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# United States Withdrawal from NAFTA: Potential Effects on the Domestic Agriculture Sector and In-Market Consumers

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# United States Withdrawal from NAFTA: Potential Effects on the Domestic Agriculture Sector and In-Market Consumers

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**Abstract**

A United States withdrawal from the North American Free Trade Agreement – a tenant of Donald Trump's 2016 presidential campaign – could significantly reduce job creation and consumer spending in a number of sectors within the U.S. economy. While it remains to be seen whether this proposed exit will occur, economists predict the main industries that will be affected are the automotive, farming, and petrochemical industries. The United States' current political climate could potentially, negatively impact the farming industry – thus causing the unemployment rate to possibly skyrocket as well as adversely affecting consumer spending. This paper examines the potential adverse effects of a U.S. exit from NAFTA. Specifically, it examines the impact such an exit may have on farmers, and consumer spending within the sector. More precisely, I will be discussing cases in which countries have exited trade agreements and the consequences of the exit, such as Brexit. Drawing on a systematic literature review, this study collects and interprets research focusing on trade agreement withdrawal. This data is supplemented by financial reports provided by major agricultural corporations, and consumer spending statistics (e.g., avocado and cereal purchases). This study finds the significant correlation between consumer spending and the potential U.S. withdrawal from NAFTA, which may affect consumer spending. Also, major companies such as Kellogg's may be forced to now pay a tariff on wheat, which will lower their revenue stream and in turn cause a mass number of layoffs. This study concludes with the recommendations for economists, who may wish to take greater care in evaluating the potentially adverse effects of this withdrawal on corporate production and consumer behavior.

## Introduction

This study analyzes the effects that the United States' potential withdrawal from NAFTA could have on major firms and on consumers as well as farmers, who have been rioting nationwide over the proposed exit (Farmer's Group, 2014). Although this proposed exit from NAFTA has not yet occurred, it is something that should concern all of us as consumers, as it could pose a real threat to consumer prices.

While the Mexican government has been fighting tooth and nail to save NAFTA, Mexican farmers have rioted and protested that the deal be eradicated. As NAFTA renegotiations have been taking place, Mexican farmers protested on the streets of Mexico City in August of 2017 (Solomon 2017). Many believe that the agreement benefits the United States the most. Therefore, a withdrawal will obviously negatively impact the U.S. the most. United States' farmers have the most to lose if the deal collapses. For instance, reports state that NAFTA withdrawal could cost Nebraska farms and ranches up to $55,000 annually (Report Shows NAFTA, 2017). The report "North American Free Trade Agreement and Nebraska Agriculture," provides an economic breakdown of the value NAFTA has added to farmers in Nebraska and the implications that would come with a U.S. NAFTA withdrawal. The value estimated for agricultural exports under NAFTA from Platte County in Nebraska topped $34.5 million, which makes it the highest dollar export county in the state (Rempe, 2017). This is just one example of a state that would clearly suffer the consequences of a NAFTA withdrawal. The state calls the potential situation "unfathomable" (Report Shows NAFTA, 2017). Clearly, farmers in Mexico would benefit from this withdrawal, however the Mexican government and American farmers are completely opposed to the situation.

Moreover, suppliers in the agriculture industry will look for ways to enter into more cost-effective markets, such as South America or Asia (Zahniser, 2015). Also, farmers on both sides of the industry will be affected if this withdrawal transpires. Imports from Mexico could face a tremendous increase in tariffs which means that consumers will find themselves paying perhaps four times the price of a simple good, like an avocado. Beyond economic benefits, the United States' decent relations with Mexico and Canada contribute to making a more competitive American economy. Thus, these 'good relations' might be compromised if President Trump decides to pull out of the agreement (Investors Say NAFTA Withdrawal Would Hurt, 2017). Some important scholarly articles that are relevant to the current research are Patrick Minford's article, "The Liverpool macro-economic model of the United Kingdom" which analyzes the rise in the cost of living for consumers post-Brexit. Also, Steven Zahniser's article, "North America's free trade area and its impact on agriculture" which discusses the benefits of trade agreements in relation to the agriculture sector. Additionally, there are various statistical models included from the Bureau of Labor Statistics that summarize consumer expenditures in relation to income. The structure of this paper will include analyzing and interpreting various scholarly articles in regards to the farming industry and NAFTA, followed by a Methodology which will explain my methods of research. Additionally, I will be report my results for the increase in consumer spending. Finally, the discussion and conclusion sections will reaffirm the importance of the study as well as summarize the results.

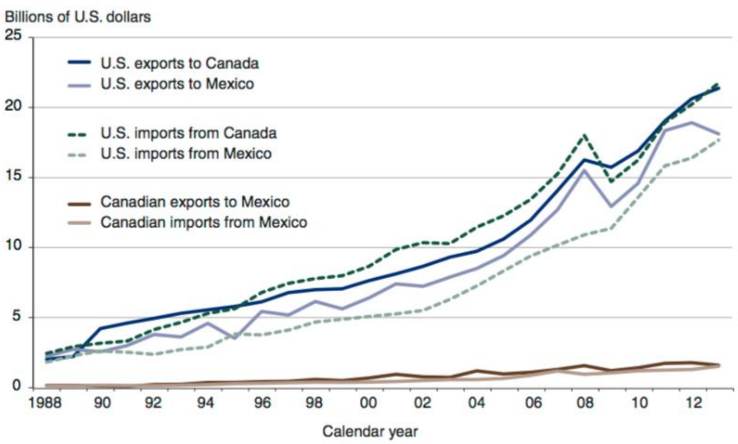
## Literature Review:

### An Overview of NAFTA

The North American Free Trade Agreement, most commonly known as NAFTA involves three trade partners; Canada, Mexico, and the United States. NAFTA came into force in January of 1994, when Mexico was added to a prior Canada-U.S. Free Trade Agreement, known as CUSTFTA (Bown, 2017). One of the most important factors of this agreement is the zero tariff imports for all manufactured products traded between them. After NAFTA, trade between the three countries grew substantially (Bown, 2017).

