



June 29, 2018

Via Regulations.gov

Hon. Wilbur L. Ross, Jr.
Secretary of Commerce
U.S. Department of Commerce
1401 Constitution Ave., NW
Washington, DC 20230

**Re: Section 232 Investigation of Automobiles and Automotive Parts
Imports; Docket No. DOC-2018-0002**

Dear Secretary Ross:

The Motor & Equipment Manufacturers Association (MEMA) is filing these comments in response to the Department of Commerce's ("Department") request for public comments on the Section 232 National Security Investigation of Imports of Automobiles, Including Cars, SUVs, Vans and Light Trucks, and Automotive Parts ("Notice").¹

MEMA strongly opposes any broad, unilateral, and import-restrictive measures – such as tariffs, quotas, or other adjustments – on imported automobiles or motor vehicle parts. MEMA recognizes the Department is currently investigating these matters and that no specific recommendations have been made. However, MEMA remains very concerned that the pattern of recent actions from the administration signal that tariffs are one of several tactics that would be considered and imposed. Counterproductive unilateral actions will place manufacturers at a competitive disadvantage to their global counterparts, erode U.S. jobs and growth, and will not protect the national security of the United States. Such actions would weaken our nation's economy by harming U.S. manufacturers of vehicles and vehicle parts and would deter U.S. investments in new innovative technologies. In fact:

- Tariffs will jeopardize 871,000 parts manufacturing jobs in the United States;
- Tariffs will harm global competitiveness of the United States;
- Tariffs, quotas or other adjustments will diminish investment in the United States; and, the
- Broad scope of investigation has negative consequences for the United States

In addition to laying the foundation of our overarching concerns, MEMA has further comments that address each of the questions put forth in the Department of Commerce *Federal Register* notice. Further, we anticipate that several member companies will also submit individual comments directly to the Department of Commerce.

¹ 83 Fed. Reg. 24,735 (May 30, 2018).



Tariffs Would Jeopardize 871,000 Parts Manufacturing Jobs in the U.S.

MEMA represents 1,000 vehicle suppliers that manufacture and remanufacture original equipment and aftermarket components and systems for use in passenger vehicles and commercial trucks and equipment. MEMA represents the full spectrum of the supplier industry – from Tier 1-3 suppliers – through its four divisions.²

In 2017, MEMA released an important economic impact study that clearly defines the critical and expanding role of vehicle parts suppliers in the U.S. economy.³ Suppliers are the largest manufacturing sector in the U.S. directly employing over 871,000 Americans in all 50 states plus the District of Columbia, up 19 percent in five years (see Figures 1 and 2). This growth is due to a global supply chain that allows suppliers to remain competitive. Together with indirect and employment-induced jobs, the total employment impact of the vehicle parts manufacturing industry is 4.26 million jobs, an increase of nearly 18 percent from 3.62 million in 2012 (see Appendix A). Nearly \$435 billion in economic contribution to the U.S. GDP is generated by vehicle parts manufacturers and its supported activity. Employee compensation paid to workers supported by vehicle parts manufacturing increased 22 percent over five years to \$270 billion, which is 2.8 percent of total U.S. employee compensation. Vehicle parts manufacturers are significant components of our nation's economic engine.

Figure 1



Suppliers provide about 77 percent of the vehicle value. To put this into perspective, a typical vehicle contains more than 30,000 components. Vehicle suppliers manufacture materials, parts and systems for a wide range of customers including new vehicle manufacturers (a.k.a. “OEMs”), other Tier 1-3 suppliers. They also manufacture for the vehicle aftermarket by way of multiple channels to provide vehicle service technicians, commercial fleets, and consumers the parts and materials needed for vehicle maintenance and repair. The variety of service applications ranges widely too: from passenger cars, SUVs and pick-ups to heavy-duty vocational trucks, semi-tractor trailers and military tactical vehicles – suppliers provide the components necessary to support the production

² MEMA represents its members through four divisions: Automotive Aftermarket Suppliers Association (AASA); Heavy Duty Manufacturers Association (HDMA); Motor & Equipment Remanufacturers Association (MERA); and, Original Equipment Suppliers Association (OESA).

³ MEMA, “Driving the Future: The Employment and Economic Impact of the Vehicle Supplier Industry in the U.S.” (Jan. 26, 2017), available at https://www.mema.org/sites/default/files/MEMA_ImpactBook.pdf.

of millions of these vehicles annually. Our members make a wide array of vehicle components for new vehicles as original equipment and for the aftermarket as replacement parts. They manufacture and produce essential vehicle components and materials – such as axles, brakes, tires, wheels, batteries, wire harnesses, seats, front/rear lights, bearings, oil filters, fluids, plastics, metals, composites, and thousands more. They also innovate and create complex and highly integrated vehicle systems – such as advanced refrigerants and HVAC systems, emissions control technologies, regenerative braking technologies, alternative propulsion systems, advanced driver assistance systems, vehicle-to-vehicle communications, and automated driving systems.

In the vehicle manufacturing industry, suppliers are categorized in tiers. Tier 1 manufacturers provide new original equipment (OE) finished parts, components, and systems directly to their vehicle manufacturer customers. Tier 2 manufacturers are often niche or specialty component manufacturers that provide subcomponents and other content to Tier 1 manufacturers. Tier 3 companies are typically the suppliers of raw or semi-finished materials, such as metals or plastics, for both Tier 1 and Two suppliers. Often, Tier 2 and 3 suppliers may also provide products and supply customers in other industry sectors outside of the vehicle industry (such as, computer chips, PCB boards, sensors, cameras, metals, glass, plastics, chemicals).

In Figure 3 below, we generally estimate that approximately 40 percent of the suppliers are Tier Ones and about 60 percent are Tier 2s and Threes. The dashed line indicates the frequent crossover of suppliers that may be a Tier 1 to several vehicle manufacturers, but also a Tier 2 supplier to a Tier 1. The vehicle aftermarket provides finished components via a variety of channels directly either to consumers or to vehicle service technicians and repair facilities. These goods are used for the maintenance and repair of over 260 million cars, trucks, and buses on our nation’s roadways.

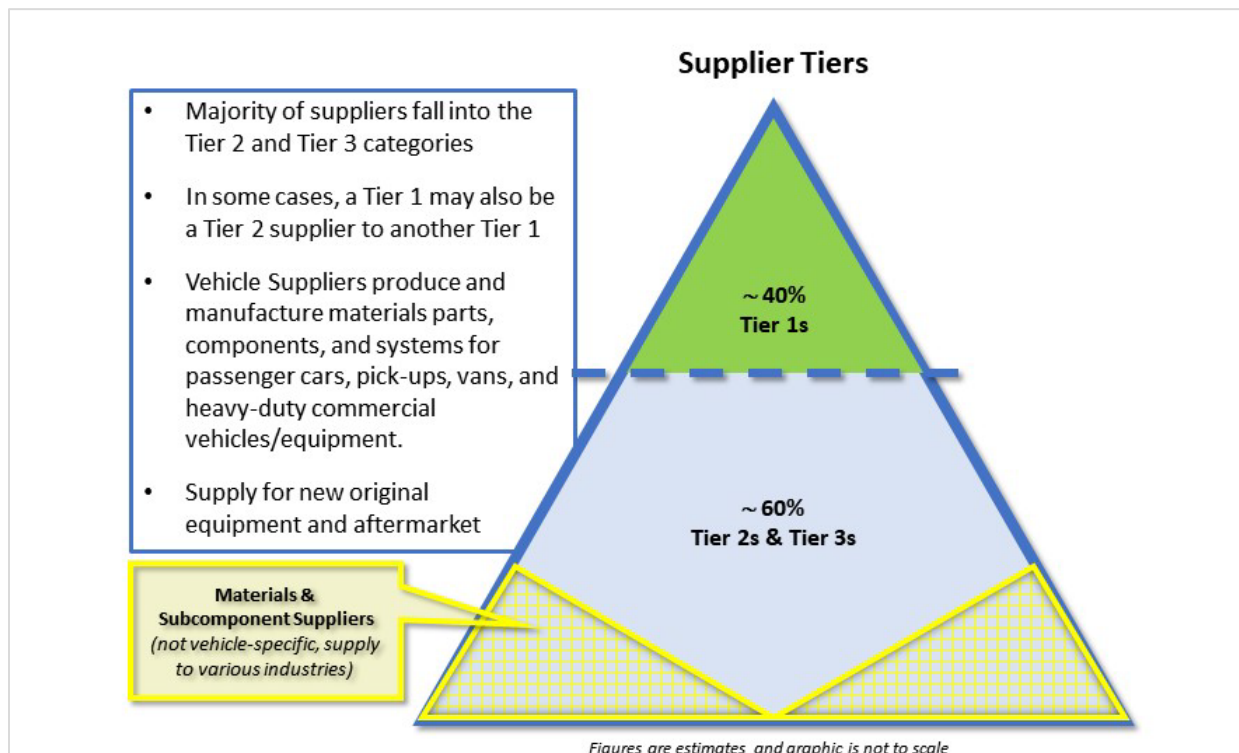
Figure 2
State Distribution of
Total U.S. Direct Employment

Total U.S. Direct Employment	
TOTAL	871,831
Michigan	125,909
Ohio	96,238
Indiana	88,306
Tennessee	50,128
Kentucky	47,658
Alabama	41,107
Illinois	38,394
North Carolina	33,825
South Carolina	33,766
Texas	33,132
California	31,190
Pennsylvania	27,920
Georgia	23,836
New York	19,517
Wisconsin	18,200
Missouri	16,301
Iowa	16,114
Virginia	13,277
Arkansas	10,495
Mississippi	9,706
Florida	8,827
Oklahoma	8,676
Nebraska	8,415
Utah	7,884
Minnesota	6,366
Kansas	6,270
Connecticut	4,958
Washington	4,687
Arizona	4,672
Oregon	4,473
West Virginia	4,069
New Jersey	4,028
South Dakota	3,931
Louisiana	3,167
Colorado	3,120
Massachusetts	2,510
North Dakota	1,994
Rhode Island	1,879
Maryland	1,720
New Hampshire	1,389
Vermont	745
Idaho	616
Maine	549
New Mexico	525
Nevada	484
Delaware	400
Montana	269
Wyoming	136
Alaska	30
Hawaii	21
District of Columbia	2

Data source: IHS Markit

Published in "Driving the Future: The Employment and Economic Impact of the Vehicle Supplier Industry in the U.S."

Figure 3



The supply chain, their customers, and the jobs they support are highly interdependent. Like a stone in a pond, one small change to the chain can cast off multiple ripple effects. The vehicle industry has repeatedly witnessed the narrow threads that bind its successes and prevent its weaknesses. This past May, a fire at a U.S. supplier facility stopped production and pinched availability of specialized parts that only a few suppliers make. Multiple vehicle manufacturers were impacted and had to pause production of finished vehicles.⁴ Certainly, other examples of supply chain disruption and the short- and long-term ripple effects include the worldwide economic crisis in 2008, which drastically slowed overall vehicle production, and the “Great Sendai Earthquake” in 2011, which impacted capacity for the materials and subcomponents. The point is that these are just a few examples that demonstrate how the U.S. vehicle industry relies on both its global suppliers and its local domestic component manufacturers to be viable with as little disruption and as much predictability as possible.

The Figure 4 below, sourced with permission from IHS Markit, illustrates the interconnectedness of the North American supply base and their OEM customers. For example, looking at General Motors, this chart shows that GM shares 76 percent of suppliers with Ford Motor Company. OEM after OEM show significant percentages of shared supply base for their vehicles. The interdependency is clear. This chart underscores the interconnectedness of our industry and the North American region.

