

Research Report

Price Dynamics and the Impact of the Food and Other Essentials Program

Second report of the Research program to evaluate the cost-of-living reduction measures in Nunavik

Sébastien Lévesque under the direction of Gérard Duhaime



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EXECUTIVE SUMMARY

The Research program to evaluate the cost-of-living reduction measures in Nunavik, launched in 2021, has consolidated new sources of data on price levels in Nunavik.

This report analyzes recent trends in grocery prices in Nunavik and explores factors that may affect the effectiveness of the Food and Other Essentials program.

In 2023, grocery prices were around 33.6% higher in Nunavik than in southern Québec.

Price differentials between Nunavik and southern Québec vary considerably by product sub-category.

Although there is no clear trend, the variation in comparative price indices between 2022 and 2023 suggests a slight increase in the Nunavik-Québec price differential.

As in the rest of Québec and Canada, in-store price levels in Nunavik have risen sharply in recent years.

Compared to the average price level observed in 2019, price levels in Nunavik have risen by almost 20% between the start of 2022 and the end of 2023.

In-store price subsidy programs have a substantial impact on price levels in Nunavik.

When considering its impact on all eligible products, the Food and Other Essentials program reduces the Nunavik-Québec price gap by over 40 index points.

The program's impact varies by product sub-category, and products with the lowest Nunavik-Québec price differential are generally subsidized by both Nutrition North Canada and Food and Other Essentials.

Subsidy program enhancements can narrow the Nunavik-Québec price gap and curb price growth.

In July 2018, the latest enhancement to the Food and Other Essentials program, the list of eligible products was expanded. This resulted in a notable reduction in price levels compared with the average observed in 2017.

The Nunavik-Québec differential appears to have decreased between the observations obtained in this research program and the previous comparative analyses dating back to 2016.

Several types of products are not covered by the Food and Essential Goods program.

When Nunavimmiut expenditures are assessed in relation to the entirety of consumer goods studied, which encompasses everyday products sold in grocery stores, 28.7% of their spending was allocated to subsidized products in 2023.

The modalities of current subsidy programs aimed at lowering in-store prices in Nunavik make no provision for dynamic adaptation to inflation, which may affect their effectiveness.

The sharp rise in grocery prices in recent years may have affected Nunavimmiut consumption patterns.

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1. INTRODUCTION

1.1. Context

Although the high cost of living is a concern for the people of Nunavik, the national and provincial statistical agencies do not produce data that allow this problem to be documented. In order to offset this lack of data, the Nunivaat program (Nunivaat.org 2024) has already conducted a number of studies, in particular to measure the gap in consumer prices between Nunavik and southern Québec (Bernard & Duhaime 2006; Duhaime & Caron 2011, 2013). The 2016 survey on the cost of living in Nunavik (Robitaille et al. 2018), hereinafter referred to as “the 2016 Survey,” was an important step in this process, making it possible not only to better document the issue, but also to support the negotiation of a new funding agreement for cost-of-living reduction measures between the Government of Québec and the parties representing Nunavik (Québec 2019). Signed in 2019, this agreement included provisions aimed at promoting the development of indicators that would improve the monitoring of price changes in Nunavik as well as the impact of existing cost-of-living reduction measures. The Research program to evaluate the cost-of-living reduction measures in Nunavik, hereinafter referred to as “the present evaluative research program,” was launched in 2021, and the work carried out since then has made it possible to consolidate new sources of data on the level of prices in Nunavik.

The funding agreement on measures aimed at reducing the cost of living in Nunavik, signed in March 2019, provides for the production of an annual report

by the Kativik Regional Government (KRG) for the purposes of accountability. The Food and Other Essentials program (FOE) is one of the measures covered by this agreement. FOE is an in-store subsidy aimed at reducing the price gap between Nunavik and southern Québec for a set of everyday consumer products sold in grocery stores. In practice, this subsidy takes the form of a reduction rate that varies according to the type of product and applies to the price paid at checkout before taxes (Kativik Regional Government 2023).

Evaluating the impact of this measure requires data on price levels in Nunavik. The aim of this report is to help document this issue by providing an analysis of recent price trends in Nunavik and by examining the factors that may influence the effectiveness of this cost-of-living reduction measure.

1.2. Objectives

Based on the data collected to date as part of the present evaluative research program and other Nunivaat program datasets, this report sets out to:

- summarize the current state of knowledge on the recent dynamics affecting consumer prices in Nunavik;
- estimate the impact of the Food and Other Essentials program on the level of prices in Nunavik;
- explore the factors that may influence the effectiveness of the Food and Essentials program and, more broadly, the level of prices in Nunavik.

2. METHODOLOGY

This section presents the principal methodological considerations affecting the analyses presented in this report, namely: the data sources, the methods used to calculate the indices, the data universe, and the limitations of the analyses presented.

2.1. Data sources

As part of the present evaluative research program, a research partnership was established between Université Laval, certain retailers in Nunavik and the Kativik Regional Government. Data sharing channels were subsequently established between the partners so that existing data would become available for research. This allows a database to be developed using sales data from a representative sample of Nunavik retailers along with reporting data from the Food and Other Essentials program administered by the Kativik Regional Government.

The data shared by the partners makes it possible to track the evolution of the prices and quantities sold of the various products available in grocery stores in Nunavik. On the basis of the data shared by the partners, additional layers of data are established in order to categorize and characterize the products sold in Nunavik, as well as to better identify the subsidized products. Data collected online from retail chains in southern Québec are also compiled in order to be able to track the price gap between Nunavik and southern Québec.

The time series of the complete dataset of this program starts in 2022; certain analyses prior to this period are based on subsamples of data. Other data from the Nunivaat program are also used in this report, including the data from the 2016 Survey. This last survey was conducted using a sample of 448 households from six Nunavik communities (Robitaille et al. 2018).

2.2. Price indices

2.2.1. Nunavik-Québec comparative indices

The data collected and shared by the partner businesses within this evaluative research program allow us to measure the price gap between Nunavik and southern Québec. Based on the sales data of the participating Nunavik retailers, comparative price indices are calculated using the prices observed in a selection of retailers in southern Québec as a reference value. These indices are calculated following the method developed within the framework of the present evaluative research program.¹ This methodology aims to produce measurements that are representative of the price structure of the various participating retailers, the communities of Nunavik, as well as Nunavimmiut consumption patterns.

In order to estimate the evolution of the Nunavik-Québec price differential since the 2016 Survey, indices were calculated from a subsample of data drawn from this survey and a subsample from the present research program. To limit comparison biases between these data sources, only data from the communities that participated in the 2016 survey were selected. A subsample of products available in the two sets was selected so as to compare the evolution over time of the Nunavik-Québec price differential for 2016 and 2022. The same weighting was used for the two series of measurements. In order to better understand the impact of the Food and Other Essentials program, indices were also calculated based on a subsample of products belonging to the product categories covered by the program in 2022.

2.2.2. Price level indices in Nunavik

To track changes in grocery prices in Nunavik, price level indices are calculated based on a reference year.

¹ A detailed presentation of the methodology is given in Sébastien Lévesque (under the direction of Gérard Duhaime), 2022. *Construction of Nunavik Price Indices — Methodology and Preliminary Results*. Québec, Canada Research Chair on Comparative Aboriginal Conditions, Université Laval. Available at nunivaat.org/research/publications/.

For the selected reference year, the average price levels are calculated so as to be representative of that year's price level for each of the unique products sold in the various retailers and communities of Nunavik. For each of the subsequent monitoring periods, indices are calculated monthly by comparing them to the price levels observed during the reference year.

The indices are weighted in order to take into account the relative importance of the retailers, the communities and the consumption patterns of the population of Nunavik. The weights are calculated on an annual basis and are used to adjust each of the measurements calculated on a monthly basis. The weightings and the measurement of price levels are calculated synchronously, i.e. the monthly measurements are calculated on the basis of weightings derived from the data for the current year.

The set of reference products was updated at the end of each year of the follow-up period in order to replace products that may have disappeared and ensure the representativeness of the products in the sample. In order to avoid breaks in the time series, the indices are linked when the set of products is updated (International Monetary Fund 2020; Statistics Canada 2023b). This methodological approach aims to account for the evolution of grocery prices in Nunavik since the reference period, while taking into account potential changes in the supply of products and the consumption patterns of the population during this period.

Certain analyses seek to compare the evolution of food prices in Nunavik with that observed for Québec as a whole. The data for Québec as a whole are taken from Statistics Canada's Consumer Price Index program (Statistics Canada 2023b). For these comparisons, only the categories of comparable products were used for the comparative analyses, and the reference period of the time series was converted so as to match the time series calculated for Nunavik, where the reference period is the year 2016 (Statistics Canada 2023a).

2.3. Data universe

The entire data universe of these analyses focuses on set of common consumer products sold in grocery stores in Nunavik. This universe includes:

- food sold in grocery stores, excluding fast food counters and dishes prepared on site;
- non-food products related to common household expenses such as paper products for domestic use, household cleaning products, laundry detergents and dishwashing soaps;
- personal care products, including soaps, shampoos, over-the-counter medicines and baby care products.

The complete list of product categories is provided in the appendix. The data universe excludes various product categories that can be found in Nunavik grocery stores which also offer general merchandise. This is notably the case for certain types of products subsidized by the Food and Other Essentials program, particularly clothing. Furthermore, certain analyses are based on subsamples of data, depending on the availability of data, or depending on whether the analysis justifies it, e.g. in order to better identify the price level of products subsidized by the Food and Other Essentials program.

2.4. Limitations

The availability of data constrains the analysis of the impact of such programs as Food and Other Essentials, and that is why the work of the present evaluative research program seeks to increase the availability of data on price levels in Nunavik and aims to develop statistical indicators. The data shared by the partners is therefore essential if we are to understand and document the issues related to the high cost of living in Nunavik. But this transactional data poses its own challenges involving both the securing of sharing agreements and the development of processes for the enhancement of the transactional data (International Monetary Fund 2020).

