

STATE OF THE U.S. AUTOMOTIVE INDUSTRY

2020

INVESTMENT, INNOVATION, JOBS, EXPORTS,
AND AMERICA'S ECONOMIC COMPETITIVENESS

AMERICAN AUTOMAKERS
A A P C



Q1 2020

FOREWORD

As this year's installment of the American Automotive Policy Council (AAPC) Economic Contribution Report shows, FCA US, Ford and General Motors are driving a revival in U.S. manufacturing by investing heavily in the technologies of the future, including critical investments in research and development (R&D). In fact, each year America's automakers invest far more in capital investment and R&D than foreign automakers - totaling \$20 billion in R&D and \$2.4 billion in plant and equipment in 2018 alone - a reflection of their unwavering commitment to the United States economy and its workers. This strong foundation provides the platform for America's automakers to demonstrate their global competitiveness in markets around the world.

The long-term success of any American automotive facility - whether an assembly plant or research lab - also depends, in part, on how international public policies affect an automaker's global competitiveness. Although the U.S. automotive industry is already making an enormous contribution to the U.S. economy and its workforce, a policy environment aimed at facilitating and growing U.S. auto manufacturing and exports would help America's automakers do even more.

The U.S. exported \$142 billion worth of vehicles and parts in 2018, with motor vehicles accounting for \$53.2 billion and auto parts at \$88.5 billion - more than any other U.S. industrial sector. Despite this success, the U.S. automotive industry, which currently exports one in every five vehicles produced in the U.S., has room to improve its export performance. This is evidenced by the fact that our global competitors in Germany, Japan and Korea export more than half of their domestic vehicle production.

Policies aimed at addressing the barriers to exports that AAPC member companies face significantly increase the U.S. auto industry's contribution to U.S. economic growth and job creation. While some progress has been made, many barriers to access remain in critical automotive markets in Asia, the Middle East, and in Europe, among others - making it difficult for our automakers to compete on a level playing field. These market access issues include the lack of acceptance of U.S. auto safety standards, non-tariff barriers designed to put America's automakers at a disadvantage, and currency manipulation by some of our major trading partners.

Maintaining and preserving our automakers' ability to compete globally is also at the heart of the new trade pact with our North American partners, the U.S.-Mexico-Canada Agreement (USMCA). America's automakers are confident that the recently approved USMCA will not only help maintain the competitiveness of the U.S. auto industry, it will also serve as a blueprint for future U.S. trade agreements, allowing our automakers to thrive in the increasingly competitive global auto market.

Since the industry's restructuring a decade ago, FCA, Ford, and General Motors have thrived - with significant growth in their investments, sales, production, exports, and employment. Most of that success has been built on an integrated North American supply chain that has helped keep our automakers competitive with their counterparts in Europe and Asia. Our competitors in Europe and Asia have similarly integrated supply chains in their respective regions.

USMCA keeps these North American supply chains intact and provides critical duty-free access to two of the largest vehicle markets in the world, where our companies have been incredibly successful. In Canada, our brands now account for about 40 percent of the 2 million vehicles sold. And in Mexico, American nameplates have secured 27 percent of the 1.4 million vehicle market - a market that is expected to grow steadily in the future.

USMCA also includes two ground-breaking provisions that will lock in acceptance of vehicles built to U.S. safety standards, and prevent currency manipulation. These are the strongest such provisions ever included in a U.S. free trade agreement, and we hope they will be included in any future U.S. trade pact.

In short, American automakers are pleased with the USMCA that Congress recently approved because it will not only help the U.S. auto industry remain globally competitive, it brings certainty and predictability, which in turn will encourage automakers - foreign and domestic - to invest and expand here in the U.S.

The 2020 Economic Contribution Report describes in detail the vital role that American automakers play in our economy. To ensure that the American auto industry continues its important contributions to the U.S. economy and, by extension, to the people who depend on our industry, we also urge readers to keep in mind the importance of international trade policies in shaping the future of America's automotive industry.



Governor Matt Blunt
President, American Automotive Policy Council

ACKNOWLEDGEMENTS

This report, the sixth of its kind from AAPC, is meant to serve as a resource for policymakers, researchers, and media interested in the state of automotive manufacturing in America and what leadership in this industry means for our nation's economic competitiveness.

The bulk of figures presented here are derived from simple comparisons of each automaker's production, sales, employment, and parts purchases in the U.S. and abroad. These figures are obtained from each automaker's respective annual reports and corporate websites, as well as reports produced by several of the industry's trade groups. For more information about how automakers contribute to America's economy and our global competitiveness, visit our website (www.americanautocouncil.org) or the website of the Alliance of Automotive Manufacturers (www.autoalliance.org). For information on America's automotive parts suppliers and their contribution to America's economy, we rely on analysis produced by the Motor & Equipment Manufacturers Association (www.mema.org).

Most of the critical analysis cited in the report has been produced by The Center for Automotive Research (CAR), a nonprofit organization focused on a wide variety of important trends related to the automobile industry and society at the international, federal, state, and local levels. CAR's Industry, Labor, and Economics (ILE) group focuses on the intersection of industry and the public sector. Its Automotive Communities Partnership helps state and local officials develop public policies that sustain auto communities. We rely heavily on CAR's "job multiplier" analysis; sales, production, and employment forecasts; estimates of automaker spending on research and development and capital investment; and analysis of the reach and nature of a typical plant's supply chain. More information about the ILE, and the Automotive Communities Partnership is available at www.cargroup.org.

For data on corporate research and development, we rely on the European Commission's Joint Research Centre's 2018 EU Industrial R&D Investment Scoreboard, which contains economic and financial data for the world's top 2,500 companies, ranked by their investments in research and development. The rankings also include data on employment, revenue, and capital investment. The data are drawn from each company's financial statements. The rankings and related materials are available at <http://iri.jrc.ec.europa.eu/scoreboard18.html>.

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INTRODUCTION

This report examines the current state of the U.S. automotive sector and its share of America's manufacturing production, capital investment, innovation, and jobs.