⁴ “Supplier fire isn't just hurting Ford, supply issues are rippling across auto industry”, by Phil LeBeau, CNBC.com
Published May 10, 2018, Updated May 11, 2018
<https://www.cnbc.com/2018/05/10/supplier-fire-isnt-just-hurting-ford-gm-and-others-may-feel-impact.html>

Figure 4

North American Supply Base Interdependence

OEM Supply Base for NA Vehicles	Also supply to									
	GM	Ford	FCA	R-N-M	Honda	Toyota	Hyundai/Kia	VW	Daimler	BMW
GM	100%	58%	61%	47%	41%	29%	32%	47%	42%	44%
Ford	76%	100%	66%	50%	49%	30%	35%	50%	46%	49%
FCA	72%	60%	100%	51%	46%	32%	32%	46%	49%	47%
R-N-M	64%	52%	59%	100%	60%	40%	28%	50%	44%	39%
Honda	60%	55%	56%	65%	100%	45%	32%	49%	41%	41%
Toyota	56%	44%	51%	56%	59%	100%	25%	40%	32%	33%
Hyundai/Kia	54%	46%	46%	36%	37%	23%	100%	39%	31%	36%
VW	72%	59%	59%	56%	51%	32%	35%	100%	60%	64%
Daimler	66%	55%	64%	51%	45%	26%	29%	62%	100%	61%
BMW	80%	68%	71%	52%	52%	32%	38%	76%	70%	100%

Source: IHS Markit North American Component Forecast Analytics (CFA) as of 2017 calendar year. IHS Markit CFA tracks the supply of 90+ major light vehicle components/systems sourced from over 280 Tier 1 suppliers.

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Disruption to one implies disruption to all. As suppliers and OEMs develop new technologies and vehicles, this interconnectedness is critical to the long-term viability of the industry. Not only for new car production, but also the aftermarket production of the components needed to maintain vehicles.

Taken together these figures paint a picture of this industry. They illustrate that there are relatively few suppliers at both the top and bottom of the supply chain and there are a substantial number of jobs dependent on the success of many. Successful suppliers must have a wide range of customers in the vehicle industry providing content to a number of vehicle manufactures.

As the cost of manufacturing in the U.S. increases for a non-traditional vehicle manufacturer, the entire supply base suffers. A supplier with only one manufacturing facility in the U.S. will find its market limited to the Tier 1s as the Tier 1 suppliers find their markets limited to its customer base. Indeed, smaller, more locally based Tier 2 and 3 suppliers may find it more difficult to reorganize their business models since they do not have other global facilities to move business to or absorb the economic impacts.

There should be no doubt that the implementation of tariffs or quotas under a Section 232 investigation on motor vehicle parts will cost U.S. jobs. In fact, some members have shared with MEMA that – if tariffs are implemented – the length of time it would take to feel the ramifications and impact is within one quarter for larger companies, and significantly

less than that time for smaller to medium companies. In order to make adjustments, the first resources to get cut will be jobs. As we illustrated, a majority of vehicle suppliers fall into that small/medium size and would be hardest hit because they would be squeezed on both ends to absorb the cost impacts. These smaller companies are likely to be in a position where they cannot absorb the costs, nor can they pass on to their customers.

Tariffs Will Harm Global Competitiveness of the United States

The United States is one of three main areas in the world that has a significant vehicle manufacturing industry, along with Europe and Asia. As shown in Figure 5, the U.S. has dominated North American vehicle and vehicle parts production totaling almost \$150 billion in 2017. Notably, over 75 percent of U.S. manufactured automotive parts were exported. As part of the North American region, the U.S. can compete with Asia and Europe in almost every facet of motor vehicle production. For the past ten years, the vehicle industry has grown and thrived, due in part to the improving economy and the strength of the region's supply chain. The U.S. is also strong on exports. Of the 83.3 million light vehicles produced in the U.S. since 2010, 15.5 million light vehicles have been exported despite a strong dollar (see Figure 6).

The U.S. automotive industry is running near full production capacity. Current capacity utilization for suppliers at highest it has been since 2000 (see Figure 7). Investment in duplicate capacity could slow U.S. R&D investments in new technologies. Also, a common concern among various manufacturing sectors are finding enough skilled U.S. workers due in part to the currently strong economy and low U.S. employment rate. These factors make adding U.S. more capacity difficult. Thus, to remain competitive, U.S. vehicle suppliers leverage the global supply chain to source the materials, subcomponents and parts needed for further component manufacturing and system integration.

Tariffs on motor vehicle parts will jeopardize the vehicle industry's growth and success and – more importantly – the U.S. jobs and American innovation that comes with trade. Tariffs or other broad trade-restrictive measures would cause significant disruption and upheaval to the vehicle industry. Given the strength of the North American region's supply chain, certainly, if Canada and Mexico were to be exempted from these types of measures, the impact would be substantially reduced. Most OE and aftermarket suppliers have well established footprints in North America to support regional requirements. It is typical and normal for parts and subcomponents to be shipped back and forth over borders, often multiple times, within the region. If this accessibility is abruptly constrained or closed off, the results will be chaotic and catastrophic to the U.S. vehicle industry. (See MEMA's comments to Question No. 1 in our Supplemental Comments).

The U.S. cannot simply stand on its own and manufacture the most fundamental components as well as the newest advanced technologies and still remain competitive in a tariff compulsory environment. MEMA has long urged this administration to consider alternative policies and actions instead of tariffs to encourage and retain the development and deployment of the newest innovations in the United States.