The work of the present research program began in 2021, and the time series allowing the calculation of Nunavik-Québec comparative indices began in 2022. Thus, certain analyses from earlier periods draw on more limited data samples or other sources, including the 2016 Survey and Statistics Canada's Consumer Price Index program. Despite efforts to harmonize the 2016 Survey data with the present research program, some biases may remain. In particular, for the same product, the reference grocery stores in the south may not be the same depending on the data sources; and due to the methodology of the 2016 survey, some communities or businesses are not represented in the sample. Similarly, for certain types of products, the number of matches between the two datasets is small, which could limit the reliability of the measurements.

With regard to the comparisons of the evolution food prices between Nunavik and Québec as a whole, since the data for Nunavik and Québec come from different sources, the comparisons could be biased by methodological differences. Moreover, certain sources in Nunavik do not include data prior to the present research program; therefore, only the sources allowing us to obtain a panel of data from 2016 to 2023 were selected for this analysis. For this reason, certain fluctuations specific to particular products or businesses may not have been captured by this sample.

Finally, this evaluative research program is still ongoing. The measurements and analyses presented herein are preliminary and could potentially be refined with additional data.

3. RESULTS

This section is divided into three series of analyses, each designed to address one of the three main objectives of the report we set out above.

The first series reports on the recent dynamics of prices in Nunavik by drawing on the latest data from the work of the present research program. It includes analyses comparing the level of prices in Nunavik with that observed in southern Québec, as well as analyses measuring the level of prices in Nunavik over time, comparing these to average prices observed in 2019, at the beginning of the current agreement to finance cost-of-living reduction measures in Nunavik.

The second series of analyses seeks to estimate the impact of the Food and Other Essentials program on in-store prices in Nunavik. This series includes analyses that estimate the impact of the program on price indices, both on the whole set of products in the consumer universe under study and on the smaller subset of subsidized products. Some of these analyses involve subsamples of data, including data from the 2016 Survey.

The third series explores various factors to consider in evaluating the impact of the Food and Other Essentials program.

3.1. Price dynamics in Nunavik

3.1.1. Nunavik-Québec price differential

The Nunavik-Québec comparative price indices calculated on the complete data sample indicate that in-store prices in Nunavik were approximately 33.6% higher than in southern Québec in 2023 (figure 3.1). The measured price differences vary from one product category to another. The price differential on personal care products when compared to the reference stores in the south is smaller than the differential on the category of food products taken as a whole.

There are also significant variations in the price differentials between Nunavik and Québec according to

the different subcategories of food products. According to the most recent data, the price differences are generally lower for fruit and vegetables as well as for baby food. For other food subcategories, cereal products, for example, and non-alcoholic beverages, the measured differential is larger.

Although this may not be a strong trend, the variation in price indices between 2022 and 2023 suggests a slight increase in the Nunavik-Québec price differential, particularly for food products (figure 3.2). Between 2022 and 2023, while the price of most food categories increased in Nunavik compared to the city of Québec, the relative level of certain food categories – particularly meat and vegetables – increased more significantly.

The monthly variations in the Nunavik-Québec comparative indices suggest that the level of prices measured tended to stabilize at a higher level beginning in the second half of 2023 (figure 3.3). However, we have to be cautious in interpreting the time series, as there are several methodological considerations that need to be taken into account.

3.1.2. Price levels in Nunavik

Price level indices allow us to track the evolution of grocery prices in Nunavik compared to a given reference period. The time series in figure 3.4 shows the evolution of prices from the beginning of the period of the current agreement to finance cost-of-living reduction measures, using as a reference the average of the prices observed in 2019 (2019 = 100). These measurements are calculated on the basis of a subsample of data which allows for a comparison over time.

Compared to 2019, grocery prices in 2020 and 2021 were slightly higher, displaying a general upward trend, with the exception of a noticeable decline in prices around May 2020. This price decrease corresponds to enhancements to the Nutrition North Canada program in the context of COVID-19 (Canada 2020).

FIGURE 3.1

NUNAVIK-QUÉBEC COMPARATIVE INDICES BY SUBCATEGORY, 2023
(Québec = 100)

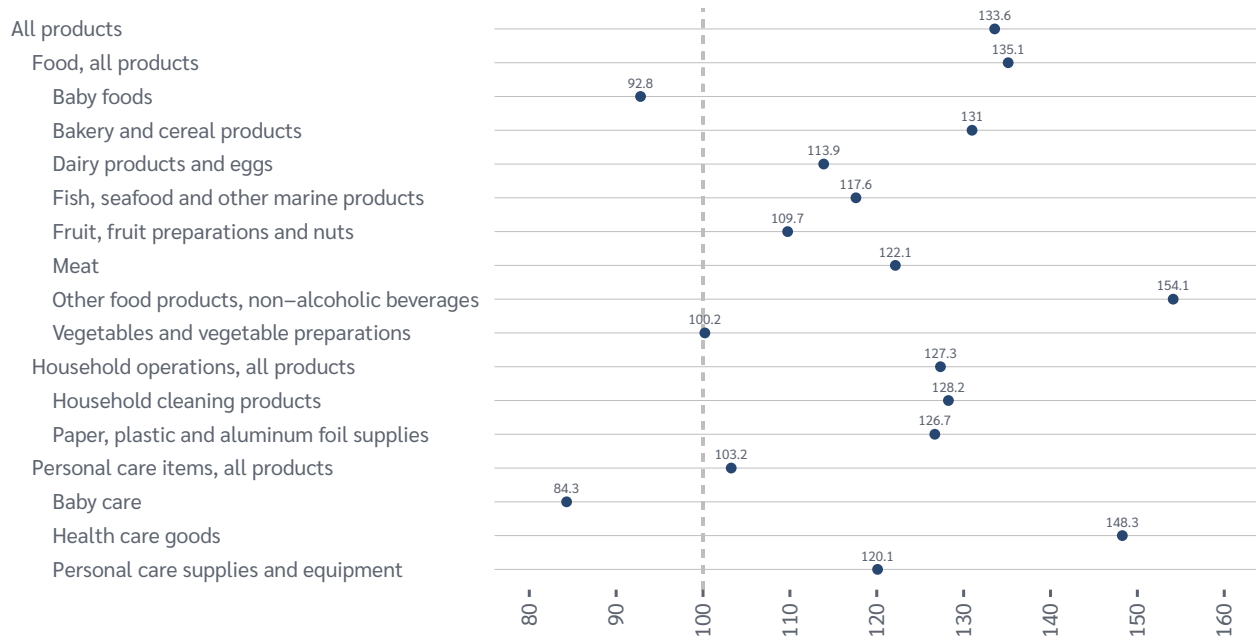


FIGURE 3.2

NUNAVIK-QUÉBEC COMPARATIVE INDICES BY SUBCATEGORY, DIFFERENCE IN INDEX POINTS, 2022-2023
(Québec = 100)

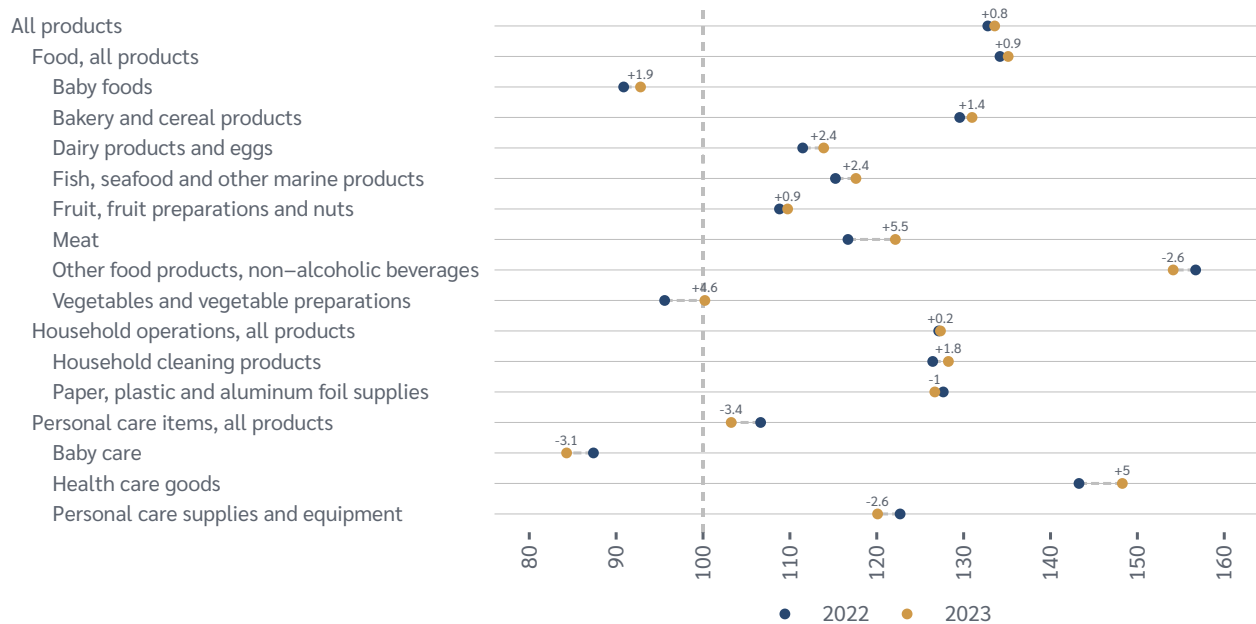


FIGURE 3.3

NUNAVIK-QUÉBEC COMPARATIVE INDICES, ALL PRODUCTS, 2022-2023
(Québec = 100)

