

Quantifying Electronics Supply Chain Vulnerabilities Due to the US / Mexico Border Dispute

Geopolitical Risks to the Supply Chain

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Issue

Geopolitical issues have suddenly become a major risk factor with direct impact on the electronics and electronics components supply chain. Policies enacted by the Trump administration have destabilized the trade agreements that have governed trade between the US and major partners for many years. The dispute between the US and China led to the imposition of punitive tariffs on Chinese imports in 2018. Negotiations with other major countries are in various stages of progress. President Trump has shown a willingness to use both a carrot and a stick in pursuit of his goals. The most recent threat to the supply chain comes as the US struggles to deal with challenges on its southern border with Mexico. President Trump has threatened tariffs and closing the border if Mexico doesn't stop the flow of drugs. A summary of the most recent developments is below:

- President Trump has given Mexico a "one-year warning" to stop the flows of migration and drugs into the U.S., or he would slap tariffs on cars made there and close the southern border.
- The warning is a step back from a threat to close the border unless Mexico stopped "all illegal immigration" into the U.S.
- His stance appeared to soften when he told reporters that Mexico had started taking further measures to stop migrants travelling into the U.S., and White House officials said that closing the border was one of a number of options on the table.

Even though administration officials have indicated that imports and exports would continue to flow between the US and Mexico, there is a concern that significant delays in cross-border shipments would result from a border closure. In addition, tariffs on automobiles produced in Mexico would directly impact electronics components supplied to Mexico.

Analysis

A vibrant global free trade environment has been a major contributor to growth in the electronics industry. However, various concerns over trade relationships and other geopolitical issues have resulted in the use of trade agreements in aggressive negotiations between the US and other countries.

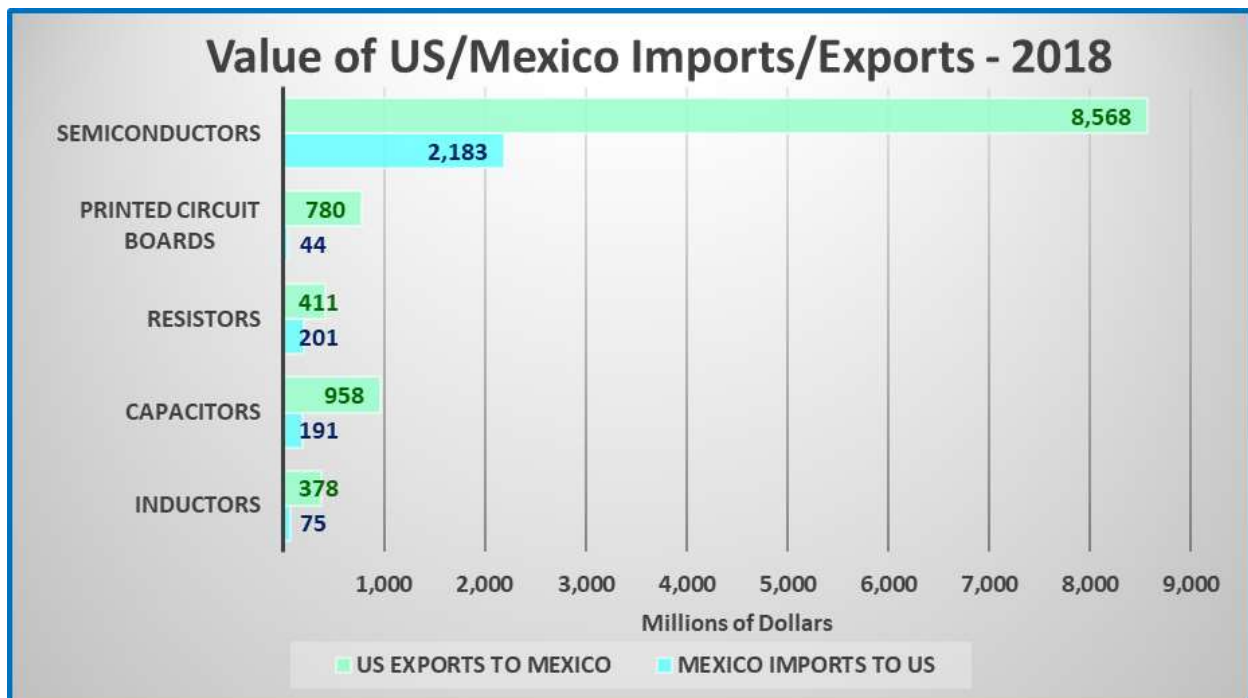
As a close trading partner, Mexico has developed a strong synergy with the US in the electronics industry. Threats to this partnership need to be understood and quantified as executives across the electronics industry manage their supply chain risks. Fortunately, executives appear to have a notice of one year to implement contingency plans to respond to threats of tariffs and border closures. By comparison, the China tariffs were implemented more quickly.