Figure 5

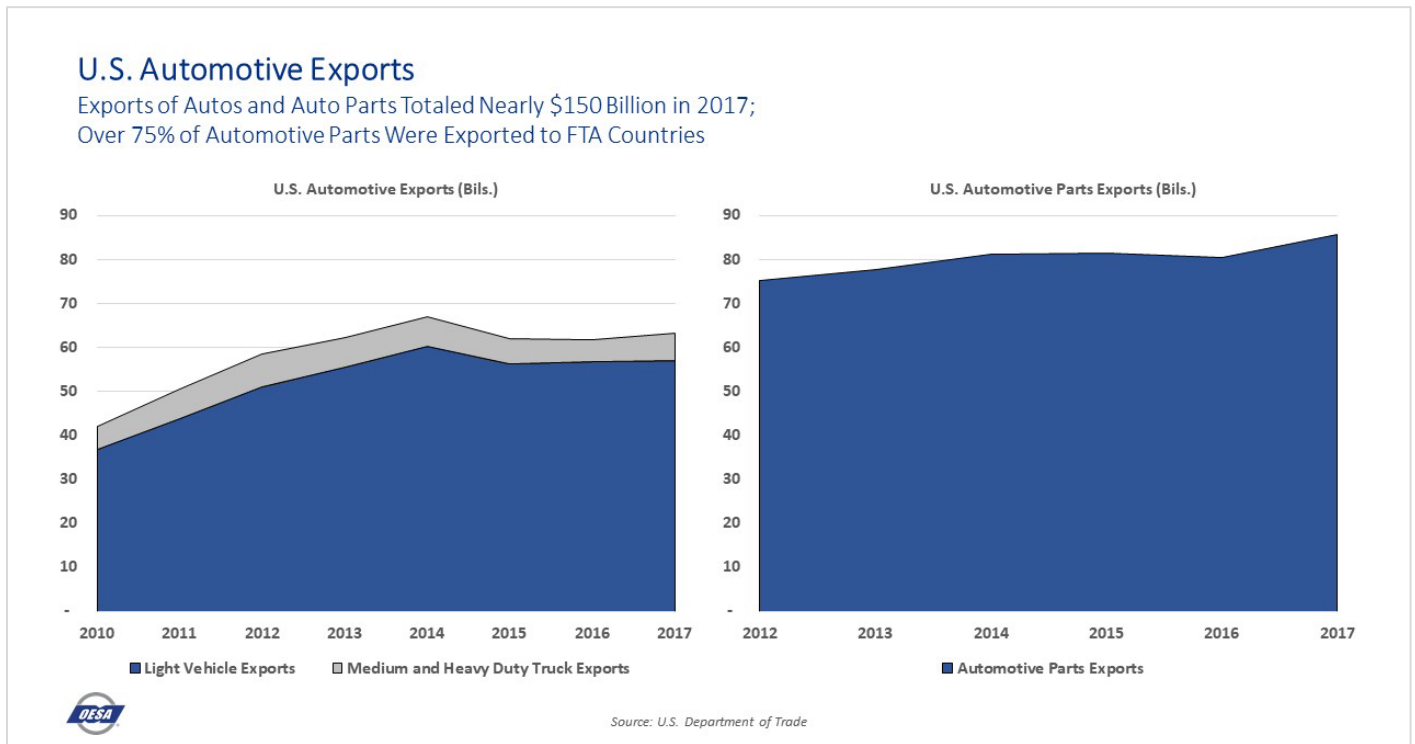


Figure 6

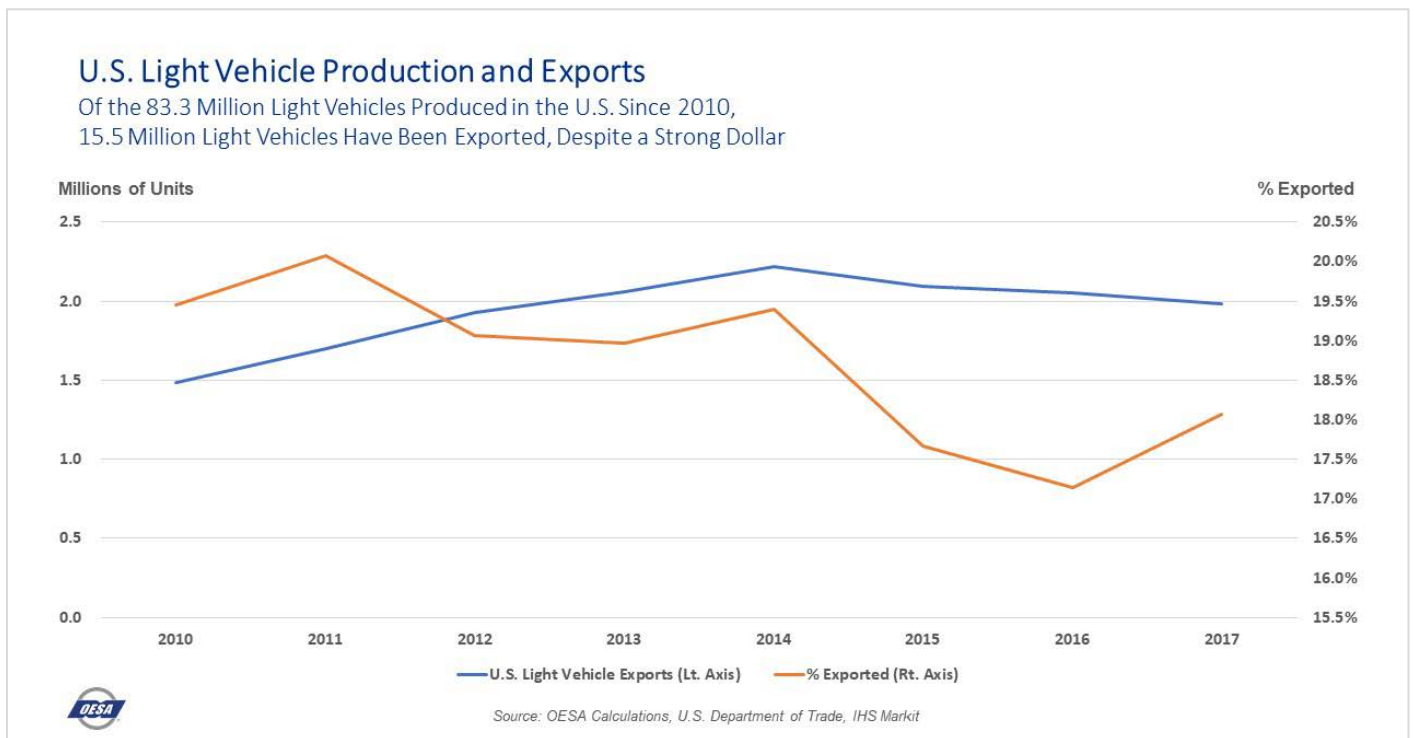
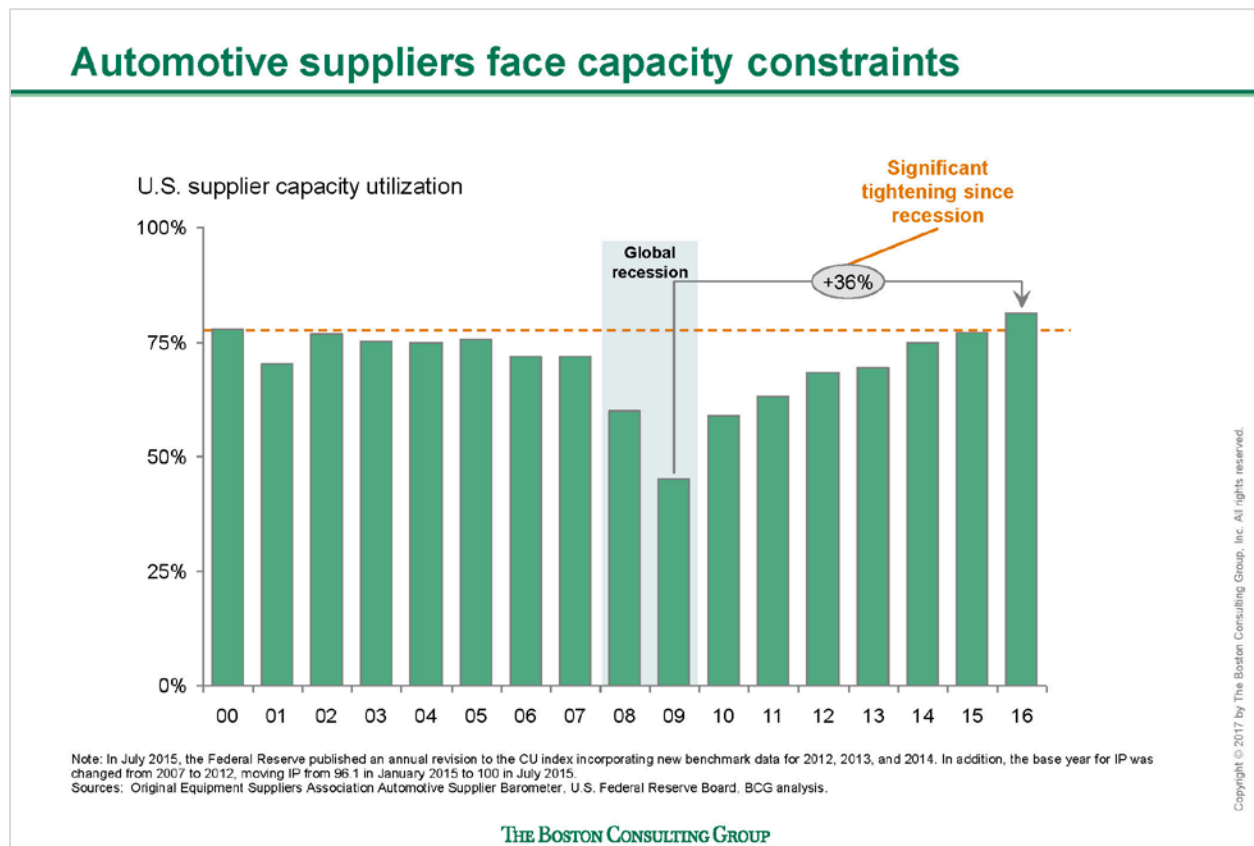


Figure 7

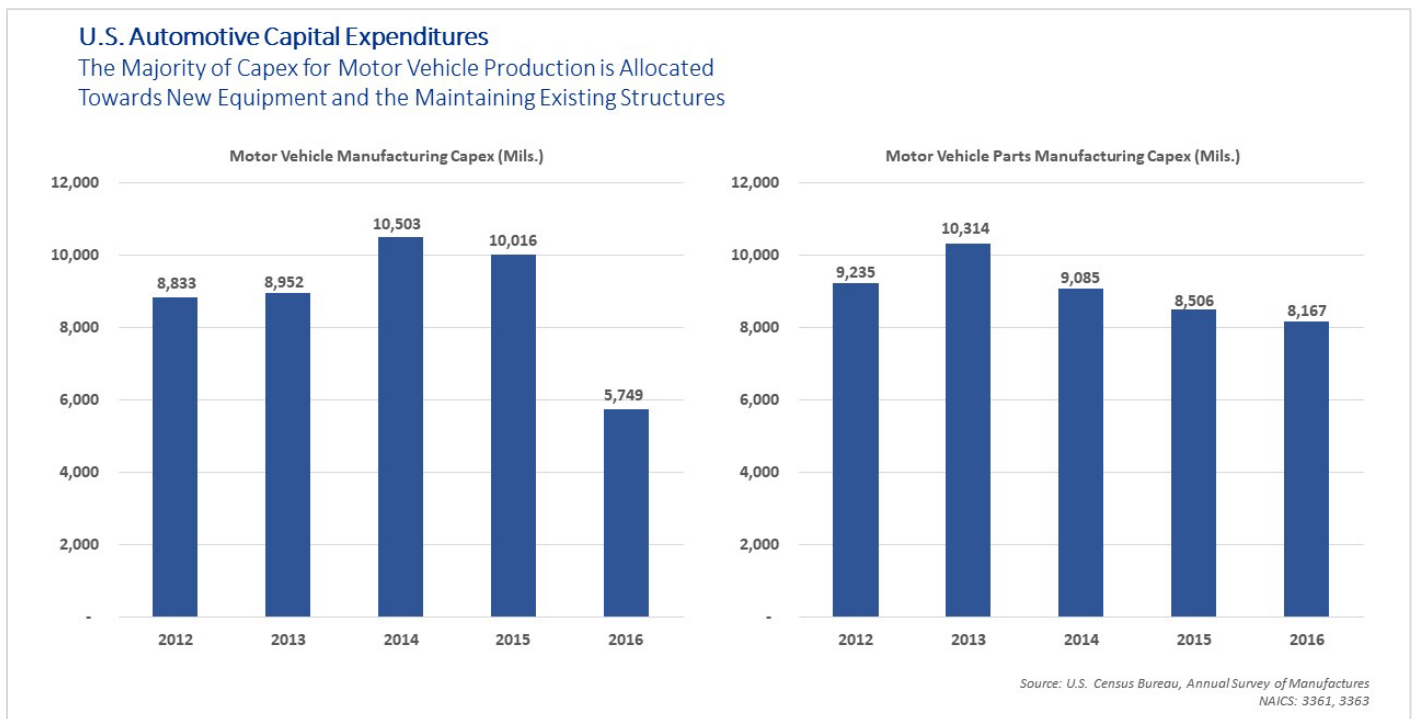


Tariffs, Quotas or Other Adjustments Will Diminish Investment in the United States

Vehicle suppliers lead the way in developing advanced, transformative technologies that enable safer, smarter, and more efficient vehicles, all within a rapidly growing global marketplace with increased regulatory and customer demands. As key innovators, suppliers provide upwards of 77 percent of the content of vehicles manufactured in the United States. Figure 8 below show the capital expenditures (“capex”) investments for automakers and vehicle parts manufacturers. The capex invested in the U.S. is in the billions of dollars. The right side of the chart indicates that over the past five years \$45 billion in capital expenditure investments have been made by U.S. vehicle parts manufacturers. About half of suppliers’ capex spending is invested heavily into facilities, machinery, and tooling. Those investments go towards ensuring they can meet production demands for long product cycles. More importantly, these investments result in high-value U.S. jobs – whether it is skilled labor for manufacturing or engineers for product development.

Moreover, suppliers invest a significant amount on research and development (R&D) here in the United States, to innovate and create the advanced technologies necessary for the vehicles of today and tomorrow. Many suppliers have established technical centers and

Figure 8



R&D facilities here in the United States. This enables them to test and validate a whole host of systems and components for their customers. Suppliers are currently conducting important research, development, and deployment throughout the United States.

The vehicle industry finds itself at a critical inflection point with the development of transformative innovations in advanced safety, efficiency, and automated technologies. These technologies for advanced vehicle safety and efficiency systems are building block technologies to automated driving systems, which require substantial development costs. The U.S. investment and research over the next several years in the vehicle industry – from Silicon Valley to Detroit and across America – may well determine global leadership in transportation and technology for generations to come. The United States has long been a leader in innovation. However, the imposition of trade-restrictive actions – like tariffs or quotas – on vehicle parts manufacturers will put these U.S. investments in jeopardy. Unfortunately, the uncertainty of the proposed actions and the potentially broad scope has made planning for future investments very difficult. In fact, many of our members have indicated that their companies are delaying, deferring, or cancelling plans for further U.S. investments. These are the kinds of critical investments we need domestically to support jobs as well as support our nation’s economic growth and success.

The U.S. has a strong history of being a leader in innovation. Our nation is uniquely positioned to lead the world in automated technology development and increasingly efficient propulsion systems. Unlike other manufacturing sectors, however, this innovation will occur in places in the world that provide the best economic and trading opportunities. Therefore, if suppliers are unable to access and import into the U.S. the needed materials, components, and technologies from other parts of the world, they may simply establish their centers of innovation elsewhere. Consequently, this current and future development

depends on the free flow of trade for new and state-of-the-art parts, systems, and raw materials. Limiting access to these products in the U.S. will make other regions of the world more attractive for future investments.

The motor vehicle parts industry is wide and diverse allowing great job and investment opportunity. MEMA urges the Department to ensure that the investigation sufficiently accounts for all of these factors in its analyses.

Broad Scope of Investigations Has Negative Consequences for the United States

MEMA urges the administration not to include motor vehicle parts – at all – in its final report of recommended actions – whether they are tariffs, quotas, or other adjustments. As previously noted, there are tens of thousands of parts, components and materials that are manufactured as OE for new vehicles, and there are exponentially more components and replacement parts that are manufactured for the consumer aftermarket for vehicle repair and maintenance.

The broad nature of the investigation suggests that all HTS codes related to “automotive parts” would be contained within the scope of the Department’s investigation. There are significant concerns with this potential approach.

First, this scope is too broad. “Automotive parts” are defined in HTS such that there are no distinctions by application (in most cases). Consequently, the HTS codes for “automotive parts” used in passenger cars, SUVs, pick-ups and vans, are also the same for “automotive parts” used in medium- and heavy-duty commercial and tactical vehicles.

Vehicles that are over 10,000 lb. gross vehicle weight rating (GVWR) impact a wide range of vehicle types including, but not limited to, semi-tractor trailers, buses, and specialized vocational trucks. The medium- and heavy-duty vehicle category for applicable “automotive parts” also encompasses on/off-road construction and agricultural vehicles and equipment.⁵ Many of these commercial vehicles are also utilized in combat and non-combat applications used by the U.S. defense industry. Second, the sheer volume of parts that would be implicated by a broad, encompassing scope would impact thousands of parts. Any constraints placed on some or all of these kinds of materials and parts used to make completed components and systems would place huge constraints on both the OE and aftermarket sectors for passenger and commercial vehicles.

