The Effects of the USMCA Trade Agreement On the United States, Mexico, and Canada

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Introduction: What is the USMCA?

The USMCA free-trade agreement between the United States, Canada, and Mexico is a trade agreement aimed at building upon and improving on its successor, the North American Free Trade Agreement (NAFTA). Discontent with NAFTA, the previous agreement between the three countries dating back to the early 1990's, had been growing among U.S. lawmakers for the last several years. One of the major issues with the dated trade deal included the loss of manufacturing jobs in the U.S. and it's subsequent impact on manufacturing wages (Burfisher et al, 2019). Through the near complete elimination of tariffs between the three countries, manufacturers could choose to transition manufacturing jobs away from the U.S. to Mexico, given Mexico's lower real wages. This is the most likely explanation for the lower real manufacturing wages in the U.S. following NAFTA, and is one issue of NAFTA that the USMCA aims to correct. According to Burfisher et al., the USMCA introduced a rules of origin rule that requires 40% to 45% of certain vehicles to be manufactured by workers earning a wage of at least $16 U.S. dollars (2019). The intent of such a requirement is that firms will either have to raise the wage in Mexican manufacturing plants, or move such plants to the U.S. or Canada. Other additions upon NAFTA include modified rules of origin for the composition of vehicles in the automobile industry, adjustments in Mexican labor laws, increased access for U.S. firms to Canada's dairy market, regulations regarding U.S. internet companies, and a clause stipulating the length that the USMCA will be in effect (Feentstra & Talor, 2021). For the following analysis, the effect of the USMCA on real wages, number of manufacturing jobs, and the balance of trade will be examined for the United States. A basic regression model will be used to forecast the U.S. export of goods to Mexico and Canada under the USMCA. Then, the same analysis will be applied to determine the effects of the USMCA on both Canada and Mexico.

The Effects of the USMCA on the U.S.

On the surface, the USMCA is meant to be an improvement for the United States over the NAFTA trade deal. Under the USMCA, automive manufacturing firms currently operating in the U.S. will have less incentive to move operations to Mexico, since the new trade deal requires higher wages in Mexico. However, firms currently operating in Mexico don't have an incentive to move operations to the United States or Canada, since the real wages are still comparably lower in Mexico. In fact, Burfisher et al. (2019) indicate that Mexico may choose to import automotive parts from suppliers in low-cost countries and pay a tariff rather than raising the wage of automotive workers. Therefore, the automotive wage provision is unlikely to increase manufacturing jobs in the automotive industry in the United States. The modified rules of origin under the USMCA require that 75% of automobiles must be produced in North-American countries, as opposed to the 62.5% requirement under NAFTA (Feentstra & Talor, 2021). This provision is also intended to keep automotive manufacturing jobs in North-American countries. However, this change doesn't indicate that these manufacturing jobs will be moved to the United States. Therefore, there doesn't appear to be evidence indicating a change in the number of manufacturing jobs, or the real wage for the U.S. automotive manufacturing industry following the implementation of the USMCA. However, the dairy-market provision of the USMCA, which allows for increased access to the Canadian dairy market for U.S. dairy farmers will increase the demand for U.S. dairy firms. This increased demand will most likely result in higher wages for employees in the U.S. dairy industry. However, as Josh Zumbrun points out in his *Wall Street Journal* article, "U.S. Prevails Over Canada in Dairy Dispute Under New Trade Deal", these gains will only be realized if both countries can successfully implement the dairy provision of the USMCA (2022). On net, there is reason to

believe that manufacturing jobs and real wages overall in the U.S. may increase slightly over NAFTA, given the additional provisions listed here. However, Burfisher et al. found that, "The evidence on labor markets post-NAFTA indicates that ... the effects in the U.S. economy are indeed small and are overwhelmed by other U.S. macroeconomic trends such as a rapidly growing economy" (Burfisher et al., 2001). Therefore, it may be difficult to determine the true effects of NAFTA and the USMCA overall, given other macroeconomic changes and trends in the U.S. economy. One area of interest, however, is on the U.S. exports to Canada following the implementation of NAFTA since Canada is the largest trading partner of the United States. Figure 1 shows the forecast of U.S. exports to Canada to August 2024 based on a seasonal näive forecasting method discussed in Chapter 5 of Hyndman's and Athanasopoulos' *Forecasting: Principles and Practice 3rd edition* (2021, Chapter 5 Section 2).

