13TH EDITION

Canada's **Food Price Report** 2023

DALHOUSIE UNIVERSITY

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY of GUELPH

UNIVERSITY OF SASKATCHEWAN

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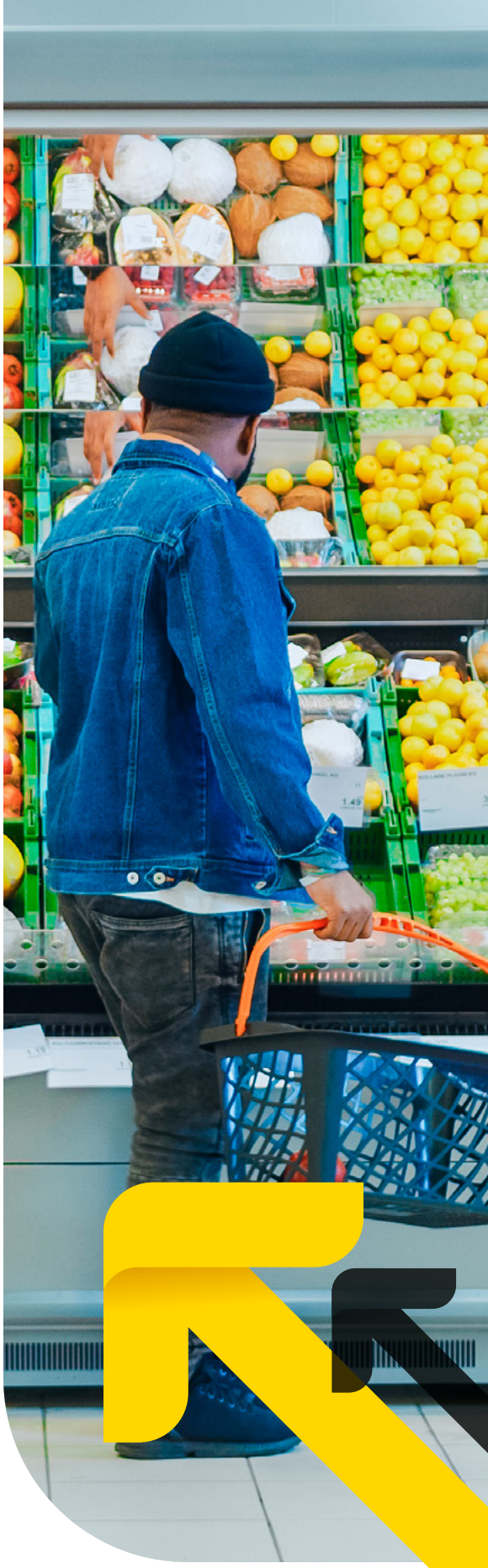
Executive Summary

This is the 13th edition of Canada's Food Price Report, published annually by Dalhousie University, the University of Guelph, the University of British Columbia, and the University of Saskatchewan. Contributions are made by all universities to broaden the scope of the report and add regional expertise.

Last year's report predicted an overall food price increase of 5% to 7% in 2022. The current rate for food price increases has exceeded this prediction at 10.3% as of September 2022 (according to the latest available CPI data). By category, the predicted price increase for restaurants was accurate, while the remaining categories saw higher than anticipated price increases in 2022.

The report also provides readers with predictions on annual food expenditures for individual consumers based on their age and gender. This allows readers to construct for their household predicted annual food expenditures. In 2022, for example, we predicted an annual food expenditure of up to $14,767.36 for a family of four including a man (age 31–50), woman (age 31–50), boy (age 14–18), and girl (age 9–13). From what was observed in 2022, the total annual expenditure for a family with the same demographic makeup was $15,222.80, **meaning a difference of $455.44 for the year**.



For 2023, the report uses the same food categories and makes the following predictions:

2023 Food Price Forecasts

FOOD CATEGORIES	ANTICIPATED CHANGES %
Bakery	5% to 7%
Dairy	5% to 7%
Fruits	3% to 5%
Meat	5% to 7%
Other	5% to 7%
Restaurants	4% to 6%
Seafood	4% to 6%
Vegetables	6% to 8%
Total Increase in Food Prices	**5% to 7%**

Over the last 13 years, this report has considered many market instruments and macroeconomic factors in its forecast such as financial indicators, currency values and exchange rate fluctuation, and Canada-specific information. The 2023 report forecasts that overall food prices will increase by 5% to 7%. This report maintains the same methodological approach as last year and shows predicted annual food expenditures by individual consumer based on their age and gender. Included again this year are the categories of pregnant women and nursing women that were newly added last year.

This year, we are predicting that the same family of four will have an annual food expenditure of up to $16,288.41, an increase of up to $1065.60 over the total annual cost in 2022.

In 2022, due to ongoing repercussions of the COVID-19 pandemic, Canada has experienced supply chain disruptions as well as labour shortages. Canada also saw the highest rate of food inflation since the 1980s—a 40-year high. Adverse climate events, rising geopolitical tensions, high oil prices, and a falling Canadian dollar all contribute to retail food prices.