We make four points:

- 1. Automakers contribute a great deal to America's economy, but FCA US*, Ford, and General Motors contribute more than others.¹**
- 2. Automakers are doing their share to make America more competitive.**
- 3. Every state is an "auto state."**
- 4. U.S. automakers' investments are contributing to the strengthening of manufacturing in America.**

In making these points, we explain how production, investment, and employment have rebounded since the financial crisis and are likely to grow through 2025.

We also compare the economic contributions of AAPC members — FCA US, Ford, and General Motors — with those of their competitors. While most car buyers appreciate just how many U.S. workers FCA US, Ford, and General Motors employ, this report explains why so much of their global workforce is based here.

The highly competitive nature of the industry and the enormous fixed costs that go into producing cars and trucks combine to give public policy decisions an enormous impact on which automakers grow and where auto jobs are created. The long-term success of any American automotive facility, whether an assembly plant or research lab, depends, in part, on how international public policies, including those relating to currency manipulation and automotive safety standards, affect an automaker's ability to compete internationally. AAPC and its members are optimistic about the future of auto manufacturing in America and all of the research, design, finance, marketing, and other related jobs that this industry generates.

***This report includes references to both FCA US LLC (FCA US) and Fiat Chrysler Automobiles N.V. (FCA). FCA US is the American subsidiary of its global parent company, FCA.**

EXECUTIVE SUMMARY

Automakers drive the U.S. economy.

Automakers and their suppliers are America's largest manufacturing sector, responsible for 3% of America's GDP.² No other manufacturing sector generates as many American jobs.³

They are also America's largest exporters. In fact, over the past ten years, automakers have exported more than \$1.1 trillion in vehicles and parts - nearly \$36 billion more than the next largest exporter (aerospace).⁴

Not only are they America's largest exporters, they also buy hundreds of billions of dollars worth of American steel, glass, rubber, iron, and semiconductors each year. They are also among America's largest investors in R&D. The auto sector ranks third out of the 40 largest industries, on a global basis, in R&D spending.⁵

FCA US, Ford, and General Motors are in the driver's seat.

FCA US, Ford, and General Motors produce more of their vehicles, buy more of their parts, and conduct more of their R&D in the U.S. than their competitors. As a result, they employ nearly two out of three U.S. autoworkers and operate three out of five American auto assembly plants.

Perhaps the best way to appreciate the scale of FCA US, Ford, and General Motors's investment in the U.S. is to consider what would happen if foreign automakers matched their U.S. production and parts purchases rates. The answer? To match FCA US, Ford, and General Motors's U.S. production rate in 2018, their competitors would have had to assemble more than 2.1 million additional cars and trucks in the U.S.⁶ To match FCA US, Ford, and General Motors's domestic content rate, they would have had to buy another 1.3 million more cars'-worth-of-parts here.⁷

Automakers are investing to make America more competitive.

Over the past six years alone, FCA US, Ford, and General Motors have announced investments of more than \$34 billion in their U.S. assembly, engine and transmission plants, R&D labs, headquarters, administrative offices, and other infrastructure that connects and supports them.⁸

Globally, FCA, Ford, and General Motors, together, invest nearly \$20 billion in R&D every year.⁹ Each alone spends more on R&D than some of the world's most famous technology companies.¹⁰

Every state is an “auto state.”

FCA US, Ford, and General Motors produced 5.8 million vehicles in the U.S. in 2018, with the help of 238,000 employees at 260 assembly plants, manufacturing facilities, research labs, distribution centers, and other facilities across 31 states in 128 congressional districts. They work with nearly 9,700 dealerships, which employ nearly 660,000 U.S. workers.

Nationwide, FCA US, Ford, and General Motors’s auto suppliers employ more than 871,000 U.S. workers.

Automakers’ investments are contributing to the revival of manufacturing in America.

U.S. auto sales have increased by more than 66% since the 2009 financial crisis, from 10.4 million in 2009 to 17.5 million in 2018. CAR projects sales will reach 17.7 million vehicles per year in 2025. Meanwhile, U.S. auto production doubled during that same period, from 5.6 million vehicles in 2009 to 11.1 million vehicles in 2018. U.S. auto production is expected to reach 11.7 million by 2025.¹¹

U.S. automaker and auto supplier employment increased by nearly 50% from 2011 through 2018, adding nearly 130,000 U.S. jobs. FCA US, Ford, and General Motors account for the majority of that job growth.¹²

An industry-wide move toward global model platforms has helped automakers centralize production in high functioning markets, like the U.S., which can now export the same body frame or major component to assembly facilities around the world.¹³

In a globally competitive auto industry, public policy matters.

Because producing cars and trucks is so capital-intensive, automakers must maintain scale to remain cost-competitive. For these reasons, international public policies, including those relating to automotive safety standards and currency manipulation, have an enormous impact on each automaker’s competitive status.

AUTOMAKERS CONTRIBUTE A GREAT DEAL TO AMERICA'S ECONOMY, BUT FCA US, FORD, AND GENERAL MOTORS CONTRIBUTE MORE THAN OTHERS.

Scale of the auto industry

Americans bought 17.5 million cars and trucks in 2018. Nearly 11.1 million cars and trucks were produced at one of America's 44 automotive assembly plants. Lined up end-to-end, the cars and trucks assembled in the U.S. would stretch 33,300 miles, enough to extend from the Statue of Liberty to the Golden Gate Bridge eleven and a half times.¹⁴

A typical auto plant requires between \$1 billion and \$2 billion in start-up capital investment and employs 2,000 to 3,000 workers. Each assembly plant job supports nearly seven other jobs with suppliers and in the surrounding community.¹⁵ While plant output varies, a single plant producing 200,000 vehicles each year can contribute nearly \$6 billion to America's gross domestic product.¹⁶

Each assembled vehicle contains 8,000 to 12,000 different components (and as many as 15,000 individual parts).¹⁷ More than 5,600 suppliers produce auto parts in the U.S.¹⁸ Together, these suppliers employ more than 871,000 U.S. workers.¹⁹

The components in a typical car or truck contain more than 3,000 pounds of iron, steel, rubber, and glass. Because of the size of each vehicle – and the number of vehicles made each year – automakers are also among the largest buyers of those American raw materials.²⁰

Designing each of those 15,000 parts and integrating them into a single vehicle is an enormous engineering challenge. Automakers and suppliers spent more than \$23 billion on R&D in the U.S. in 2018 – about \$1,333 per vehicle sold here.²¹

Companies that distribute, market, sell, and service those vehicles employ hundreds of thousands of other U.S. workers. FCA US, Ford, and General Motors alone rely on nearly 9,700 dealerships, which employ nearly 660,000 U.S. workers.