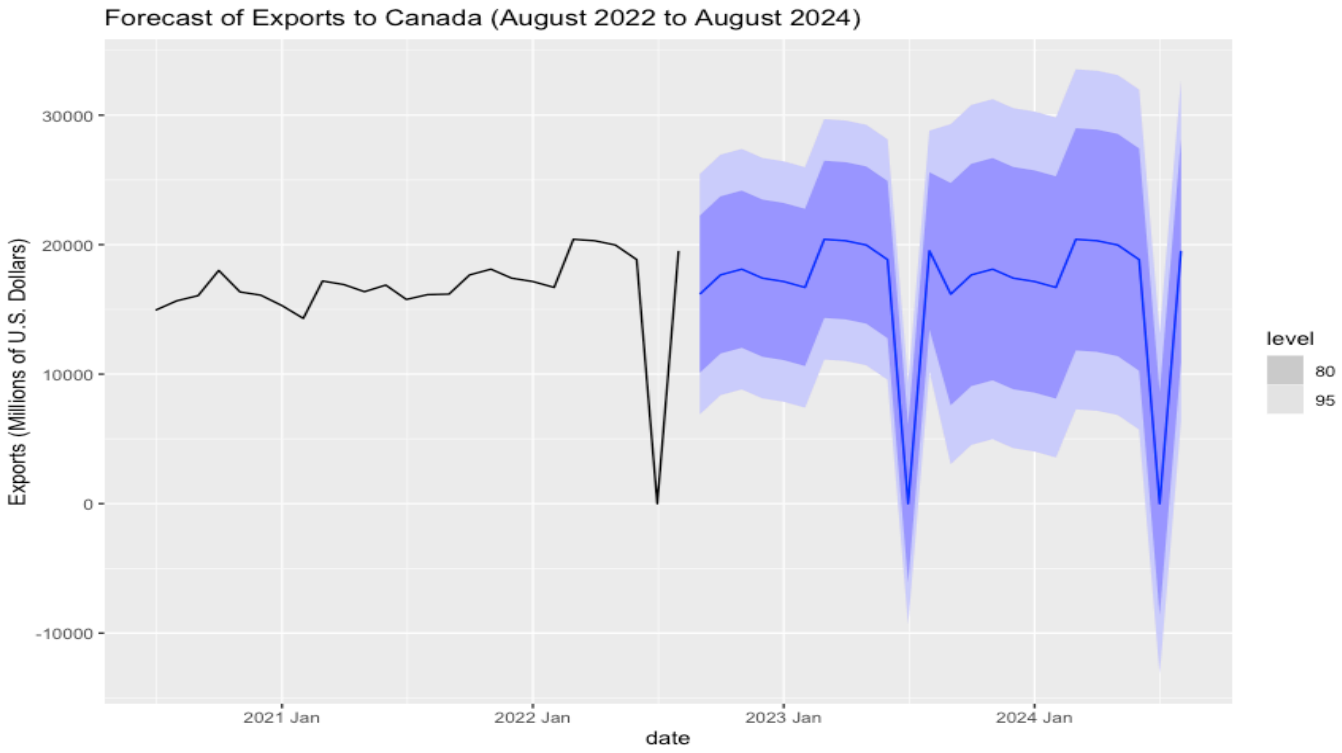

Figure 1: The forecast of U.S. exports to Canada forecasted two years into the future based data from the U.S. Census Bureau. Time series data retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/EXP0022, October 16, 2022. Created using R version 2022.07.1.