For many Canadians this year, food choices were motivated by the ability to save money while at the check-out counter. More consumers attempted to save during grocery trips by reading weekly flyers, using coupons, taking advantage

of volume discounting, and using food rescuing apps.[1] Consumers under age 35 are more than twice as likely to have increased their use of coupons, and those who earn less than $50k per year are using coupons more often than those with higher income.[2] Other avenues like volume discounting (i.e., buying bulk products or large quantities to save money) seem to be more popular with Canadian shoppers, however 54% feel it is unfair to smaller households/single people, and 47% feel volume discounts lead to more food waste.[3]

In 2023, it is expected that Canadians will continue to feel the effects of high food inflation, and food insecurity/affordability will also be a big issue with rising food prices. The effects of climate change and the impact of high transportation costs, as a result of higher oil prices, will also continue through next year.

2022 Provincial Breakdown of Food Prices

PROVINCE	2022 CHANGES[4]	2023 FORECASTS[5]
Alberta	10.8%	⬆
British Columbia	9.2%	⬆
Manitoba	10.7%	⬆
New Brunswick	10.7%	⬆
Newfoundland and Labrador	10.8%	⬇
Nova Scotia	10.5%	⬆
Ontario	10.4%	-
Prince Edward Island	10.6%	-
Saskatchewan	10.3%	⬆
Quebec	11.0%	⬇

1 AgriFood Analytics Lab. (2022). New report suggests most Canadians would use more coupons at the grocery store if more were available or useable. Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/sites/agri-food/Report%20EN%20Coupons.pdf
2 Ibid
3 Ibid
4 Food inflation by province since October 2021.
5 (⬆) 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 2022: How We Did

> *At 7%, our forecast a year ago was considered by many to be alarmist, yet here we are with a food inflation rate above 10%.*

Food inflation is the progressive increase in the value of all food goods. Food price rise is the increase in the price of a product at the retail level. While Statistics Canada measures inflation, **Canada's Food Price Report** looks at the relative price increases at retail. Official food inflation data is one source used to develop the forecast.

Forecasting food prices in what is considered normal circumstances is challenging, and the past year has presented a number of unforeseen factors including Russia's invasion of Ukraine, higher interest rates, and escalating energy costs. While factors such as energy costs can be factored into forecasting, the impact on food prices of other events like the sudden changes in interest rates and geopolitical conflicts are difficult to predict. These drivers likely contributed to the differences in last year's predictions versus the observed changes for 2022.

In the 2022 forecasts shown in Table 1, the predictions for food price increases were lower in all categories, except restaurants. Few were predicting a food inflation rate at 5% to 7%, which was considered high by many only 12 months ago. However, 2022 presented a host of contributing factors that drive food inflation including continued labour shortages, high oil and gas prices, adverse climate events, and geopolitical conflicts.

Table 1: 2021 Food Price Results: 2022 Forecast vs Observed[6]

CATEGORIES	2022 CANADA'S FOOD PRICE REPORT FORECAST	2022 ACTUAL CHANGE (CPI, SEPT. '21 TO SEPT. '22)
Bakery	5% to 7%	14.8%
Dairy	6% to 8%	9.7%
Fruits	3% to 5%	11.4%
Meat	0% to 2%	7.6%
Other	2% to 4%	12.8%
Restaurants	6% to 8%	7.5%
Seafood	0% to 2%	7.6%
Vegetables	5% to 7%	12.7%
Total Food Categories Forecast	**5% to 7%**	**10.3%**

Price increases can also be explained by a rise in transportation costs and supply chain disruptions. Climate events have also negatively impacted harvests this year with drought and historic heat waves across the globe.

Our predicted annual expenditures for Canadian consumers based on age were lower than the observed costs for 2022. Predicted costs were calculated based on a 5% to 7% increase, while observed costs reflect the 10.3% increase. The category with the largest difference between the predicted and observed cost was for a nursing woman <18 years at $138.40 for the entire year (Table 2).

6 Statistics Canada Consumer Price Index (CPI) numbers retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000403&pickMembers%5B0%5D=1.26&cubeTimeFrame.startMonth=09&cubeTimeFrame.startYear=2022&referencePeriods=20220901%2C20220901

