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The Renegotiation of NAFTA

A Look at the Potential Consequences of a 20% Tariff on Mexican Imports

Molly Maier
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Honors Thesis

INTRODUCTION

The United States is at a critical moment economically with the proposed tariffs on Mexico through the renegotiation of the North American Free Trade Agreement (NAFTA). This paper will conduct an economic analysis using international trade models and basic economic assumptions to predict the consequences of increased tariffs on Mexican goods entering the United States. The paper will begin by examining the current state of tariffs in the market and why the government is considering increasing tariffs. Then the paper will prove the gains from trade with the Heckscher-Ohlin Model and show the negative consequences of barriers to trade in a stimulated trade surplus model. Finally, the paper will interpret the findings to support an alternative policy suggestion for addressing displaced workers in the United States manufacturing sector.

BACKGROUND

The United States and Mexico are two of the three countries involved in the North American Free Trade Agreement, an agreement that was formed to decrease trade barriers and encourage free trade in North America. This agreement was formed with international trade models support for free trade between countries leading to specialization and increased welfare for both countries. This idea allows the United States and Mexico both to gain through trade as the each specialize and export to each other. This specialization allows each country to focus on the industry that uses the factors available most efficiently. Currently each country can participate in specialization because there are no or very low trade barriers between the United States, Mexico, and Canada to interfere with exporting to each other. The three countries signed on to the North American Free Trade Agreement in 1994, and trade between the three countries has greatly increased since that time. This increasing trade has benefited many industries, all

three economies, and consumers in the form of lower prices for goods and services. The gains from free trade in North America are apparent and are the direct result of the North American Free Trade Agreement.

The benefits of the North America Free Trade Agreement discussed above were the base for adopting low tariffs between the United States and Mexico; however, there are winners and losers in trade, which leads to criticisms of trade agreements. In recent years, the United States' manufacturing sector has been hit hard due to this free trade, especially with Mexico. Mexico is a developing country and lacks much of the technology and human capital; this gives Mexico a comparative advantage in labor intensive industries like manufacturing. Mexico can produce and trade these products into the US market with lower costs of production and thus selling costs. This is beneficial to consumers in the United States as their consumer surplus increases as they pay less for a product they would be willing to purchase at a higher price point. This benefit to consumers is a gain from trade; however, this benefit comes at the cost of United States' producers of manufacturing goods that Mexico can now produce cheaper.

This results in a loss of profits to the domestic manufacturing industry in the United States. These lower profits as these industries attempt to compete in the market with Mexico, lead to unemployment in domestic manufacturing firms. Although the United States market is made better off by this increase of free trade, the workers displaced by this trade do not "see" the gains from trade. These displaced workers have become very vocal and gained political power in the United States. President Trump has become the voice of anti-trade agreements and more specifically anti-NAFTA. The new Trump Administration is responding to the calls for less free trade, higher trade barriers, and more protectionism of domestic industries. This response is in the form of a renegotiation of the North America Free Trade Agreement (NAFTA). This

renegotiation has promised increased tariffs on Mexican imports up to a 20% tariff. These increased tariffs designed to decrease the supply of Mexican import to allow domestic industries (Manufacturing) to compete in the domestic market. This is a sound economic move if the government is willing to lose welfare that is gained from trade to help domestic producers. This is the main argument behind the renegotiation of NAFTA, increase of tariffs and trade barriers between the United States and Mexico. This argument for protecting producers ignores the consumers and exporters gains from free trade between the United States and Mexico.

ANAYLSIS- KEY ASSUMPTIONS

This section of the paper will analyze the potential consequences of an increased tariff on imported Mexican goods. This analysis will rely on a few key assumptions to make the simple international trade models work with the complex nature of the situation. For this analysis, I will be using a Heckscher-Ohlin model to demonstrate comparative advantage and gains from trade with Mexico, and a basic international trade surplus model to show surplus/welfare shifts in both economies as the result of free trade due to the North American Free Trade Agreement. This same model will be used to demonstrate predicted consequences of a tariff increase to 20% on imported goods from Mexico. The Heckscher-Ohlin Model is based on the Heckscher-Ohlin theorem which states that a country will export the good that is produced using its abundant factor intensively, and import the other good. The international trade supply and demand surplus model will be modified to fit this situation as the United States is the larger economy and arguably the only superpower in the world at the moment. This power and influence needs to be considered in the model with regards to the tariffs Mexico chooses to impose in retaliation for the increase of tariffs on Mexican goods. In international trade the assumption is that if you levy

a tariff on one country's industry, they will retaliate by also increasing trade barriers on a different, comparable industry to hurt your industry through barriers to trade.