According to Figure 1, there is 95% confidence that U.S. imports to Canada will be between $30,000 and $10,000 in August of 2024. However, this forecast appears to be biased downward due to the outlier point in July of 2022. The accuracy measures for this model are given in Table 1 in the Appendix. There is no indication that exports to Canada in July of 2022 were zero, therefore this point unnecessarily causes the forecast to cycle to zero every every year. Overall, there doesn't appear to be evidence that U.S. exports to Canada will increase substantially compared to prior years under the USMCA, though only time will tell. On net, evidence indicates that the implementation of the USMCA will not impact the U.S. more than the impacts that resulted from NAFTA.

The Effects of the USMCA on Canada and Mexico

In examining the impacts of the USMCA on Canada and Mexico, the first area of interest is on the real wages and number of automotive manufacturing jobs in Mexico. The rules of origin provision that requires wages in the automotive manufacturing sector Mexico to be raised to $16 will likely cause unemployment in that sector in the short run, as firms may be required to lower the size of the workforce in order to increase the wage. However, firms in that sector that are already located in Mexico are not likely to transition to the U.S. or Canada given their large investment in Mexico over the last 20 years due to NAFTA. Additionally, the rules of origin

requirement in the UMCSA stating that 75% of automobiles must be manufactured in North America is likely to increase the number of manufacturing jobs in Mexico in that sector. Automotive firms will try to meet that 75% mark by manufacturing more components in North America, and Mexico is still the most attractive location for automotive firms given their looser labor laws as compared to the U.S. and Canada. In order to see how the USMCA will impact the manufacturing sector in Mexico, the same seasonal näive forecasting method can be applied to manufacturing data for Mexico, which is shown in Figure 2.