Table 2: 2022 Annual Food Expenditure by Age and Gender – Predicted vs. Observed

DEMOGRAPHICS		PREDICTED COST 2022	OBSERVED COST 2022	DIFFERENCE
Child	6-11 Months	$2,706.30	$2,789.83	$83.46
	1-3 Years	$2,141.08	$2,207.11	$66.03
Boy/Man	4–8 Years	$2,793.32	$2,879.47	$86.15
	9–13 Years	$3,596.24	$3,707.26	$111.02
	14–18 Years	$4,219.55	$4,349.69	$130.14
	19–30 Years	$3,971.15	$4,093.63	$122.48
	31–50 Years	$3,779.50	$3,896.07	$116.57
	51–70 Years	$3,671.14	$3,784.36	$113.22
	70+ Years	$3,528.51	$3,637.33	$108.82
Girl/Woman	4–8 Years	$2,675.31	$2,757.82	$82.51
	9–13 Years	$3,377.20	$3,481.35	$104.15
	14–18 Years	$3,506.45	$3,614.60	$108.15
	19–30 Years	$3,457.74	$3,564.38	$106.64
	31–50 Years	$3,391.11	$3,495.69	$104.58
	51–70 Years	$3,320.36	$3,422.76	$102.40
	70+ Years	$3,175.97	$3,273.92	$97.95
Pregnant Woman	< 18 Years	$4,050.30	$4,175.22	$124.92
	19–30 Years	$3,941.80	$4,063.37	$121.57
	31–50 Years	$3,900.06	$4,020.35	$120.29
Nursing Woman	< 18 Years	$3,941.80	$4,080.20	$138.40
	19–30 Years	$3,941.80	$4,063.37	$121.57
	31–50 Years	$3,908.75	$4,029.30	$120.55

2022 Highlights

Food Affordability and Greedflation

> *With more financial data to clarify food sales and an authoritative watchdog in the Competition Bureau, industry and grocers may have a shot at regaining consumers' trust.*

Food affordability has been top of mind for many Canadians in the past year. Consumers have attempted to save during grocery trips by reading weekly flyers, using coupons, taking advantage of volume discounting, and using food rescuing apps.[7] According to the 2022 HungerCount published by Food Banks Canada, use of food banks has increased in Canada by 15%.[8] Food affordability is a nationwide problem, with 5.8 million Canadians, including 1.4 million children, in the ten provinces living in food-insecure households in 2021.[9] The lack of affordability Canadians are facing as a result of rising food prices has resulted in an estimated 23% reporting that they eat less than they should.[10] In normal years, food banks tend to see a slow-down of use in summer months, but last summer there was no slow-down and food banks faced their toughest summer in 41 years.[11]

In relation to affordability of food, the term "greedflation" has become a prominent topic in the past year, with several announcements related to grocery prices coming in the Fall of 2022. "Greedflation" refers to the practice of taking advantage of high inflationary times to earn excessive profits at the expense of consumers who have limited choice in grocery shopping. In October 2022, the Competition Bureau announced it was launching a study of grocery store competition in Canada with the goal of examining various issues and recommending measures governments can take to improve competition in this sector.[12] Ottawa also announced in October that it would investigate food prices and the alleged abuse by large grocery store chains—a

7 AgriFood Analytics Lab. (2022). New report suggests most Canadians would use more coupons at the grocery store if more were available or useable. Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/sites/agri-food/Report%20EN%20Coupons.pdf

8 Food Banks Canada. (2022). HungerCount 2021. Retrieved from https://fbcblobstorage.blob.core.windows.net/wordpress/2022/05/HungerCount-Report-in-Design-Oct-20.pdf

9 Proof. (2022). How many Canadians are facing food insecurity? https://proof.utoronto.ca/food-insecurity/how-many-canadians-are-affected-by-household-food-insecurity/

10 Food Banks Canada. (June 6, 2022). New Food Banks Canada Research Shows 7 Million Canadians Going Hungry. Retrieved from https://www.newswire.ca/news-releases/new-food-banks-canada-research-shows-7-million-canadians-report-going-hungry-833281882.html

11 Ibid

12 Government of Canada (2022). Competition Bureau to study competition in Canada's grocery sector. Retrieved from https://www.canada.ca/en/competition-bureau/news/2022/10/competition-bureau-to-study-competition-in-canadas-grocery-sector.html

decision made by the Parliamentary Standing Committee on Agriculture.[13] Although Canada has the third-lowest inflation rate among the G7 countries, food inflation has exceeded general inflation for 13 consecutive months.[14] The scope of this investigation will include the entire chain, from production to retail and wages.[15] Although there is not currently any evidence to suggest that there is abuse by grocers, almost 80% of Canadians claim there is abuse in the system.[16] Both the study and investigation will provide Canadians with more clarity on the changes in grocery store prices.

Transportation and Impacts of Shelflation

"Shelflation" is a new term in the grocery industry that describes when supply chain issues lead to overripe, or less fresh food products making their way onto store shelves.[17] Factors that contribute to supply chain issues could include labour shortages, weather, border-related challenges, or any event that could realistically extend storage and/or transportation times.[18] In 2022, 63% of Canadians noted that they had to throw away food prematurely at least once in the 6 months preceding the survey.[19] Food with a shorter shelf-life can contribute to higher food costs because the food goes bad faster than it can be consumed. To combat this issue, may are looking to the "middle-mile" for solutions to supply chain disruptions, and combatting the costs associated with transporting food that can impact food prices. The "middle-mile" is the part of the supply chain that consumers do not see but which affects them.[20]

> *2022 reminded us that cybersecurity should be prioritized by all companies within the food supply chain, from farm to fork.*

One component of costs associated with the "middle-mile" is fuel costs for transportation. As COVID-19 lockdowns were lifted and economies worked towards a state of normalcy, energy prices rose globally as many places of work, industries, and leisure activities all suddenly required more energy, placing

