

Inflation of Egg Prices Across Canadian Grocery Stores*

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After the COVID-19 pandemic, inflation has been a large economic issue for the majority of Canadians. This analysis studies the inflation of egg prices in 2024 and finds that prices have decreased compared to mid 2024. By understanding how the prices of staple grocery items fluctuate, we can gauge the effect of inflation on the general Canadian consumer.

Introduction

Groceries in Canada have been one of the consumer goods most affected by inflation. According to the Bank of Canada, the main reason for this is because grocery prices are affected by factors such as “cost of energy, labor, and transportation”, (Bank of Canada 2024). Past inflation trends in the United States show that groceries most affected by inflation are eggs, dairy products, and lettuce. In 2022, egg prices increased by 60% in the United States (CNBC 2023). This analysis studies Canadian egg prices as they are a common good most people buy and they are heavily impacted by inflation. Another reason why groceries are very expensive is because there is limited competition in the grocery market. Loblaws essentially dominates Canada’s market and practices price gouging (Appel 2024).

*Code available at : <https://github.com/redpinecube/grocery>

Data

The data used for this analysis was sourced from Jacob Filipp’s Project Hammer. This project “aims to drive more competition and reduce collusion in the Canadian grocery sector” (Filipp 2024). The raw data consists of two data sets: one containing detailed product information from the grocery vendors Voila, T&T, Loblaws, No Frills, Metro, Galleria, Walmart, and Save-On-Foods, and the other containing time series data on product prices. This data was filtered and cleaned using R (R Core Team 2021) and the Tidyverse package (Wickham et al. 2019), to examine discrepancies in egg prices over time. A clean data set was constructed with the following variables for analysis: price of an egg, vendor, time, egg color, egg size, product brand, egg type, and whether the product was on sale or not. This section briefly examines variables of interest.

Egg Prices

The average price of an egg in Canada in 2024 was \$0.52. The minimum price of an egg was \$0.3 while the maximum price was \$0.82. The distribution of egg prices can be seen in Figure 1, with two modes at 0.42 and 0.6. The trend of egg prices over time in 2024 can be seen in Figure 2. In 2024, egg prices increased dramatically from February to October but then faced a sharp price decline afterward. According to Sylvain Charlebois, a “professor in food distribution policy at Dalhousie University,” grocery prices dropped in fall since the Bank of Canada “cut interest rates by 25 basis points” (The National Post 2024).