Automakers as job multipliers

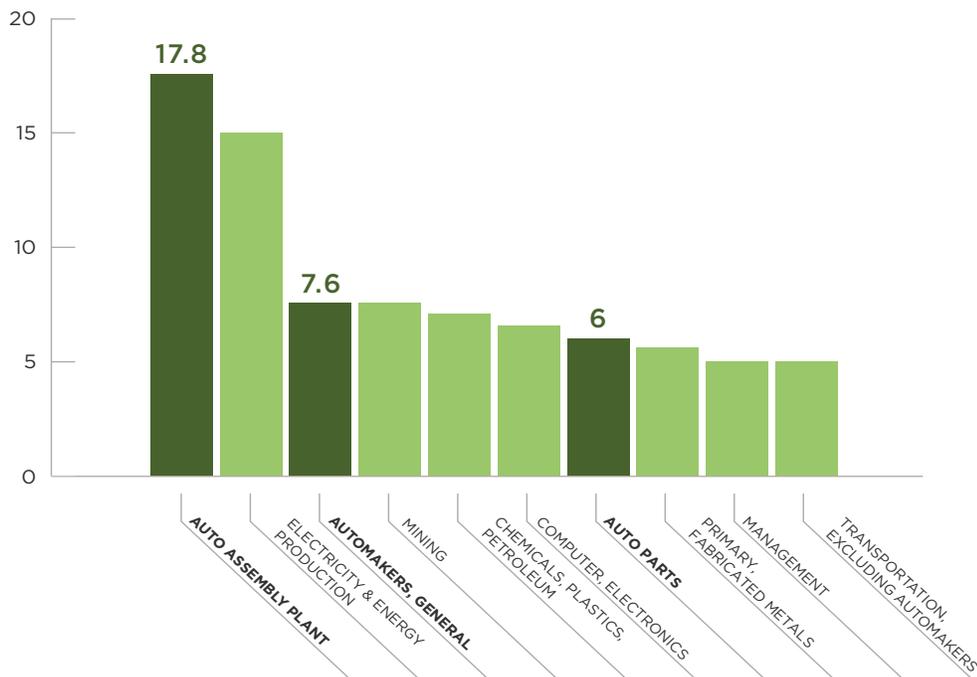
One way to measure an industry’s economic contribution is to consider the number of workers it employs through its own operations, its suppliers, and the other local businesses it supports.

Economists refer to this as a sector’s “job multiplier.” Generally speaking, a sector’s multiplier grows relative to its supply chain – the number and costs of the inputs that go into its products. Because the auto supply chain is so large, automotive jobs have the largest multiplier.

Among the leading sources on job multipliers in the U.S. is CAR, which examines how jobs at each step of the automotive value chain (from R&D to suppliers, assembly plants, and dealerships) support other jobs in the community.

CAR uses its own Regional Economic Impact Model (REMI), customized using proprietary company data on employment and compensation (by region), as well as publicly available data on capital investments. The model generates estimates of the economic contribution associated with the manufacturing operations it is testing. CAR’s REMI model has been used by automakers, their trade groups, and policymakers for more than 20 years.²²

INDUSTRIES WITH THE TOP 10 HIGHEST JOB MULTIPLIERS



FCA US, Ford, and General Motors production rate

One way to measure an automaker's investment in the U.S. is to compare its U.S. production to its U.S. sales. FCA US, Ford, and General Motors produced 5.8 million vehicles in the U.S. in 2018.

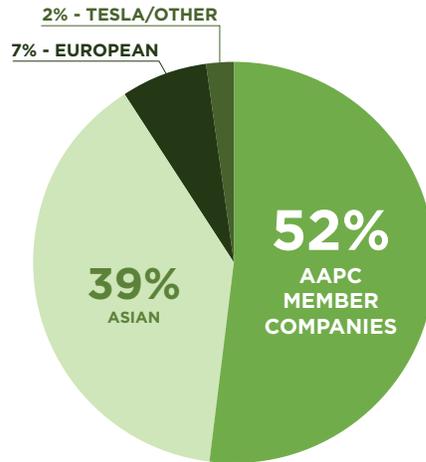
That same year, FCA US, Ford, and General Motors sold 7.7 million vehicles here. In other words, their 2018 U.S. production represented 75% of their 2018 U.S. sales.

By comparison, foreign automakers' U.S. production represented only 53% of their sales in the U.S.²³

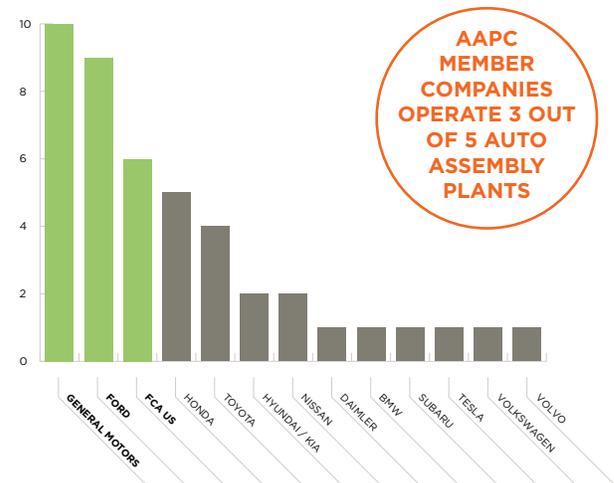
For example, Ford produced more than 1.1 million more cars and trucks in the U.S. in 2018 than Toyota or Honda, more than four times as many vehicles as Hyundai-Kia, nearly seven times more than BMW, and more than 17 times more than VW.