13 Charlebois, S. (2022). Ottawa will investigate food prices. It's about time. Retrieved from: https://torontosun.com/opinion/columnists/charlebois-ottawa-will-investigate-food-prices-its-about-time https://torontosun.com/opinion/columnists/charlebois-ottawa-will-investigate-food-prices-its-about-time
14 Ibid
15 Ibid
16 Ibid
17 Powell, C. (2022). Supply chain crunch leaves produce sector ripe with challenges. Retrieved from: https://canadiangrocer.com/supply-chain-crunch-leaves-produce-sector-ripe-challenges
18 AgriFood Analytics Lab (2022). Canadians may have thrown away close to $550 million worth of food at home in the last six months, due to "shelflation". Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/sites/agri-food/Report%20EN.pdf
19 Ibid
20 Charlebois, S. (2022). Battle of the middle mile starts autonomously. Retrieved from https://canadiangrocer.com/battle-middle-mile-starts-autonomously

pressure on suppliers.[21] Some companies and industries are searching for solutions to this, and this year Loblaw announced it would be partnering with Gatik to launch autonomous food delivery fleets.[22] While this does not address fuel prices, it will address issues related to labour shortages and disruptions to supply chain as a result of human interactions.[23]

Cybersecurity is also a growing concern for the food industry. In addition to privacy concerns, cyberattacks can disrupt supply chains and compromise our access to food. After JBS Canada last year, both Sobeys and Maple Leaf Foods were allegedly impacted by attacks this year. This is something the entire food industry will need prioritize, as suggested by the most recent National Task Force on Supply Chains, submitted in October of this year.

Ukraine Conflict and Impacts on Food Prices

Geopolitical conflicts can impact food prices in a number of ways including trade and export restrictions and disruptions to the supply chain due to conflict areas. The ongoing war in Ukraine has especially impacted production and supply of three major commodities: wheat, sunflower oil, and fertilizers. Russia and Ukraine produce 27% of global wheat exports, and the shortage of exports from both countries could contribute to higher prices based on demand from countries that import wheat. Ukraine is the world's largest producer of sunflower oil,[24] which is the fourth most consumed oil in the world.[25] Sunflower oil is also widely used in producing other products such as processed foods.[26] According to the Food and Agriculture Organization (FAO), Russia's invasion of Ukraine in February 2022 created significant uncertainty about

> *"North America is in a food security bubble. Despite the horror in Ukraine, most shelves at our grocery stores are full of food. Few of us can appreciate what other parts of the world are experiencing."*

21 Barrett, N. (2022). Why are global gas prices so high? Retrieved from https://www.bbc.com/news/explainers-62644537

22 Charlebois, S. (2022). Battle of the middle mile starts autonomously. Retrieved from https://canadiangrocer.com/battle-middle-mile-starts-autonomously

23 Ibid

24 Emediegwu, L. (2022). How is the war in Ukraine affecting global food prices? Retrieved from https://www.economicsobservatory.com/how-is-the-war-in-ukraine-affecting-global-food-prices#:~:text=The%20war%20in%20Ukraine%2C%20as,rise%20in%20food%20prices%20globally

25 Economic Research Service (2022). Sunflower oil production makes up 9 percent of all vegetable oil produced globally. Retrieved from https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=104023

26 Ibid

world food supply and caused international wheat and grain prices to reach record levels.[27]

The reduced exports of sunflower oil could contribute to higher food prices as demand for this input increases when one of the leading suppliers is unable to produce and export as it typically would. Lack of availability of fertilizers may also add pressure to prices as Russia is the largest producer and exporter of fertilizer in the world.[28] Rising fuel costs have also had an impact. Russia is the largest gas exporter and, in addition to its use as a fuel, Europe's largest supplier[29]. Sanctions imposed on Russia by many Western countries have placed pressure on other suppliers of gas and the effects of higher fuel costs affect food prices as suppliers face higher costs themselves. Farmers feel the effects of these price increases as trucking and planting become more expensive.[30] The United Nations brokered a deal in July 2022 between Russia and Ukraine to ensure the unimpeded export of grain and fertilizers via the Black Sea to world markets; extension of this deal into 2023 will likely influence food and fertilizer prices.

Loblaw Price Freeze

In October 2022, Loblaw announced a voluntary price freeze on over 1,500 private-label products sold across the country until the end of January 2023. Worldwide, other grocers have made similar moves with the first grocer in the world implementing a price freeze more than six months ago. While this is a move welcomed by many Canadians struggling with food inflation, criticism has also followed as many believe grocers across Canada are price gouging. Consumers have not forgotten about, or forgiven the industry for, the bread price-fixing scheme uncovered in 2017. Overall, a price freeze like Loblaw's isn't difficult to achieve; negotiating with contract manufacturers that support the grocer's brand is not challenging and just requires a plan. Although a temporary move, it does show that industry is aware of, and sympathetic to, the current food prices everyone is facing.