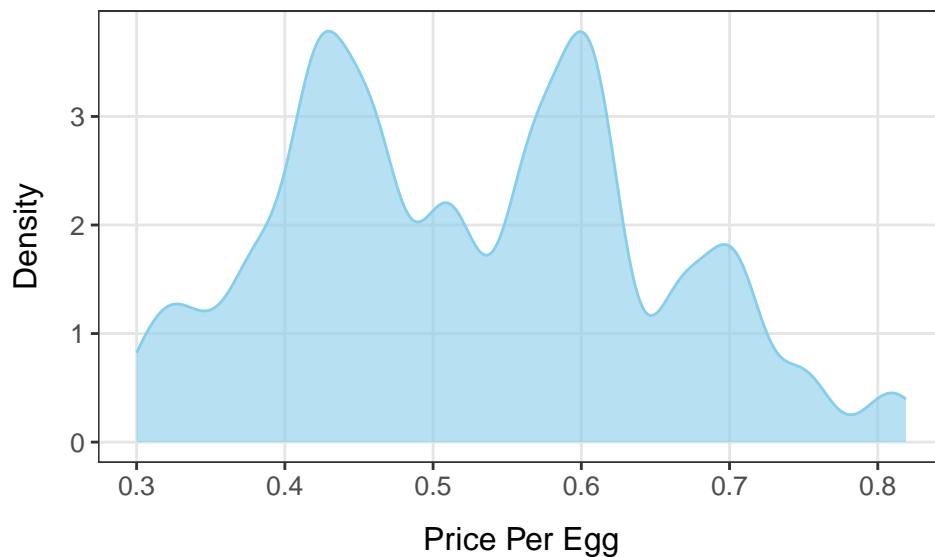


Figure 1: Density of Canadian Egg Prices in 2024

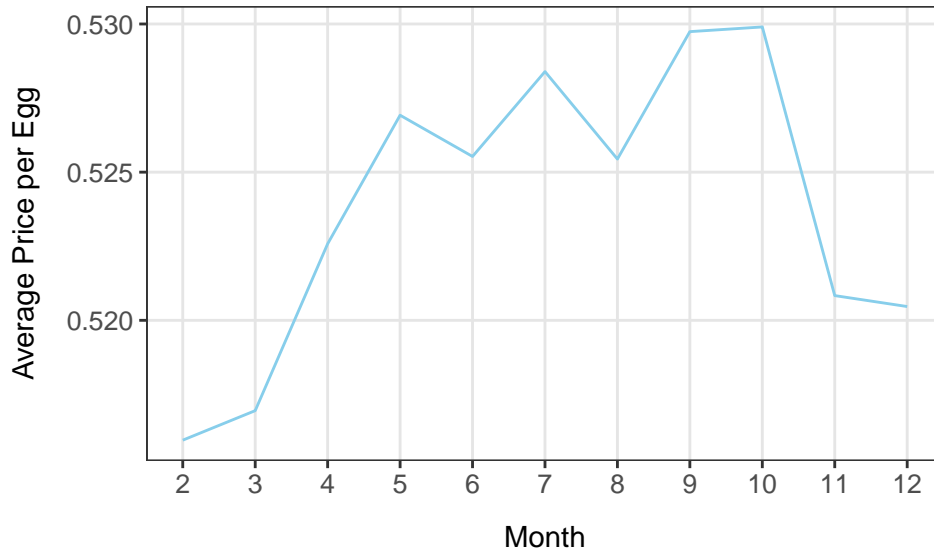


Figure 2: Canadian Egg Prices by Month in 2024

Grocery Vendors & Brands

Three popular grocery vendors were considered in this analysis: Loblaw's, Metro, and Voila. As seen in Figure 3, the brands these vendors source their eggs from include Blue Menu, Compliments, Conestoga Eggs, Gold Egg, Gray Ridge, Longo's, and President's Choice. Among the vendors, Metro offers the most expensive eggs, followed by Loblaw's, with Voila being the least expensive, as seen in Figure 4. Price per egg at Metro is \$0.64 on average, \$0.62 for Loblaw's, and \$0.51 for Voila. From February to April, the price of eggs decreased for Metro and Voila while it increased for Loblaw's. During this price hike, Loblaw's was accused of price gouging by many consumers, prompting a boycott of the retailer (Appel 2024).

According to Figure 5, Blue Menu and Conestoga Eggs are the priciest brands, while Compliments and Gray Ridge are the more affordable options. Compliments is a store brand launched by the retailer Sobeys in 2005 (Sobeys 2024). Store brands, like Compliments, are often a more economical choice for consumers compared to name brands. For example, in the United States, "consumers save more than \$40 billion a year on grocery and household purchases by opting for the store brand over the national brand version of their favorite products" (Private Label Manufacturers Association 2024).

Egg Color, Size, and Type

Chicken eggs sold at Metro, Loblaw's, and Voila, come in two colors and three sizes. Eggs are either white or brown and they are labeled medium, large, or extra large. As seen in Figure 6, medium sized eggs are the most expensive, followed by extra large eggs, with large