To support increased production, automakers need more plants. General Motors operates as many plants as Toyota, Honda, and Daimler, combined. Similarly, FCA US operates as many assembly plants as BMW, Subaru, Hyundai-Kia, and VW, combined.

FCA US, FORD, GENERAL MOTORS & EUROPEAN OEMs, AND ASIAN OEMs



TOTAL U.S. ASSEMBLY PLANTS BY OEM

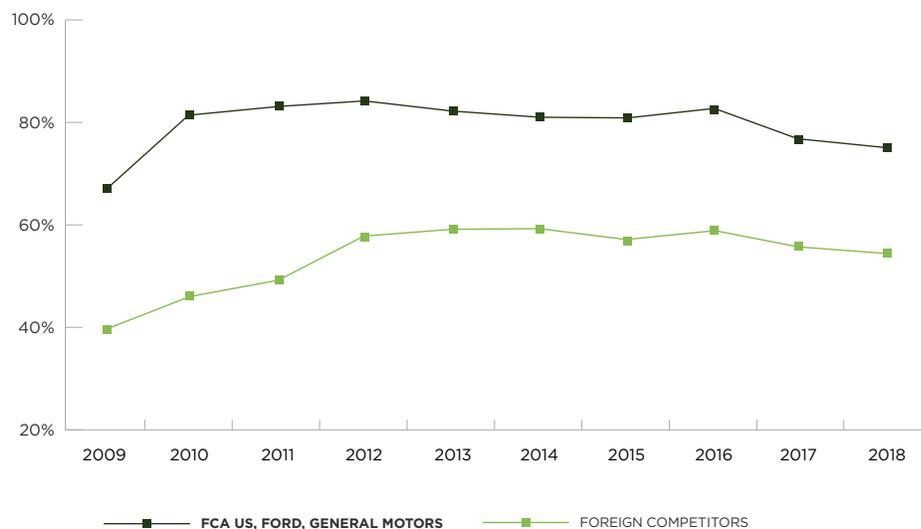


The difference: Seven new U.S. assembly plants producing a line of new cars 6,300 miles long

Because the auto industry is so big, the difference between FCA US, Ford, and General Motors's 75.2% U.S. production rate (their U.S. production as a share of their U.S. sales) and their foreign competitors' 52.9% U.S. production rate represents hundreds of thousands of jobs and billions in capital investment. In order to match FCA US, Ford, and General Motors's U.S. production rate in 2018, foreign automakers would have had to assemble more than 2.1 million additional vehicles here.²⁴ Lined up bumper to bumper, those cars would stretch more than 6,300 miles.

To assemble 2.1 million additional vehicles, foreign automakers would have to build seven plants, each employing approximately 3,000 U.S. workers and supporting tens of thousands of additional U.S. jobs.²⁵

U.S. PRODUCTION AS A PERCENTAGE OF U.S. SALES (2009-2018)

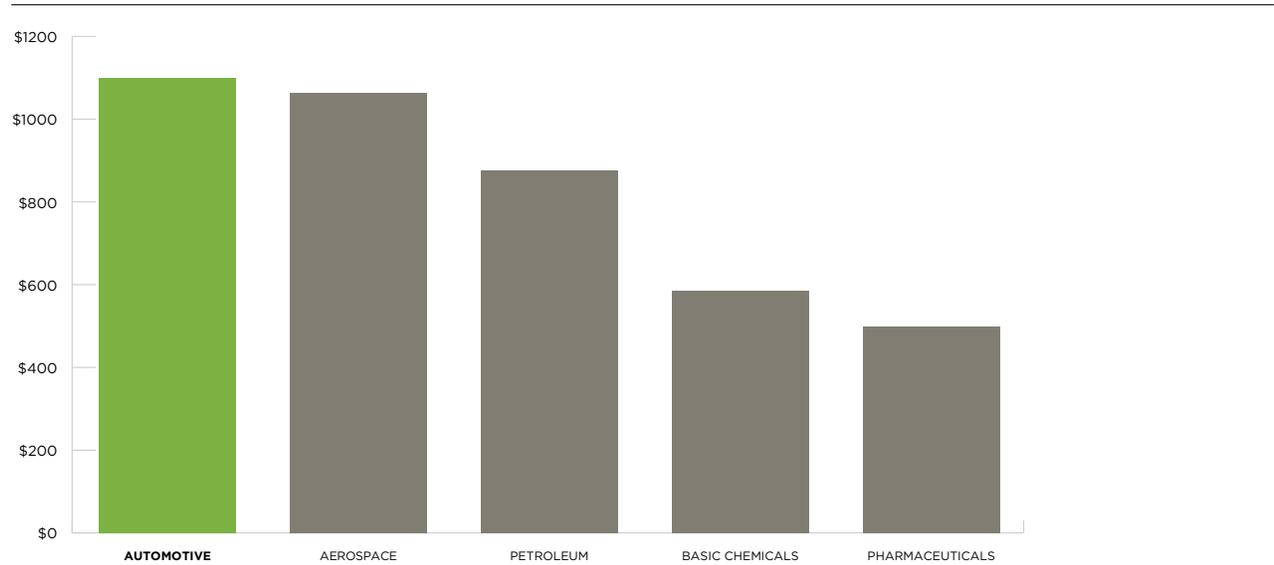


To match AACP member companies' U.S. production, foreign automakers would need to assemble 2.1 million more vehicles per year here.