> *Canadians were expecting empathy from the food industry to come sooner.*

27 Food and Agriculture Organization of the United Nations. (April 13, 2022). Food Price Monitoring Analysis Bulletin. Retrieved from https://www.fao.org/3/cb9556en/cb9556en.pdf

28 OEC. (N.D.). Fertilizers in Russia. Retrieved from https://oec.world/en/profile/bilateral-product/fertilizers/reporter/rus

29 Barrett, N. (2022). Why are global gas prices so high? Retrieved from https://www.bbc.com/news/explainers-62644537

30 McKeen, A. (2022). How much is inflation in Canada being driven by Russia's war in Ukraine. Retrieved from https://www.thestar.com/news/canada/2022/04/20/how-much-is-inflation-in-canada-being-driven-by-russias-war-in-ukraine.html

Impacts of Climate Change and the Carbon Tax

> *We need to understand how carbon taxation will impact food affordability in Canada over time.*

Economic expansion and population growth have greatly contributed to accelerated rates of greenhouse gas emissions (GHGs), which are the most important driver of global warming.[31] Without intervention, disruptive climate events have severe consequences for the global economy and food security.[32] Studies have shown that adverse effects of climate change can cause deficiencies in food supply of the affected area, and the demand for more agricultural products is typically inelastic, meaning a negative impact on food supply leads to an increase in prices.[33] While the world works to combat climate change, one intervention often used is a carbon tax. This approach is seen as a simple and fair solution, but just as climate events affects the agriculture sector, carbon taxes also have implications for this sector.[34] To reduce carbon emissions in Canada and reach targets set out by the Government of Canada, such a system has been implemented. It will see the cost per tonne of GHG emissions increase by $15 per year to $170 in 2030.[35] By 2030, a typical 5,000-acre farm could see taxes of over $150,000 which could compromise the owner's ability to make a profit.[36] The added cost of a carbon tax will increase production and transportation costs associated with food and may be passed on to the consumer as producers try to remain profitable. Currently, there is no incentive for making changes to production processes as there are no economical substitutions.[37] Other effective methods to combat climate change include new affordable technologies for producers that would phase out processes that produce GHGs.

There is no one individual factor that can be specifically identified as the root cause of increases in food prices. Various macroeconomic factors like those identified—labour shortages, high oil and gas prices, continued adverse climate events, geopolitical conflicts—all contribute to the changes seen in food prices.

31 Peña-Lévano, L. M., Taheripour, F., & Tyner, W. E. (2019). Climate change interactions with agriculture, forestry sequestration, and food security. Environmental and Resource Economics, 74(2), 653-675. doi: https://doi.org/10.1007/s10640-019-00339-6

32 Ibid

33 Ibid

34 Charlebois, S. (January 6, 2021). From farm to fork, not all carbon taxes are created equal. Retrieved from https://www.saltwire.com/atlantic-canada/business/perspectives-on-business/sylvain-charlebois-from-farm-to-fork-not-all-carbon-taxes-created-equal-537924/

35 Government of Canada. Update to the Pan-Canadian Approach to Carbon Pollution Pricing 2023-2030. Retrieved from https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/carbon-pollution-pricing-federal-benchmark-information/federal-benchmark-2023-2030.html

36 Charlebois, S. (January 6, 2021). From farm to fork, not all carbon taxes are created equal. Retrieved from https://www.saltwire.com/atlantic-canada/business/perspectives-on-business/sylvain-charlebois-from-farm-to-fork-not-all-carbon-taxes-created-equal-537924/

37 Ibid

Canada's Food Price Report: 2023 Forecast

Methodology

In the 13th edition, Canada's Food Price Report uses predictive analytics models applying machine learning to support the analytical process of determining the future of food prices. The report, a collaborative effort by Dalhousie University, the University of Guelph, the University of Saskatchewan, and the University of British Columbia, 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's Centre for Advancing Responsible and Ethical Artificial Intelligence (CARE-AI), known for its commitment to the agri-food sector, contributed to the analysis of prices using machine learning predictive analysis for the different categories of food and predicting the 2023 Consumer Price Index (CPI) changes. Different models were developed, namely, Vector Auto-Regressive Models, Prophet Models, and Deep Learning methods.

Besides the forecasting models, academics from the participating universities provided input and expertise from a wide range of disciplines on macroeconomic factors driving food prices, trends, and expectations for the food industry in the coming year.

Vector Auto-Regressive (VAR) Models

This is the first time we are using VAR models for our forecast.

The use of Vector Autoregressive Models (VAR) was adopted for the 13th edition of the Canada Food Price Report. The advantage of this approach is the ability to explicitly quantify the importance of exchange rates and overall inflation. VAR is a forecasting algorithm that can be used when two or more time series influence each other. In this instance the used model, or the parameters in combination with the historical data, is the forecasting of four endogenous variables for October 2022 to December 2023. VAR uses four endogenous variables, four exogenous variables, and a seasonal adjustment. The endogenous variables included: Canadian Food Price Inflation (9 categories), U.S. Food Price Inflation (all-food categories), Canadian wage index, and global energy index. The exogenous variables are Canadian All-Item Inflation, Canada/U.S. exchange rates, the lag of e, and time trend. The data for this forecasting

method included monthly data runs from January 1997 to September 2022 and used the TD Bank[38] forecasts for the four exogenous variables together with the estimated VAR to generate the food price inflation forecast. This process provided forecasts of monthly inflation for each of the nine food categories for October 2022 to December 2023.