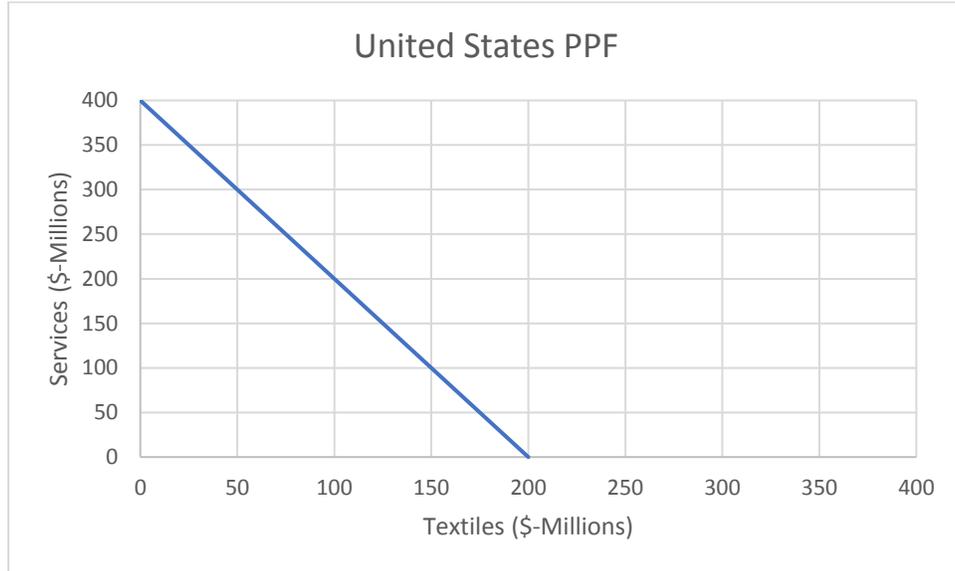
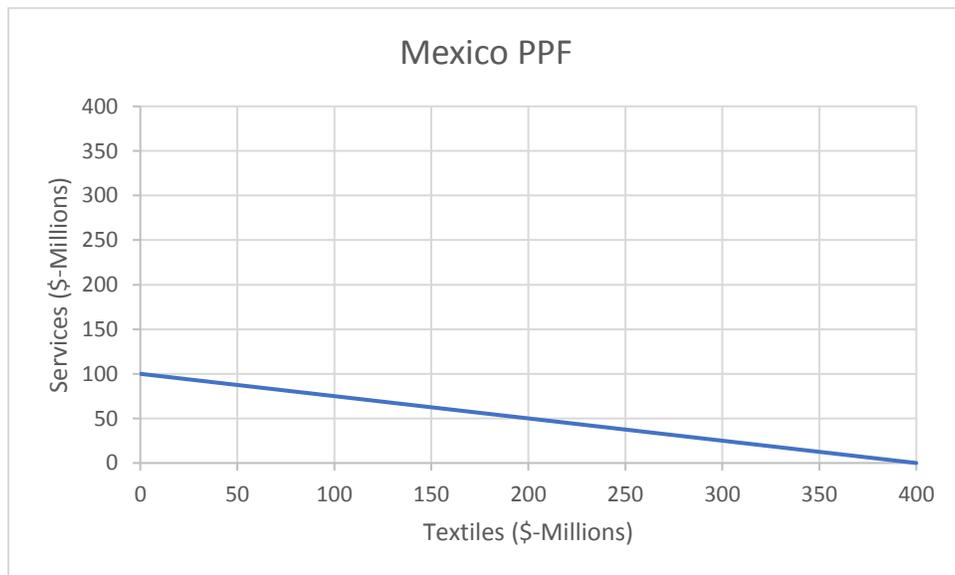
This model will essentially be assuming there are two different industries in the United States and in Mexico, labor intensive and capital intensive industries. The labor-intensive industries will be simplified to manufacturing of textiles and other basic items, and the capital-intensive industries will be simplified to technologically advanced service. The assumption then follows that the United States and Mexico both have the capabilities to participate in both industries to meet the demand in their respective countries; however, because of comparative advantage each country produces one of these outputs more efficiently based on their endowments of the resources each industry uses intensively. It is assumed based on knowledge about both countries' resource endowments that the United States is capital rich, while Mexico is labor rich. With the assumption that there is perfectly free trade, the United States would only participate in service and Mexico would only participate in manufacturing (textiles to keep the model simple) because they have competitive advantages in these respective fields. This would lead to trade between these two countries as the United States and Mexico trade the goods they produce most efficiently and supply the other country with that respective product through imports. This is the situation observable in the United States and Mexico: the United States is importing cheap, manufacturing goods (textiles), and exporting capital intensive service industries to Mexico.