NAFTA has also had a significant effect on many aspects of North American agriculture. “NAFTA at 20: North America’s free trade area and its impact on agriculture” specifically states the positive impact that NAFTA has had on the agriculture sector. “NAFTA has had a substantial impact on the integration of North America’s agricultural markets. Market integration is the extent to which one or more formerly separated markets have combined to form a single market. Integration is visible in increased cross-border flows of goods, services, capital, and labor” (Zahniser et. al). In other words, NAFTA has successfully unified the agricultural sector amongst these three countries. As depicted by the photo above, U.S. agricultural exports/imports to and from NAFTA countries will continue to steadily increase, as it has been doing since the introduction of NAFTA.

Figure 1
**Intraregional agricultural trade has experienced tremendous growth during the CUSTA-NAFTA period**




Clearly, NAFTA has played a significant role in the growth of American agriculture. One of NAFTA’s accomplishments has been opening the door to Canadian and Mexican markets for farmers to export American goods. A coalition of food and agriculture groups stated that the withdrawal from NAFTA would “cause immediate, substantial harm to American food and agriculture and to the U.S. economy as a whole” (Fatka, 2017) . In order to understand the destruction this would cause to the economy, it is important to first comprehend the amount of food and agriculture exports and imports between the three countries.

According to the United States Department of Agriculture, Canada and Mexico are the two largest suppliers of US agricultural imports. “Canada and Mexico remain the United States’ largest supplier of agricultural products.” The goods imported from these countries are consumer-oriented goods such as agricultural products, red meats, and snack foods.

Refer to Figure 2 below:

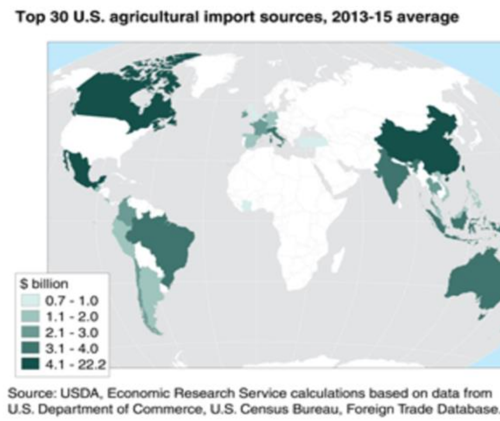



Figure 2 depicts the top 30 U.S. agricultural import sources. Canada and Mexico are the largest suppliers accounting for $22.2 billion and $19.3 billion in 2013-15, respectively). Basically, what it boils down to is an agreement (NAFTA) which allows all three countries to trade billions of dollars’ worth of goods between one another without having to pay tariffs. This keeps prices low for farmers and food companies which in turn keeps prices low for us consumers.

All three countries- Canada, Mexico, and the United States – are codependent when it comes to the agricultural sector because each imports goods they do not produce from the other two. Synergies exist, such as Mexico exporting more beef to the U.S. than it buys while importing a lot of U.S. corn, which is used in Mexico’s feedlots (Grueff). So, there exists a give-and-take among the three countries.

Also mentioned in this article is how consumers greatly benefit from this trade agreement. American consumers spend just about 6.4% of their total income on food.

Canadians spend around 10% and Mexicans, 20% (Bureau of Labor Statistics). What trade does is it permits each country to have better quality products year-round at a fair price. Withdrawing from this trade agreement will perhaps cause consumers to spend more of their total income on food. This will mean perhaps an increase in our weekly grocery budget.

The major buyers of U.S. food imports are supermarket chains, hotels and restaurants, and multinational companies. Also, major food franchises such as McDonald's and Burger King are purchasers of U.S. food imports. These food groups are not on board with Trump's proposal to withdraw from NAFTA due to the rise in tariffs on food imports/exports that it will cause.

NAFTA's Chapter 11 established the Investor State Dispute Settlement (ISDS), which basically grants foreign investors the right to sue local or national governments over measures that affect their real of potential profits on existing or planned investment (Department of Homeland Security). Cargill, Archer Daniels Midland and Corn Products International are all companies that have successfully sued Mexico and as a result won multimillion dollar settlements. This lawsuit was due to Mexico's tariffs on high fructose corn syrup (South American Business Information). This infamous lawsuit has set a precedent for many American companies whose real or potential profits could be affected by the U.S. possible withdrawal from NAFTA. This could lead to many lawsuits against the U.S. government.