Prophet Models

Prophet models produce univariate, auto-regressive forecasts using trend and seasonality extrapolation. NeuralProphet is a multivariate regression model inspired by Prophet where multiple variables may be considered per model. This enables the inclusion of additional dependent variables, such as historical exchange rates or oil prices, into the forecasting model.

Deep Learning Models

Neural Basis Expansion for Interpretable Time Series Forecasting (N-BEATS) uses a single deep neural network model to learn from many time series simultaneously. It learns a shared set of patterns and trends (basis functions) that it uses to generate forecasts. Neural Hierarchical Interpolation for Time Series Forecasting (N-HiTS) is a successor method to N-BEATS that has been shown to be more performant and computationally efficient. Lastly, DeepAR is a popular Deep Learning method based on recurrent neural networks that produces probabilistic forecasts and is configured as a global model.

For this year's report, an experiment was designed to determine which configuration of models and dependent variables would have produced the most accurate forecasts, per food price category, over the last six years. This included 331 variables from Statistics Canada (StatCan) and the Federal Reserve of Economic Data (FRED) database over the period January 1986 to September 2022.

38 TD Bank forecasts were used to mitigate trends and allow for more prediction power and accuracy versus using only the past to predict the future.

2023 Macroeconomic Factors and Drivers

As displayed in Table 3, this report considers multiple macroeconomic factors impacting the global landscape, the food and agriculture sector, and Canada as a whole. Climate change, geopolitical conflicts, energy, material, inflation, currencies, trade deals, food retail and manufacturing figures, consumer debt and expenditures, and remaining effects of COVID-19 influence our forecast for 2023 food prices in Canada. Of note this year, geopolitical conflicts, energy costs, and input costs have played a role in the cost of food prices.

Table 3: Macroeconomic Drivers for Canada's Food Prices in 2023

VARIABLES	CATEGORIES	IMPACT	PRICE EFFECTS	LIKELIHOOD
Macro-Level	Climate Change	Very Significant	Increase	Very Likely
	Geopolitical Risks	Very Significant	Variable	Very Likely
	Input Costs	Very Significant	Increase	Very Likely
	Energy Costs	Very Significant	Increase	Very Likely
	Inflation	Very Significant	Increase	Very Likely
	Currencies and Trade Environment	Moderate	Variable	Likely
	COVID-19	Very Significant	Increase	Likely
Sectoral-Level	Food Retail and Distribution	Moderate	Variable	Likely
	Food Processing Figures	Moderate	Variable	Likely
	Policies and Regulations	Moderate	Increase	Likely
	Consumer Awareness and Trends	Moderate	Decrease	Likely
Domestic-Level	Consumer Indebtedness	Very Significant	Decrease	Likely
	Consumer Disposable Income	Very Significant	Decrease	Very Likely

Food Prices by Province

Canada is expected to see food inflation increases across the country in 2023 (Table 4). Higher food prices will likely be due to rising costs of inputs for food and transportation costs. **All provinces could see price increases of up to 7% next year.**

Table 4: 2022 Provincial Breakdown of Food Prices

PROVINCE	2022 CHANGES[39]	2023 FORECASTS[40]
Alberta	10.8%	⬆
British Columbia	9.2%	⬆
Manitoba	10.7%	⬆
New Brunswick	10.7%	⬆
Newfoundland and Labrador	10.8%	⬇
Nova Scotia	10.5%	⬆
Ontario	10.4%	⬆
Prince Edward Island	10.6%	⬆
Saskatchewan	10.3%	⬆
Quebec	11.0%	⬇

The 2023 Watch-List Items

Overall, prices for all food categories could increase by up to 7% in 2023 with vegetables seeing the largest increase (6% to 8%) as shown in Table 5. Overall, commodities prices are increasing, and the global supply chain has been impacted by multiple factors including an unprecedented price increase for numerous commodities and food products. Some of these increases include the cost of crop inputs (i.e., fuel, chemicals, and fertilizers) which have increased by 50% or more. Restaurant prices will continue to increase as businesses contend with rising food costs, rent increases, and labour challenges with the accommodation and food services industry seeing a 46.3% vacancy rate.[41]

> *We were hoping to have better news for Canadians, given the difficulties experienced in 2022, but our models tell us a different story.*

39 Food inflation by province since October 2021.

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

41 Statistics Canada. (June 24, 2022). Labour shortage trends in Canada. Retrieved from https://www.statcan.gc.ca/en/subjects-start/labour_/labour-shortage-trends-canada

Like 2022, we anticipate 2023 to be challenging for Canadians at the grocery store, especially for households with lower means

Table 5: 2023 Food Price Forecasts

FOOD CATEGORIES	ANTICIPATED CHANGES %
Bakery	5% to 7%
Dairy	5% to 7%
Fruits	3% to 5%
Meat	5% to 7%
Other	5% to 7%
Restaurants	4% to 6%
Seafood	4% to 6%
Vegetables	6% to 8%
Total Increase in Food Prices	**5% to 7%**

To reflect the diversity of Canadian household composition, **Canada's Food Price Report 2023** uses an approach of predicting annual food expenditure based on individual consumers' age and gender (Table 6). This allows Canadians to calculate the annual expenditure predictions that reflect the composition of their household whether it's, for example, a person living alone, a single-parent-headed family, or a multi-generational family.