ANALYSIS- HECKSHER-OHLIN MODEL

With the basic assumptions in place, this analysis will begin with a look at basic production possibility frontiers for both countries. The United States and Mexico both have the capability to participate in capital intensive service industries and labor intensive manufacturing

industries; however, by trading with each other they can move their Production Possibility Frontier out to allow for both countries to consume more of both with trade. Mexico has a large, and relatively unskilled labor force compared to the United States, the United States on the other side has a large, highly skilled labor force. Both of these labor forces are useful, but in different industries. Unskilled labor is useful in production of goods that for the most part do not require high levels of education or large amounts of job training, these are often basic manufacturing industries like textiles. Highly skilled labor is often used in service industries that are capital intensive as they require highly skilled workers and deal more with technology, financial, and health services. A unit of service is hard to account for, so this analysis will be using dollars' worth of imports and exports to compare.

I will begin by showing the comparative advantage the rest of the analysis will rely on with simplified numbers to show the comparative advantage this analysis assumes exists between the United States and Mexico. Let us assume the labor force in the United States can produce \$200,000,000 of textiles or \$400,000,000 of services, and Mexico's labor force can produce \$400,000,000 of textiles or \$100,000,000 of services. This means the United States only gives up \$0.50 of textiles for every dollar on services, while Mexico gives up \$4.00 of textiles for every dollar of services. In this case, the United States has the comparative advantage in services, and Mexico has the comparative advantage in textiles. The United States and Mexico would therefore benefit from trade with each other if the United States focused completely on services, and Mexico focused completely on textiles. The Heckscher-Ohlin Model shows the product possibilities frontier for both countries and shows the shifted-out consumption line achieved through free trade (Attached).

Graph 1- The United States' Production Possibilities Frontier without Trade**Graph 2- Mexico's Production Possibilities Frontier without Trade**

Graph 3- The US and Mexico’s Combined Production Possibilities Frontier with Trade



Based on the models above, we would expect the United States and Mexico to participate in trade as the United States exports services to Mexico, and Mexico exports textiles to the United States. This is what the data for trade between these two countries supports. According to the United States’ trade report on NAFTA, the United States “Increased exports in services to Mexico by 53%” (between 1993-2002). The free trade agreement allowed the United States to specialize in services while it imported textiles from Mexico because they specialized in textiles. A different report states that the United States imported “\$8.6 billion from Mexico” in textiles and apparel products. Both countries benefit from free trade and are able to easily import and export to products in which they do not have the competitive advantage. The North American Free Trade Agreement exports in both specialized areas for both countries have increased since the establishment of the agreement in 1993, which demonstrates the benefits according to the Heckscher-Ohlin Model and theorem discussed above.

