



**NAFTA: It is more than avocados, beer and cars**

**A White Paper on the México-U.S. Trade Portfolio**

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### **Introduction**

There is a general misconception about the trade of manufactured products between México and the United States. Much of the misconception comes from the notion that Mexico's economy has not matured to the level that it has. Global trade is a complex issue involving many moving and dynamic pieces that goes beyond simply moving car production lines back to Detroit. Today's general perception of Mexican imports is that it is about fruits and vegetables with beer sprinkled in between. The belief being that very few segments of the United States' economy would be affected if NAFTA were to be cancelled. Thus, the notion is that although dismantling or imposing taxes on imports may hurt certain U.S. economic interests, it would not affect the country, as a whole. Therein lies the problem with dismantling NAFTA or taxing imports, the repercussions would be felt in all economic segments of the United States.

### **More Than Avocados**

Consider avocados. The United States, like most countries has adopted the Harmonized Commodity Description and Coding System, better known as the Harmonized System, or HS for categorizing the vast amounts of products traded internationally. The HS coding allows countries to standardize products to control imports and exports, as well as to tax them as necessary. Each commodity traded internationally has a consistent HS code applied to it. The larger number of digits that the code has, the more detailed the product is defined.

Avocados are coded under the 0804 HS code that includes edible fruits. The actual HS code for avocados is 080440. In 2015, México exported \$14 billion in vegetable products to other countries. That is from a total of \$391 billion in exports in 2015. [13] Of the total vegetables exported, \$10.8 billion went to the United States. That is almost 80% of the total Mexican vegetable exports.

However, avocados only accounted for 14% of the total vegetable export market. Avocados are an interesting example because they are generally brought up as representative of the Mexican export market. Mexico is the largest avocado exporter in the world. Yet, avocados only accounted for less than 0.01% of Mexico's total export market to the United States in 2015. [13]

México exported \$291 billion worth of products to the United States that year. Avocados were only \$1.54 billion of that year's trade.

Cars dominated the 2015 Mexican exports to the United States at \$24 billion, accounting for 8.2% of the total export market from México to the United States. Although the automobile trade market is the largest, it still is not a significant part of the whole México export portfolio.

This demonstrates that the Mexican export market to the United States is diverse and encompasses many products that go beyond the avocados, beer and cars.

The diversity of Mexican exports to the United States numbers in the hundreds. The products range from cars, automotive products to medical instruments and other commodities not normally associated with Mexican exports. For example, in 2015, México exported \$5.06 billion in medical instruments (HS92-9018.) to the United States.

## **Supply Chains**

To understand why resolving the trade imbalance between México and the United States by simply shifting manufacturing lines back to the U.S. is impossible, it is important to understand the concept of supply chains in manufacturing.

Nearly all U.S. citizens with pacemakers, a necessary lifesaving device, are using devices that contain parts made in México. [14] The Mexican medical industry exports artificial respirators, catheters, defibrillators, intravenous bags and other medical equipment to the U.S.

It is impossible to pick up the medical manufacturing lines, that are mainly in Tijuana, and move them across the border, because medical equipment is heavily regulated by the Food and Drug Administration before it can be used on humans. It would take significant amounts of time to certify new assembly lines to produce medical equipment within the United States. [14]

Supply chains are assembly lines that integrate parts and labor from many different parts of the world to produce the consumer goods. Simply moving a production line across the border involves complex logistics of necessary parts, equipment and complex readjustment of prices due to new tariffs and labor costs.

Another example is the Chevrolet Malibu that is assembled in the United States. According to the National Highway Traffic Safety Administration, the 2013 Chevrolet Malibu has 25% of its parts that are imported.

The supply chain dilemma means that for a car to be fully manufactured in the United States, it would require moving thousands of manufacturing lines back to the United States. An average car includes tens of thousands of components.

Even if the supply lines were to be moved back to the United States, the consequences would be a significant loss in efficiency resulting in higher costs and reduced inventory availability. As production lines are removed from countries, their incentive to keep lines open to fulfill U.S. parts needs would not exist resulting in production lines refocusing towards more economic feasible products.