Recently, 130 Food and Agriculture Organizations sent President Trump a letter highlighting NAFTA successes – an underlying way of informing Trump the harm he could be causing with a withdrawal. An excerpt from the letter below:

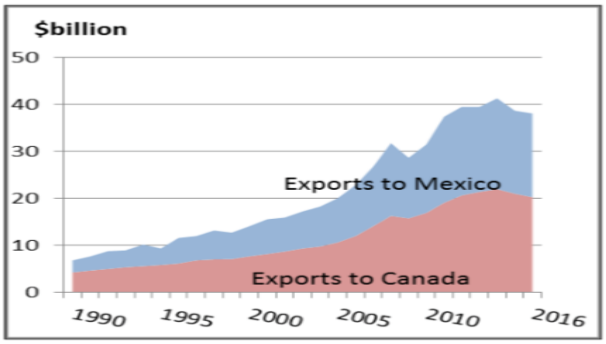
> "In the 20 years since NAFTA was implemented, the U.S. food and agriculture industry has become increasingly efficient and innovative—growing to support millions of jobs.

The market integration provided by NAFTA has increased competitiveness in the face of a rapidly changing global economy" (Plus Company Updates).

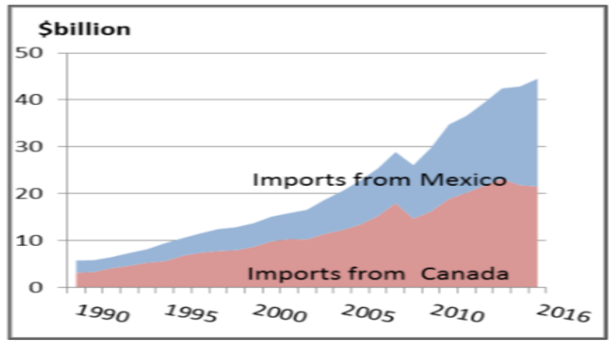
Moreover, one of the most American meals, a burger and fries, may become more difficult to assemble in the case of the U.S. withdrawing from NAFTA. Many consumers do not realize how much this classic meal actually depends on this trade agreement. Caitlin Dewey's article "As NAFTA talks continue, your hamburger hangs in the balance" asserts the claim that simple things may not be so simple if this withdrawal occurs. For instance, ground beef. "It is the end product of a highly efficient, integrated international system. U.S. farmers ship corn for cattle feed to Mexico and Canada. Mexico and Canada ship cattle -1.7 million in 2016 – to the United States for slaughter. And the United States ships finished steaks and burgers back to its neighbors" (Dewey). Therefore, interfering with this would be an interruption of the whole supply chain. Potatoes, another prominent part of the classic meal – is imported from Canada and tomatoes and other vegetables from Mexico. The price of these consumer goods, without NAFTA, would skyrocket – as predicted by many economists. Even condiments, such as cucumbers and jalapenos, could face tariff increases. The US could also find itself paying up to 37% tariffs on corn. A bushel of corn which costs the average American consumer three dollars could be doubled in price. By the same token, we will find ourselves paying $15 for a classic hamburger deluxe meal, something that shouldn't be more than $9-$10 at the local McDonalds. Whereas an American consumer may have a weekly budget of $100 for food, this price might double as a result of tariffs on simple goods.

**Trends in Agricultural Trade Under NAFTA**

Agricultural trade under NAFTA accounts for 28% of the total value of U.S. agricultural exports and 39% of its imports in 2016 (Johnson, 2017). Since the introduction of NAFTA, agricultural trade with both Canada and Mexico has sharply increased. "Adjusted for inflation, the value of agricultural exports and imports between the United States and its NAFTA partners has increases roughly threefold since 1990, growing at an average rate of about 5%-6% annually" (Johnson 2017).




**Source:** CRS from USDA data.
**Notes:** Data are nominal and are not adjusted for inflation. Data are calendar year.




**Source:** CRS from USDA data.
**Notes:** Data are nominal and are not adjusted for inflation. Data are calendar year.

Being that the agriculture sector has seen tremendous growth since NAFTA's implementation, many farming associations have expressed strong opposition to the withdrawal.

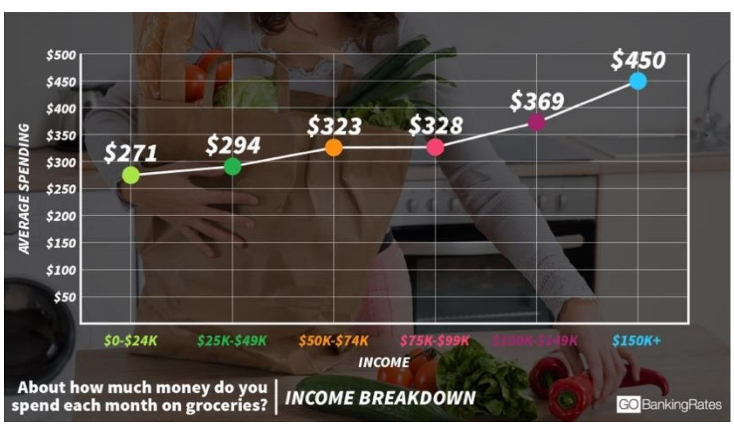
> "The National Pork Producers Council stated that NAFTA withdrawal could be 'cataclysmic' and 'financially devastating' to U.S. pork producers. The National Corn Growers Association said that 'withdrawing from NAFTA would be disastrous for American agriculture' and would disrupt trade with the sector's top trading partners. The American Soybean Association said withdrawing from NAFTA is a 'terrible idea' and would hamper ongoing recovery in the sector. The U.S. Grains Council highlighted that withdrawal would have an 'immediate effect on sales to Mexico.' The National Association of Wheat Growers (NAWG) noted that Mexico is the largest U.S. wheat buyer and claimed that NAFTA withdrawal would be a 'terrible blow to the U.S. grain distributor and its Mexican customers.' Cargill, Inc., a major privately held U.S. grain distributor and global agriculture supplier, claims that sales to Canada and Mexico

account for an estimated 10% of the company's annual revenues. Most fruits and vegetable growers did not support NAFTA withdrawal" (Johnson 2017).