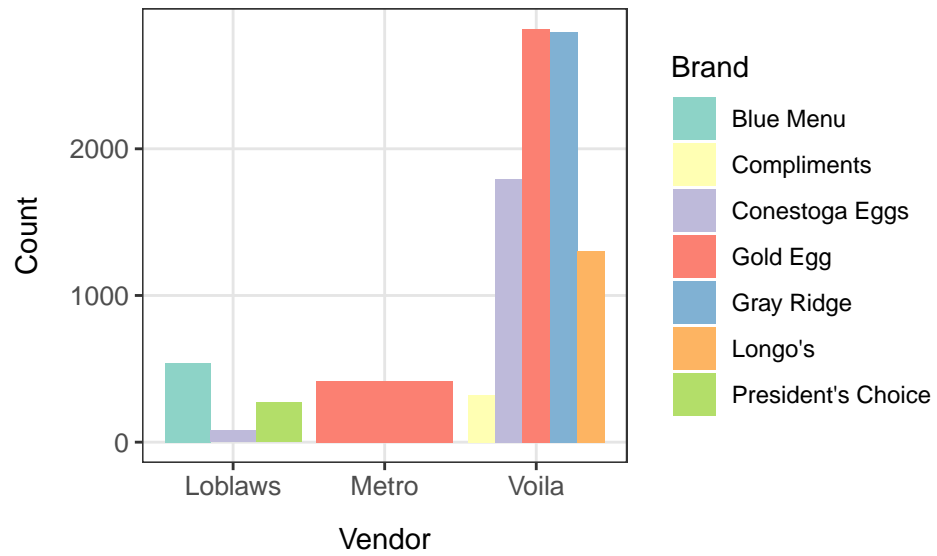


Figure 3: Frequency Distribution of Price Changes by Brand

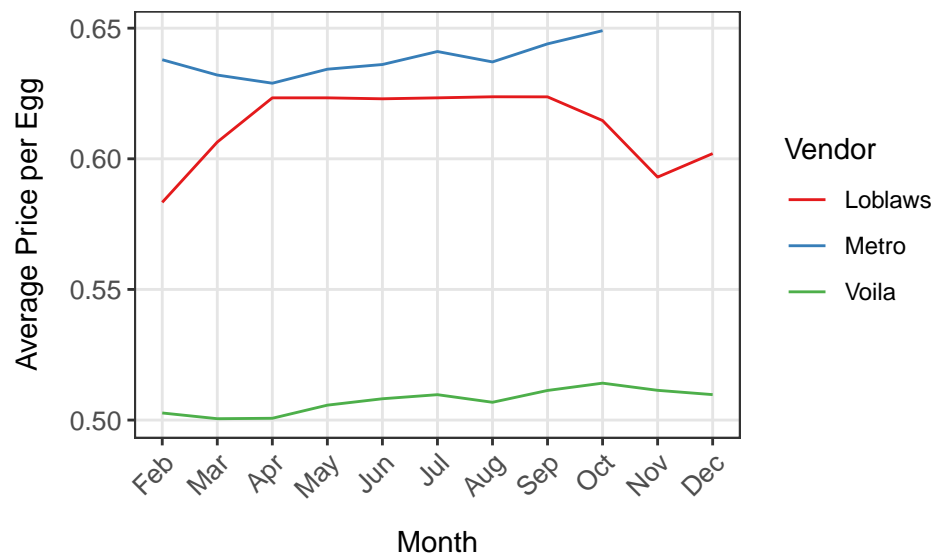


Figure 4: Average 2024 Egg Prices by Canadian Vendors over Time

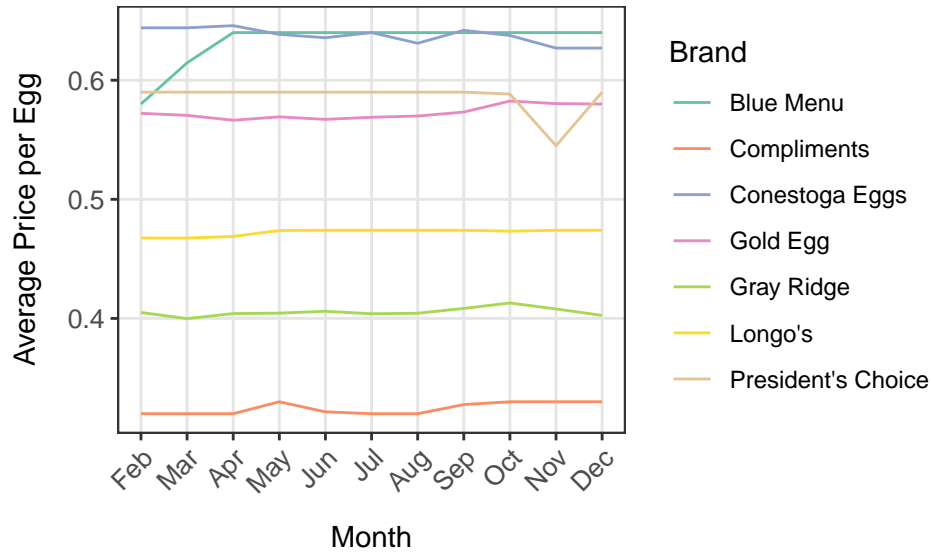


Figure 5: Average 2024 Egg Prices by Canadian Brands over Time

eggs being the cheapest. Figure 7 shows that egg color is a strong indicator of price. Brown eggs on average cost around \$0.57, while white eggs cost on average \$0.44. Brown eggs come from larger breeds of chickens that require “more food, which makes the eggs more expensive for farmers to produce” (Consumer Reports 2024).

Eggs are also divided by the conditions their hens are raised in. Some common ways hens can be raised is organic, free range, free run, and none of the above. Looking at Figure 8 tells us that organic eggs have an average sell price greater than \$0.70 per egg which is around \$0.20 higher than the average price of an egg. Eggs that are not raised in farms with special conditions are the cheapest with an average price point of \$0.40. Free range and free run eggs have similar price points around \$0.60 with free range being \$0.02 higher in price per egg.

Sale

In 2024, the price of discounted eggs was up to \$0.23 cheaper than the average cost of non sale eggs which was around \$0.53. The largest discount price occurred in July, followed by minor peaks in discounts in October and December, as seen in Figure 9.