## **The Made in America Car Fallacy**

Even the iconic Tesla is not 100% U.S. manufactured because it relies on imports for some of its components. The most “American made” car is an import from Japan, the Toyota Avalon that has content that is 80% derived within the United States. [15] The most “American” car on the market is the Dodge Avenger that includes about 76% components that come from within the country.

Most U.S. boys dream about the iconic U.S. muscle cars parked on their driveways. The funny thing is that the iconic muscle cars are Mexican made. Even traditionally old-school “Detroit steel” muscle cars from yesteryear, require a specific component that is only made in México, the HEMI engine, which is made in Saltillo. And it gets worse, the muscle car transmission, the Tremec TR-6060 six-speed transmission, is exclusively made in México. Tremec is short for Transmisiones y Equipos Mexicanos SA de CV. It is based in Mexico City.

Today’s muscle cars, the Ford Mustang (GT350 and GT350R), the Chevrolet Camaro Z1 and the Chevrolet SS all have a Tremec six-speed transmission in them. The Dodge Challenger SRT Hellcat has both the HEMI and the Tremec transmissions made in México. The Dodge Charger SRT has a Mexican HEMI in it. [7]

Clearly, the complexity of the global trade between México and the United States is much more than avocados, beer and cars.

When asked, the likely answer to the question about what México exports to the United States is that it exports fruits and vegetables, with some respondents adding automobiles to the list. Others will argue that oil is central to the Mexican export economy. However, a review of the most recent trade data, between México and the United States, demonstrates that the Mexican manufacturing sector has matured away from agriculture into a technology-centered industry. Not only is oil not the top Mexican export, but agricultural products are not included in the top ten commodities exported by México to the United States.

As a matter of fact, the México-U.S. trade flows are reversed. In 2015, the United States exported more oil-based products and corn than México exported. Let us examine closer the flows of imports and exports between the two countries.

## **Inflows**

The United States imported \$291 billion in products from México in 2015. [13]

The top twenty imports were:

1. Cars HS92-8703 \$24 billion, or 8.2% of the total export market.
2. Vehicle Parts HS92-8708 \$21.3 billion, or 7.3% of the total export market.
3. Delivery Trucks HS92-8704 \$19.6 billion, or 6.7% of the total export market.
4. Computers HS92-8471 \$17billion, or 5.8% of the total export market.
5. Video Displays HS92-8528 \$12.6 billion, or 4.3% of the total export market.
6. Crude Petroleum HS92-2709 \$11.8 billion, or 4.1% of the total export market.

7. Telephones HS92-8517 \$11.4 billion, or 3.9% of the total export market.
8. Insulated Wire HS92-8544 \$10.1 billion, or 3.5% of the total export market.
9. Tractors HS92-8701 \$8.28 billion, or 2.8% of the total export market.
10. Seats HS92-9401 \$6.99 billion, or 2.4% of the total export market.
11. Medical Instruments HS92-9018 \$5.35 billion, or 1.8% of the total export market.
12. Refrigerators HS92-8418 \$4.12 billion, or 1.4% of the total export market.
13. Electrical Control Boards HS92-8537 \$3.87 billion, or 1.3% of the total export market.
14. Railway Freight Cars HS92-8606 \$3.14 billion, or 1.1% of the total export market.
15. Engine Parts HS92-8409 \$3.03 billion, or 1.0% of the total export market.
16. Air Conditioners HS92-8415 \$2.94 billion, or 1.0% of the total export market.
17. Spark-Ignition Engines HS92-8407 \$2.8 billion, or 0.96% of the total export market.
18. Electrical Motors HS92-8501 \$2.76 billion, or 0.95% of the total export market.
19. Low-Voltage Protection Equipment HS92-8536 \$2.62 billion, or 0.90% of the total export market.
20. Beer HS92-2203 \$2.59 billion, or 0.89% of the total export market.