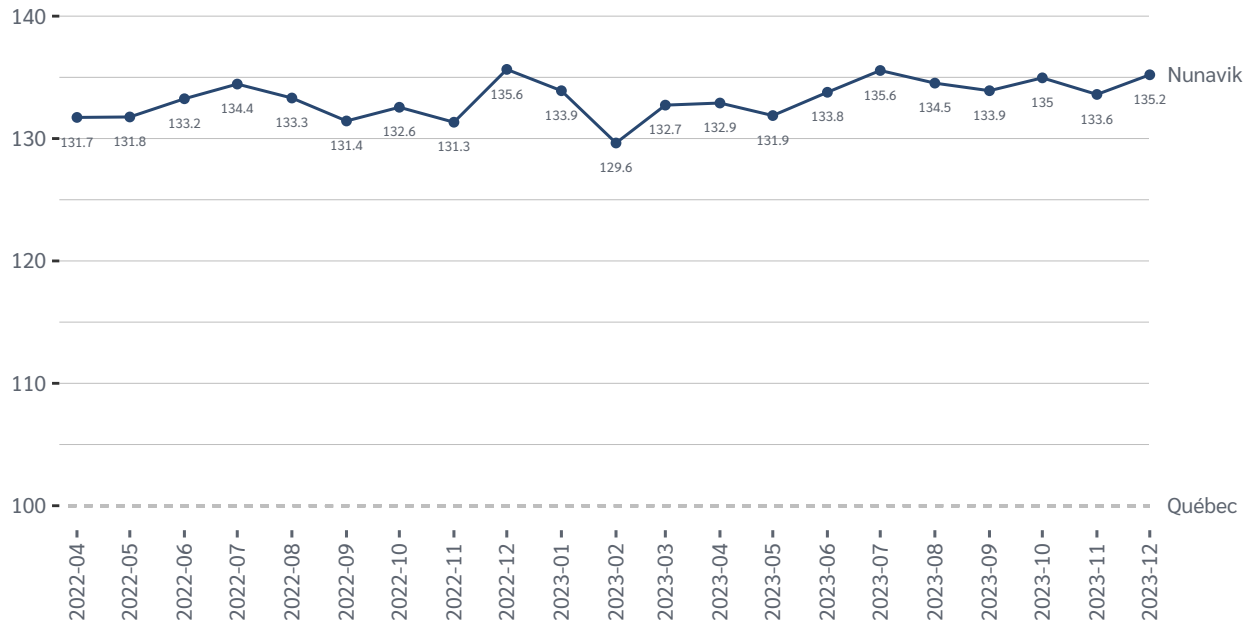
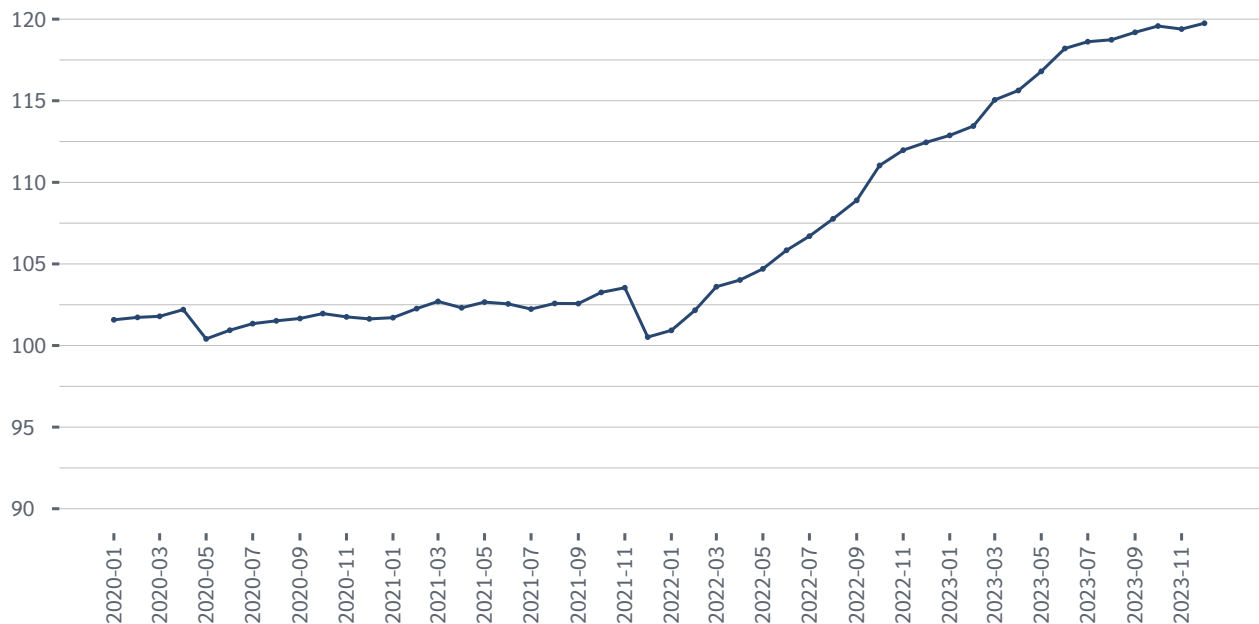


FIGURE 3.4

PRICE LEVEL INDICES, ALL PRODUCTS, COMPARABLE SUBSAMPLE OVER TIME, 2020-2023
(2019 = 100)



The decrease in the price level at the end of 2021 does not appear to be attributable to changes in the existing subsidy programs. Rather, this price shift may reflect certain dynamics within the retailers in the subsample used for this analysis. From the beginning of 2022, grocery prices in Nunavik have increased significantly: compared to average prices in 2019, price levels have gone up by nearly 20% from 2022 to the end of 2023.

3.2. Estimation of the impact of the Food and Other Essentials program

Changes were made to the Food and Other Essentials program between the end of the last funding agreement and the current agreement. In particular, the list of eligible products was expanded in July 2018; and in July 2019, the subsidy rates were revised downwards (Nunatsiaq News 2019). The following analyses seek to estimate the impact of these enhancements and modifications. Because the availability of data for the period before the work of the present research program began is more limited, these analyses employ smaller samples of data.

3.2.1. Estimation of the impact of the latest changes to the FOE program

Figures 3.5 et 3.6 present Nunavik-Québec comparative indices calculated on the basis of a comparable subsample of products between the 2016 Survey and the present research program. The measurements calculated from this subsample are intended to reflect the evolution of the price differential between the previous agreement to fund cost-of-living reduction measures and the 2019 agreement. The indices calculated on the entirety of this sample² indicate that the price differential in grocery stores between Nunavik and Québec was higher on average in 2016 than in 2023, with a difference of 17.7 index points. It should be noted that this subsample of products tends to include products for which the Nunavik-Québec price differential is higher than the differentials measured for the entire sample in their respective periods.

Calculating indices based on products currently subsidized by the Food and Other Essentials program,³ we can see that the price differentials between Nunavik and Québec are even greater between these two periods, with an overall difference of more than 31 index points.

Figure 3.7 presents a time series of indices calculated on the basis of a subsample which shows the variations of price levels in Nunavik from the end of the previous agreement to fund cost-of-living reduction measures up until the 2019 agreement. This analysis takes as reference year 2016 (2016 = 100) and breaks down the indices into three series: the measurements calculated on all the products in the sample; the measurements calculated on the basis of the products subsidized by Food and Other Essentials program; and the measurements calculated on the basis of the non-subsidized products. The aim here is to try to isolate the impact of the enhancements made to the Food and Other Essentials program on the level of prices in Nunavik and to monitor the overall evolution of the price levels since the last agreement.

Taking 2016 as the point of comparison and considering all the products in the sample, we see that there was little change in the price of products during 2017 and the first half of 2018. In July 2018, on the other hand, there was a marked decrease in the price level of products subsidized by the Food and Other Essentials program which was not observed for non-subsidized products. We also observe that the reduction in the subsidy rates of the Food and Other Essentials program in July 2019 had the effect of noticeably increasing the price level of the subsidized products.

The expansion of the list of eligible products thus had the effect of keeping the price level of subsidized products below the average price level of 2016 for several months. Enhancements to Nutrition North Canada in the context of COVID-19 also contributed to lowering price levels in comparison to the level observed in 2016.

² Number of unique products: 433; number of valid comparison points in 2016: 985; in 2023: 6,509.

³ Number of unique products: 250; number of valid comparison points in 2016: 551; in 2023: 3,964.

FIGURE 3.5

NUNAVIK-QUÉBEC COMPARATIVE INDICES, ALL PRODUCTS, COMPARABLE SUBSAMPLE OVER TIME, 2016, 2023
(Québec = 100)

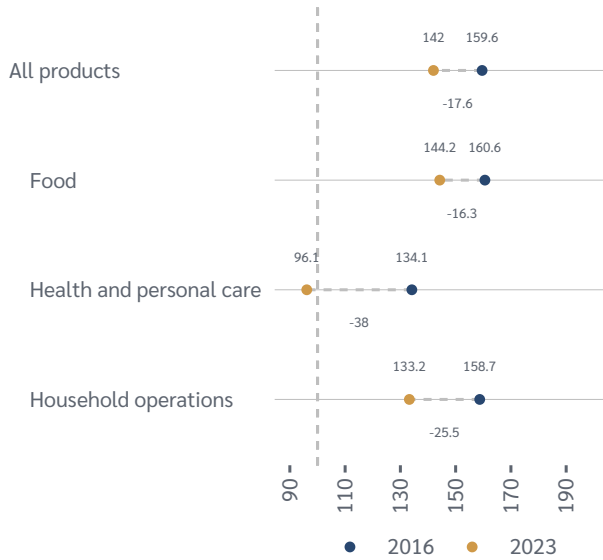


FIGURE 3.6

NUNAVIK-QUÉBEC COMPARATIVE INDICES, PRODUCTS CURRENTLY SUBSIDIZED BY FOE, COMPARABLE SUBSAMPLE OVER TIME, 2016, 2023
(Québec = 100)