Measurement

Variables such as egg size are challenging to measure accurately, as many brands rely on subjective labels like “large,” “medium,” or “extra large.” On the other hand, some variables in this analysis, such as egg price, are easier to measure and more reliable, as prices are

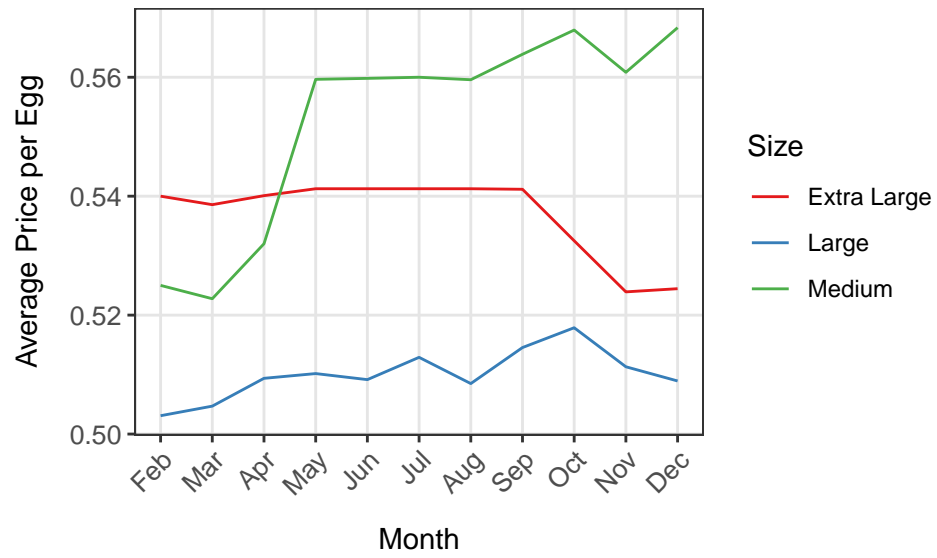


Figure 6: Average 2024 Egg Prices by Egg Size over Time

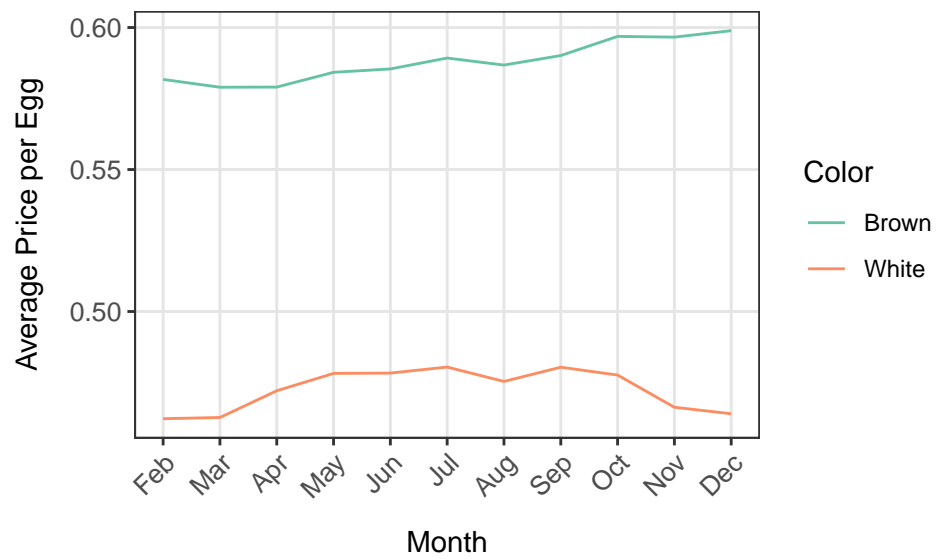


Figure 7: Average 2024 Egg Prices by Egg Color over Time

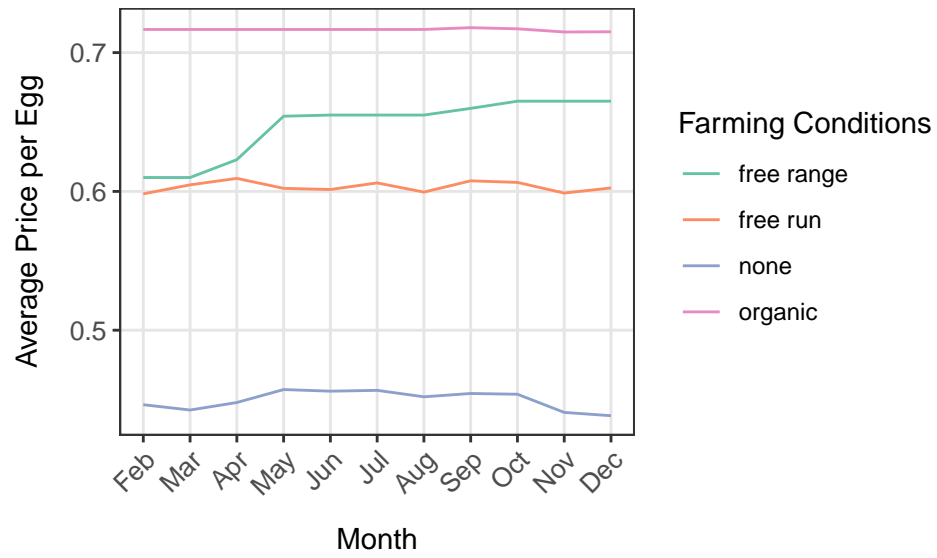


Figure 8: Average 2024 Egg Prices by Farming Conditions

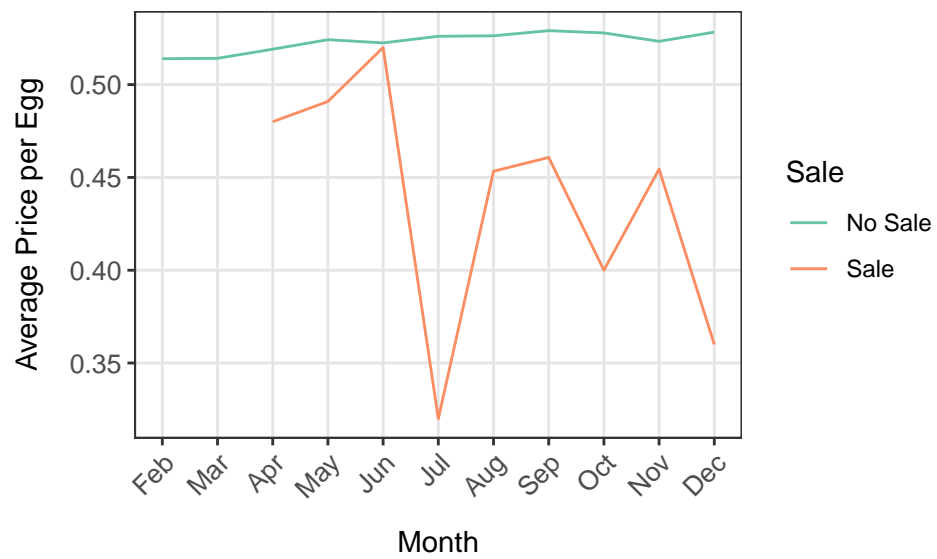


Figure 9: Average 2024 Egg Prices by Discount Type over Time

typically set by the retailer. However, it's important to note that gathering a comprehensive measurement of prices across all vendors and brands is difficult, particularly due to the large number of small businesses across Canada that this dataset may not fully capture.

Similarly, assessing farming conditions is inherently subjective. Farmers within each category often follow different standards, making it difficult to measure farming conditions consistently.

Model

Results

The biggest factor that affect egg prices is the vendor. As we can see from **?@fig-vendor**, Loblaw's essentially dictates what prices eggs should have. If we see egg prices by brand, they are mostly stable. In the earlier months of the year prices were relatively lower than prices in the middle of the year. Prices are also decreasing towards the end of the year. The cheapest eggs are available from No Name and the most expensive eggs are the eggs from PC Blue and PC Organics. Smaller eggs are also cheaper than larger eggs. Using these results consumers can make more educated food choices to save money.

Discussion

The best way to reduce prices is to get rid of the Canadian grocery monopoly. Unfortunately, this is pretty difficult for the average consumer so some actionable ideas are to buy groceries from the brand No Name. Some other ideas are to eat more plant based meals, buy groceries that last longer such as beans and rice in bulk, and meal planning in advance, (Hughes 2024).

This analysis is not perfect due to missing data and bias. Outside of these major grocery chains, there are many smaller farmers who sell their food locally, their prices are not reflected in the data. Additionally, to understand the whole picture of food prices its important to take food substitutions into consideration. When prices are very high, people may opt to use food substitutions, this analysis fails to take food substitutions into account.

There is also a correlation between size and price but there are also some discrepancies which may be the result of egg quality. This factor wasn't taken into account in the analysis. We can't say that larger egg sizes cause higher prices.

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