Table 6: Predicted Food Expenditures for Individual Consumers 2023

DEMOGRAPHICS		PREDICTED COST 2022
Child	6-11 Months	$2,985.12
	1-3 Years	$2,361.61
Boy/Man	4–8 Years	$3,081.03
	9–13 Years	$3,966.77
	14–18 Years	$4,654.17
	19–30 Years	$4,380.18
	31–50 Years	$4,168.80
	51–70 Years	$4,049.27
	70+ Years	$3,891.94
Girl/Woman	4–8 Years	$2,950.87
	9–13 Years	$3,725.05
	14–18 Years	$3,867.62
	19–30 Years	$3,813.88
	31–50 Years	$3,740.39
	51–70 Years	$3,662.36
	70+ Years	$3,503.10
Pregnant Woman	< 18 Years	$4,467.48
	19–30 Years	$4,347.81
	31–50 Years	$4,301.77
Nursing Woman	< 18 Years	$4,365.81
	19–30 Years	$4,347.81
	31–50 Years	$4,311.35

Table 7 provides examples of different household compositions and their predicted annual food expenditure for 2023. Using these calculations, based on a family with a man (age 31–50), woman (age 31–50), boy (age 14–18), and girl (age 9–13), the annual food expenditure is predicted to be up to $**16,288.41** in 2023. This is an increase of up to $1065.60 from the observed annual expenditure for a family of the same demographic makeup in 2022.

Table 7: Examples of Canadian Households and Predicted Annual Food Expenditure 2023

HOUSEHOLD DEMOGRAPHICS	TOTAL PREDICTED FOOD EXPENDITURE 2023
Four People: Man (31–50), Woman (31–50), Boy (14–18), Girl (9–13)	$16,288.41
Three People: Woman (19–30); Boy (4–8), Child (1–3)	$9,256.52
Four People: Two Women (31–50), Girl (14–18), Boy (9–13)	$15,315.17
Two People: Man (51–70), Woman (51–70)	$7,711.63
Six People: Woman (70+Years), Man (31–50), Woman (31–50), Girl (9–13), Boy (4–8), Child (6–11 Months)	$21,203.48
Two People: Man (19–30), Pregnant Woman (19–30)	$8,727.99

There are limitations to the data presented in Tables 7 that should be noted. First, the data is based on a very conservative 5% assumed food waste; because of supply chain interruptions and the introduction of "shelflation", food waste is likely higher. Second, the calculated expenditures do not account for food service costs and assume that Canadians are cooking and eating exclusively at home. Third, the data does not account for specialized diets or fees associated with online food retail.

Consumers have become savvy grocery shoppers. Frugality will continue to be a priority for many Canadians in 2023.

What to Expect in 2023

Food Security and Affordability

Food security will continue to be a concern for many in 2023 as the price of food is expected to increase. There were nearly 1.5 million visits to food banks in 2022, marking the highest March use in history, and an increase in use of 35% from 2020 and 15% from 2021.[42]

42 Food Banks Canada. (2022). HungerCount 2021. Retrieved from https://fbcblobstorage.blob.core.windows.net/wordpress/2022/05/HungerCount-Report-in-Design-Oct-20.pdf

Food bank use has been increasing since June 2020 and because of rising food prices, 20% of Canadians reported their household would be likely or very likely to get food or meals from community organizations including food banks, community centres, or other access points over the next six months.[43] Additionally, 47% of Canadians have purchased cheaper alternatives, brands, or items to adjust their spending in the face of current inflation rates.[44] Steps have been taken to help Canadians with affordability, like the doubling of the GST credit from the Federal government, and some corporations' interventions, like Loblaw's announcement of a price freeze until January 31, 2023.[45] However, these measures cannot be assumed to be permanent and while they may relieve some of the financial stress around food security and affordability, Canadians will still need to be prepared to spend more in the coming year.

Continued Pressure on Inputs and Commodities

The global supply chain has been impacted by several factors and seen unprecedented price increases for numerous commodities and food products. Since mid-2020, food prices have increased because of the COVID-19 pandemic, and temporary export restrictions on key commodities have contributed to shortages, exerting more pressure on prices. Geopolitical events have further increased food prices. A recent study showed that there was a one-way causal relationship with geopolitical factors such as the Russo-Ukrainian war significantly affecting food prices.[46] This is not just true for the war, however; generally speaking, geopolitical risks have become more common and are key drivers of commodity prices.[47] Lastly, the cost of crop inputs has increased by 50% or more. These factors together place pressure on inputs and commodities, contributing to overall rising food prices.