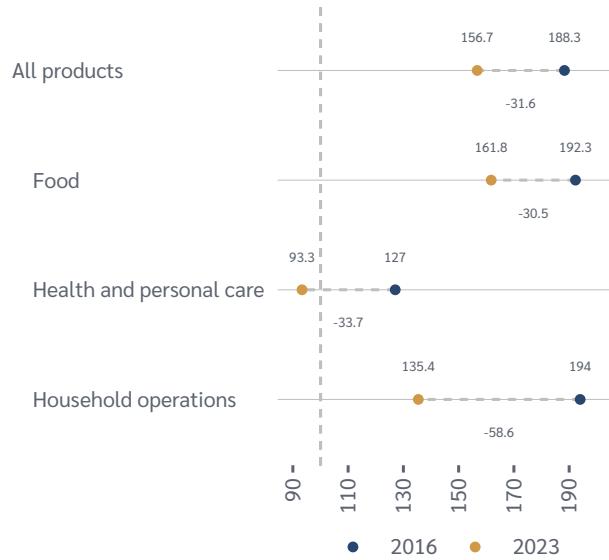
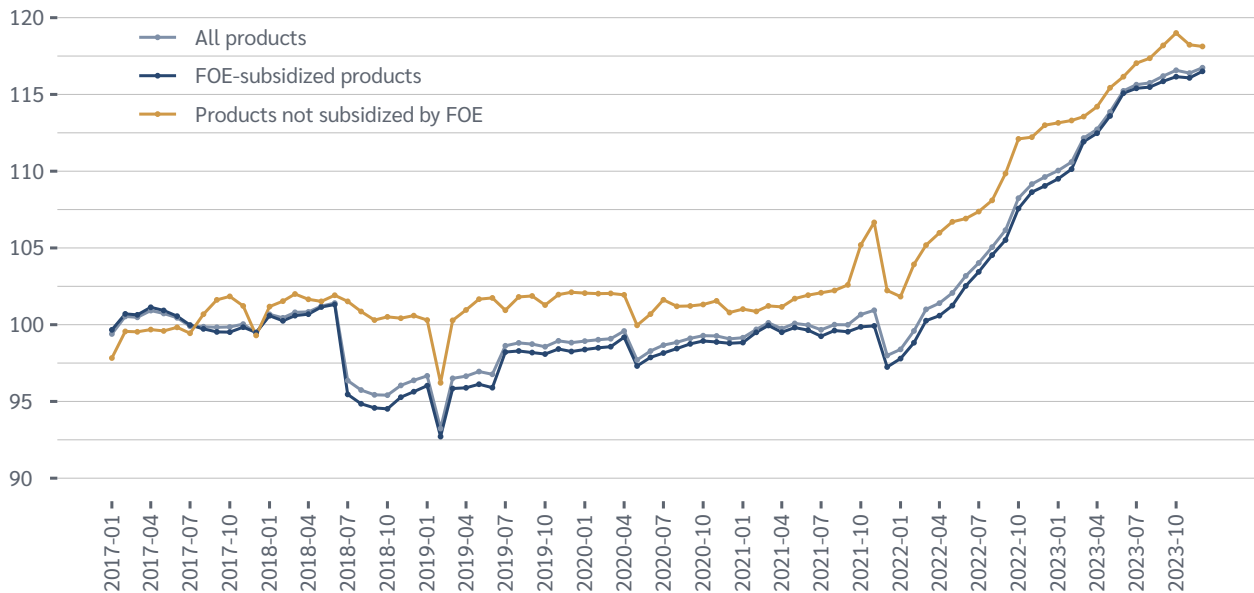


FIGURE 3.7

PRICE LEVEL INDICES BY SUBSIDY STATUS, ALL PRODUCTS, COMPARABLE SUBSAMPLE OVER TIME, 2017-2023
(2016 = 100)



3.2.2. Estimation of the impact of the FOE program, current period

When the measurements are calculated using the most recent data, we observe that the impact of the Food and Other Essentials program varies from one product category to another. It tends to reduce the Nunavik-Québec price differential for fruit, vegetables and baby foods more than for other categories such as meat and dairy products (figure 3.8). In fact, the list of the program's eligible products in these categories is limited. Figure 3.9 presents indices calculated exclusively on the basis of products that are eligible for the Food and Other Essentials program. When calculated for the set of all eligible products, the overall impact of the program is more than 40 index points. The impact of the program varies according to the product category depending notably on the subsidy level, but also on the initial Nunavik-Québec price differential recorded before the application of the subsidy (see section 3.3 and appendix A.1). For example, the impact of the program is considerably greater for household cleaning products than for dairy products.

The monthly variations in the impact of the Food and Other Essentials program on the Nunavik-Québec price differential are rather small when the measurements are calculated on the entire sample (figure 3.10), but greater when only the subsidized products are considered (figure 3.11). These monthly variations in the program's impact on the price differential for subsidized products reflect, among other factors, the monthly variations in the proportion which the Nunavimmiut spend on the different categories of subsidized products, because not only do the subsidy rates vary from one category of product to the next, but the measured impact is also affected by the Nunavik-Québec price differential before the application of the subsidy (see section 3.3 and appendix A.1).

3.3. Exploration of the factors influencing the effectiveness of the Food and Other Essentials program

This section presents factors that need to be considered in evaluating the impact of the Food and Other

Essentials program. These exploratory analyses are currently at a preliminary stage; the progress of the present evaluative research program will provide more insights and clarifications through the development of additional datasets and layers of data, as well as by the extension of the time series.

The aim of the Food and Other Essentials program is to reduce the price gap between Nunavik and southern Québec for a set of everyday consumer products sold in grocery stores. Thus, one of the methods employed to evaluate the impact of this program is to estimate its ability to reduce the Nunavik-Québec price differential. However, the Nunavik-Québec price differential measured by these methods – as well as the program's ability to reduce it – is itself affected by a number of factors that must be taken into account in order to assess the effectiveness of the program and, more broadly, to better understand and mitigate the high cost of living in Nunavik.

From a comparative perspective, three sets of factors can be distinguished that may affect the price differentials that have been measured:

- factors specific to the business environment in Nunavik;
- factors specific to the selected point of comparison, namely southern Québec and, more broadly, the economic system in which Nunavik is embedded;
- factors related to the population of Nunavik, ranging from individual behaviours to the region's socio-demographic composition.

These distinctions are distinguished for conceptual purposes, although each can influence and be influenced by the others.

3.3.1. Factors related to the business environment in Nunavik

In Nunavik, as in other regions that are remote from Canada's distribution networks, the distances that goods have to travel and the absence of land transportation links, among other factors, have an impact on consumer prices in the region (BDL, Conseillers en administration Inc. 2007; Makivik Corporation et al.

FIGURE 3.8

NUNAVIK-QUÉBEC COMPARATIVE INDICES BY SUBCATEGORY AND IMPACT OF THE FOOD AND OTHER ESSENTIALS PROGRAM, ALL PRODUCTS, 2023

(Québec = 100)

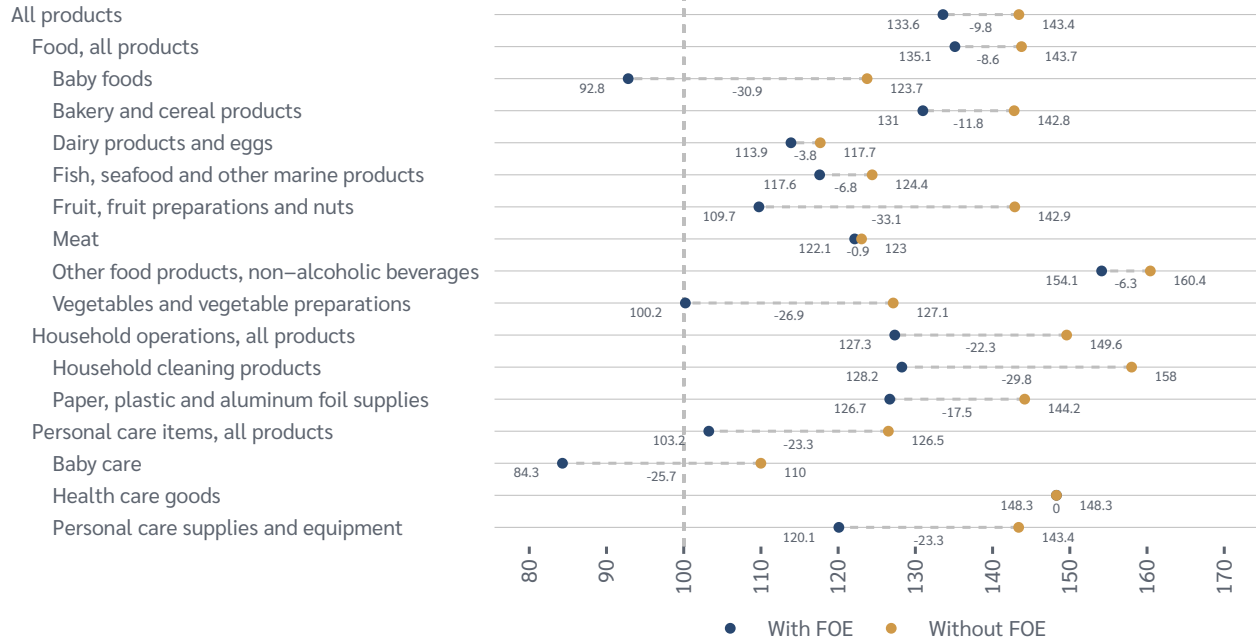


FIGURE 3.9

NUNAVIK-QUÉBEC COMPARATIVE INDICES BY SUBCATEGORY AND IMPACT OF THE FOOD AND OTHER ESSENTIALS PROGRAM, SUBSIDIZED PRODUCTS ONLY, 2023

(Québec = 100)