During the June 20, 2018, Senate Finance Committee hearing in which you testified, Senator Chuck Grassley asked you a question regarding the broad scope of “automotive parts” per the HTS code classifications noting that it included commercial trucks, vocational vehicles, and agricultural equipment. In response, you answered as follows:

“[The] intention is to deal with automotive parts, not to deal with parts throughout the economy, I can assure you of that.”

“We will try our very best to avoid there being any unintended consequences, such as the ones you described.”

⁵ In fact, when there is a distinction, it is usually addressed either as agricultural applications.

MEMA is encouraged that the intention of the Department is to avoid such unintended consequences resulting from the wide scope and potential impacts on “automotive parts.”

Therefore, MEMA urges the Department to carefully weigh the need to cast an all-encompassing net in evaluating “automotive parts” as part of its investigation. These parts are not only needed to produce new OE parts, but also aftermarket parts for repair and maintenance, which are necessary for the continued safe and efficient operation of all vehicles – including U.S. military vehicles. These parts, as coded in the HTS, are all parts for all vehicle types – including the gamut from parts for cars to semi-tractor trailers; from pick-up trucks to agricultural equipment. Therefore, given the immense complexity and ramifications of the broad scope of “automotive parts,” MEMA respectfully requests the Department take following actions:

- Remove entirely “automotive parts” from the scope of this investigation.
- Exclude key U.S. allies, particularly Canada and Mexico, from the scope of this investigation.

Or, at a minimum, the Department must clarify exactly which parts are subject to the investigation and how to delineate the parts. Parts used in commercial vehicles over 10,000 lb. GVWR should not be in the scope at all. Per your sworn testimony on June 20, Commerce does not intend for commercial vehicles to be in the scope. Ergo, these vehicles should be expressly excluded, and the vehicle parts associated with their production and maintenance should be eliminated. Furthermore, the administration must carefully consider the implications of the hundreds of codes for parts within HTS 8708 as well as the many parts that fall outside of HTS 8708 in other chapters (one example are vehicle seats HTS 9401.20). As demonstrated in our comments, suppliers are dependent on manufacturers outside of our industry sector for a wide range of components that are not vehicle-specific but are used in vehicle parts and systems (e.g. microchips, sensors).

The inclusion of the entirety of vehicle part imports in the Department’s investigation will be viewed by many as a distorted analysis and has the potential to create industry instability and put major supplier operations in jeopardy. If the investigation does not make these distinctions clear, it is impossible to analyze the full and complete impact of potential actions if the exact scope is not well-defined and understood. As it stands today, without any guidance or clarifications from the Department, the ongoing uncertainty will continue to hold the industry hostage in an unprecedented state of limbo.

The motor vehicle sector requires long-term investments in facilities and employees, and thus depends on regulatory and market stability. The implementation of tariffs on steel and aluminum, which are important raw materials for the production of vehicle parts and finished automobiles in the United States, has already caused significant uncertainty and added costs to domestic manufacturers in the vehicle sector. The looming threat of additional tariffs or quotas on vehicle parts further jeopardizes U.S. innovation and investment in research and development.

Finally, the administration must fully take into account the benefits of the vehicle industry to our economic and national security. Motor vehicle suppliers provide needed content for the Department of Defense and our armed forces. The imposition of tariffs will

jeopardize this supply chain and, in turn, our national security. (See MEMA's answer to Question 2 under our Supplemental Comments).

Conclusion

Motor vehicle parts manufacturers are the largest employers of manufacturing jobs in the U.S. and many of these companies import certain vehicle parts as inputs to manufacture higher technology or more complex parts in the U.S. These parts are then sold to domestic vehicle manufacturers and American consumers, as well as the U.S. government and the U.S. defense industry. Disrupting American manufacturing operations or increasing costs through adjustments to imports of these products would not benefit the national security of the United States. Such adjustments to vehicle parts imports would, to the contrary, detrimentally impact the revenues, productive capacity, growth, and innovation of U.S. businesses, including MEMA members and the defense industry. This negative impact on domestic vehicle parts suppliers will in turn weaken the U.S. economy and our national defense.

In order to address the administration's goals to balance trade, MEMA does support:

- Finalizing a re-negotiated three-party NAFTA;
- Addressing tariffs through engagement and finalization of other trade agreements, such as the Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (T-TIP);
- Eliminating non-tariff barriers to trade that exist throughout the world;
- Participating in forums to develop global standards and strategies that allow for the free flow of goods and expand markets for the United States; and,
- Working with the Congress to revise anti-dumping and countervailing laws.

MEMA strongly urges the government not to make any adjustments to imports of motor vehicle parts. However, if the government does make such adjustments, MEMA urges the government to take a country-specific and product-specific approach where key allied nations are exempted and certain products critical to the U.S. manufacturing operations of our member companies are excluded from the scope of any such adjustments.

Please note, below my signature and preamble comments above are supplemental comments that address the questions raised in the Department's *Federal Register* notice. MEMA appreciates your consideration of these comments. Please contact me via email awilson@mema.org or call 202-312-9246, if there is any additional information MEMA can provide for this investigation.

Sincerely,



Ann Wilson

Senior Vice President of Government Affairs

SUPPLEMENTAL COMMENTS

Criteria Under Review

Pursuant to the instructions in the Department of Commerce's *Notice*, MEMA provides the following information requested in response to this request.⁶ Analysis of the following factors demonstrates that any adjustments to imports of "automotive parts" are not needed to protect U.S. national security and should not be implemented.

1. *The quantity and nature of imports of automobiles, including cars, SUVs, vans and light trucks, and automotive parts and other circumstances related to the importation of automobiles and automotive parts;*

Automobile manufacturers require a reliable supply chain to source the thousands of parts, components, and systems that are ultimately assembled into a finished vehicle. MEMA member companies depend on imports of certain motor vehicle parts as inputs for downstream manufacturing and assembly of higher technology motor vehicle components in the United States. Several of our member companies are also submitting comments directly to the Department of Commerce, which will provide more precise details on the quantity and nature of these imported motor vehicle parts.

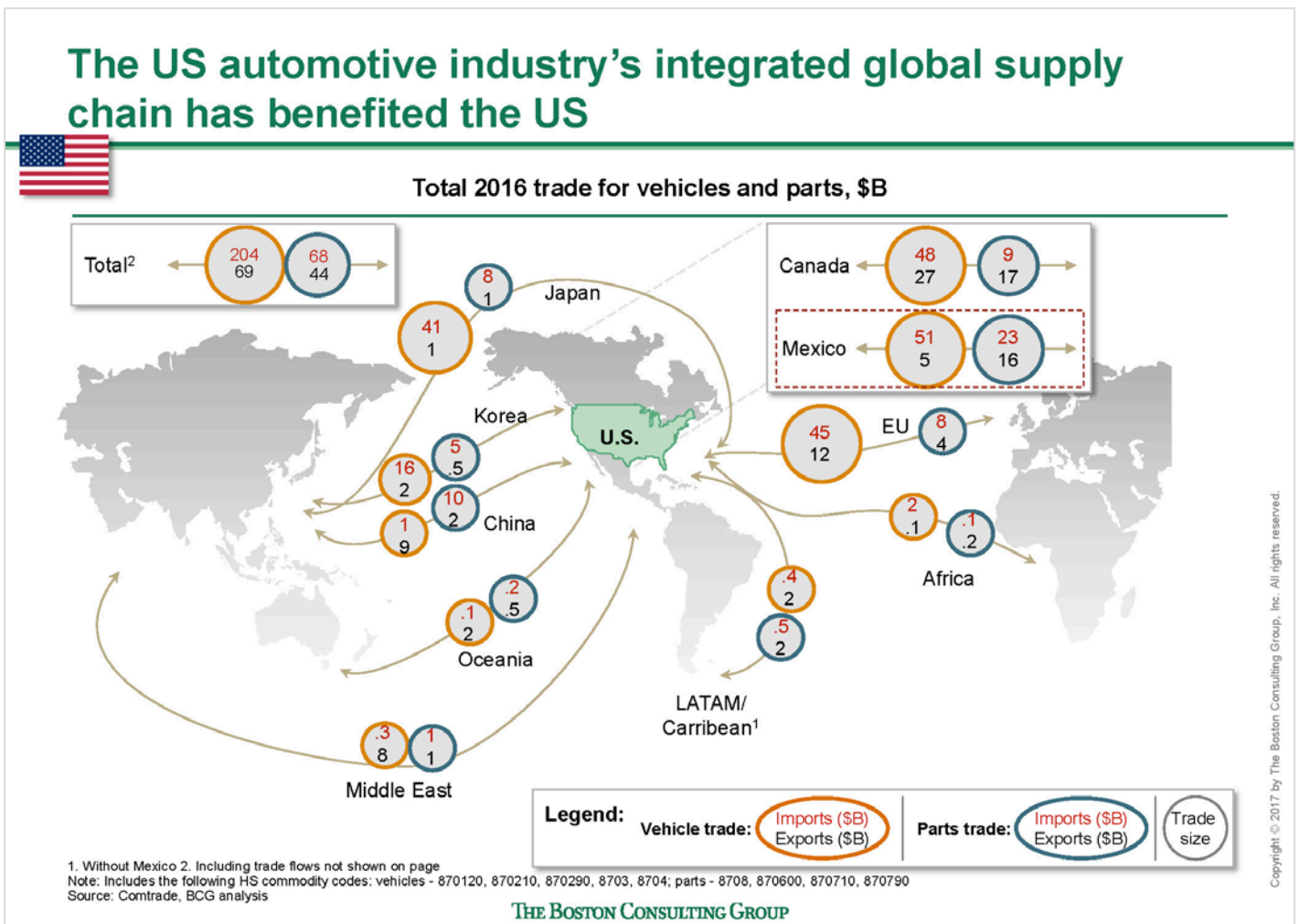
In general, the motor vehicle parts, subcomponents and materials imported by MEMA members are further manufactured in the U.S. and then are either used to support downstream manufacturing in the original equipment vehicle industry or sold to aftermarket distribution and retail channels for sale to consumers. Many of these input parts are either not produced in the U.S., not available in sufficient quantities, or not available to the quality or grade specifications demanded by the vehicle industry, which imposes strict safety and environmental requirements and standards.

Certain producers of vehicle parts have worked closely with MEMA member companies to develop specialized products of which continued access is critical to the vehicle industry and its downstream customers, including the defense industry. These producers are a mix of domestic and foreign manufacturers. Many of the U.S. vehicle parts that are manufactured abroad, particularly in Canada and Mexico, contain U.S.-origin materials and parts (including software and other value-add elements). The trade flows are illustrated in Figure 9 below.

Suppliers have found the global network to be the best option for sourcing a wide variety of products – from commodity-type parts to highly-specialized niche components – and in the high volumes that many suppliers require. MEMA's economic study showed that this model has allowed for continued growth in motor vehicle production as well as expanded U.S. employment in our industry sector. The recent 19 percent growth in direct supplier jobs is three times the growth rate of other sectors.

⁶ *Notice*, 83 Fed. Reg. at 24736. These criteria are also listed in Sec. 705.4 of the National Security Industrial Base Regulations (15 CFR parts 700 to 709).

Figure 9



2. *Domestic production needed for projected national defense requirements;*

The vehicle industry is closely associated with the U.S. defense industry. Suppliers provide components and parts to vehicle manufacturers, which make combat/tactical and non-tactical vehicles purchased by the defense and related industries. Moreover, suppliers provide the replacement parts and systems for vehicle maintenance and repair. These parts can be for both the military's tactical and non-tactical fleets. Often these parts may have specific application specifications and durability requirements that are often very different, highly specialized and frequently customized when compared to the consumer market. These parts are often reinforced, highly-durable and exposed to extreme environments and applications. Tactical applications often necessitate added layers of development, validation and specialized performance requirements. Many of these vehicles and the parts used to make them are important components necessary for the safe operation and function of the vehicles.