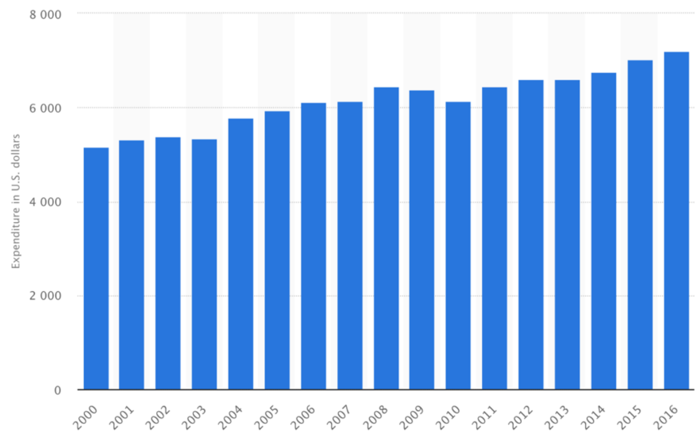
The purpose of citing these numerous U.S. agricultural groups is to demonstrate the disastrous effects this withdrawal will have on businesses, firms, and consumers.

**Consumer Expenditures**

In order to accurately comprehend how in-market consumers will be affected by the U.S. potential withdrawal from NAFTA, it's important to take a look at consumer spending statistics. This will better give us an idea on how much money the average consumer spends on food thus allowing the economic model to depict how much an average consumer will spend on food post-NAFTA withdrawal, when tariffs are imposed on imported and exported goods. I will specifically look at the consumer's income and relationship to grocery spending budget during NAFTA (present) and post-NAFTA (potential future), which will be depicted as a model in the results section. Obviously, higher income earners spend more on groceries per month. However, there is a concern surrounding those who are below the poverty line and are not able to spend high amounts on groceries. This will be one of the main demographics directly affected from the potential withdrawal.



The chart above from Go Banking Rates depicts grocery expenditure in relation to income breakdown. Respondents' average food cost per month increased 9% for every $25,000 increase in salary up to $75,000. Also, the highest earners spent 3.6% of their annual wages on food, as compared with 13.55% percent for lower income earners.




Source: Bureau of Labor Statistics

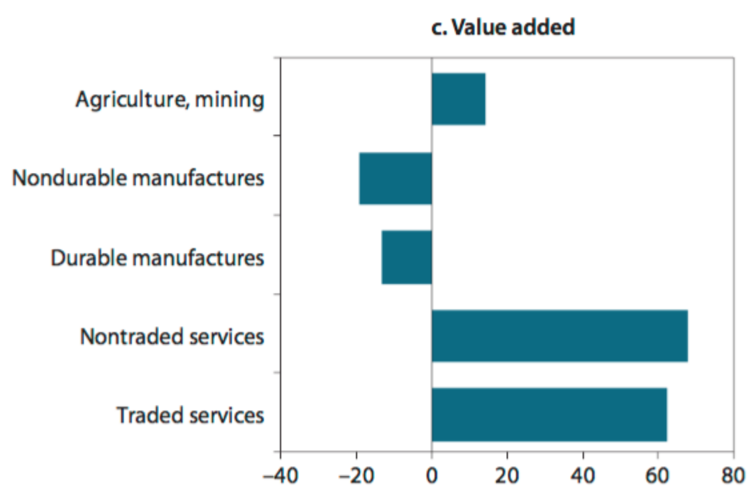
This statistic depicts the average annual household food expenditure in the United States from the years 2000 to 2016. In 2016, on average, the U.S. household food expenditure amounted to $7,203. As you can see, with NAFTA in place, the averages of food expenditures per household are relatively stable throughout the years. However, once the U.S. is no longer a part of NAFTA, there are two things that can occur. As an immediate outcome, consumer spending on food will increase. This means monthly grocery budgets will skyrocket. The long-term effects could see a significant decrease in consumer spending once consumer income will be too low in relation to food prices.

**Exited Trade Agreements: Precedents**

The United States withdrawal from trade agreements has various precedents. In order to clearly comprehend what effects the potential US withdrawal from NAFTA will have on the US, it is important to analyze previous situations in which the US or other countries have exited from trade agreements and the impact is has on economies. The Franklin D. Roosevelt administration unilaterally withdrew from the 1927 Convention for the Abolition of Import and Export Prohibitions and Restrictions. The International Convention for the Abolition of Import and Export Prohibitions and Restrictions is considered to have been the first multilateral trade agreement. This agreement "can be seen as an impressively ambitious initial attempt to substantially reduce the use of non-tariff trade barriers among the major trading nations of that era" (Grueff, 2017). This agreement significantly improved the United States' ability to export, specifically agricultural products. During this period, the United States' agricultural sector was in a long-term depression. Prompted by Great Britain's departure from the convention, the United States also decided to leave the convention in 1933. The withdrawal of Great Britain and the United States left only Japan, Norway, Denmark and the Netherlands bound by the convention. The convention "established international law in the area of non-tariff measures" (Grueff). The withdrawal from this convention seemed to have no immediate devastating effects on the United States economy being that the U.S. economy was already in the midst of a Depression. However, perhaps if Roosevelt had not withdrawn from the convention, the Great Depression may have lasted a shorter period of time.