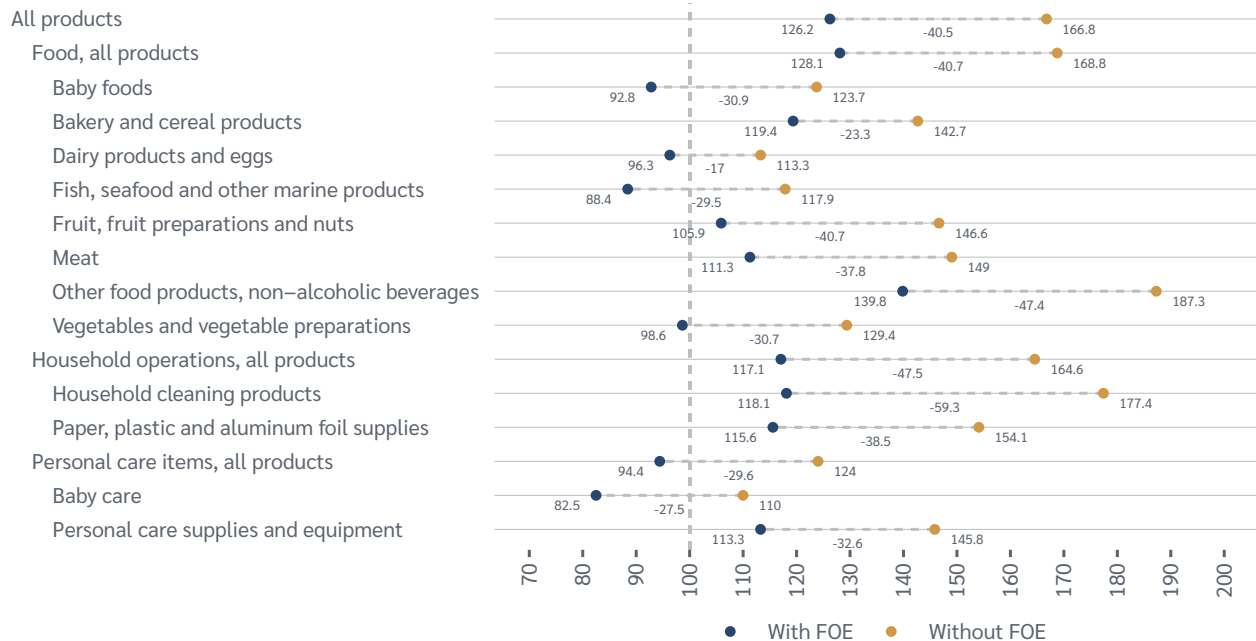


FIGURE 3.10

NUNAVIK-QUÉBEC COMPARATIVE INDICES, ALL PRODUCTS, ESTIMATE OF THE IMPACT OF THE FOE PROGRAM, 2022-2023

(Québec = 100)

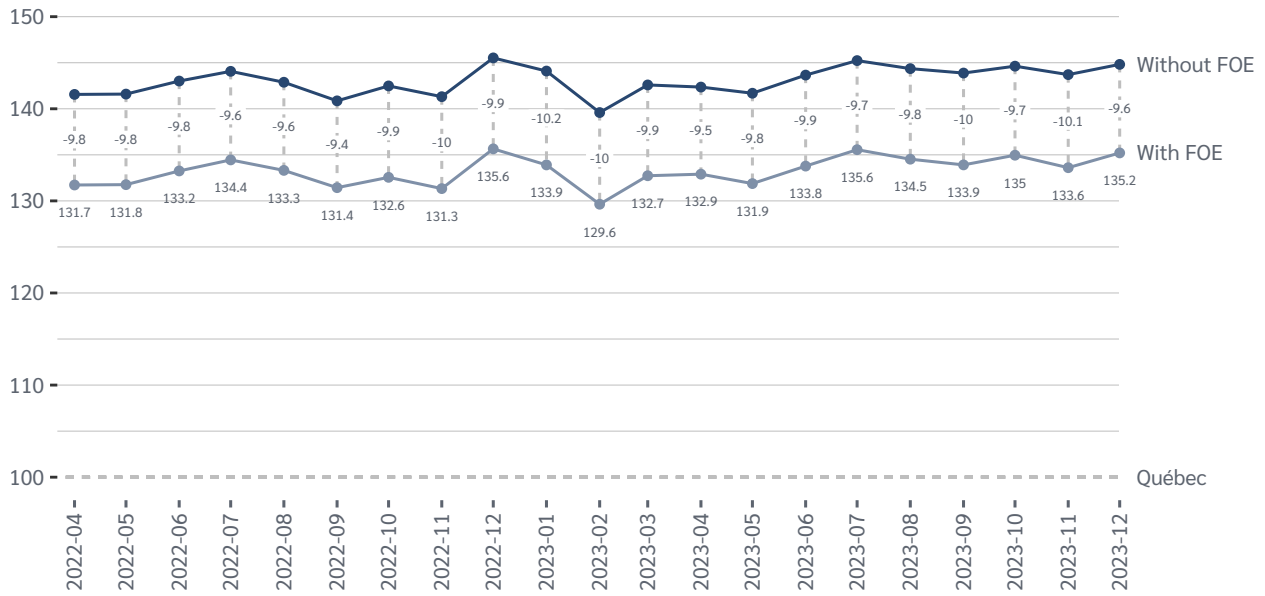
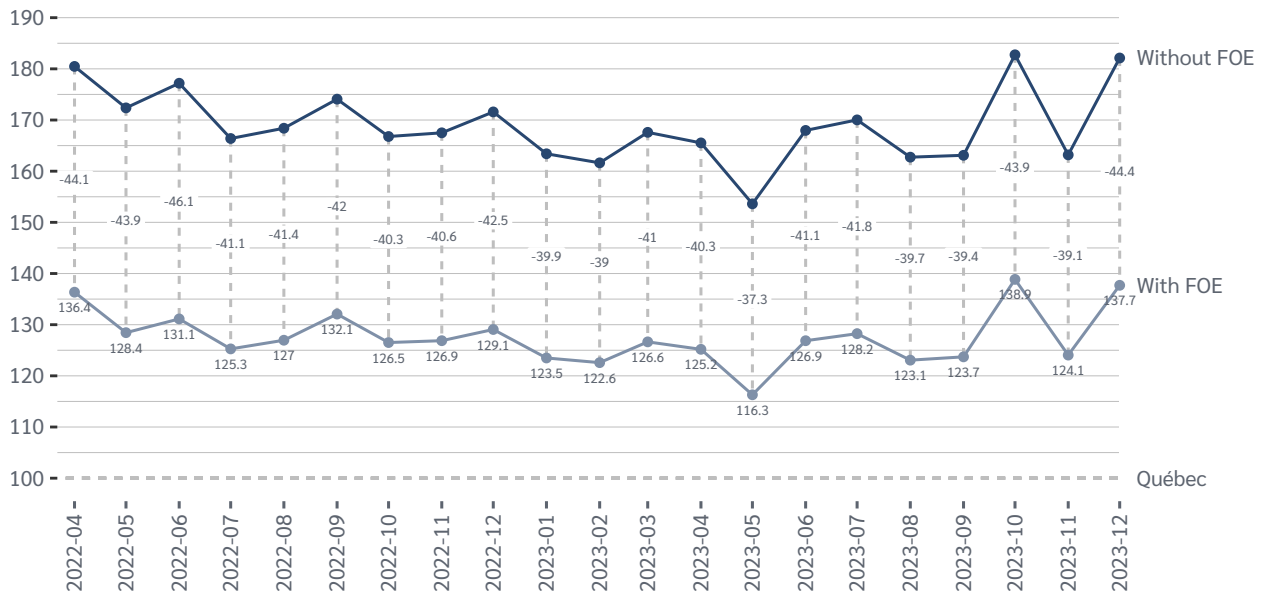


FIGURE 3.11

NUNAVIK-QUÉBEC COMPARATIVE INDICES, PRODUCTS SUBSIDIZED BY FOE, ESTIMATE OF THE IMPACT OF THE FOE PROGRAM, 2022-2023

(Québec = 100)



2014). The mode of transport itself can affect businesses' operating costs and the prices paid by consumers. Large-scale importation by sea in the summer offers lower costs than transport by air the rest of the year. The characteristics of the products can also affect their price; for example, the price of a perishable product may be more affected by the price of transport than a product that can be stored for a longer period. Similarly, the weight and volume of products affect transportation costs.

Hence, the location of the communities in relation to the distribution networks can affect the level of prices. The communities that serve as entry points for goods in Nunavik may benefit from lower transportation costs than communities that are further away in the network transporting the goods.

Moreover, the communities' business environment may also affect these logistical considerations. Indeed, the various stores in Nunavik may decide to do business with different suppliers; they may display different pricing structures and adopt distinct pricing strategies.

The aim of the Food and Other Essentials program and Nutrition North Canada is to mitigate the effect of these factors on in-store prices for everyday consumer products.

The characteristics of these programs also have an impact on the level of prices in Nunavik. The Nutrition North Canada program takes the form of subsidies per kilogram of goods transported. These are paid to participating companies, whether they are Nunavik grocery stores that import goods from the south or southern suppliers that ship goods to Nunavik (Canada 2014). The per kilo subsidy varies from one product category to another according to three subsidy levels from the lowest to the highest, and these three levels vary from one community to another. The businesses that benefit from the program are required to pass on all subsidies to consumers by reducing the price of eligible products in the stores.

For its part, the Food and Other Essentials program takes the form of a fixed subsidy rate throughout Nun-

avik that varies according to the category of eligible products. This subsidy rate applies to the pre-tax price calculated on the basis of the price to which the Nutrition North Canada subsidy has already been applied, where applicable. In this sense, these two programs have a potentially cumulative effect.

These programs each subsidize a closed list of product categories. Figure 3.12 shows the expenditures allocated to subsidized products in the consumer universe defined within the framework of our analyses (see section 2.3). When we break down the expenditures of this consumer universe, we see that almost half are allocated to products not subsidized by these programs. Furthermore, the proportions are rather stable over the period studied, although a slight increase can be observed in the share of expenditures allocated to subsidized products in 2022 compared to previous years. The share of expenditures allocated to products that are eligible for the Food and Other Essentials program appears to have increased slightly from 2020 to 2023.

These programs have an undeniable impact on the level of grocery prices in Nunavik. That said, both the expenditures broken down by subsidy status and the comparative indices calculated on the entire consumer universe show that a significant proportion of Nunavimmiut's expenditures are on products that receive little or no subsidy and for which they have to bear the higher costs.

3.3.2. Economic factors external to Nunavik

From a methodological point of view, while precautions have been taken to reduce biases, the points of comparison used to measure the Nunavik-Québec price differential can have a significant impact on the price levels reported in our analyses. That said, regardless of the point of comparison, the level of in-store prices in Nunavik depends on the prices of those who supply Nunavik retailers, suppliers who are located in the south. And the prices of food products, together with other products, have risen sharply in the last two years both in Québec and in the rest of Canada (Food and Agriculture Organization of the United Nations (FAO) 2023; Statistics Canada 2023a; World

Bank 2023). This increase in food prices in Canada and around the world is the result of multiple factors that have affected supply chains, most notably labour shortages since the COVID-19 crisis, the increased cost of raw materials and energy, poor harvests due to droughts, and Russia's invasion of Ukraine (Statistics Canada 2022).