America's biggest exporters

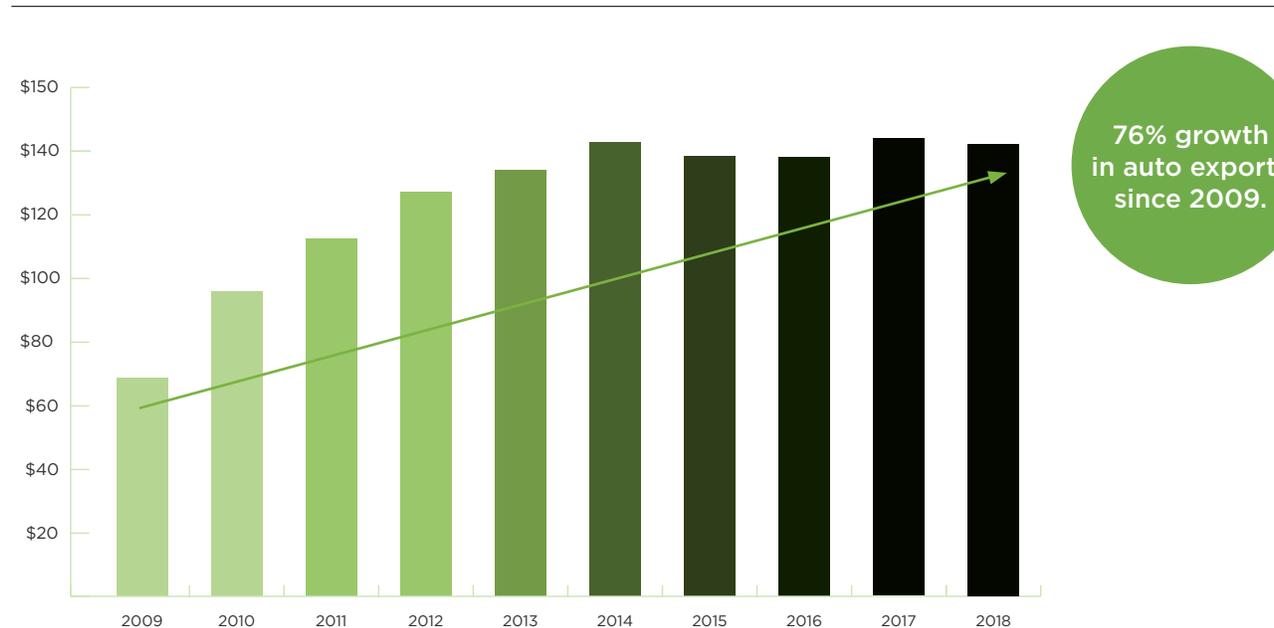
Automakers and their suppliers are America's largest exporters, beating the next best-performing industry by nearly \$36 billion in exports over the past ten years.²⁶

TOP 5 U.S. EXPORTERS, IN BILLIONS (2009-2018)



Each year, FCA US, Ford, and General Motors export about 1 million American-made vehicles to more than 100 different foreign markets.²⁷

AUTO EXPORTS, IN BILLIONS



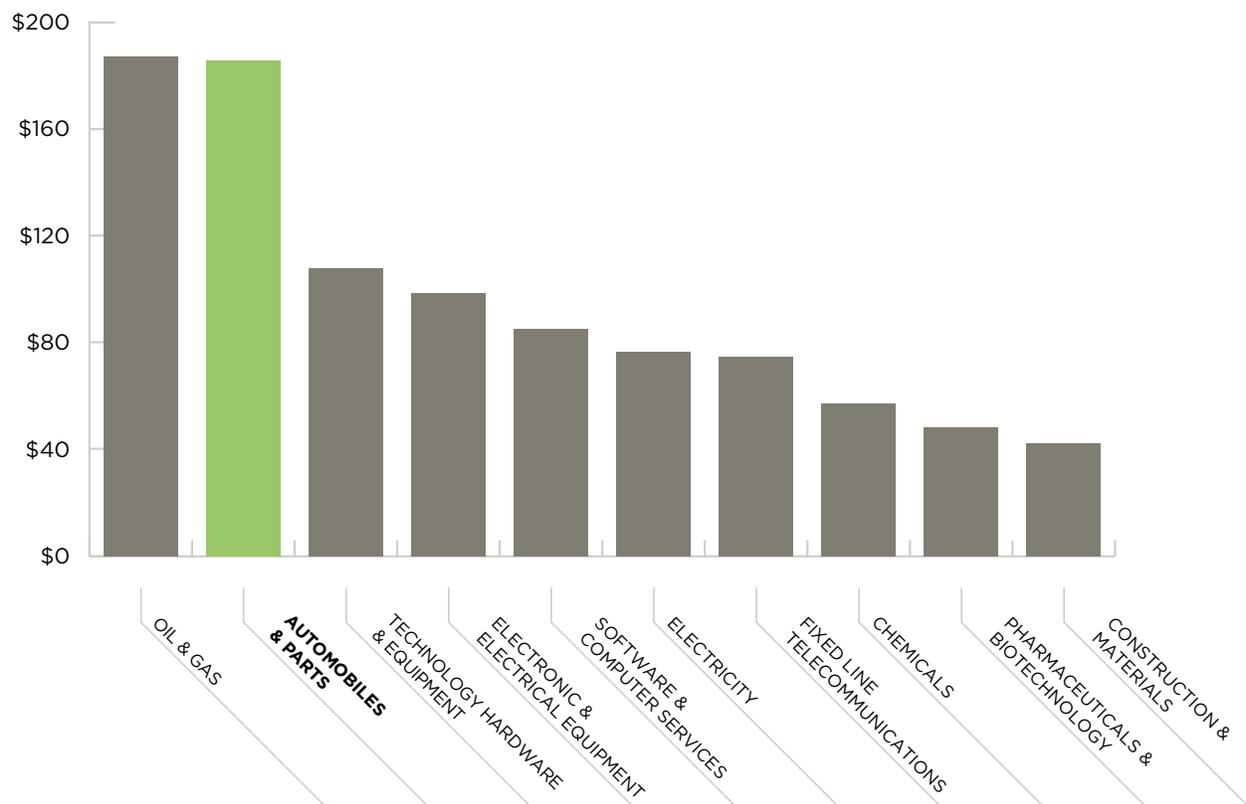
AUTOMAKERS ARE INVESTING TO MAKE AMERICA MORE COMPETITIVE

Capital investment, global

Automakers assemble approximately 85 million new cars and light trucks each year, worldwide. Building new plants and maintaining existing ones requires more than \$160 billion in investment each year.