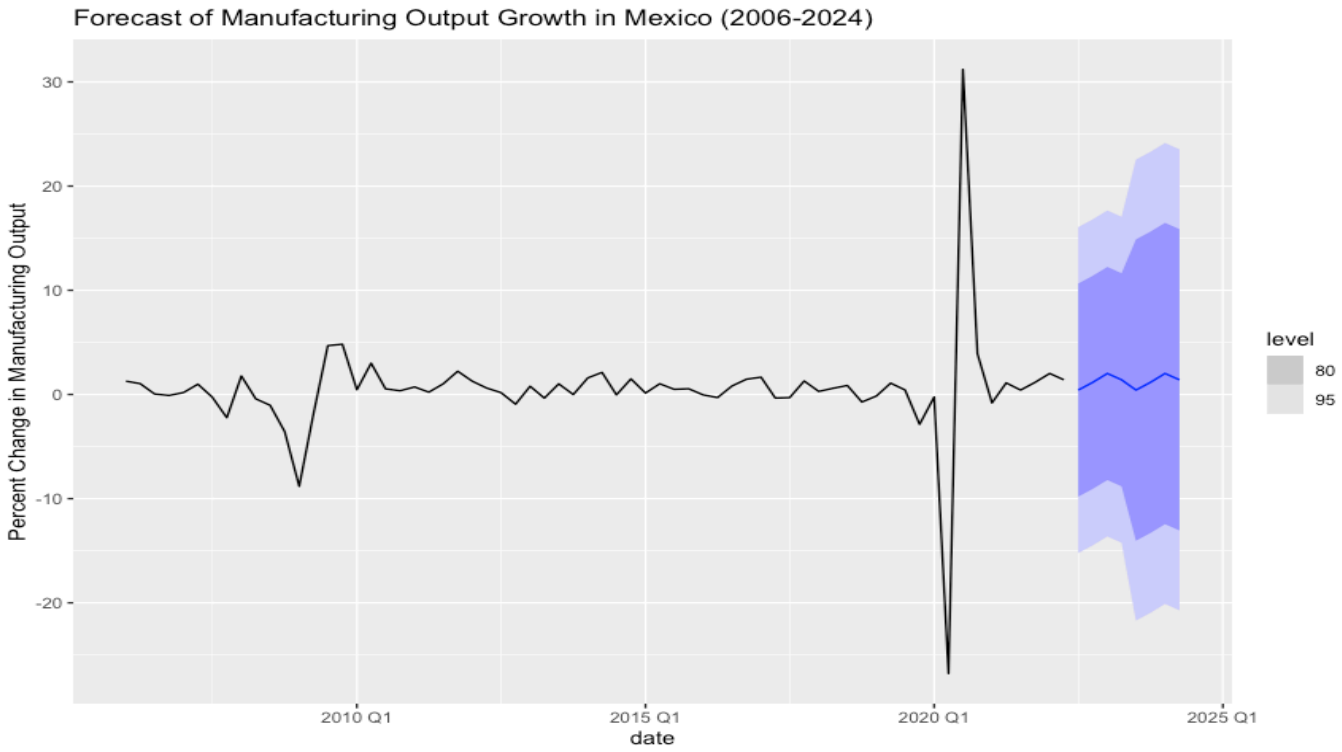

Figure 2: The forecast of percentage change in Mexico manufacturing output two years into the future based data from the OECD. Time series data was retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/PRMNTO01MXQ657S, October 16, 2022. Created using R version 2022.07.1.

According to the model shown Figure 2, there does not appear to be a variation in manufacturing output in Mexico in the coming two years. There is a noticeable large spike in the growth in manufacturing output during the peak of the COVID-19 pandemic, which doesn't seem to have influenced the two-year forecast. The accuracy measures for this model are given in Table 1 in the Appendix. Therefore, given this model, and the analysis of the new provisions in the USMCA, it appears that the introduction of the USMCA will not have a large economic impact on Mexico. However, given its looser labor laws and the reassurance of trade ties between the U.S., Mexico, and Canada given by the USMCA, manufacturing firms may continue to invest in Mexico in the coming years, thus bringing job growth in that sector.

Lastly, the effects of the USMCA on Canada can be analyzed. The provision of the USMCA that will most likely have the largest impact on Canada will be the increased access to the Canadian dairy market for U.S. dairy firms. This provision will increase the variety of dairy products for Canadian consumers. These benefits may be difficult to measure, though one area of interest would be the impact of the USMCA on food prices in Canada, given that the U.S. exports other agricultural and food items to Canada. Figure 3 shows the consumer price index for Canada for food and non-alcholoic beverages from March 2016 to July 2022, along with a two-year forecast of the index based on the seasonal näive method.