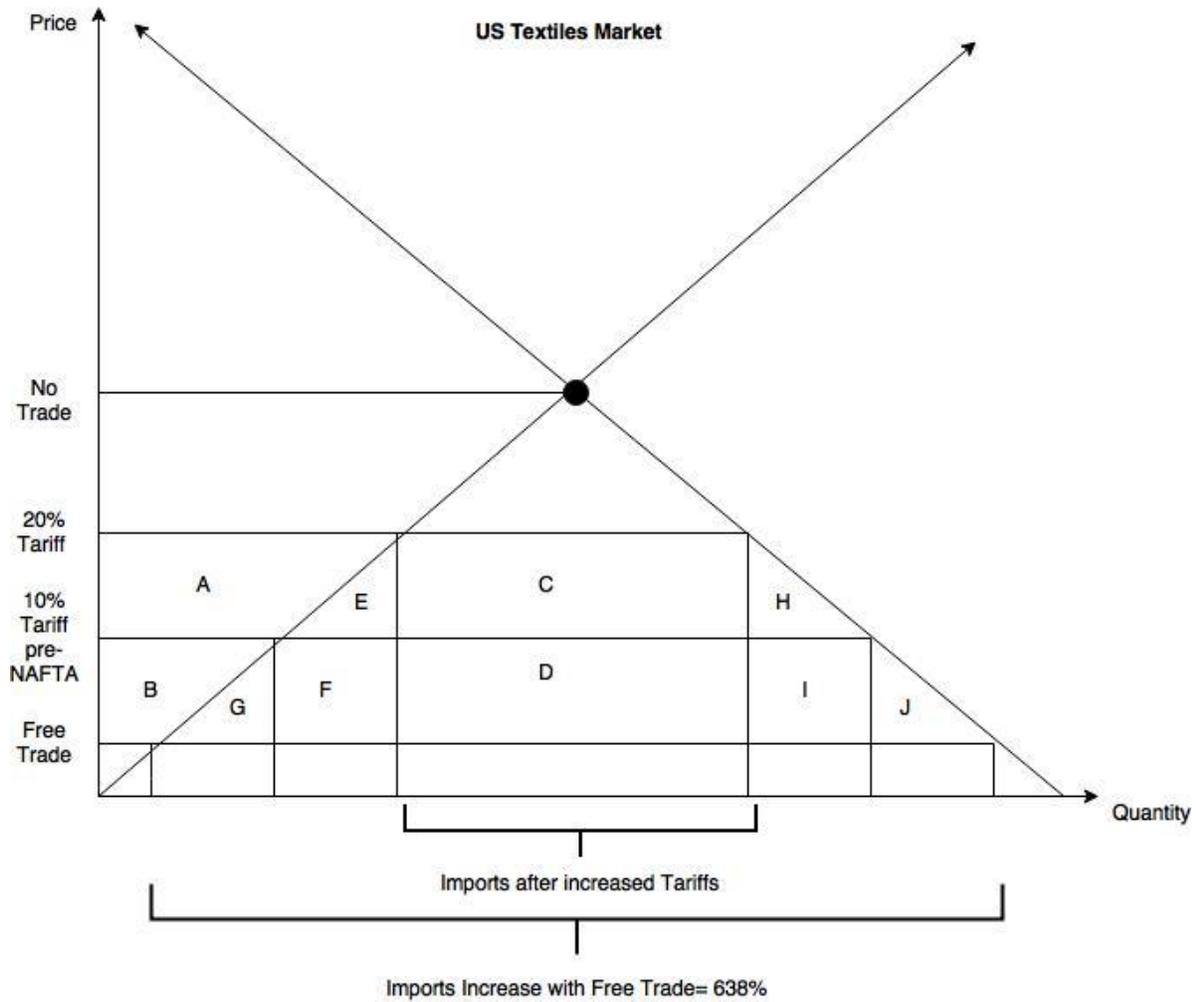
ANAYLSIS- TRADE SURPLUS GRAPHS

Now that the benefits of free trade because of NAFTA have been identified in the data, we now move onto predictions as to how an increase in trade barriers will affect this trade balance. These predicted shifts are based on assumptions and purely to show what might happen, no data is available at this time as the tariffs have not been raised, but we can use data from before trade barriers were lowered to gain understanding as to a possibility of an impact. The impact will be demonstrated on the basic international trade model of surplus lost and gained through trade. Trade barriers add an additional cost onto exporting industries and make them less profitable, thus make them less willing to export to other countries with these barriers and results in fewer benefits from country specialization. The original shift from before NAFTA will be shown in both graphs with an increase in the supply of textiles/ services in accordance with the percent increase in imports of these goods post NAFTA. According to the US Trade Representative imports of Mexican textiles increased 638% and exports of US services to Mexico increased 191%. We will assume for simplicity that the quantity supplied in both markets increased proportionately. There was no data that showed the direct price difference in textiles and services as the result of NAFTA; however, assuming both markets are functioning correctly it can be concluded that the price of goods decreased as the quantity in the market increased due to trade. The general surplus shifts can be shown without specific data, the graphs below are showing the changing surplus as the result of the initial 20% tariff on Mexican textiles, and the additional retaliation tariff on the United States service industry. Because the United States is larger and has significantly more power economically, I am adding in the assumption that Mexico would not retaliate with a full 20% tariff, but instead with a tariff around 10%. This is not the average assumption in the market, but has been modified to account for my views of

the market interaction due to the relative size and influence of each of the markets. The resulting change of surplus is below and the consequences on both economies is discussed in the next section.