A recent study by the European Commission examined the capital investment (plants and equipment) of 2,500 of the world's leading companies. The study found that automakers and their suppliers spent more on capital investment than electrical utilities, telecommunications companies, electronic and electrical manufacturers, chemical manufacturers, and software and computer services companies.²⁸

TOP 10 INDUSTRIES FOR CAPITAL INVESTMENT, IN BILLIONS (2017-2018)

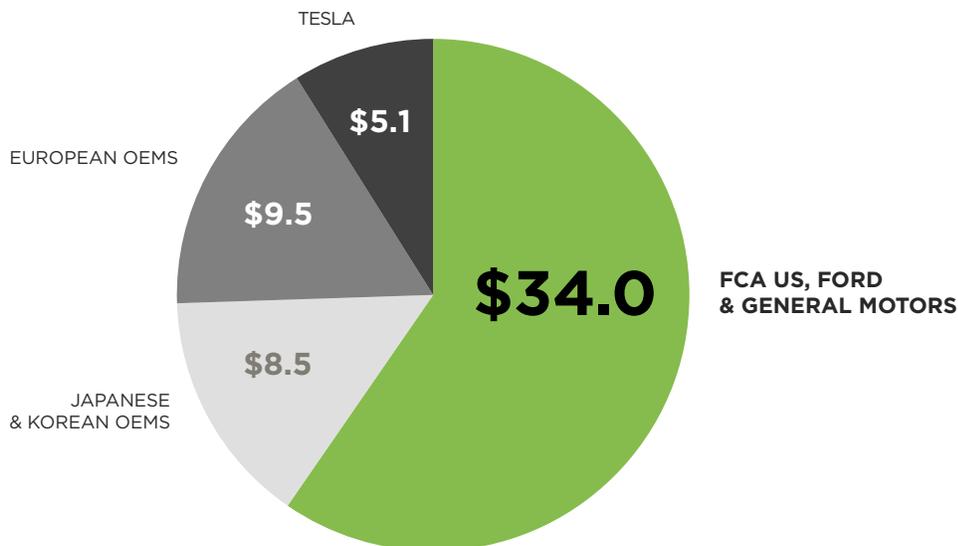


FCA US, Ford, and General Motors's capital investments in the U.S.

Domestic and foreign automakers announced investments of \$57.1 billion in their U.S. assembly, engine and transmission plants, R&D labs, headquarters, administrative offices, and other facilities from 2013 through 2018.²⁹

FCA US, Ford, and General Motors made more than \$34.0 billion of those \$57.1 billion (about 60%) in investments. Their announced investments in U.S. facilities are four times greater than all Japanese and Korean automakers combined. Together, Toyota, Honda, Nissan, Subaru, Mazda, Mitsubishi, and Hyundai-Kia announced only \$8.5 billion during this same six-year period. American automakers' investments are nearly four times greater than the combined investments of the four major European automakers competing in the U.S. (BMW, Daimler, Volvo, and VW). Together, they invested only \$9.5 billion over this six-year period.

ANNOUNCED U.S. CAPITAL INVESTMENTS, IN BILLIONS (2013-2018)

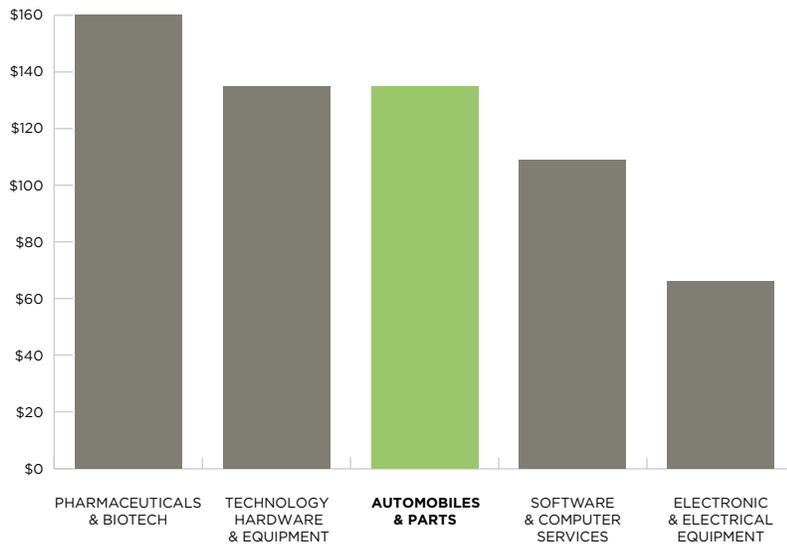


Building a new plant costs between \$1 billion and \$2 billion. Expanding a plant to allow for multiple platform production, or to take advantage of new process improvements, can cost several hundred million dollars. Both investments create jobs and help maintain America's competitive advantage, but a new plant will generate hundreds of headlines, while existing plant improvements tend to go unnoticed.

Research & development

Designing and producing autos is a massive engineering challenge, which is why automakers and their suppliers invest approximately \$130 billion in R&D each year – behind only pharmaceuticals and technology hardware.³⁰

TOP 5 INDUSTRIES FOR RESEARCH & DEVELOPMENT, IN BILLIONS (2017-2018)



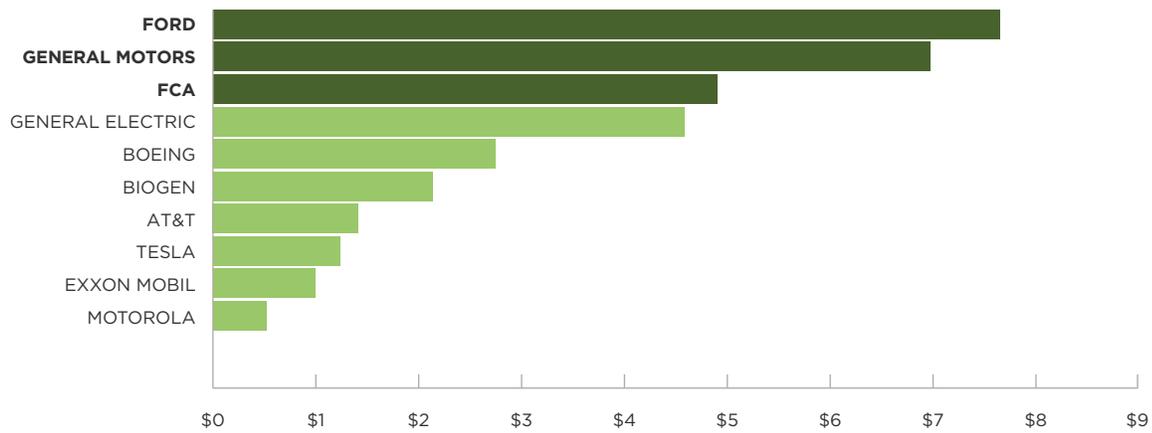
In the U.S., automakers and their suppliers invested approximately \$23 billion in 2018, representing approximately \$1,333 of R&D for each car sold here that year, on average.

