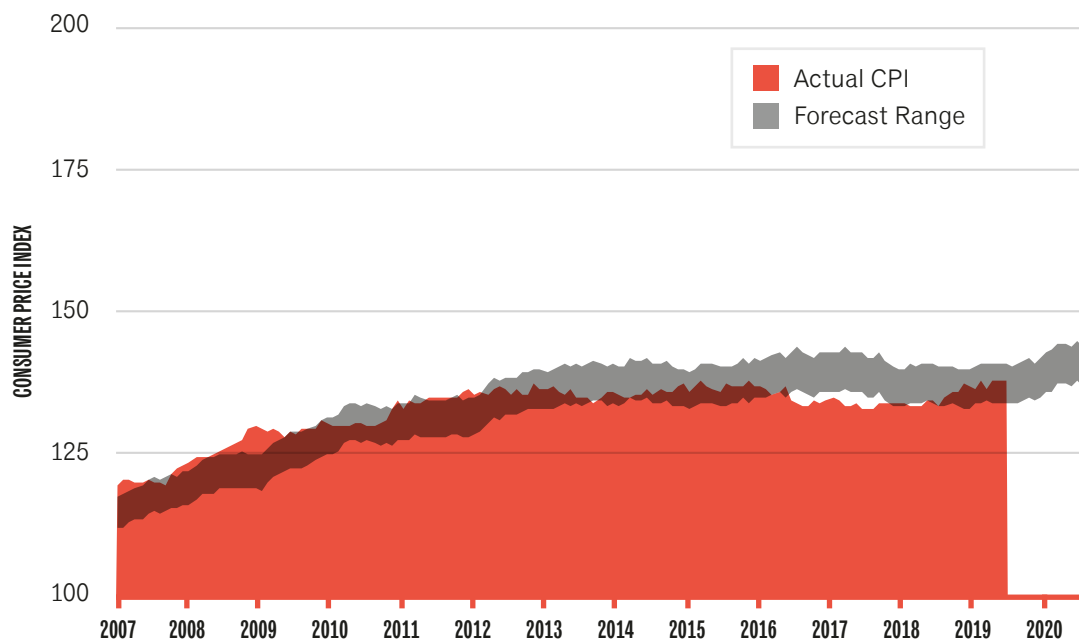
led to the **Canada Border Services Agency (CBSA)** considering it as a protein ingredient and not subject to Canada's high dairy tariffs at the border. Inconsistently, the same product is considered milk by the **CFIA**. Because it was invented after ratification of the **North American Free Trade Agreement (NAFTA),** Canadian authorities adhered to policies allowing diafiltered milk into the Canadian market.[68] From 2012 to 2015, US exports of dairy products to Canada increased **54%** primarily due to diafiltered milk.[69] Affecting dairy prices, the dairy marketing board in Canada allowed an increase of **234%** in the milk protein substance category including diafiltered milk from 2012 to 2015. While we have seen much attention pointing to Canada's dairy sector, all five supply-managed agricultural sectors will continue to face increasing criticism from industry representatives, government leaders and food experts.

> *Canada has been in a battle with the US over dairy products for decades. With new trade deals, including USMCA, agricultural growth is poised to flourish as long as both countries work closely on aligning interests and goals for the sector.*

FIGURE 4: DAIRY PRICES IN CANADA (APRIL 2007 TO NOVEMBER 2020)

68   Lampron, P. (2016). What is diafiltered milk? Retrieved from https://dairyfarmersofcanada.ca/en/dairy-in-canada/dairy-news/what-diafiltered-milk

69   Johnson, K. (2017). American dairy imports into Canada are going up, defying U.S. claims. Retrieved from http://ipolitics.ca/2017/02/10/american-dairy-imports-into-canada-are-going-up-defying-u-s-claims/

DALHOUSIE UNIVERSITY

UNIVERSITY of GUELPH

dal.ca/aal

arrellfoodinstitute.ca

🐦 @dalagriculture

🐦 @ArrellFoodInst

📘 /dalagriculture

📘 /foodinstituteguelph