Moreover, it is important to discuss the U.S. recent withdrawal from the Trans-Pacific Partnership. The Trans-Pacific Partnership (TPP) was a free trade agreement among a group of twelve nations with interests in the Pacific. The most prominent countries that were/are a apart of this agreement were the United States and Japan. Other countries involved included Singapore, New Zealand, Chile, Australia, Malaysia, Mexico, Peru, and Vietnam. Similar to NAFTA, the TPP included agreements to lower and eliminate tariffs and work for a more integrated market. American involvement in the treaty began with George W. Bush in 2008 and continued with Barack Obama. Obama strongly supported it because he saw it as a "key element in the diplomatic pivot to Asia" (Burns). However, the U.S. exit left the agreement in danger of crumbling altogether. As per the article, "After US exit, Asian nations try to save trade deal," the TPP without the United States is meaningless and sort of empty in a way. Therefore, by withdrawing from the agreement, the U.S. not only affected the American economy, but also economies in countries all over the world. The U.S. exit from TPP made many other countries, such as China, hesitant about joining.

Had the United States remained a part of the TPP, the American economy could have undergone constructive significant changes. A thorough analysis of the TPP suggested that it would have significantly contributed to the U.S. GDP. Specifically, the Peterson International Economics in Washington estimated U.S. income would have increased by $78 billion per year (Depillis). In a paper by Peter Petri and Michael Plummer, TPP projections were forecasted until the year 2030. According to these projections, trade in the agriculture sector would have seen significant change, thus adding more value to the sector. This is depicted in the figure below.




"Because U.S. agricultural productivity over the years has grown faster than domestic consumption, exports have become an increasingly important source of farm income. In fiscal

2016 alone, U.S. agricultural exports generated $130 billion in sales, according to the USDA, with Canada, China and Mexico topping the list of customers. During the eight-year period 2009 to 2015, farm exports produced $1 trillion in income — 'the strongest period for U.S. ag exports in history,' USDA says" (Walker).

What this means is that any withdrawal or renegotiation of treaties should be evaluated meticulously to ensure that consumers and farmers are not negatively impacted. The administration's decision to withdraw from TPP affected the U.S. economy in terms of possible progress and growth. Similarly, this withdrawal halted the U.S. economy from improvement in the main sectors such as the agriculture and automotive sectors. According to an article by Decker Walker, the TPP would have cut tariffs on export to and imports from Canada, Mexico, and all other countries in the TPP. All of these countries account for 40% of the global economy. According to the Peterson Institute for International Economics, the TPP would have contributed roughly $4.4 billion to the U.S. farming income, annually. Had the United States remained in the TPP, the American economy could have seen significant market integration, which would have lowered prices for consumers even more. Overall, abandoning the TPP decreased the influence the U.S. could've had in the region as well as undermines its image as a trading partner. This uncertainty in U.S. trade relations has posed an opportunity for China, and has left the U.S. trailing behind.

Great Britain's decision to extricate itself from the European Union, could have severe impacts on the European economy, similar to the consequences the U.S. would face if they were to withdraw from NAFTA. Granted, the consequences for the U.K. exiting the EU are far worse than the U.S. withdrawing from NAFTA, due to their dependence and reliance on EU policies and regulations. However, the UK economy would still be significantly affected, specifically the agriculture sector. Markets do not respond well to change. And whether it's a withdrawal from a trade agreement or an extraction from a union, one could expect similar economic effects on the most important sectors of the economy.

The UK's farming sector will face many challenges as a result of Brexit. As a result of extricating themselves from the EU, the UK will at the same time be withdrawing from the Common Agricultural Policy (CAP). "The CAP plays a fundamental role in regulating and supporting UK agriculture. Many farmers in the UK rely on CAP funding to sustain their businesses. Wider rural communities also benefit from EU development programmes" ("The EU Energy and Environment", 2017). Similarly, the United States also implemented a policy to regulate the farming sector. This is known as the Farm Bill. The farm bill legislation governs everything in regards to farming – from crop prices to funding for food related research and innovation (Eubanks 2013). More importantly, the UK extraction from Brexit will have a major effect on future trade in agri-food products. The European Union is the UK's largest trading partner in agriculture products. Agricultural exports to the EU account for 80% of the UK's exports. Therefore, Post-Brexit, the United Kingdom will be forced to develop its own tariffs and negotiate new trading relations with countries in the EU and the rest of the world. Moreover, these new tariff barriers could disrupt integrated supply chains between the UK and the EU and pose challenges for the UK economy and its consumers.

In his paper, Patrick Minford discusses the cost/benefit analysis of trade and Brexit, which can ultimately be compared to the cost/benefit analysis of trade within NAFTA. Basically, Minford's model assumes that the EU-tariff equivalent protection is 10%. 10% protection in agriculture and manufacturing raises prices in both sectors to 10% over the world price. The table is depicted above.

Minford's table shows the effects of raising prices for both the agriculture and manufacturing sectors by 10% will cause a 7.5% rise in the cost of living. These figures support the idea that farmers, landowners, manufacturing businesses, and consumers will support being inside the EU.