Graph 4- The US Textile Market (Imports from Mexico)

The pre-NAFTA tax rate ranged from 10-20%, it is shown on the graph as 10% to show how negative the results of the 20% could be.



Surplus Shift with NAFTA from 10% tariff to free trade (0%)

$$CS = +B + G + F + D + I + J$$

$$PS = -B$$

Government Revenue= -D-F-I

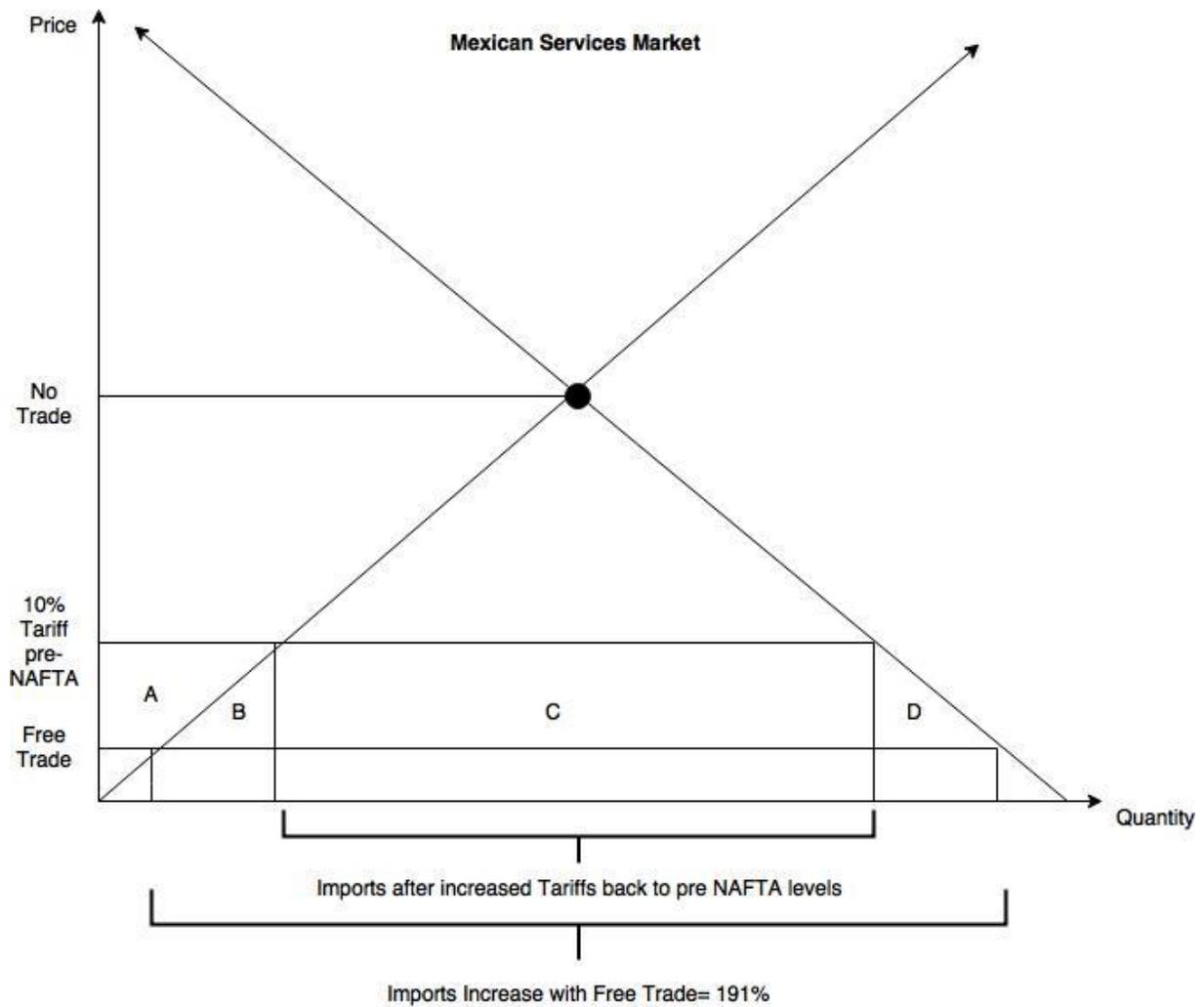
Surplus Shift from NAFTA (0%) to 20% tariff

CS=-A-B-C-D-E-F-G-H-I-J

PS=+A+B

Government Revenue= +C+D

Graph 5- The Mexican Service Market (Imports from the US)