MEMA members depend on a reliable supply of certain vehicle parts as inputs to produce more complex, technical, and higher-demand vehicle parts and finished vehicles in the United States for all vehicle types, and especially those utilized by the U.S. defense

industry. Tariffs or quotas on these input parts will cause uncertainty, price increases, and potential delays across the vehicle manufacturing supply chain. Ultimately, restrictive actions will impact the ability of U.S. producers to meet projected national defense requirements. More importantly, adjustments to vehicle parts imports may even jeopardize our members' ability to continue manufacturing these critical products domestically.

3. Domestic production and productive capacity needed for automobiles and automotive parts to meet projected national defense requirements;

Adjustments to imports of motor vehicle parts, which in many cases are inputs used to support downstream U.S. manufacturing operations, will impact the production of vehicles and equipment provided to the U.S. defense industry. This would directly and adversely impact the defense industry by limiting or eliminating the supply of such critical vehicles and equipment, which are essential to protecting our national security. Any disruption to our members' U.S. manufacturing operations would be detrimental to the production and productive capacity of vehicle parts producers and inhibit their ability to meet projected national defense requirements.

Moreover, there are often capacity challenges and sourcing these vehicle parts in the volumes some suppliers require is simply not possible domestically. Currently, automobile manufacturers and vehicle parts suppliers operate at virtually 100 percent capacity utilization (see Figure 10).⁷ Because capacity utilization in the U.S. is strained or non-existent for many of the products needed by suppliers on the list, foreign sources are often the only sourcing choice for manufacturers (see Figure 11). Lack of capacity would be a serious consequence of any adjustment to imports of vehicle parts, which would hinder the ability of suppliers to manufacture the volumes necessary to meet projected national defense requirements.

Other impacts on production include workforce and product cycle considerations (see Figure 12). Many suppliers are struggling with workforce challenges in finding staff for key technical and production positions which are needed to expand production capacity. Historically low unemployment levels, individuals out of the workforce as a direct result of the opioid crisis, needed infrastructure improvements, etc. are all contributing factors. According to the Center for Automotive Research, the average product cycle for vehicle platforms is about 6.7 years.⁸ Thus, the product development cycle is extensive. Vehicle parts are expected to perform safely and efficiently in a wide variety of environments, under various levels of stress and for tens of thousands of miles. Similarly, vehicle systems are highly integrated and must work in unison under various performance conditions.

The process to develop and manufacture these products and bring them to market is equally complex and meticulously aligned. Suppliers dedicate significant resources and investments towards R&D as well as towards complex processes in the production of their products. Components and systems are subject to extensive specifications that must be

⁷ This figure is a duplicate of Figure 7 to emphasize the importance of capacity in the vehicle industry.

⁸ "Automotive Product Development Cycles and the Need for Balance with the Regulatory Environment" Sept. 20, 2017, CAR <https://www.cargroup.org/automotive-product-development-cycles-and-the-need-for-balance-with-the-regulatory-environment/>

Figure 10

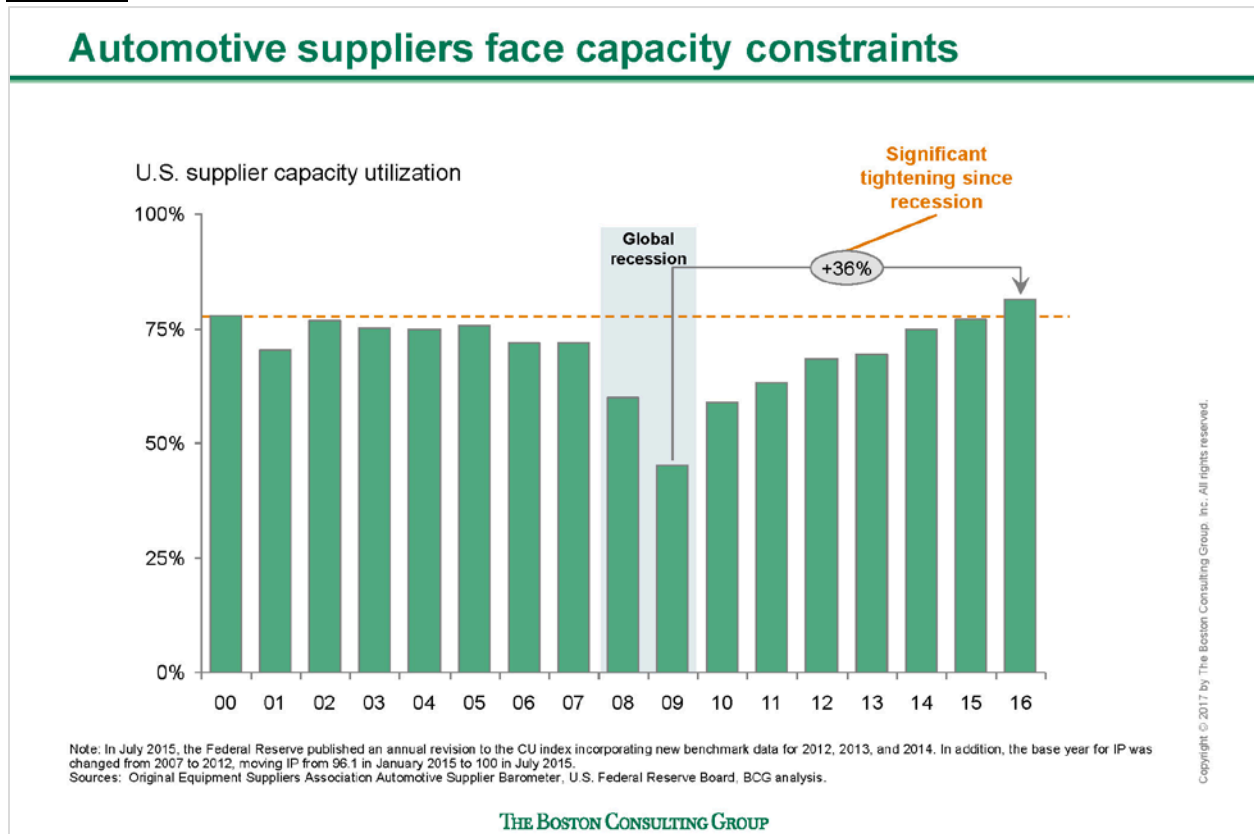


Figure 11

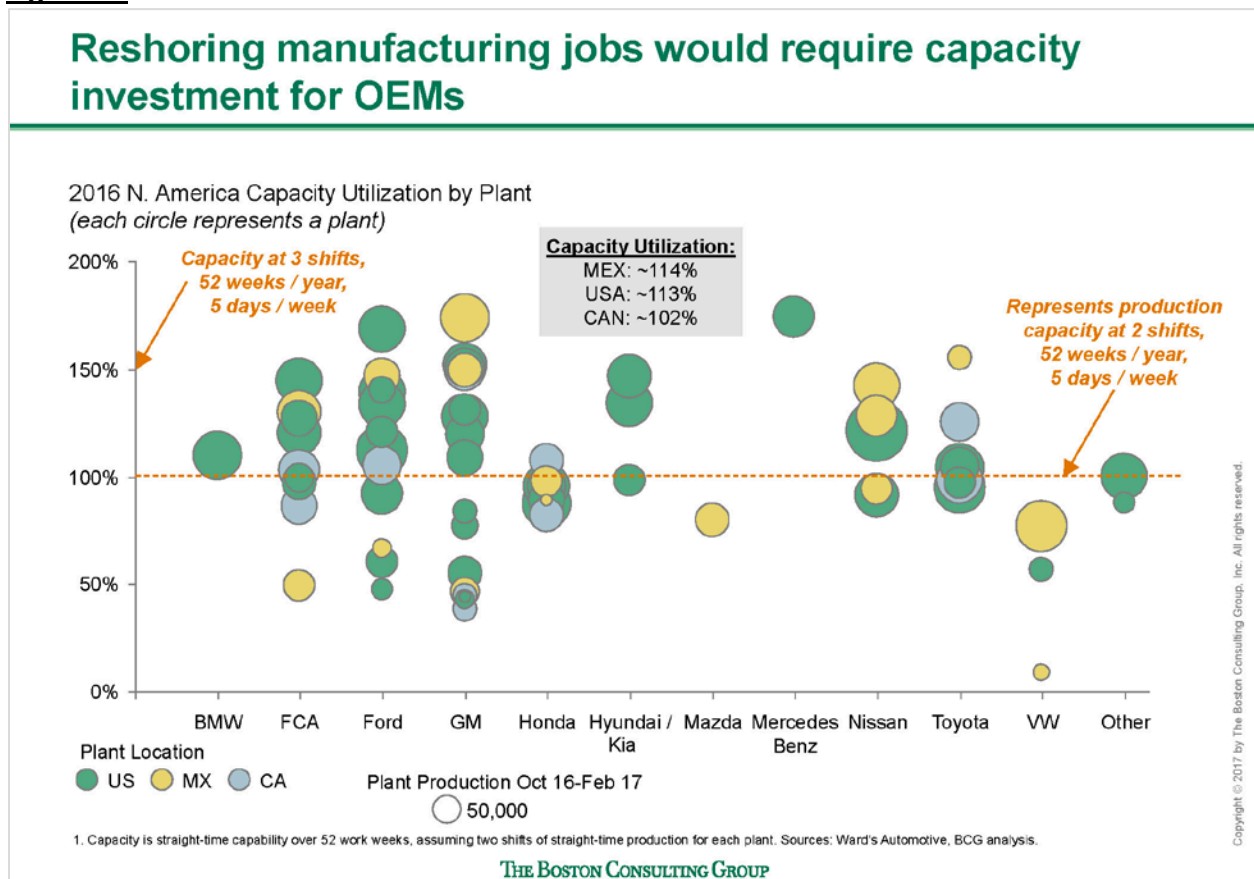
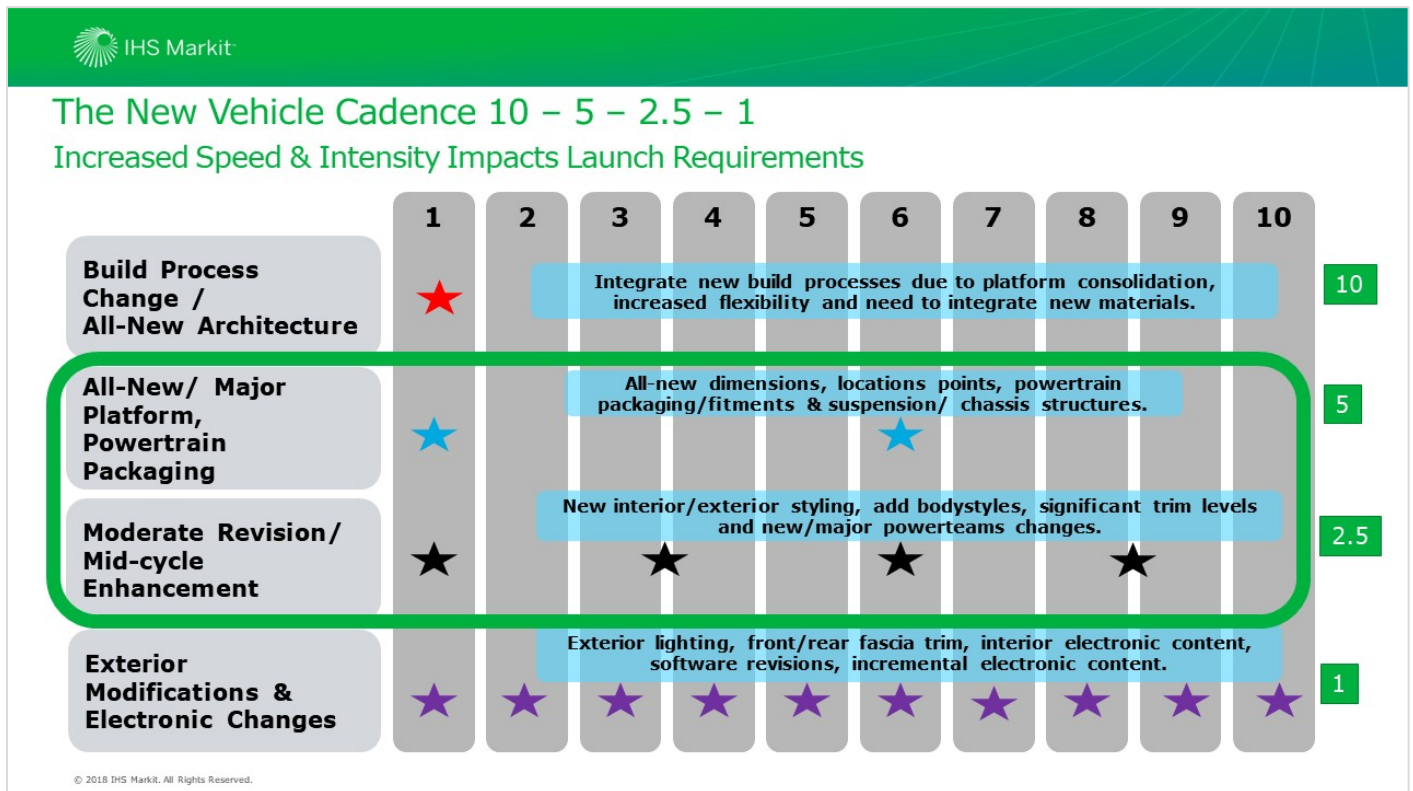