- Supply chain concerns need to address the flow of products in both directions across the border.
 - Mexico is a large consumer of electronic goods supplied from the US in support of the large maquiladoras in Mexico.
 - Automotive production is one of the important segments supported by components from the U.S. This segment has been directly threatened with tariffs. The potential implications of these tariffs can be seen in the recent decline in profits reported by Harley-Davidson due in part to European tariffs.
 - Mexico supplies 5% to almost 17% of major electronics imported to the U.S. Disruption of imports from Mexico would potentially result in increased lead times and price increase. Ripple effects would be disruptive to demand for other components in the supply chain.

Figure 1 illustrates the value of key electronics components flowing between the US and Mexico.

- Total value of US / Mexico 2018 trade in major electronics components = \$20.7B
- US exports to Mexico of major components averaged 6.7 times greater than US imports from Mexico

Figure 1 – The U.S. and Mexico are major trading partners in electronics components

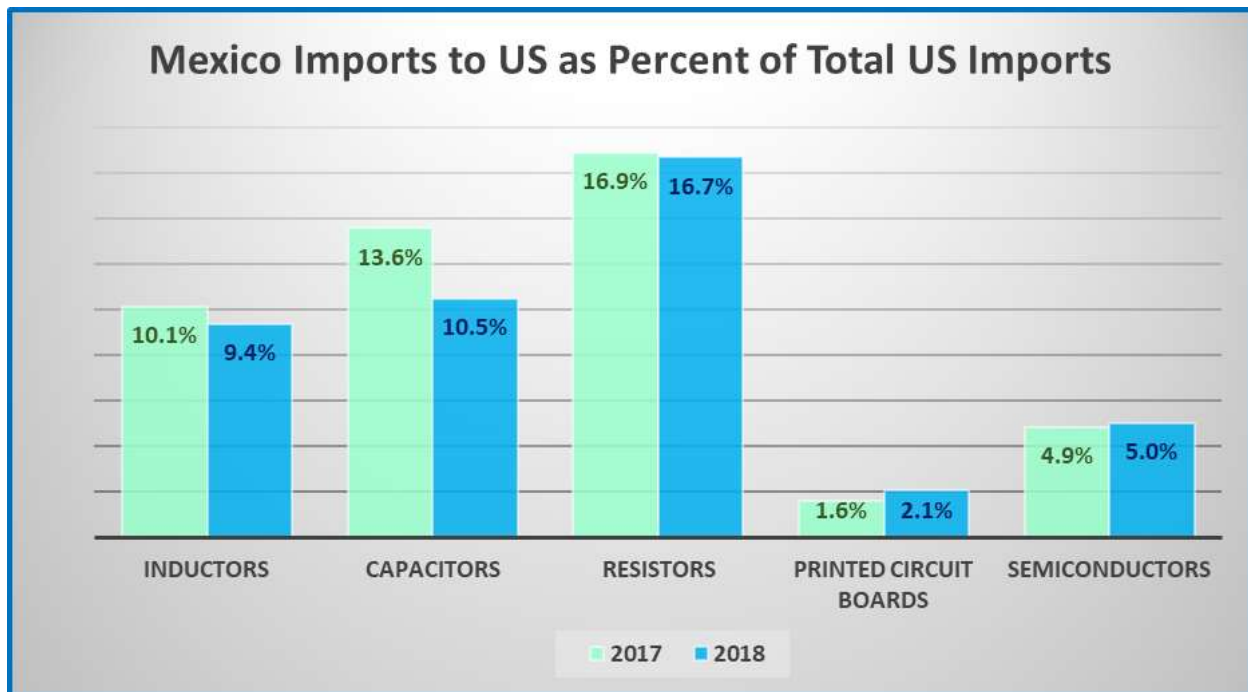


Source – U.S. Census Bureau, Economic Indicators Division

Figure 2 captures the significant share of electronic component imports to the U.S. that come from Mexico.