To appreciate the scale and significance of automotive R&D, consider several findings from CAR's report, "Just How High-Tech is the Automotive Industry?" For example: a new smart phone contains one microprocessor, while a new car or truck contains about 60. These microprocessors manage 100 or more sensors located throughout the vehicle, connected by as much as a mile of wiring. Just as important, a microprocessor in a smart phone is expected to last about three years, while autos are expected to last 12 years or more.³¹

Over the past decade, automaker R&D has driven braking technology from anti-lock brakes (which help a driver brake faster) to electronic stability control (which keeps a vehicle moving safely when the driver has lost control), to automated emergency steering systems (which control braking, steering, and throttle functions).³²

Meanwhile, research into the use of new materials, better joining (welding, fasteners, adhesives), and fabrication could reduce a vehicle's body weight by 10% to 20% from 2014 through 2020.³³

GENERAL MOTORS, FORD, AND FCA'S ANNUAL R&D VS. OTHER LEADING INNOVATORS, IN BILLIONS (2017-2018)³⁴



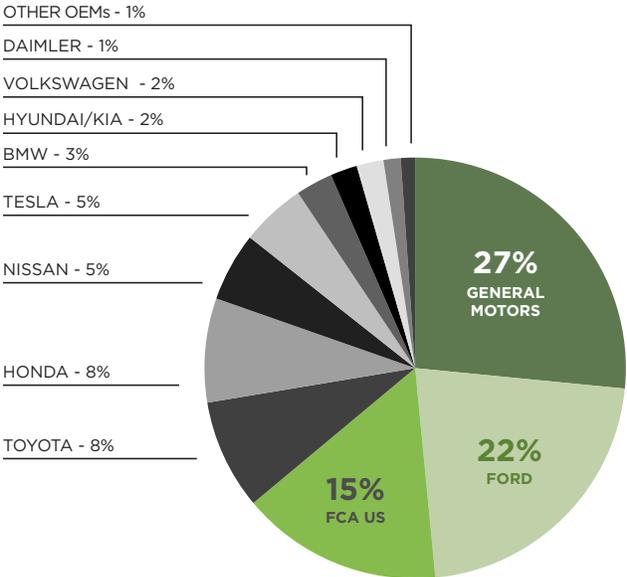
Automaker jobs

Automakers, their suppliers, their dealerships, and the local businesses that support them are responsible for more than 7.25 million U.S. jobs. No manufacturing sector employs more U.S. workers.³⁵

Together, the 15 major automakers competing in the U.S. directly employ about 388,000 U.S. workers. FCA US, Ford, and General Motors employ 238,000 of these U.S. workers.³⁶

The fact that FCA US, Ford, and General Motors account for 64% of U.S. auto jobs is remarkable, especially considering that they account for only 44% of U.S. market share.

U.S. EMPLOYMENT (YE 2018)



JOBS

Together, FCA US, Ford, and General Motors employ nearly 2 out of 3 of America’s autoworkers (238,000 jobs).

The reason for this disparity is simple. FCA US, Ford, and General Motors produce more of their vehicles here, conduct more of their research here, and buy more of their parts here. As a result, they have based nearly seven times more of their global workforce in the U.S. than their competitors.

To appreciate just how much having an automaker’s global headquarters in your country matters, consider VW, which employs about 8,000 U.S. workers (1% of its total workforce). At Ford, 43% of its workforce is based here, and that includes tens of thousands of high-paying engineering, finance, marketing, and other management jobs.

EVERY STATE IS AN “AUTO STATE”

The auto supply chain

More than 5,600 auto parts suppliers operate in the U.S.³⁷ Together, they employ more than 871,000 U.S. workers.³⁸

Approximately two-thirds of every vehicle’s parts content is produced by suppliers. For every worker employed by an automaker, two and a half other workers are employed by parts suppliers.

Many supplier jobs are in R&D. In fact, suppliers account for approximately 40% of the auto R&D conducted in the U.S. each year.³⁹

Auto suppliers are the biggest reason why every state is an “auto state.” For example, 220 U.S. auto suppliers manufacture parts for hybrid, plug-in hybrid, and electric battery vehicle components. They operate across 23 different states.⁴⁰

A state that hosts one or more assembly plants can support more than 100 different suppliers. For example, Texas and California host 106 and 160, respectively.

FCA US, Ford, and General Motors’s national footprint

For their part, FCA US, Ford, and General Motors operate 260 assembly plants, manufacturing facilities, research labs, distribution centers, and other facilities, directly employing 238,000 U.S. workers. These facilities are located across 31 states and 128 congressional districts. The automakers’ nearly 9,700 auto dealerships employ nearly 660,000 additional U.S. workers.