Figure 12



calibrated, tested, and validated to assure product safety, quality and adherence to standards and regulations. These processes are lengthy and complex. Additionally, a supplier must ensure that they have the tooling in place to manufacture the components in the volumes needed and the production logistics in place for “just-in-time” final assembly.

Tariffs, or trade-restrictive measures, could disrupt production development in a variety of ways, thus impacting overall competitiveness. All aspects of production work off of the product cycle’s cadence – including tooling, machining, worker training. Shifting the cycle prematurely or making abrupt changes to sourcing patterns will result in displaced capital and added risk.

4. *The existing and anticipated availability of human resources, products, raw materials, production equipment, and facilities to produce automobiles and automotive parts;*

Vehicle parts manufacturing jobs have been steadily growing since 2008 and have increased nearly 19 percent since 2012 (see Figure 13).⁹ MEMA’s members are at the forefront of this incredible growth and poised to meet the demands of both the consumer market and the national defense industry. Growth in improving the efficacy of simple, straight-forward components through improved manufacturing processes, cutting-edge materials, composites, and fluids, as well as innovating and developing the next generation of advanced vehicle safety and efficiency technologies to enable a highly-connected and automated future.

⁹ This figure is a duplicate of Figure 1 to emphasize that vehicle parts manufacturers are the nation’s largest manufacturing sector.

Figure 13



Though vehicle sales in this country are at an all-time high, adjustments to imports of vehicle parts will inhibit the competitiveness of domestic automobile and vehicle part producers, which depend on an affordable supply of manual-labor intensive parts and inputs to produce more complex and high technology parts in the United States. A tariff or quota on these products will cause these American-made vehicle parts to be more expensive, making them less competitive in the U.S. market and threatening their continued production in the United States.

As MEMA has shared with U.S. Trade Representative, the Department of Commerce, and Congress, vehicle parts suppliers rely on a wide range of raw and semi-finished materials, which are critical to the manufacture in the United States of finished vehicle components and systems. For example, steel and aluminum are critical materials for many vehicle parts and suppliers are already dealing with the significant impact of recent actions, which has increased costs and restricted access to these materials. The recent Section 232 tariffs imposed on imported steel and aluminum, also spurred domestic U.S. producers to increase their prices of their materials. Thus, producers have had to pay high tariffs on imports of specialty steel and aluminum materials that are either not manufactured in the U.S. or are not available in the volumes suppliers require.

Already, these tariffs have caused raw material supply shortages and a rise in the production costs of vehicle components and systems. All Tiers are feeling the pinch and are being squeezed by their material suppliers as well as by their customers with increasing demands to cut costs of finished components and systems. Additional adjustments to vehicle part imports would further distort market access and impede vehicle part suppliers' ability to source the materials necessary to make critical vehicle components and systems domestically.

5. *The growth requirements of the automobiles and motor vehicle parts industry to meet national defense requirements and/or requirements to assure such growth, particularly with respect to investment and research and development;*

Suppliers currently anticipate continued job growth in our industry for workers such as engineers, technicians, and other skilled trades and, therefore, expect to contribute heavily to the economic security of the country. This projected growth, however, assumes no adjustments to imports of vehicle parts or other significant disruptions or constraints. Consistent with the stated goals of the administration, a more competitive and thriving motor vehicle parts industry will create more American manufacturing jobs and assure

continued investment in important research and development initiatives. Indeed, MEMA members play a significant role in the R&D of the new technologies and advanced components that provide safer and more efficient vehicles to all Americans and while meeting U.S. national security requirements.

The motor vehicle sector requires long-term investments in facilities and employees, and thus depends on regulatory and market stability. The implementation of tariffs on steel and aluminum, which are important raw materials for the production of vehicle parts and finished automobiles in the United States, has already caused significant uncertainty and added costs to domestic manufacturers in the vehicle sector. The looming threat of additional tariffs or quotas on vehicle parts further jeopardizes U.S. innovation and investment in research and development.

6. The impact of foreign competition on the economic welfare of the U.S. automobiles and motor vehicle parts industry;

MEMA member companies operate in a global supply chain with both suppliers and customers inside and outside of the United States. Foreign competition and foreign investment have not impacted the economic welfare of the U.S. vehicle parts industry. To the contrary, the global supply chain model has allowed for continued growth in automobile and vehicle part production, as well as for expanding U.S. employment in our industry. Many MEMA members import less expensive low technology inputs to support the downstream production of higher technology vehicle components and finished automobiles in the United States. The availability of these affordable inputs therefore protects American workers.

Any adjustment to imports of a motor vehicle parts will harm the economic welfare of the U.S. vehicle parts industry by disrupting American manufacturing operations and increasing costs, both to U.S. manufacturers and to the U.S. defense industry. The increased costs and financial losses resulting from the proposed tariffs will place a significant harmful burden on our members and their U.S. workers. By contrast, without the imposition of additional quotas or tariffs, our member companies anticipate continued job growth in our industry for workers such as engineers, technicians, and skilled trades.

7. The displacement of any domestic automobiles and motor vehicle parts causing substantial unemployment, decrease in the revenues of government, loss of investment or specialized skills and productive capacity, or other serious effects;

Adjustments to imports of vehicle parts will also adversely impact MEMA member companies by disrupting supply chains, increasing costs, and causing displacement of domestic production. As previously noted, motor vehicle parts and systems manufacturers are among the largest employers in the United States, providing stable middle-class manufacturing jobs throughout the nation. The motor vehicle parts industry directly employs 871,000 Americans and generates an additional 1.49 million indirect jobs. In the states of Michigan, Ohio, Indiana, Tennessee, and Kentucky, which are important centers of U.S. manufacturing, vehicle parts manufacturers provide 47 percent of total direct employment.

To be clear, suppliers anticipate and expect that if there are adjustments to imports of motor vehicle parts and as lower technology inputs become more expensive and less available, the result will be job losses due to a decrease in the downstream production of higher technology vehicle components and finished automobiles. Increased production costs will also threaten U.S. businesses and their employees that depend on a reliable supply of vehicle parts to make repairs to automobiles. Adjustments to imports of motor vehicle parts could therefore lead to downsizing, layoffs, or even cause certain U.S. production to move overseas.

Some of our members have shared with MEMA that if tariffs are implemented on vehicle parts and automobiles, that the impacts will be felt almost immediately. Some of the larger companies say within one quarter; smaller companies say less than that. The first immediate action that these companies expect to implement in order to mitigate the impacts will be to cut U.S. jobs. MEMA believes that this is a minimum threshold of job loss if tariffs on imported autos and motor vehicle parts are implemented.

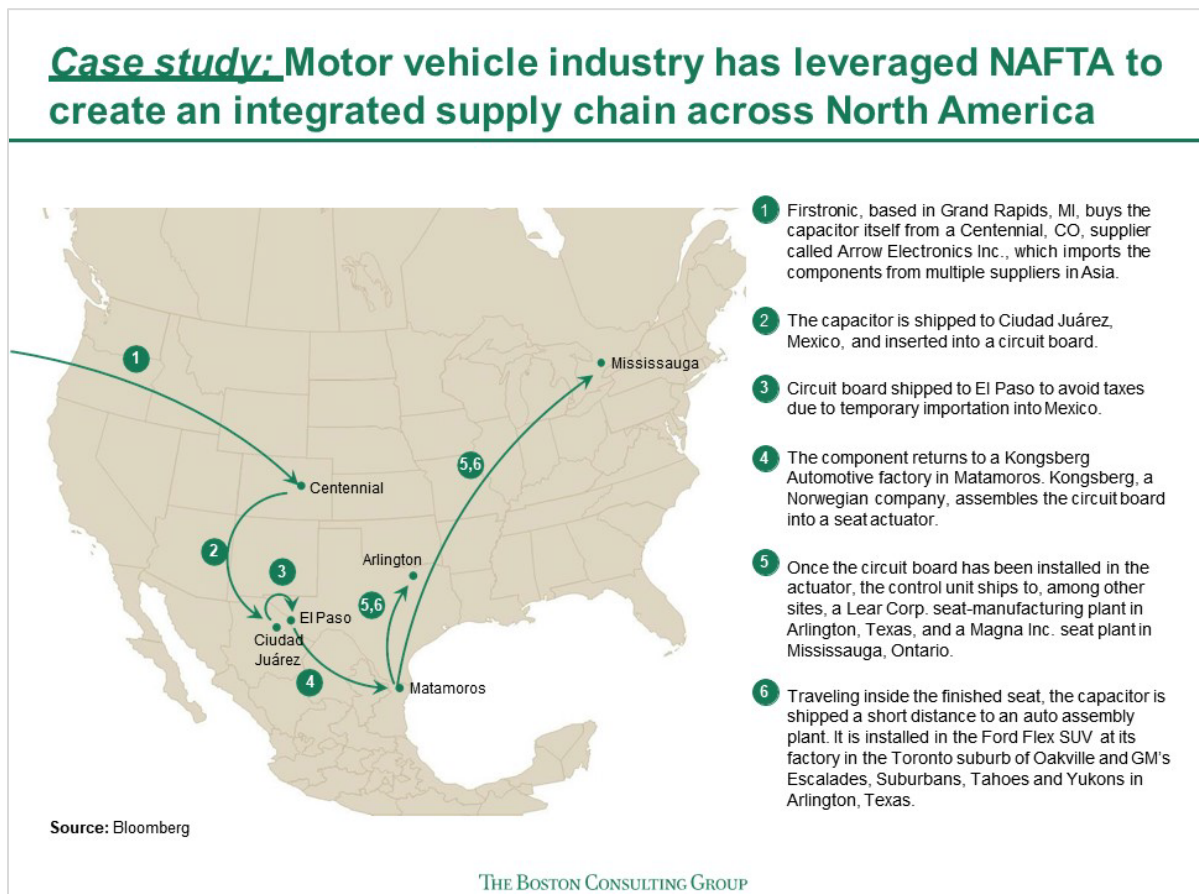
Adjustments to imports of motor vehicle parts would also likely cause declines in overall U.S. production as the cost of inputs increase and member companies are faced with the unenviable choice of passing these higher production costs on to their customers or absorbing the price increases. This in turn will cause additional job losses. Passing on the costs may not be possible because the OEM customer would seek other suppliers – potentially overseas. If the supplier absorbs the costs, however, they may be forced to delay or cancel planned U.S. investments, such as workforce training or facility expansions. Regardless, the result will be lost jobs and market share for vehicle suppliers and a less competitive and profitable U.S. vehicle industry.