Although Minford's model includes factors that I will not be observing in my study such as wages of skilled/unskilled workers, and commodity prices, the idea behind his study is essentially the same as mine. My model will focus solely on changes in the agriculture sector and consumer prices/spending. The immediate consequences of the UK leaving the EU will affect both the agriculture and manufacturing sectors and skyrocket prices for consumers. The UK's economy will be negatively impacted until they are able to establish trade agreements with the rest of the world and essentially stand on their own two feet.

**Brexit and Consumer Spending**

Consumer spending accounts for more than two thirds of the UK's GDP and thus is the most significant driver of UK economic growth. In order to accurately understand how the US withdrawal from NAFTA will affect in-market prices and thus have an impact on consumer spending, it is important to analyze how Brexit will affect consumer spending. Many factors Post-Brexit will affect consumer spending. For instance, the fall in the pound and the reliance on EU migrant labor. Consumer focused sectors, such as the agriculture and manufacturing sectors, are likely to see relatively slower long-term expenditure growth due to the adverse effects of the weaker pound and future Brexit constraints in regards to labor migration. As a result, businesses and firms will need to make plans in order to accordingly adjust to Post-Brexit consumer spending behavior.

Overall, it is clear that the UK's extraction from the EU will have immediate harmful effects on the economy, specifically on consumer spending. The agriculture sector will be impacted due to the country's newly imposed trade tariffs and as a result, agricultural product prices will see a tremendous increase. This will ultimately lead to a decrease in consumer spending, at least in the short-term. Additionally, the UK will be left to fend for itself in terms of establishing new trade agreements with the rest of the world. In the short-term, they will be left on a low-competitive basis. Brexit will affect United Kingdom's living standards in terms of trade (Reenan). The table below depicts Brexit's effect on UK living standards.

> "When negotiating post-Brexit trade deals, the United Kingdom would not need to compromise with other EU countries as it does now. Conversely, the United Kingdom would need to take on the cost of hiring civil servants to rebuild its capacity to engage in trade negotiations. More important, because Britain's GDP is less than one- fifth of the EU Single Market's GDP, it would have less bargaining power in trade negotiations than the EU does" (Reenan).

**Table 1. The Static Effects of Brexit on U.K. Living Standards**[a]

| | *Soft Brexit*[b] | *Hard Brexit*[c] |
|---|---|---|
| Trade effects | –1.37 | –2.92 |
| Fiscal benefits | 0.09 | 0.31 |
| Total welfare change | –1.28 | –2.61 |
| Unilateral liberalization[d] | 0.30 | 0.32 |
| Total welfare change | –0.98 | –2.29 |

Source: Dhingra and others (2016a).

## Methodology

### Research Design

As stated, the purpose of this thesis is to relate the U.S. potential withdrawal from NAFTA and its correlation to consumer expenditure, specifically spending on food and products that are traded within the agriculture sector. My main focus is to analyze other studies where nations have pulled out of trade agreements and the effects it has had on consumers, such as Brexit. Based on this I will infer my own hypothesis in economic model form as to the effects the U.S. pulling out of NAFTA will have on consumers. Being that there is no clear precedent to this study, I will have to fully hypothesize what difference it will make in consumer expenditures.

My planned method of research will be both qualitative and quantitative. I will be researching what happens to industries and companies when a nation withdraws from a trade agreement or pact. I will also apply some economic models and look at the economy of nations who have pulled out of agreements or trades, such as Brexit or the U.S. pulling out of the Trans-Pacific Partnership. More specifically, I will be analyzing charts and graphs from the Bureau of Labor Statistics on consumer expenditure. I will then apply my method of research to these charts and graphs to come up with a difference in consumer spending. I did not interview or survey anyone. Thus, my methods of research were solely based on research that has already been done and studies that have already been conducted. Again, being that this is an unprecedented situation, it is more challenging to predict what will happen in terms of consumer expenditures. My economic models will be based solely on research that has already been conducted.

## Research Limitations

As mentioned previously, I did not conduct any studies myself in the form of surveys or interviews. Therefore, there was no interaction with humans. This limited the results sections in term of accuracy. For example, since I am basing my model off of research that has already been done, it will not fully represent what effect the U.S. withdrawal from NAFTA will have on consumer expenditure. Instead, it will hypothesize what effect this will have on consumer expenditure. As I previously stated, it is difficult to conduct research when the study is based on unprecedented situations. As I researched previous withdrawals from trade agreements, none of them had an immediate effect on consumer expenditure. The only comparable withdrawal/extraction was Brexit. Therefore, I will be closely formulating my model in accordance with the effect Brexit had on consumer expenditures as a short-term effect.

## **Results**:

To carry out this analysis we have to make calculations of how things would be without NAFTA, specifically how the withdrawal will skyrocket consumer prices for goods. Since this has never been observed, we need a way to do this by using established economic relationships, a model, to see the effects this withdrawal will have on consumers.

## Linear Regressions:

Linear regressions are the appropriate models to prepare as they are used to model the relationship between two variables. I will be comparing two variables to consumer food expenditures post-NAFTA withdrawal. These variables are income and household size. Income and household size are the main determinants when it comes to how much spending goes towards food.

Linear regressions use dependent and independent variables. In this case, income household size, and age are all independent variables and consumer food expenditure is the independent variable as it depends on all other factors.