What the Nunavik-Québec indices conceal is that, while the Nunavik-Québec price differential appears to remain rather stable according to our current measurements, the level of prices in Nunavik actually displays the same growth pattern as prices in southern Québec. Figure 3.13 compares the evolution of the price level of a comparable subsample of food products in Nunavik and Québec as a whole, taking 2016 as the reference year, in order to reflect the impact of the changes made to the Food and Other Essentials program.

This time series shows that enhancements to the subsidy programs can bring about price level changes, as was the case in July 2018 when the Food and Other Essentials program was modified most recently. But this time series also illustrates that price trends in Nunavik remain strongly linked to those observed in the rest of Québec.

To illustrate this last statement more clearly, figure 3.14 presents a time series of indices that takes 2022 as the reference year for a comparable subsample of data between Nunavik and Québec as a whole. What this series illustrates is that, in the absence of major enhancements to subsidy programs, the price level curve in Nunavik is very close to that for Québec as a whole.

3.3.3. Socio-demographic factors and factors related to Nunavimmiut's spending patterns

Just as the Nunavik-Québec comparative indices can be affected by the expenditures that Nunavimmiut allocate to subsidized or non-subsidized products, so Nunavimmiut's spending patterns can be affected by price dynamics such as food inflation or the effect of subsidy programs.

There are clear indications that Nunavimmiut's consumption patterns affect the impact of the subsidy programs. As we saw in Figures 3.10 and 3.11, the monthly volatility of the impact of Food and Other Essentials program is less when measuring the impact on the entire consumer universe, because the share of expenditures allocated to subsidized products is rather stable. Longer time series will be needed to characterize these types of trends, but there may also be seasonal trends that can be explained by a variety of factors, ranging from the influence on consumer prices of orders shipped by boat in the summer to greater consumption of unsubsidized products during the holiday season. The volatility of the impact of Food and Other Essentials program is greater when calculating the measurements on eligible products, with the impact varying according to the products consumed and their subsidy level.

Figure 3.15 shows the Nunavik-Québec price differential measured by subsidy level for different product categories. To illustrate this relationship, the expenditures are broken down by the subsidy status of the purchased products and are juxtaposed with the Nunavik-Québec comparative indices by product categories. As this figure illustrates, the categories with a high share of subsidized products tend to have a lower Nunavik-Québec price differential than the less subsidized product categories. For example, the category that includes non-alcoholic beverages has the lowest proportion of subsidized products and the highest price differential of any category. The measured price differential is smaller when the proportion of products jointly subsidized by the Food and Other Essentials program and Nutrition North Canada is higher. Baby food and baby care products offer a good example of the combined impact that Nutrition North Canada and FOE can have on the level of prices in Nunavik. The relationship between the subsidy level and the level of prices is clear, but further analyses will be needed to better understand the interrelationships between these subsidy programs and the other factors that may affect the level of prices in Nunavik.

However, neither of these programs includes a provision to dynamically adapt to price changes, which can affect the purchasing power of Nunavimmiut in an inflationary context. Based on a subsample of data that allows us to define a limited consumer universe for a selection of communities, figure 3.16 presents the evolution of spending from 2020 to 2023. Expenditures are grouped into product categories with similar consumer trends in recent years. If the expenditures analyzed are representative of the overall trend in Nunavik, we can see that the share of expenditures allocated to certain categories of products has been decreasing in recent years; this is the case, for example, for canned products (excluding baby food) and household cleaning products. If the changes are related to the effect of price increases and not to consumer

preferences, Nunavik households may have reduced their expenditures in these product categories in order to keep other expenditures constant – for example, baby products – while increasing expenditures in other more heavily subsidized categories, for example, fresh fruits and vegetables or other staple foods such as cereal and bakery products. The development of additional time series and data layers could allow for the elucidation of such price dynamics on consumer behaviours, identifying, in particular, those essential products for which demand is relatively inelastic (Hashimzade, Myles, and Black 2017a) as well as the potential substitution effects (Hashimzade, Myles, and Black 2017b) for products whose cost reaches too high a level.

FIGURE 3.12

EXPENDITURES BY SUBSIDY STATUS, COMPARABLE SUBSAMPLE OVER TIME, 2020-2023 (%)

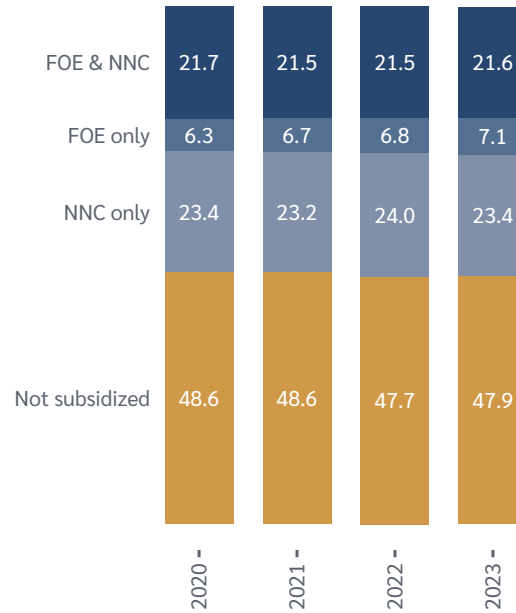


FIGURE 3.13

PRICE LEVEL INDICES, FOOD SOLD IN STORES, NUNAVIK AND QUÉBEC, 2017-2023 (2016 = 100)