8. Relevant factors that are causing or will cause a weakening of our national economy;

Free and fair trade is imperative for a strong domestic manufacturing of automobiles and motor vehicle parts. Disruption to supply chains or increases in production costs will not contribute to the national security of the United States, but rather weaken the U.S. vehicle sector and our national economy overall. Indeed, national security cannot be viewed as solely a defense industry issue. Our national security also depends on the strength of our national economy. Policies that will make U.S. manufacturers more competitive by creating jobs and cultivating capital investments will allow the U.S. to achieve greater economic security.

Parts frequently cross borders multiple times as subcomponent and materials manufacturers and suppliers (typically Tier 2 and Tier 3) feed up to the Tier 1 manufacturers for final component production and/or system integration. This is a critical concern of the supplier industry as it could increase exposure to multiple tariffs (or other restrictive measures) just to produce a single finished good. There are tens of thousands of component parts that go into a finished new vehicle. Imagine that figure multiplied by a significant exponential factor for the hundreds of thousands of subcomponents and materials that go into a finished vehicle part or system. Figure 14, which is from a MEMA-commissioned study from Boston Consulting Group regarding trade impacts on the NAFTA region, shows an example of one vehicle part's journey across multiple borders until it reaches the OEM's final assembly line.

Figure 14



Consumers and service technicians also rely on the availability of materials, parts and components needed for the automotive and commercial vehicle aftermarket to service their vehicles and commercial fleets. Further, they rely on affordable vehicle parts to repair and maintain over 260 million vehicles on our nation's roadways. Any adjustment to vehicle parts imports will likely be passed onto U.S. consumers through higher prices for the final product. Due to increased repair costs, U.S. consumers may be forced to forgo necessary repairs and maintenance. This will harm American consumers who desire affordable, convenient, and accessible services to repair and maintain their vehicle and keep it operating safely and efficiently.

In addition, MEMA member companies obtain vehicle parts from countries that are allies of the United States. Thus, it is in the U.S.'s economic and national security interest that our allies remain stable and our relationship with them secure. Countries will likely to retaliate against the U.S. for imposing adjustments to imports of vehicle parts and automobiles by implementing their own restrictions, which could detrimentally impact exports of MEMA member companies and our national economy overall. Indeed, long-standing U.S. allies like Canada, Mexico, and the EU have already announced retaliatory tariffs in response to the Section 232 tariffs on aluminum and steel. China has also imposed high tariffs in response to Section 232 and Section 301 tariffs, while India, Japan, Russia, and Turkey have notified the World Trade Organization of potential retaliation measures.

Additional retaliatory measures by these and other countries in response to adjustments to imports of automobiles and vehicle parts will further weaken the national economy.

Naturally, the industry certainly prepares as much as possible for market shifts and modest disruptions. However, forced, abrupt, drastic changes will have near and long-term effects on the industry. In terms of looking behind to see what is ahead as well as anticipating economic forecasts, please review Figures 15 and 16.

Therefore, MEMA urges the Department to consider and weigh the very serious consequences of applying unilateral, broad trade restrictive actions, which will result in increased cost of goods, decreased accessibility, and constrained supply of materials and parts that are necessary to make new vehicles and maintain existing ones.

9. The extent to which innovation in new automotive technologies is necessary to meet projected national defense requirements;

MEMA's members invest heavily in innovation and new vehicle technologies. The technological and material innovations by our member companies have resulted in safer and more efficient products for not only individual consumers, but also for the entire U.S. defense industry. As noted in our introductory comments, this industry is at a critical point in time when suppliers and our OEM customers must encourage and implement future investments in this country to produce the advanced technologies they are developing. Any adjustments to imports of vehicle parts will have the opposite effect, driving off investments, cutting skilled labor and high value jobs, and, ultimately, reducing the competitiveness of the United States and, by extension, our national security.

As MEMA has consistently stated, "manufacturers need certainty."¹⁰ They need to know what the regulations are going to be. They need to know what the market conditions are going to be. These kinds of changes and lack of certainty and clarity about our nation's overall trade policy do not provide that degree of predictability – much less certainty. Adjustments to imports of vehicle parts will further diminish opportunities for our members to invest in their U.S. operations, their employees, and in the development of new vehicle technologies, which are necessary to best protect the safety of U.S. consumers and U.S. national security.

10. Whether and, if so, how the analysis of the above factors changes when U.S. production by majority U.S.-owned firms is considered separately from U.S. production by majority foreign-owned firms;

Broadly speaking, vehicle suppliers' first preference is to source locally – as in, build where they sell and buy where they build. There are circumstances where local or regional sourcing is not feasible. When a U.S. vehicle parts manufacturer cannot find adequate sources of either specialty materials in the grades required to meet specifications or subcomponents in the volumes needed to meet customer or consumer demands, they must find alternative sources utilizing their global network of suppliers.

¹⁰ Sophie Sherry, "New tariffs could create messy uncertainty for U.S. auto parts manufacturers," MichiganRadio.org (Jun. 1, 2018) (Comments of Ann Wilson, MEMA's Senior Vice President of Government Affairs).

Figure 15

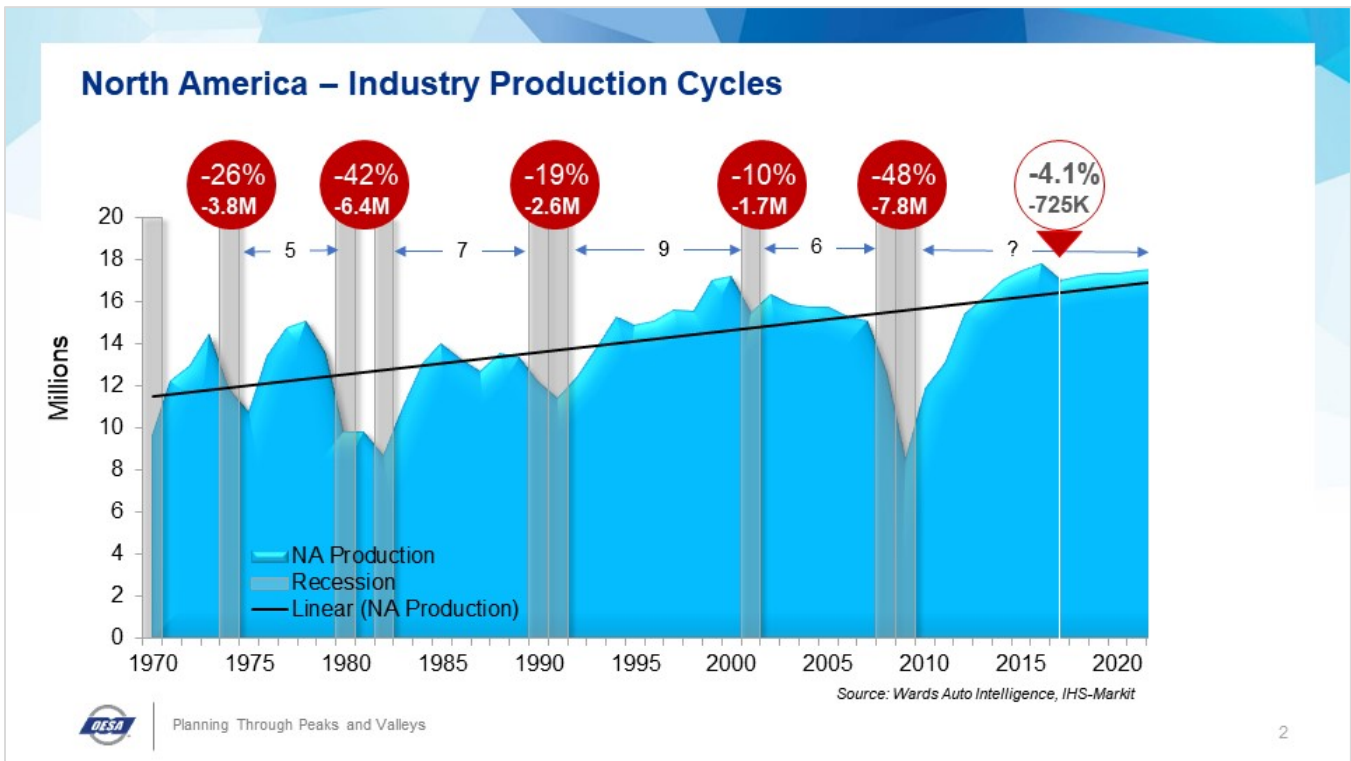
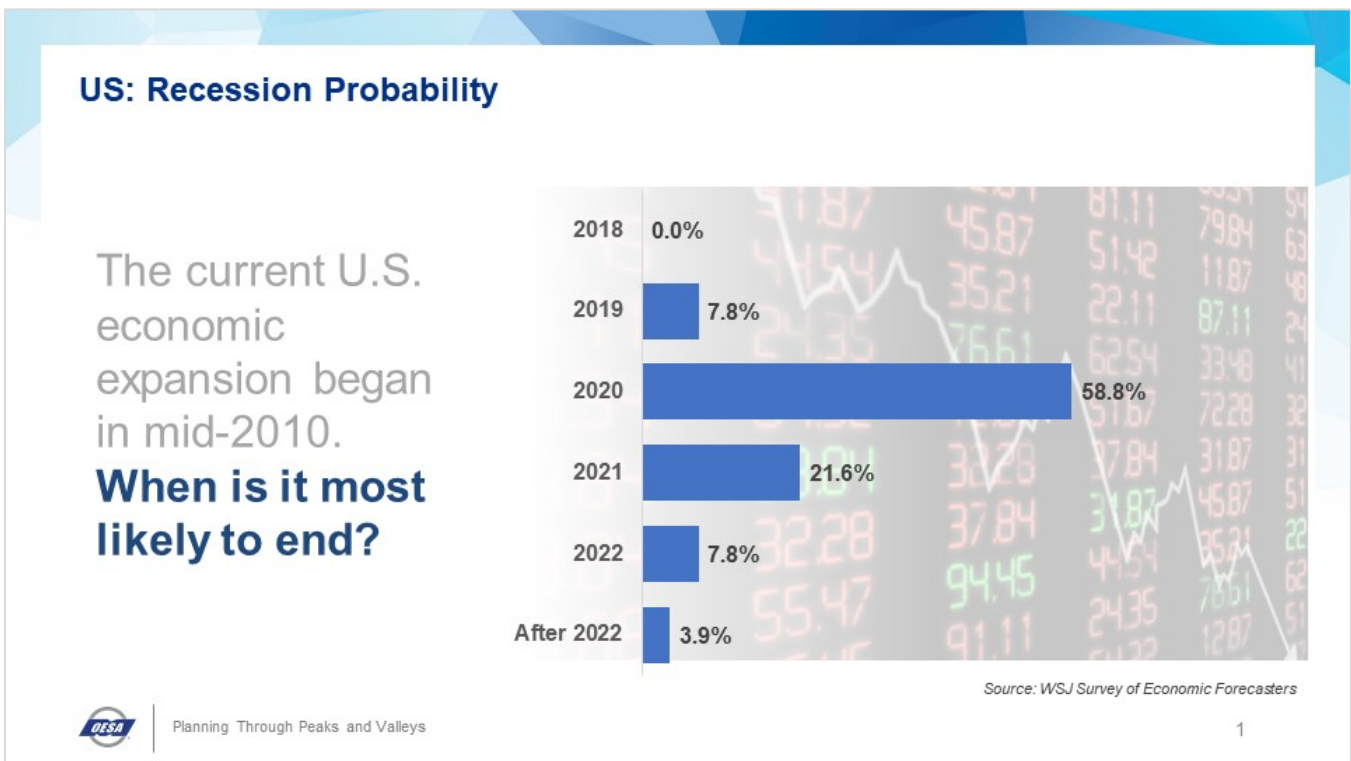


Figure 16



The interconnectedness of the vehicle industry, as illustrated in Figure 4, disruption to one will result in disruption to many. As suppliers and OEMs develop new technologies and vehicles, this interconnectedness is critical to the long-term viability of the industry. Not only for new car production, but also the aftermarket production of the components needed to maintain vehicles.