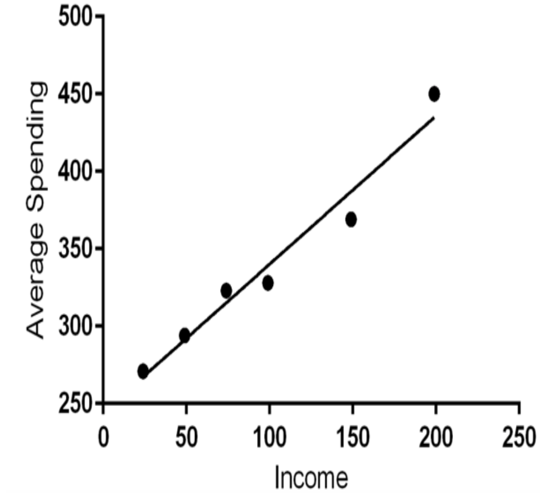
Linear Regression Equation → $Y = a + bX$, where X is the independent variable and Y is the dependent variable.

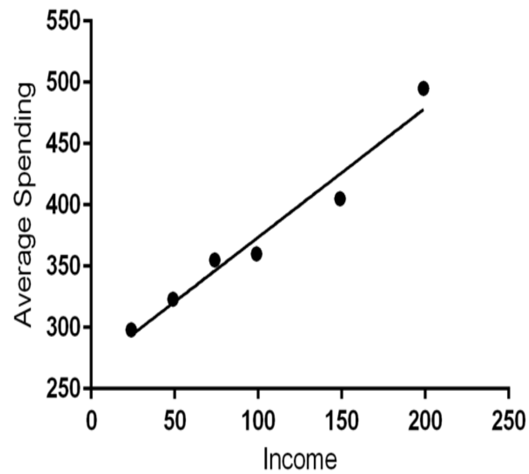
For both models, I will also be including tabular forms so the data is easier to comprehend.

**Similar to Minford's Model, assuming there is a rise in prices within the agriculture sector of 10%, this will also raise food prices to 10% over the world price.**

Model 1: Income (Monthly Basis)

Pre-NAFTA Withdrawal Post-NAFTA Withdrawal (10% Increase in Food Prices)




(Source: Bureau of Labor Statistics)

Pre-NAFTA Withdrawal

| **Income** | **Average Monthly Spending** |
|---|---|
| $0-$24K | $271 |
| $25-$49K | $294 |
| $50-$74K | $323 |
| $75-$99K | $328 |
| $100-$149K | $369 |
| $150K + | $450 |

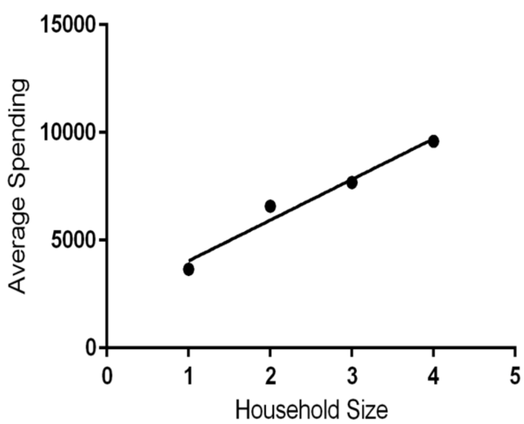
Post-NAFTA Withdrawal (10%)

| **Income** | **Average Monthly Spending (rounded to nearest #)** |
|---|---|
| $0-$24K | $298 |
| $25-$49K | $323 |
| $50-$74K | $355 |
| $75-$99K | $360 |
| $100-$149K | $406 |
| $150K + | $495 |

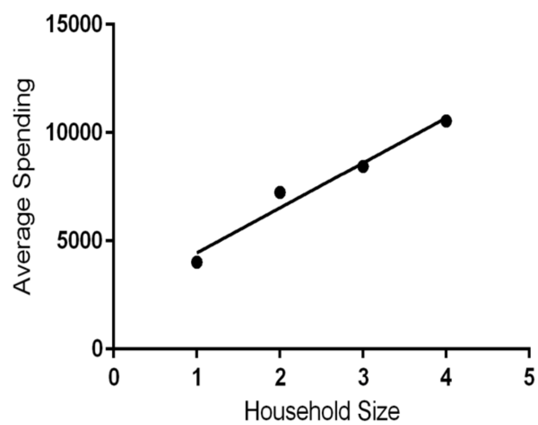
As you can see, average spending moved slightly up in the model. Those who are making between around $24,000 per are now spending closer to $300 as opposed to the pre- NAFTA withdrawal price of $271. Those who are earning $49,000-$50,000 per year are now spending over $300 on groceries as compared to $290. For those who earn around $74,000, they will now spend close to $350 on groceries as opposed to $320. Clearly, those who will be most affected by price increases are the ones that are earning $24,000, which is below the poverty line. Those who earn more than $150,000 will also be subject to a price increase of $45. However, they will not be as affected due to their high salary. Overall, the most affected income groups in terms of an increase in expenditure will be those just at the poverty line making $25,000 and those making $150,000 or more.