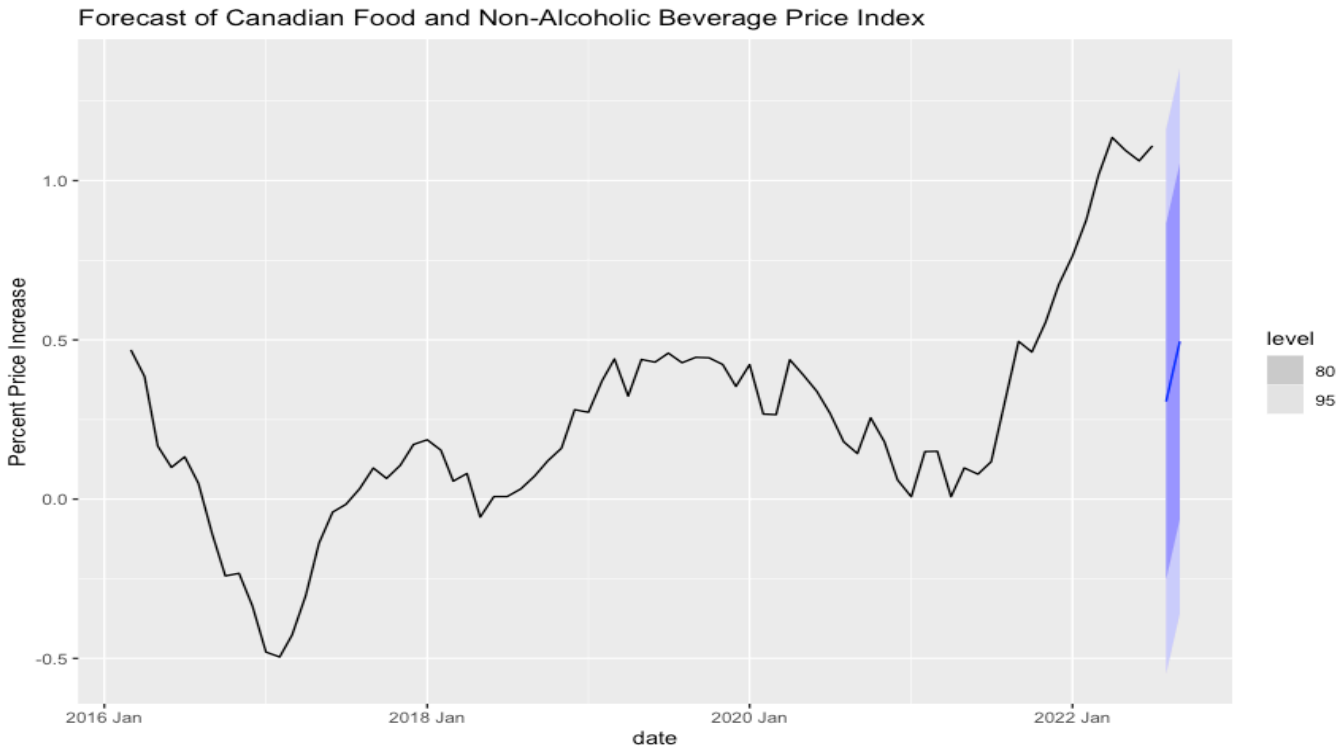

Figure 3: The forecast of the food and non-alcoholic beverage Canadian price index based on data from the OECD. Time series data was retrieved from FRED, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CANCP010000CTGYM, October 16, 2022. Created using R version 2022.07.1.

Based on the model in Figure 3, it appears that the price of Canadian food is forecasted to decline from July 2022 to July 2024. The large increase in food prices through January 2022 may be the result of overall price inflation in the Canadian economy. This näive seasonal model supports the hypothesis that the increased variety for Canadian consumers as a result of the USMCA dairy provision may result in a decrease in food prices in Canada. This is likely to be the largest source of gains for the Canadian economy from the USMCA. However, this benefit will be mostly to Canadian consumers as opposed to firms. Therefore, as a result of the price decrease and decreased demand for Canadian dairy products, the wage in that sector may decline in Canada. The accuracy measures for this model are shown in Table 1 in the Appendix.

Conclusions

Overall, the USMCA is not likely to have impacts on the U.S., Mexico, and Canada that are different from the results of NAFTA. The new rules of origin requirements for the automotive manufacturing industry may help the U.S. retain manufacturing jobs in that sector, though it won't likely be enough to incentivize manufacturing firms to invest in the United States, and thus likely won't have an impact on the real wages in that sector in the United States. Additionally, according to the findings in Figure 1, it doesn't appear that exports to Canada, the largest trading partner for the U.S., will increase after the implementation of the USMCA. The USMCA may have the largest impact on Mexico, as the rules of origin changes and the requirements for more strict labor laws will require Mexican firms to adjust current practices. However, the model in Figure 2 had found that there isn't likely to be growth in manufacturing output in Mexico. The provision of the USMCA with the potential to have the largest impact on Canada is the dairy provision, which will bring increased variety and lower prices of dairy products to Canadian consumers.

References

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Appendix

Table 1 shows the accuracy scores for the three forecasting models used in this analysis.