Successful vehicle parts manufacturers must have a wide range of suppliers up and down the supply chain providing them with content they need for new OE components and systems as well as for replacement parts to millions of consumers. The scale of this industry lends itself to require a wide range of sources to accommodate times when domestic supply is not available at the volumes or specifications needed to make a finished good. Domestic, local sourcing is the primary objective of suppliers. Yet, for all cases, it is impossible to do so. For the vehicle suppliers to remain competitive, and to access the volume and scope of a wide array of content needed to make hundreds of thousands of finished vehicle parts and systems, they must have accessibility to a variety of sourcing options.

11. Any other relevant factors.

MEMA is concerned about the additive nature of any adjustments to imports, which may be imposed on top of existing tariffs or duties on imports of vehicle parts, as well as the future of the North American region in which the supply chain is highly integrated and interdependent. These actions and uncertainty may distort market access and impede suppliers' ability to adequately source these critical materials and parts.

Sec. 232 Tariffs on Steel and Aluminum – As previously noted, our members prefer to build where they sell and sell where they build. Suppliers also depend on a wide variety of imported parts, subcomponents and specialty materials that may only be available from a limited number of producers and suppliers to the exact specifications and volumes needed. For example, as MEMA has commented to the Department on its Sec. 232 investigation of steel and aluminum materials., In many cases, specialty materials are only made by a limited number of steel and aluminum producers– often only one or two in the world. These highly specialized materials must be at the grade and quantity necessary to meet component specifications – which are typically for high-durability, safety-critical components (examples include fuel injectors and air bag systems). The consequences of the Section 232 tariffs on steel and aluminum have been:

- increased domestic material costs (seen as early as last spring when the administration launched its investigation),
- increased production costs for U.S. vehicle parts manufacturers and
- limited availability of critical materials needed to produce finished components.

Additionally, the Sec. 232 exclusions applications process for steel and aluminum has proved to be overly burdensome on companies. While some larger companies have the resources to dedicate to it, many small- to medium-sized companies do not. Moreover, the government resources – human and financial – to process well over 20,000 applications (and growing daily) are extraordinary.

Sec. 301 Tariffs on China Imports – Many vehicle parts and materials were also included on the U.S. Trade Representative’s list of products to be subject to additional tariffs pursuant to Section 301. MEMA’s comments to the USTR included an appendix of almost 200 HTS codes of impacted vehicle parts outside of HTS 8708 (e.g. vehicle seats HTS 9401.20), subcomponents, and materials. The Sec. 301 tariffs under this action also include some of the materials subject to the Sec. 232 steel and aluminum tariffs and are additive. Therefore, it is possible that if the administration imposes Sec. 232 tariffs on “automotive parts,” then suppliers who rely on those products under Sec. 301 could potentially two separate tariffs on the same imports.

North American Free Trade Agreement – Furthermore, the hiatus of negotiations to revised NAFTA, propagates deep concerns in the North American supply chain about the viability and overall competitiveness of the region. The progress made during negotiations to update the automotive rules of origin, while difficult, were recently beginning to bear fruit. Higher regional value content requirements would also have substantive implications for the supply chain. MEMA agrees that NAFTA needs to be updated and modernized, but it must remain a three-party agreement to enhance the competitiveness and growth of American businesses.

Investigation Evaluation Timetable –MEMA believes that future research and evaluation by the government is necessary before adjustments to imports of vehicles or vehicle parts are imposed. Uncertainty puts U.S. businesses in jeopardy. Particularly in the vehicle industry – which has very long product development cycles and where U.S. manufacturing operating at or near capacity – companies cannot adequately plan production runs if the timing of accessibility of these critical inputs is at risk or unknown.

MEMA requests that the Department carefully assess the impact of any adjustments to vehicle parts before such adjustments are imposed. By law, the Secretary of the U.S. Department of Commerce has 270 days to present the president with the Department’s findings and recommendations. The president then has 90 days to determine whether to adjust imports. All the available time should be utilized to thoroughly examine the impact of any adjustments to imports of vehicle parts on the entire U.S. economy before such adjustments are recommended and/or imposed. The government should also consider whether a more appropriate remedy is available, such as countervailing duties and/or antidumping duties against specific products from specific countries. The government has the authority to self-initiate such investigations. Reports and statements in recent weeks from the administration seem to signal that the pace of the Department’s investigation is being hastened. The impression that gives to industry is that the full-scale economic impacts and unintended consequences may not be fully considered and evaluated if the investigation timetable is compressed.

In Summary

MEMA represents the largest sector of manufacturing jobs in the U.S, employing over 871,000 Americans - up 19 percent in five years. This job growth is due to a highly interconnected global supply chain that allows U.S. vehicle parts manufacturers to remain competitive. The parts manufactured by suppliers are utilized as original equipment to vehicle manufacturers for new passenger and commercial vehicles as well as aftermarket parts to consumers and technicians for the maintenance and repair of vehicles in service and on the road today. Suppliers, and the U.S. workers they directly employ, create a total employment impact of 4.26 million U.S. jobs. The economic contribution generated by the motor vehicle parts manufacturing industry and its supported activity is \$435 billion, or 2.4 percent of U.S. GDP. Employee compensation paid to workers supported by vehicle parts manufacturing increased 22 percent over five years to \$270 billion, which is 2.8 percent of total U.S. employee compensation. There is little doubt, our industry is a critical part of the backbone of the nation's economy.

As stated in the conclusion of the preamble letter, MEMA supports actions that will address the goals of the administration on trade. Participating in negotiations and finalizing a three-party modernized NAFTA is a keystone trade policy that is critical to the multiple sectors' supply chains in the region and is especially important for the U.S. vehicle industry. Engagement with other trading partners and revisiting the TPP and T-TIP can open dialogue on addressing the administration's trade concerns, including tariffs and non-tariff barriers. Furthermore, the U.S. must be active in global forums to develop unified standards and long-term strategies. This is an especially critical time considering the rapid development of vehicle technologies that are transforming the transportation sector. The U.S. must be a leader in these innovations in order to have access to markets outside the country. MEMA also encourages the Department to work Congress to revise anti-dumping and countervailing laws.

Tariffs are taxes that will jeopardize supplier job growth and curtail U.S. investment, and hinder U.S. competitiveness. Existing tariffs on steel and aluminum materials, tariffs on Chinese imports, uncertain future of the NAFTA, and potential adjustments to imports of vehicles and vehicle parts, have a cumulative and direct impact U.S. motor vehicle suppliers and the global supply chain. End these adverse trade actions and consider alternative trade policies and instruments that will retain the development and deployment of technology innovations and will allow continued growth and investment in the United States.

MEMA urges the administration to not pursue actions against automobiles and vehicle parts. However, should the Department recommend action, MEMA urges the recommendations take a country- and product-specific approach as opposed to broad, unilateral, and import-restrictive measures on all imports of automobiles and vehicle parts. Any recommended action must account for the impact of such restrictions on the economic welfare of the U.S. vehicle industry and the overall health of our national economy.

While MEMA urges the government to remove "automotive parts" from the scope of this investigation and to not make any adjustments to imports of vehicles or vehicle parts,

if such adjustments are recommended, MEMA respectfully requests that the Department do the following:

- Exclude certain vehicle applications (e.g. commercial vehicles) from the scope;
- Exclude certain products critical to the U.S. vehicle parts manufacturing operations;
- Exempt allied countries (at minimum, Canada and Mexico); and,
- Provide for an exclusion process to exempt certain materials, parts, and component product critical to U.S. manufacturing operations.

MEMA is available to assist the Department in providing information on the impact of possible adjustments on imported vehicle parts and can survey its members to provide such information.

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APPENDIX A

State Employment Impacts*

	Direct	Indirect	Induced	Total
United States	871,831	1,487,125	1,905,154	4,264,110
Michigan	125,909	234,734	339,662	700,305
Ohio	96,238	199,649	253,659	549,546
Indiana	88,306	134,794	172,626	395,725
Tennessee	50,128	75,853	99,476	225,457
California	31,190	87,621	87,582	206,393
Illinois	38,394	70,667	94,563	203,624
Texas	33,132	79,831	87,722	200,685
Kentucky	47,658	62,733	74,376	184,767
Alabama	41,107	60,269	63,439	164,815
North Carolina	33,825	58,422	72,348	164,594
South Carolina	33,766	49,921	64,642	148,329
Pennsylvania	27,920	47,775	62,602	138,297
Georgia	23,836	39,414	55,165	118,415
Tennessee	50,128	75,853	99,476	225,457
Wisconsin	18,200	31,145	40,960	90,305
New York	19,517	30,773	36,867	87,157
Missouri	16,301	23,840	34,623	74,764
Iowa	16,114	17,699	24,965	58,778
Virginia	13,277	17,505	21,675	52,457
Florida	8,827	16,182	22,083	47,092
Utah	7,884	14,921	18,016	40,820
Arkansas	10,495	12,831	15,088	38,414
Oklahoma	8,676	11,847	15,270	35,793
Mississippi	9,706	11,044	12,937	33,687
Nebraska	8,415	10,884	13,639	32,938

	Direct	Indirect	Induced	Total
Minnesota	6,366	9,916	15,433	31,715
Oregon	4,473	9,165	10,990	24,627
Arizona	4,672	7,386	10,537	22,595
Kansas	6,270	6,487	9,621	22,378
New Jersey	4,028	6,252	10,897	21,177
Connecticut	4,958	6,851	9,122	20,931
Washington	4,687	7,688	8,549	20,924
Louisiana	3,167	5,116	6,589	14,871
West Virginia	4,069	4,132	6,421	14,622
Colorado	3,120	4,653	6,884	14,657
South Dakota	3,931	3,923	4,653	12,507
Massachusetts	2,510	3,682	5,748	11,940
Maryland	1,720	2,281	3,505	7,506
Rhode Island	1,879	1,866	2,795	6,540
New Hampshire	1,389	1,694	2,486	5,568
North Dakota	1,994	1,700	1,810	5,504
Vermont	745	768	866	2,378
Idaho	616	560	812	1,988
Maine	549	581	754	1,884
New Mexico	525	525	727	1,776
Nevada	484	619	698	1,801
Delaware	400	532	841	1,773
Montana	269	292	335	896
Wyoming	136	83	80	299
Hawaii	21	16	14	51
Alaska	30	5	4	39

* Data source: IHS Markit for the MEMA-commissioned study "The Economic Impact of the Motor Vehicle Parts Manufacturing Industry on the United States" 2016.