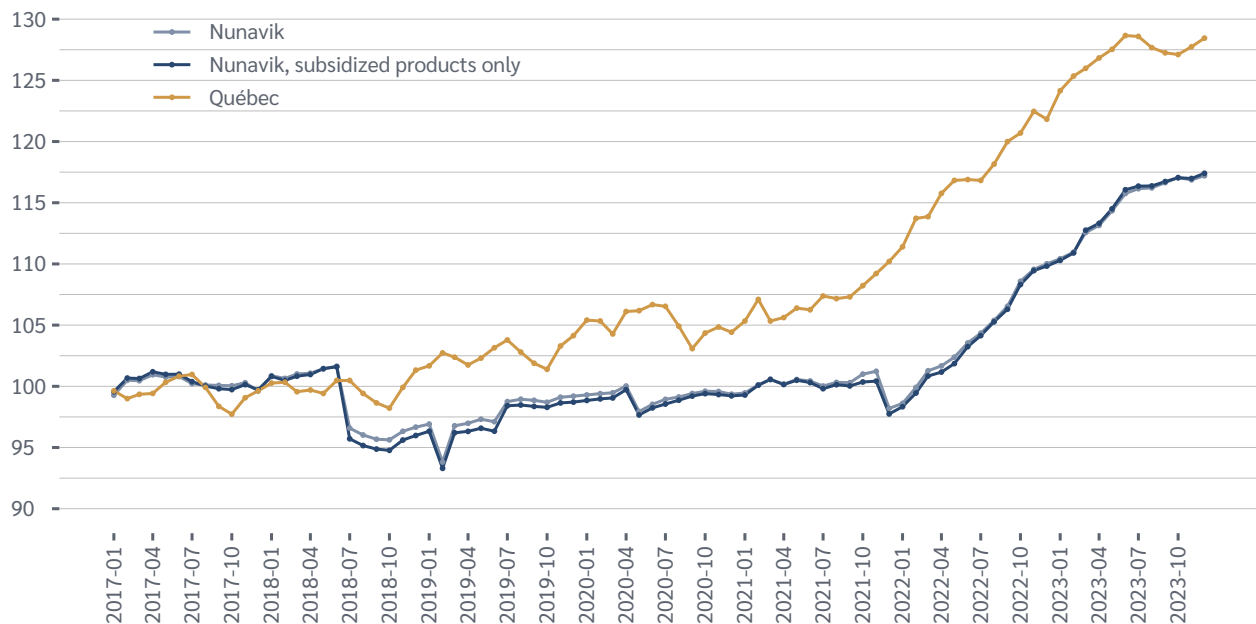


FIGURE 3.14

**PRICE LEVEL INDICES, FOOD SOLD IN STORES, NUNAVIK AND QUÉBEC, 2023
(2022 = 100)**

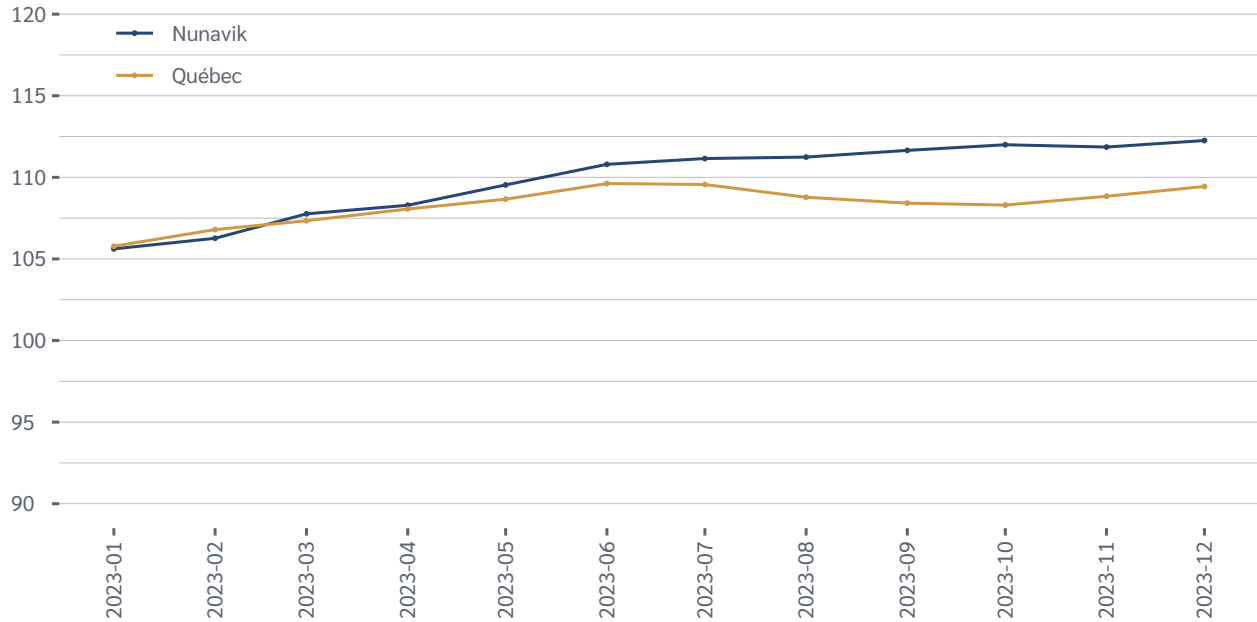


FIGURE 3.15

**PROPORTION OF EXPENDITURES BY SUBSIDY STATUS AND NUNAVIK-QUÉBEC COMPARATIVE INDICES, 2023
(% and indices)**

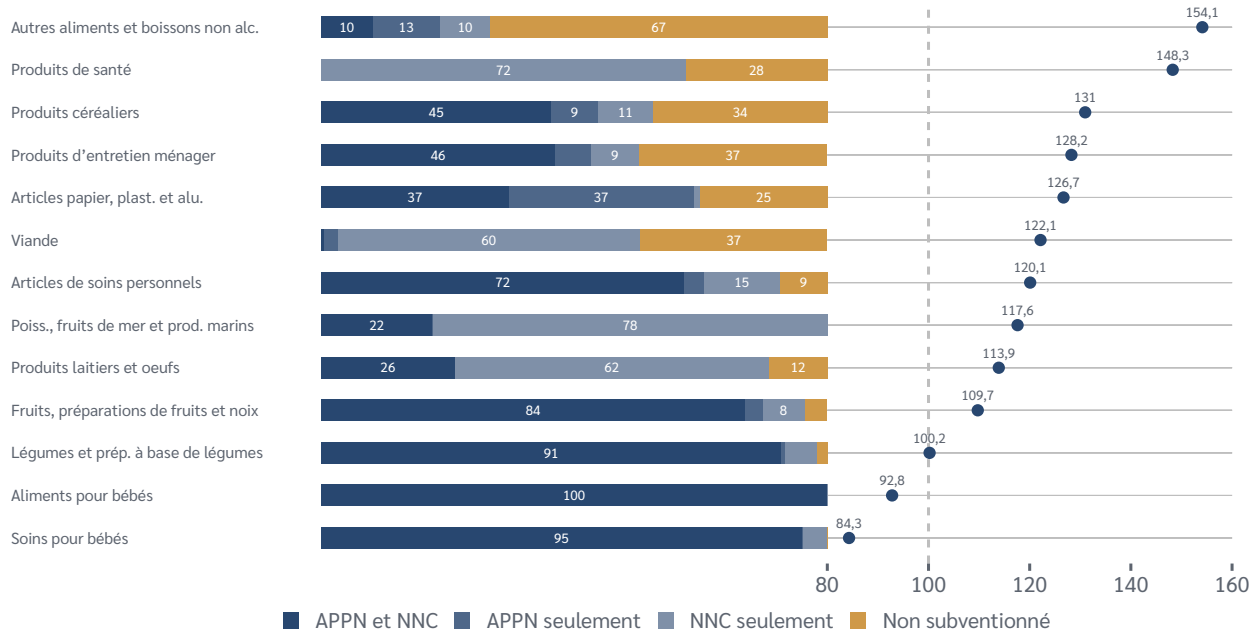
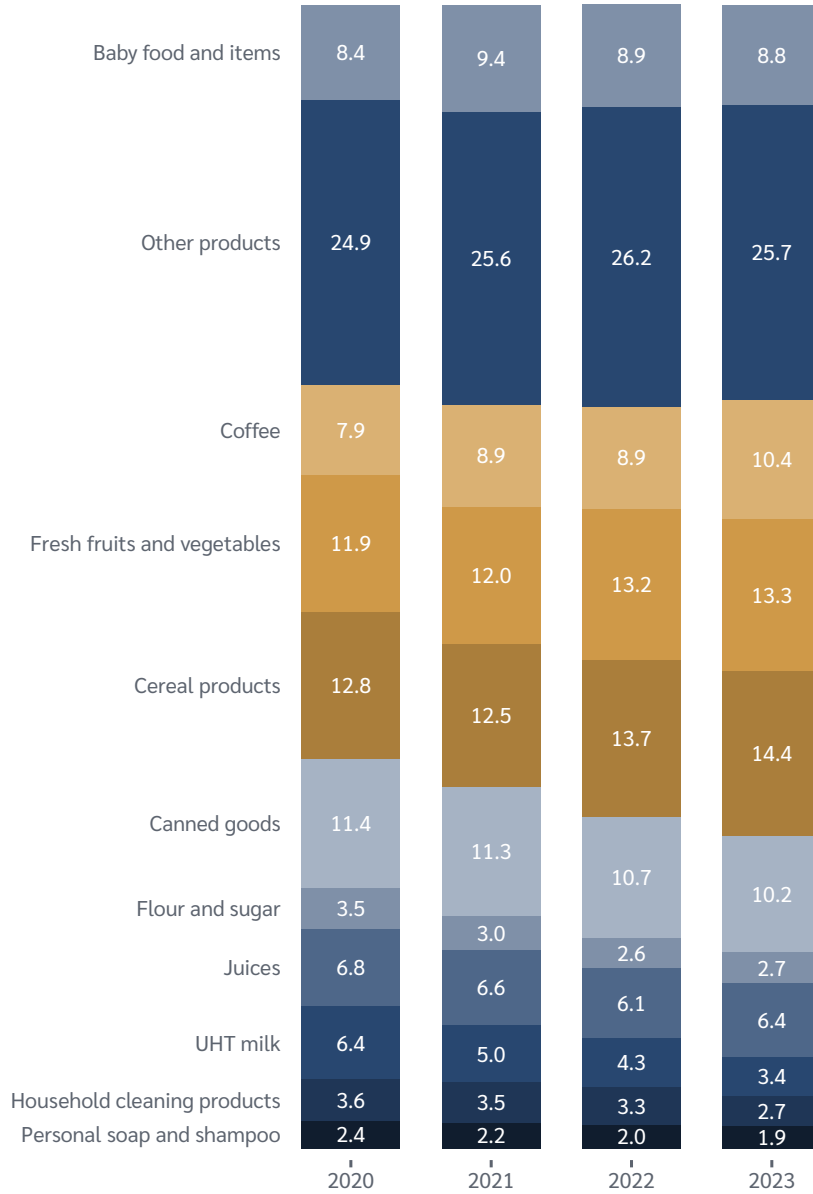


FIGURE 3.16

EXPENDITURES BY PRODUCT CATEGORIES, PRODUCTS SUBSIDIZED BY FOOD AND OTHER ESSENTIAL PROGRAM, COMPARABLE SUBSAMPLE OVER TIME, NUNAVIK, 2020-2023

(%)



4. SUMMARY AND IMPLICATIONS FOR THE FOOD AND OTHER ESSENTIALS PROGRAM

Our analyses of the Nunavik-Québec comparative indices have shown that the price gap between Nunavik and Québec persists, despite a decrease in the differential since the last agreement to fund the cost-of-living reduction measures in Nunavik. In-store price reduction programs such as Food and Other Essentials have a significant impact on the level of consumer prices in Nunavik and help mitigate the consequences of the high cost of living for Nunavimmiut.

The impact of a program like Food and Other Essentials on the cost of living depends heavily on its scope. Thus, we found that the effect of the program is considerably greater for the subset of subsidized products than it is on Nunavimmiut's overall consumption expenditures. Although more heavily subsidized products have a generally smaller price differential when compared to southern Québec, our analyses show that a significant proportion of Nunavimmiut's expenditures are on products that receive little or no subsidy.

For this reason, extending the lists of eligible products and the contributions of the FOE and the Nutrition North Canada programs would undoubtedly contribute to further reducing the Nunavik-Québec price differential.

In addition to increasing the scope of these programs, the development of monitoring datasets and, more broadly, knowledge of the factors affecting the level of prices in Nunavik will also be for the identification of other potential avenues for improving the Food and Other Essentials program. As illustrated by the exploratory analyses presented above, the Nunavik-Québec price differential by category is strongly affected by the subsidy level and potentially by other factors such as the distance travelled and various characteristics of the products themselves.

Several sources of information could be mobilized to maximize the impact of the Food and Other Essentials program. The price levels by product categories make it possible to identify the types of products for which

the initial Nunavik-Québec price differential is greatest. In its current form, the Food and Other Essentials program takes the form of a fixed subsidy rate for each product category. However, the impact in index points of a fixed rate can vary greatly from one product to another according to the initial Nunavik-Québec price differential recorded before the application of the subsidy rate (see appendix A.1).

The introduction of a dynamic subsidy rate is one of the avenues that could be explored to increase the impact of the Food and Other Essentials program. With the development of the data from the present evaluative research program and the establishment of dynamic rates, the administrators of the Food and Other Essentials program could modulate the subsidy rates based on the most recent information available. For example, the program could prioritize the sub-categories of products for which the Nunavik-Québec price differential is higher and which Nunavimmiut consume in greater measure. This could increase the complementarity of the Food and Other Essentials program and that of Nutrition North Canada, allowing subsidies to be targeted on products for which there is little or no contribution from Nutrition North Canada, owing to the subsidy level or the weight or volume of the product, for example.

Furthermore, in the context of high food inflation in recent years, greater flexibility in the program would also limit the consequences of these price increases on Nunavimmiut. As illustrated by the analyses contained in this report (Figures 3.4, 3.13 and 3.14), food prices in Nunavik follow the same inflationary trends as in the rest of Québec. However, at constant subsidy rates, if prices in Nunavik are growing at the same rate as in southern Québec, the Nunavik-Québec price differential is kept constant, yet the level of prices in Nunavik is nevertheless increasing for consumers. If no provision is made to index the program envelope, widespread increases in consumer prices could affect the program's ability to lower the cost of living in Nunavik.