## **Outflows**

Global trade is a two-way street. The United States not only imports products from México, but it also exports products back to México.

In 2015, the United States exported \$188 billion to México. [13]

The top twenty U.S. exports were:

1. Vehicle Parts HS92-8708 \$15.1 billion, or 8.1% of the total export market.
2. Refined Petroleum HS92-2710 \$16 billion, or 8.5% of the total export market.
3. Petroleum Gas HS92-2711 \$3.71 billion, or 2.0% of the total export market.
4. Cars HS92-8703 \$3.16 billion, or 1.7% of the total export market.
5. Insulated Wire HS92-8544 \$3.05 billion, or 1.6% of the total export market.
6. Low-Voltage Protection Equipment HS92-8536 \$2.79 billion, or 1.5% of the total export market.
7. Corn HS92-1005 \$2.39 billion, or 1.3% of the total export market.
8. Other Plastics HS92-3926 \$2.48 billion, or 1.3% of the total export market.
9. Telephones HS92-8517 \$2.51 billion, or 1.3% of the total export market.
10. Video Displays HS92-8528 \$2.42 billion, or 1.3% of the total export market.
11. Plastic Lids HS92-3923 \$1.99 billion, or 1.1% of the total export market.
12. Engine Parts HS92-8409 \$2.28 billion, or 1.2% of the total export market.
13. Electrical Power Accessories HS92-8538 \$2.07 billion, or 1.1% of the total export market.
14. Valves HS92-8481 \$1.87 billion, or 1.0% of the total export market.
15. Ethylene Polymers HS92-3901 \$1.84 billion, or 0.98% of the total export market.
16. Computers HS92-8471 \$1.73 billion, or 0.92% of the total export market.
17. Office Machines HS92-8473 \$1.72 billion, or 0.91% of the total export market.
18. Other Iron Products HS92-7326 \$1.71 billion, or 0.91% of the total export market.
19. Integrated Circuits HS92-8542 \$1.6 billion, or 0.87% of the total export market.
20. Air Pumps HS92-8414 \$1.6 billion, or 0.85% of the total export market.

As you can clearly see, the trade between the two countries is robust because it involves more than automobiles and beer. Since NAFTA went into effect, the global trade between the two countries has grown and become deeply interdependent on each other.

### **México-U.S. Trade is Symbiotic**

The argument most often postured by those that argue that NAFTA has been detrimental to either country, do not understand the symbiotic relationship between the two countries.

Relying solely on trade deficits ignores that both countries depend on each other's commodities to keep their own supply chains churning out products.

Take, for example, the automobile industry. In 2015 México exported \$21.3 billion vehicle parts to the United States. However, during the same time frame, México imported \$15.1 billion vehicle parts. [13] Because of the nature of tariff classifications and the amount of data it is extremely time consuming to analyze the trade flows down to the individual component. However, it can be argued that if México is importing \$15.1 billion in vehicle parts, while exporting \$21.3 billion then the parts imported likely ended up included in the finished products that entered the U.S. marketplace. This makes even more sense when the automobile exports from México are included in the discussion.

The petroleum industry is another example of the symbiotic trade relationship between both countries. México imported \$16 billion in refined petroleum from the United States in 2015 for the Mexican consumer market. At the same time, México exported \$11.8 billion in crude oil to the United States. [13] It would then stand to reason that México exports crude oil to the United States and then turns around and imports gasoline and other refined petroleum products, paying for the value-added services that produced the consumable oil. Clearly, the United States benefited from refining the Mexican oil that is used in México.

### **The Automobile Labor Cost Fallacy**

Much of the debate about bringing jobs back to the United States centers on the notion that manufacturing plants left the country because of significantly reduced labor costs and lesser regulatory controls. There is no doubt that labor and regulatory concerns play a part in moving manufacturing operations out of the country.

Looking at disparity of labor costs, between México and the United States, creates the illusion that the labor cost to build an automobile is significantly less in México.

A 2014 labor cost study by the Center of Automotive Research broke down the hourly labor costs for the following manufacturers. [8] They include benefits.