Surplus Shift with NAFTA from 10% tariff to free trade (0%)

CS= +A+B+C+D

PS= -A

Government Revenue= -C

Surplus Shift from NAFTA (0%) to 10% tariff (Retaliation)

CS= -A-B-C-D

PS= +A

Government Revenue= +C

RESULTS- THE UNITED STATES ECONOMY

The graphs above demonstrate the main consequences to the United States economy in the form of decreased consumer surplus and retaliation industries being hurt. The US consumers will be losing a large amount of consumer surplus, just to gain a small amount of surplus for domestic industries (producer surplus). Consumers will be paying a much higher price on textiles because of this tariff, even higher than pre-NAFTA rates. The service industry in the United States will also suffer because of the tariff as Mexico will most likely raise trade barriers to pre-NAFTA levels. Many service industry jobs are high paying and require skilled labor making them desirable jobs in the United States. These jobs could be affected as the industry is hurt by the retaliation tariff on US service exports to Mexico. This would be a misstep by the United States as the economy would be moving away from the more developed, high skilled positions, and instead back to the low skilled, manufacturing jobs that are more efficiently offshored/exported to Mexico. Unemployment of highly trained/ skilled workers in the service sector could be an unintended consequence of this tariff. Favoring an industry that does not have a competitive advantage is not the correct path of the United States economy that could benefit from increased trade, not more trade barriers.

RESULTS- THE MEXICAN ECONOMY

The assumptions made in the models above show the Mexican economy will likely be hurt harder by these tariffs than the United States economy. The surplus exchange above demonstrates that Mexican consumers will lose less surplus than American consumers; however, the Mexican textiles industry will be hurt more than the US service industry, and the Mexican government will not generate as much government revenue with their retaliation tariff. The Mexican economy is much smaller than the US economy, and in the textiles industry that will be greatly effected in this predicted outcome, as the United States makes up 74% of the export market for textiles from Mexico (in 2002). The assumption that Mexico will not levy a full 20% tariff on the United States' service industry in retaliation due to the size and power of the US economy results in a greater negative effect on the Mexican economy. The economy will have suffering industries in textiles and apparel as they import less to their biggest market as the result of high tariffs, and if they do continue to export to the United States they will be making less profits which could easily result in layoffs in those industries. The Mexican government could step in and pay the tariffs for the companies or move to subsidize these industries to keep them from the pain of the tariff. This is an option; however, this would be expensive and the burden would most likely fall on consumers who will already be paying more for services due to the retaliation tariff.

POLICY SUGGESTION

An alternative policy suggestion to help alleviate economic struggles in the manufacturing sector of the United States is to invest in retraining programs. The United States already has Trade Adjustment Assistance (TAA) available to workers displaced from international trade; however, these programs could be increased and redirected to maximize

benefits (Department of Labor). The programs include job training for different sectors. I recommend that this training be focused on growing areas of the economy and growing export markets for the United States. Based on the analysis above, the TAA could provide training in the service markets for employees displaced from increased trade with Mexico in the textiles, manufacturing sector. This would result in higher employment, more consumer surplus than in a tariff situation, and a more effective, efficient economy for both Mexico and the United States. The Trade Adjustment Assistance program is a government program, so the increased cost would need to be covered by the taxpayers. I think this is the more reasonable solution because it will require short-term financial help to rid the country of a long-term problem industry, without the loss in the Mexican and US economies. This program is an investment in the future United States economy. It will provide help transitioning into more specialized sectors that will profit the US and the world market, instead of remaining in the manufacturing sector that is more efficiently imported from less developed economies including Mexico.

CONCLUSIONS

This paper examined the possible consequences of a 20% tariff placed on Mexican goods imported into the United States. Assumptions were used to create models showing gains from trade for both countries and the negative effects of increased tariffs. The data on increases in imports and exports supports these assumptions and models. The finds show the damage to both the United States economy and the Mexican economy due to higher tariffs. With these findings, an alternate policy was suggested. The United States is encouraged to invest in the Trade Adjustment Assistance program to help displaced workers and support growth in specialized industries. The economy will be stronger and more stable with specialization in more complex goods outside of the manufacturing sector. The United States and Mexico both gain more

through this type of specialization. The transition into this pure specialization will have consequences to the parties transitioning. Full specialization and free trade will provide a stronger, better functioning free market in the long run. The results of this paper support low tariffs to encourage free trade and specialization.

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