Table 1: Accuracy Measures of the Three Seasonal Näive Models

Dataset	ME	RMSE	MAE	MPE	MAPE	MASE	RMSSE	ACF1
U.S. Exports to Canada	1931	2309	1980	10.3	10.6	1	1	0.693
Growth in Mex. Manufacturing	0.0442	7.98	3.65	-163	587	1	1	-0.319
Canadian Food Prices	0.156	0.436	0.337	-82.6	337	1	1	0.847

According to Table 1, the forecast model of the Canadian food price index appears to be the most accurate, as it has the lowest overall accuracy measures.

R Script

```
remove(list=ls())
install.packages("feasts")

# Load packages
library(readxl)
library(fpp3)
library(tsibble)
library(tsibbledata)
library(tidyverse)
library(fable)
library(dplyr)
library(lubridate)
library(ggplot2)
library(cowplot)
library(ggpubr)
library(feasts)

#Load in the US exports to Mexico dataset
setwd("/Users/andywright/Documents/International Econ & Policy")
ExportstoCanada <- read_excel(na.omit("IMP0021.xlsx"), sheet = 1, col_names = TRUE)
head(ExportstoCanada)

##Create a time series object for the data
ExportstoCanada <-  ExportstoCanada %>% mutate(date = yearmonth(date)) %>%
  as_tsibble(index = date)

autoplot(ExportstoCanada)

#Use the seasonal naive method to calculate the in-sample forecast two years ahead
ExportstoCanadaModel <- ExportstoCanada %>% model(SNAIVE(IMP0021 ~ lag("year")))

#Forecast
```

```
ExportstoCanadaModel %>% forecast(h = 24) %>%
  autoplot(ExportstoCanada) +
  ggtitle("Forecast of Exports to Canada (August 2022 to August 2024)") + ylab("Exports (Millions of U.S. Dollars)")


#Load in the percentage change in Mexico manufacturing dataset
MexicoManufacturing <- read_excel(na.omit("PRMNTO01MXQ657S.xlsx"), sheet = 1, col_names = TRUE)
head(MexicoManufacturing)

##Create a time series object for the data
MexicoManufacturing <-  MexicoManufacturing %>% mutate(date = yearquarter(date)) %>%
  as_tsibble(index = date)

autoplot(MexicoManufacturing)

#Use the seasonal naive method to calculate the in-sample forecast two years ahead
MexicoManufacturing2 <- MexicoManufacturing %>% model(SNAIVE(PRMNTO01MXQ657S~ lag("year")))

#Forecast
MexicoManufacturing2 %>% forecast(h = 8 ) %>%
  autoplot(MexicoManufacturing) +
  ggtitle("Forecast of Manufacturing Output Growth in Mexico (2006-2024)") +
  ylab("Percent Change in Manufacturing Output")

#Load in the Canadian food price index
CanadaFoodPrices <- read_excel(na.omit("CANCP010000CTGYM.xlsx"), sheet = 1, col_names = TRUE)
head(CanadaFoodPrices)

##Create a time series object for the data
CanadaFoodPrices <-  CanadaFoodPrices %>% mutate(date = yearmonth(date)) %>%
  as_tsibble(index = date)

autoplot(CanadaFoodPrices)

#Use the seasonal naive method to calculate the in-sample forecast two years ahead
CanadaFoodPrices2 <- CanadaFoodPrices %>% model(SNAIVE(CANCP010000CTGYM~ lag("year")))

#Forecast
CanadaFoodPrices2 %>% forecast(h = 2 ) %>%
  autoplot(CanadaFoodPrices) +
  ggtitle("Forecast of Canadian Food and Non-Alcoholic Beverage Price Index") + ylab("Percent Price Increase")



accuracy(ExportstoCanadaModel)
accuracy(MexicoManufacturing2)
accuracy(CanadaFoodPrices2)
```