Ford hourly labor cost \$57

General Motors hourly labor cost \$58

US workers average is \$48

Daimler plant in Alabama, only Mercedes plant in US \$65

US plants for Volkswagen \$38 and BMW \$39  
Honda US plants \$49  
Hyundai and Kia \$41

Of the listed automobile manufacturers, only GM and Ford were the only automakers whose workers are represented by United Auto Workers (UAW). [8]

Labor costs in the Cd. Juárez auto manufacturing plants is between \$1-\$3 an hour. However, those figures do not represent the actual payrolls because they do not include the competitive nature of the Juárez labor market that recruits a dwindling supply of qualified workers through rising monetary incentives. Kia was paying employees \$7,200 annually while engineers were earning at least three times that much at the time of the study. [11] Labor costs continue to rise in México as the workforce becomes better trained.

The labor costs disparity between \$7,200 and over \$100,000 is very significant if the analysis does not include the actual labor component it takes to build one car. Labor accounts for about 21% of the total price for one car. [9]

An Automotive Engineering Partners Report broke down the component costs for each automobile produced. [10]

Administration 10%  
Advertising and others 7%  
Depreciation 6%  
Direct Labor 21%  
Logistics 3%  
Materials 47%  
R&D 6%

The New York Times reported in July 2016, that the average cost of a new car or light truck was \$34,000 citing the Kelly Blue Book. Using the component costs outlined above, the labor cost would be about \$7,140. However, the average price of the car is significantly higher than the entry-level automobiles normally produced in México.

The 2017 Ford Focus has a manufacturers retail price starting at \$16,775. That would make the labor cost about \$3,522.75 for that car.

Ford estimated that moving its Focus line to México, which was scheduled for 2018, would save Ford about \$1,300 per car. [11]

Will \$1,300 make much difference to the U.S. consumers? Likely not, however the move to México by automobile manufacturers has more to do with global trade than it does with labor costs.

## It's About Other Markets

México has 10 free trade agreements with 45 countries across the globe. It's free trade agreements allows products manufactured in México to reach about 60% of the world's gross domestic product (GDP), tariff free. [12]

When Ford builds a car in México it is looking to have a competitive advantage over other manufacturers in Europe and other markets over the savings in labor for the cars sold in the U.S. domestic market.

Let us examine this notion by comparing a \$25,000 mid-sized automobile made in México for sale in the United States and in Europe. [12]

For sale in the United States:

Assembly Plant Labor: \$600 less in México

Parts: \$1,500 less in México

Transportation to the U.S. market \$900 more from México

Tariffs, or taxes: \$0

Total cost to produce the car in México for sale in U.S. is **\$1,200 less.**

For sale in Europe:

Assembly Plant Labor: \$600 less in México

Parts \$1,500 less in México

Transportation to market \$300 more from México

Tariffs, or taxes: \$2,500 less in México

Total cost to produce car in México for sale in Europe **\$4,300 less.**

As you can see, it costs significantly less to manufacture the car in México for the European market giving the automobile manufacturers, that are established in México, a competitive advantage over those that are not. Additionally, the 60% global market reach that México offers manufacturers gives them a greater market place for their products.

Forcing U.S. automobile manufacturers to build their cars in the United States reduces their competitive advantage globally. Even if the manufacturers were to create two production lines, one in the U.S. and another in México, the resulting loss in efficiencies by deconsolidating their manufacturing lines would be make them less competitive globally.

## Conclusion

The general narrative is that México has diminished the job market for U.S. citizens. The narrative also argues that Mexico's export contributions are simple agricultural products and simple mechanical devices. The fact is that Mexico's export market is robust and complex.

More importantly, the global reach that México provides to U.S. manufacturers gives U.S. companies global competitiveness. Arguing that labor costs and reduced governmental

oversight ignores the reality that México is not the low-cost solution it is portrayed to be, but rather the gateway to 60% of the global marketplace that U.S. companies need to remain profitable.

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