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APPENDICES

Appendix A.1

The relationship between subsidies and price indices

Appendix A.1 presents fictitious price indices based on the Nunavik-Québec price differential measured as a percentage before and after the application of an arbitrary subsidy rate held constant at 25%. For a product that shows no price difference with Nunavik, i.e. a price difference of 0% and a comparative index of 100, a subsidy rate of 25% reduces the Nunavik-Québec price differential by exactly 25 index points.

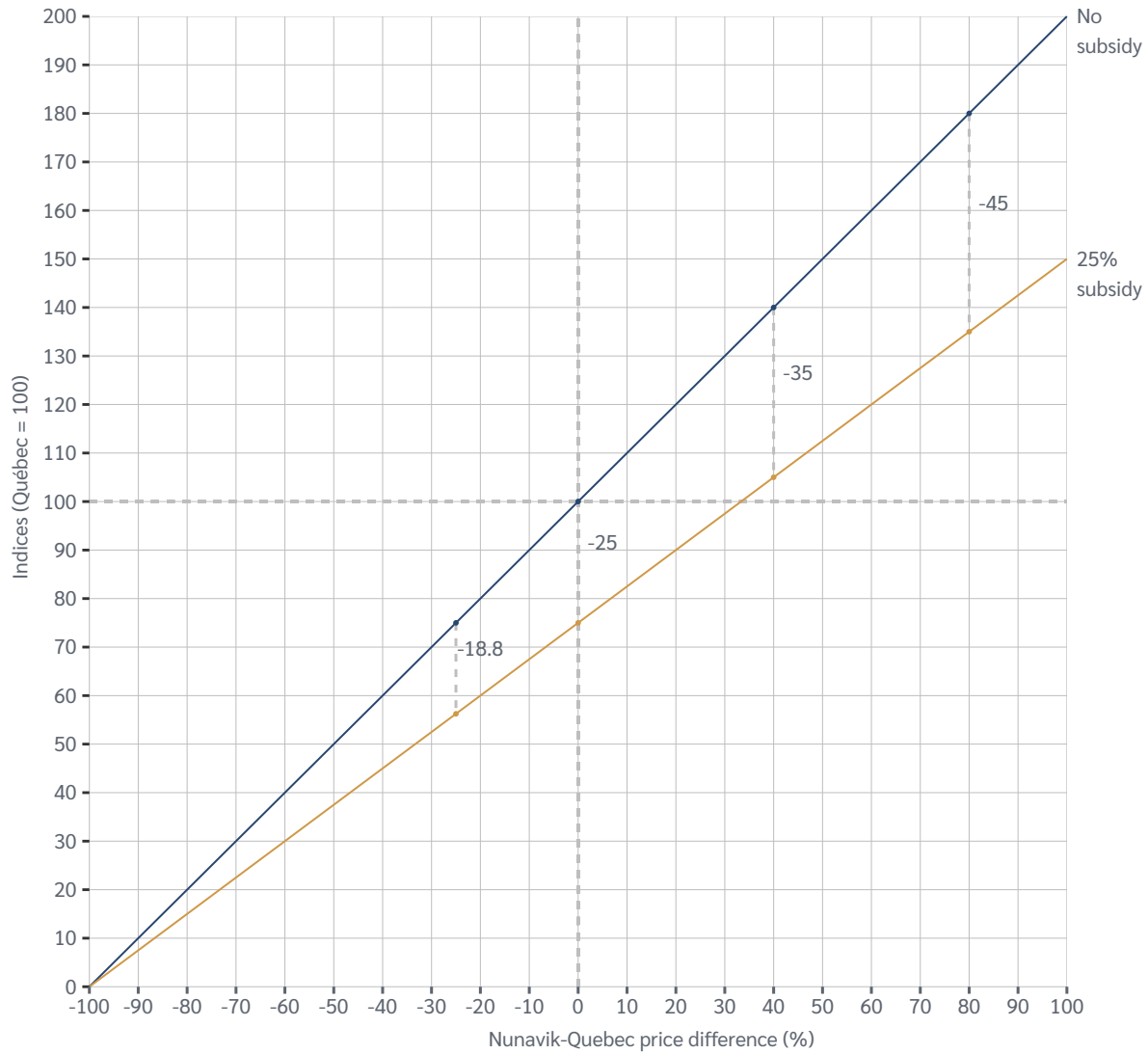
However, the impact of a subsidy rate of 25% expressed in terms of relative indices would not be the same according to the Nunavik-Québec price differential measured before the application of the subsidy. Thus, a constant subsidy rate of 25% will have much greater impact on products with a larger price differential before the subsidy than those with a smaller

price differential with Québec. For example, products heavily subsidized by Nutrition North Canada may have a smaller initial price differential with southern Québec. For these, the measured impact of a fixed subsidy at 25% would be less than for a product for which the differential was higher.

Another consideration connected to this relationship is that if prices in Nunavik follow the same inflation curve as in the rest of Québec – and this is generally the case, because Nunavik retailers obtain their products from southern suppliers – then a constant subsidy rate only maintains the Nunavik-Québec price differential, but the level of prices paid by the Nunavik consumer will increase.

APPENDIX A.1

RELATIONSHIP BETWEEN THE NUNAVIK-QUÉBEC PRICE DIFFERENTIAL AND THE IMPACT ON PRICE INDICES OF A CONSTANT SUBSIDY RATE OF 25%
(% and price indices)



Appendix A.2

Product classification

FOOD

Baby foods

- Canned infant or junior foods
- Infant formula

Bakery and cereal products (excluding baby food)

- Bakery products
 - Bread, rolls and buns
 - Cookies and crackers
 - Cookies and sweet biscuits
 - Crackers and crisp breads
 - Other bakery products
- Cereal products (excluding baby food)
 - Breakfast cereal and other cereal products (excluding baby food)
 - Breakfast cereal
 - Other cereal products (excluding baby food)
 - Flour and flour-based mixes
 - Flour
 - Flour-based mixes
 - Pasta products
 - Dry pasta
 - Fresh pasta and other pasta mixes
 - Macaroni and cheese mixes
 - Rice and rice-based mixes

Dairy products and eggs

- Dairy products
 - Butter
 - Cheese
 - Cheddar cheese
 - Mozzarella cheese
 - Processed cheese
 - Unripened or fresh cheese
 - Fresh milk
 - Low-fat milk
 - UHT milk
 - Whole milk
 - Ice cream and related products
 - Other dairy products

Eggs

Fish, seafood and other marine products

- Fish
 - Canned and other preserved fish
 - Canned salmon
 - Canned tuna
 - Other canned fish
 - Fresh or frozen fish (including portions and fish sticks)
- Seafood and other marine products
 - Canned and other preserved seafood and other marine products
 - Other shellfish
 - Shrimps and prawns

FOOD (Continued)

Fruit, fruit preparations and nuts

- Fresh fruit
 - Apples
 - Bananas
 - Oranges
 - Other fresh fruit
- Nuts and seeds
- Preserved fruit and fruit preparations
 - Fruit juices
 - Other preserved fruit and fruit preparations
 - Canned fruit
 - Dried and dehydrated fruit
 - Frozen fruit
 - Jam

Meat

- Fresh or frozen meat (excluding poultry)
 - Fresh or frozen beef
 - Ground beef, lean
 - Ground beef, medium lean
 - Other fresh or frozen beef
 - Steak
 - Ground pork
 - Other fresh or frozen pork
 - Pork chop
- Other fresh or frozen meat (excluding poultry)
- Fresh or frozen poultry
 - Fresh or frozen chicken
 - Chicken drumstick
 - Chicken thigh
 - Chicken wing
 - Other fresh or frozen chicken
 - Other fresh or frozen poultry
- Processed meat
 - Canned luncheon meat
 - Ham and bacon
 - Bacon
 - Ham excluding deli ham
 - Other processed meat

Other food products and non-alcoholic beverages

- Coffee and tea
 - Coffee
 - Instant and other coffee
 - Roasted or ground coffee
 - Tea
- Condiments, spices and vinegars
 - Fermented or pickled vegetables
 - Herbs, spices and seasonings
 - Sauces, condiments and dips
 - Ketchup
 - Mayonnaise
 - Other sauces, condiments and dips
 - Pasta sauces

FOOD (Continued)

Other food products and non-alcoholic beverages (continued)

Edible fats and oils

Margarine

Other edible fats and oils

Non-alcoholic beverages

Other food preparations

All other food preparations

All other miscellaneous food preparations

Baking powder

Nut butter

Potato chips and other snack products n.e.c.

Frozen food preparations

Frozen pizza

Other frozen food preparations

Soup

Sugar and confectionery

Confectionery

Sugar and syrup

Vegetables and vegetable preparations

Fresh vegetables

Broccoli

Carrots

Cucumber

Lettuce

Mushrooms

Onions

Other fresh vegetables

Potatoes

Tomatoes

Preserved vegetables and vegetable preparations

Canned vegetables and other vegetable preparations

Canned vegetables

Other vegetable preparations

Vegetable juice

Frozen and dried vegetables

HEALTH AND PERSONAL CARE

Baby care

- Baby soaps and shampoo
- Baby wipes
- Diapers
- Other baby care

Health care goods

- Eye care goods
- Medicinal and pharmaceutical products
- Other health care goods

Personal care supplies and equipment

- Feminine hygiene products
- Oral-hygiene products
- Other personal care supplies and equipment
- Personal soap
- Toiletry items and cosmetics
 - Creams, lotions and cosmetics
 - Hair preparations and other toilet preparations
 - Perfume and cologne

HOUSEHOLD OPERATIONS, FURNISHINGS AND EQUIPMENT

Household cleaning products

- Detergents and soaps (other than personal care)
 - Detergents and rinse agents for dish washing
 - Laundry detergents and soaps
- Other household cleaning products
 - Bleach and other household chemical products
 - Fabric softener
 - Household cleaning and polishing products

Paper, plastic and aluminum foil supplies

- Paper supplies
- Plastic and aluminum foil supplies
 - Household paper supplies
 - Foil supplies
 - Plastic supplies

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