> *While rising interest rates will increase shelter costs for many Canadian families, a stronger currency will lower the price for many food imports. Yet the former will likely outweigh the latter.*

43 Statistics Canada. (May 9, 2022). Rising prices are affecting the ability to meet day-to-day expenses for most Canadians. Retrieved from https://www150.statcan.gc.ca/n1/daily-quotidien/220609/dq220609a-eng.htm

44 Ibid

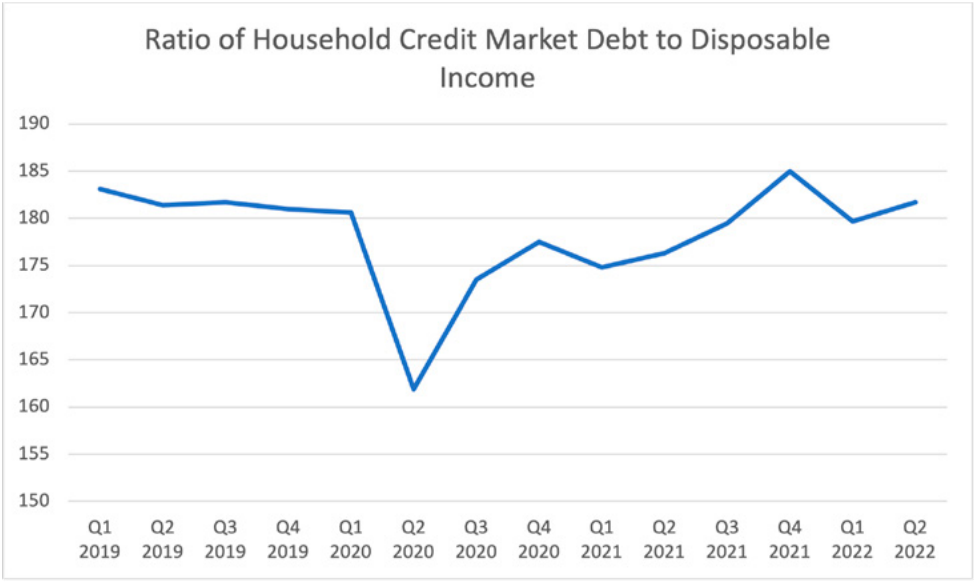
45 Bundale, B. (October 17, 2022). Loblaw freezes prices on No Name products in bid to ease inflation at the grocery store. Retrieved from https://globalnews.ca/news/9203853/no-name-loblaw-price-freeze-groceries-inflation/

46 Saadaoui, F., Jabeur, B. & Goodell, J. (2022). Causality of geopolitical risk on food prices: Considering the Russo-Ukrainian conflict. Finance Research Letters. https://doi.org/10.1016/j.frl.2022.103103

47 Caldara, D. & Iacoviello, M. (March 2022). Measuring Geopolitical Risk. Retrieved from https://www.federalreserve.gov/econres/ifdp/files/ifdp1222r1.pdf

Economic Slow-Down

With current high food prices, and the predicted increases, it is possible there will be an economic slow-down in the next year. The household credit market debt as a proportion of household disposable income for Canadians increased to 181.7% in the second quarter of 2022, an increase of 2% from the first quarter of the year as demonstrated in the graph below.[48]



48 Statistics Canada. (May 9, 2022). Rising prices are affecting the ability to meet day-to-day expenses for most Canadians. Retrieved from https://www150.statcan.gc.ca/n1/daily-quotidien/220609/dq220609a-eng.htm

In other terms, there was $1.82 in credit market debt for every dollar of household disposable income, and total debt payments increased by 3.5%,[49] while in the U.S., in April 2022, the U.S. household debt was 139% of disposable income.[50] This will likely mean less spending by consumers on other products while they adjust to food prices, and higher prices for other retail items.

The Canadian dollar fell to a two-year low in September—below 73 U.S. cents.[51] Domestic currency depreciation may add to the pressure of inflation that Canada is already experiencing by making imports more expensive.[52] It is not expected that the Canadian dollar will improve until later in 2023 when interest rates stop rising.[53] Interest rate changes in the U.S. could also impact the Bank of Canada's decision on raising interest rates as the two economies are linked.[54] The goal of the interest rate hikes is to rein in current inflation rates and encourage Canadians to borrow and spend less.[55] While this will help to slow inflation, its impact will mean more pressure for consumers and businesses that are already feeling the pressure of inflation and high borrowing costs.[56]

49 Ibid
50 Heaven, P (April 18, 2022). Posthaste: Canadians are already feeling the pinch of rising debt payments. Retrieved from https://financialpost.com/executive/executive-summary/posthaste-rising-debt-payments-will-put-the-squeeze-on-canadians-and-many-are-already-feeling-the-pinch
51 Hughes, S. (October 6, 2022). Low-flying loonie means interest rates could stay high for longer. Retrieved from https://financialpost.com/news/economy/canadian-dollar-bank-canada-inflation-fight
52 Ibid
53 Ibid
54 Ibid
55 Evans, P. (October 26, 2022). Bank of Canada raises interest rate again – but the pace of hikes may be slowing. Retrieved from https://www.cbc.ca/news/business/bank-of-canada-interest-rate-decision-1.6629901
56 Ibid

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