Model 2: Household Size (Annual Basis)

Pre-NAFTA Withdrawal:




Post-NAFTA Withdrawal (10%)




(Source: National Grocers)

Pre-NAFTA Withdrawal

| **Household Size** | **Average Annual Spending** |
|---|---|
| 1 | $3,654 |
| 2 | $6,586 |
| 3 | $7,679 |
| 4 | $9,588 |
| 5+ | $9,825 |

Post-NAFTA Withdrawal (10%)

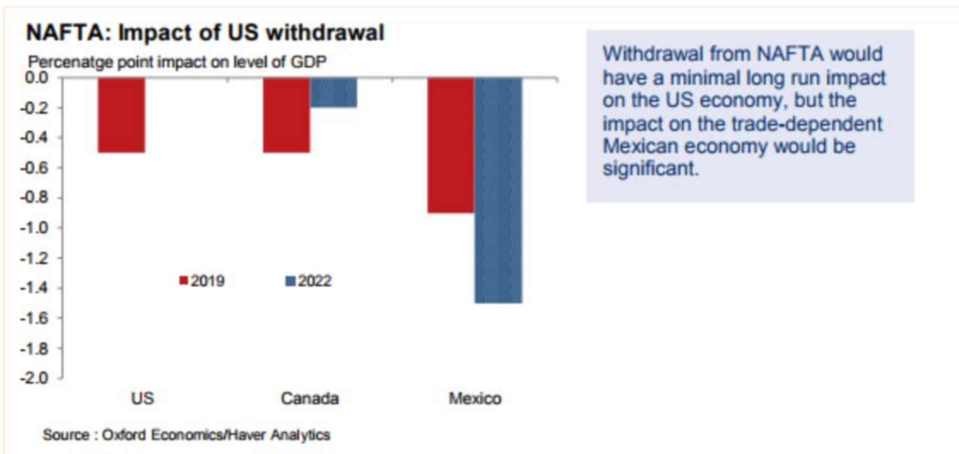
| **Household Size** | **Average Annual Spending** |
|---|---|
| 1 | $4,019 |
| 2 | $7,244 |
| 3 | $8,446 |
| 4 | $10,546 |
| 5+ | $10,807 |

Clearly, those who will be most affected by NAFTA withdrawal prices will be those who are a part of larger households. Those with households of 5 and more will see an average increase of almost $1,000 whereas those who live alone will see a yearly spending increase of about $450.

**Discussion**

With an increase in 10% in the agriculture sector, the most affected income groups will be those making $25,000 or less and those making $150,000 or more. The income groups at opposite ends of the spectrum, basically. In terms of household size, the households that will spend the most on food will be those with households of 5 or more, averaging a yearly increase of about $1,000. The results have proved that the United States withdrawing from NAFTA is a mistake. It will cause a ripple effect beginning with an input of tariffs on traded goods in the agriculture sector and ending with consumers having to spend more of their income on food.

Model one and Model two both confirm my previous theory that the United States withdrawing from NAFTA will have a disastrous effect on the agriculture sector which will cause food prices to increase and consumer expenditures to drastically change, whether it be over the course of a month or a year. In the first model, where income and average monthly spending are compared, all consumers, no matter what income level, will see an increase in monthly food expenditures. However, those in the lower income bracket and the highest income bracket will see the most significant change. Similarly, when comparing average annual spending and household size, all household sizes will see an increase in annual food spending post-NAFTA withdrawal. However, households with five or more people will most likely spend $1,000 more on food per year.




## Conclusion

There are many potential outcomes that come with the United States withdrawing from NAFTA. First; higher tariffs on U.S. agricultural exports and imports. The United States withdrawing from NAFTA will result in the removal of trade preferences amongst Canada, Mexico, and the United States. Traded goods could revert to having 35% imposed tariff, which would be higher for certain products which are frequently traded such as avocado and wheat. Additionally, the United States would have a reduced agricultural market share in both Canada and Mexico. The increased cost of U.S. agricultural products could entice Canada and Mexico to source their products elsewhere as well as to seek alternative markets which have lower trading tariffs. This could result in a loss of confidence and reliability other countries have for the U.S. More importantly, and something that will definitely affect American consumers is higher prices for imported products from Mexico and Canada. Higher tariffs on imported goods will cause an increase in food prices as well as a reduction of imports of certain agricultural products that are more price competitive, such as avocadoes.

Moreover, the withdrawal will disrupt integrated supply chains such as the established supply chain between the U.S., Mexico, and Canada. The established relationships between food producers and manufacturers in the United States and Canadian and Mexico producers/manufacturers could possibly be jeopardized as a result of the United States withdrawing from NAFTA. NAFTA-related trade preferences such as border restrictions, import licenses, and trade regulations could all be made more difficult. Overall, the United States' negotiating leverage will be decreased. The United States' ability to influence terms of trade and trade-related policies and regulations will be decreased. Some examples of trade related policies include food safety laws and labor practices and standards.

Clearly, not only consumers are opposed to this withdrawal. Food and Agriculture groups and organizations are also not supporters of the potential withdrawal due to the imposed tariffs these traded goods will raise. As a result, these companies could find major increases in operating and manufacturing costs. After taking a look at Brexit and research that has been done on the extraction and its effect on the living standards in the United Kingdom, such as a decrease in trade – it is safe to say the United States could face similar consequences.

The United States' potential withdrawal from NAFTA will not only increase the cost of living for the major income groups and large households, it will also be a disruption to markets and supply chains. The most beneficial situation would be not to withdraw from NAFTA completely, but to make revisions that benefit not only the United States, but also our counterparts (Canada & Mexico) which have played great roles in the American economic development and growth.

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