- Resistors lead the share of imports with a nearly 17% share. Capacitors and inductors from Mexico also account for roughly 10% of imports.
- Even a semiconductor import share of 5% from Mexico is significant. These are likely lower ASP products compared to memory ICs and other higher value ICs that typically come from other regions. Hence, they are likely a larger share of the volume and have a wider potential impact than the 5% share reflected in the reported value of imports.
- Reliance on imports from Mexico declined slightly in key categories in 2018

Figure 2 – The U.S. imports a significant percentage of its electronics components from Mexico

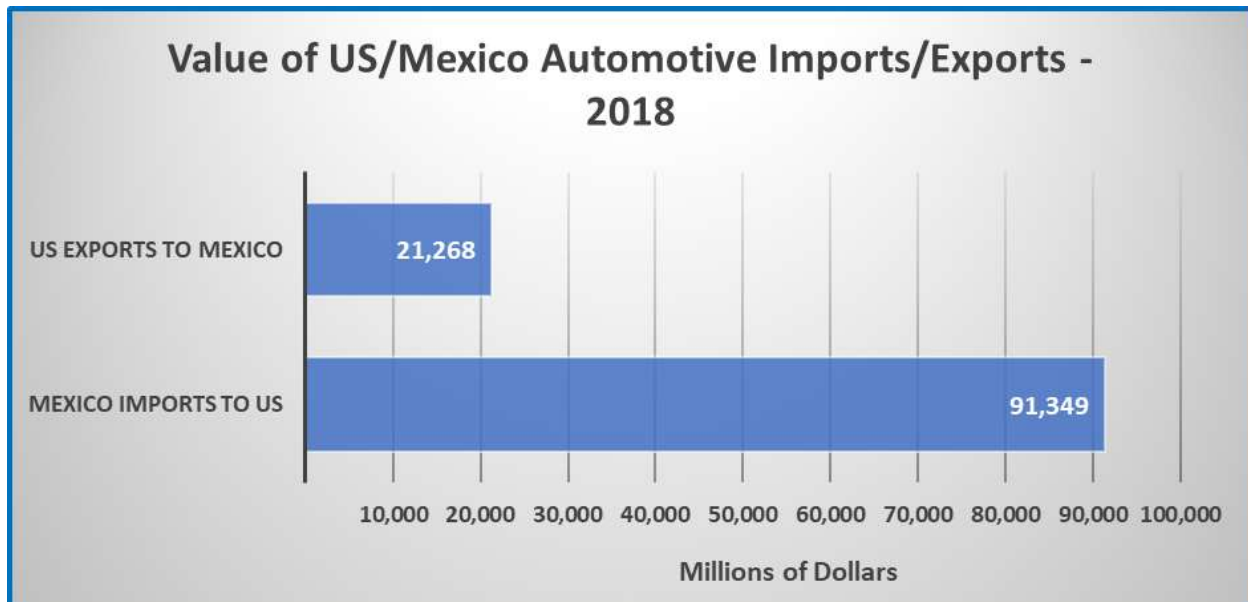


Source – U.S. Census Bureau, Economic Indicators Division

Figure 3 presents the value of the Automotive trade between the U.S. and Mexico.

- The automotive industry in Mexico is a major demand creator for US electronics component exports to Mexico.
- Tariffs or supply chain disruption in flow of finished electronics and equipment between U.S. and Mexico would negatively impact electronic components supply chain.

Figure 3 – Automotive imports to the US from Mexico have been identified as significant pain points in border negotiations



Source – U.S. Census Bureau, Economic Indicators Division

Action

- ❖ Executives across the supply chain should make sure they have strong visibility on the components they both source and supply to partners in Mexico, including secondary relationships.
- ❖ Contingency plans need to be developed based on various scenarios in U.S. / Mexico negotiations.
- ❖ The possibility that action could be taken by the Trump administration in less than a year should be considered. The unstable situation at the border is ripe for difficult surprises.
- ❖ Plans should be developed with partners to manage dependency on trade with Mexico and potentially to source components from other countries in the event of a disruption.
- ❖ Close monitoring of the evolving political and trade discussions should be incorporated into the daily management activities of supply chain participants so necessary adjustments can be made as quickly as possible.