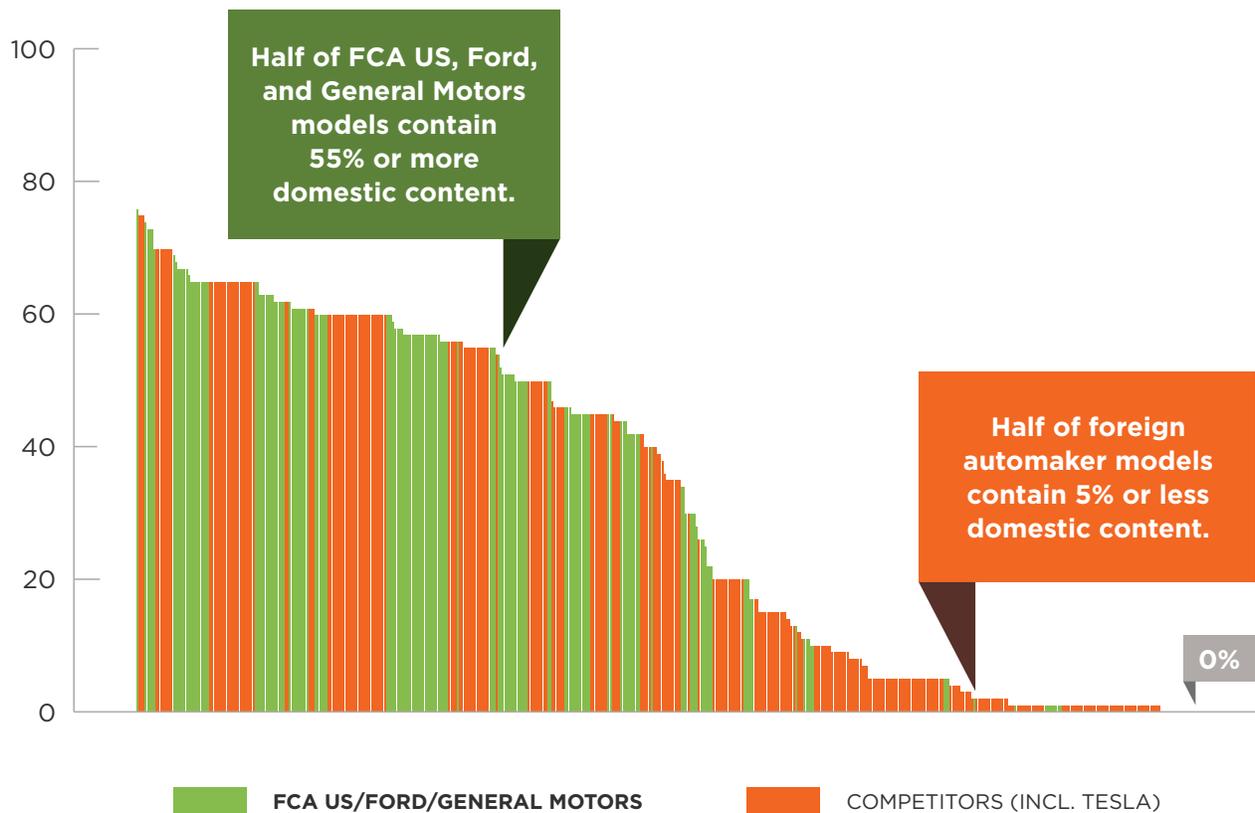
A steep curve on “domestic content”

Automakers sell more than 550 different models in the U.S., containing anywhere from 0% to 76% “domestic content” (American- or Canadian-made parts, as defined by the American Automotive Labeling Act (AALA)).

While American auto suppliers produce hundreds of billions of dollars worth of parts each year, they are used in a comparatively small portion of American vehicles. Only one in four models contains more than 55% domestic content. Nearly half of them contain 10% or less domestic content.

From a domestic content perspective, cars and trucks offer a steep curve. FCA US, Ford, and General Motors dominate the top. More than half of their models contain 55% or more domestic content. By comparison, more than half of their competitors’ models contain 5% or less domestic content. Some foreign manufacturers score better than others. For example, Honda’s domestic content matches its domestic competitors, while even the U.S. assembled models from BMW contain 35% or less domestic content.

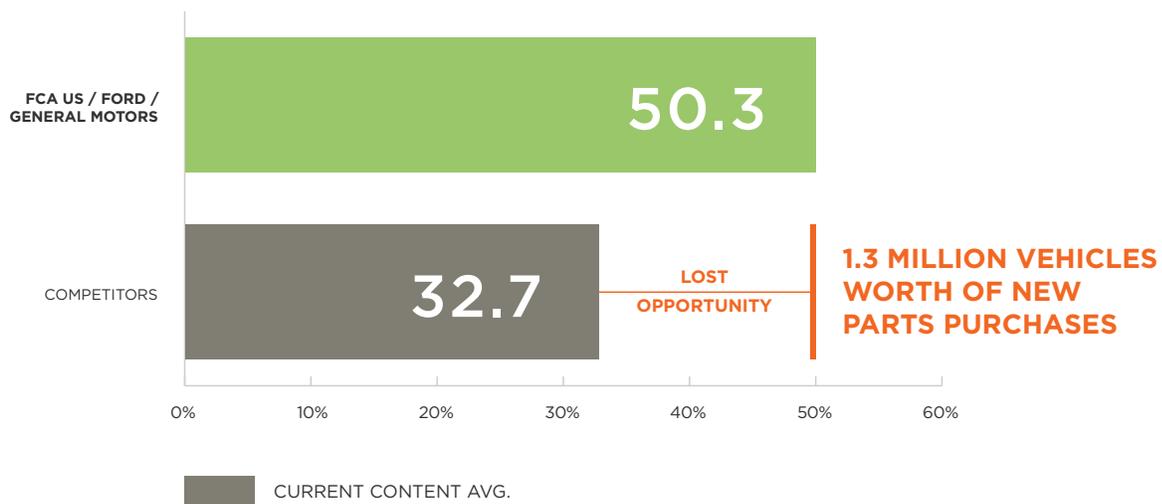
2018 AALA SCORES BY MAKE AND MODEL



The difference: Dozens of new U.S. supplier plants producing 1.3 million cars'-worth-of-parts

To appreciate the scale of this difference in domestic content, consider what would happen if foreign automakers matched FCA US, Ford, and General Motors's record. FCA US, Ford, and General Motors's fleets contain 50% domestic content (on a sales-weighted basis).

TO MATCH FCA US/FORD/GM PARTS PURCHASES, COMPETITORS WOULD HAVE HAD TO PURCHASE 1.3 MILLION VEHICLES'-WORTH-OF-DOMESTIC-PARTS



Using this same calculation, our competitors' fleets contain only 33% domestic content. If our competitors increased their use of domestic content to match FCA US, Ford, and General Motors's content rate (from 33 to 50%), they would need to insource the equivalent of nearly 1.3 million cars'-worth-of-parts.

OUR INVESTMENTS ARE CONTRIBUTING TO THE REVIVAL OF MANUFACTURING ACROSS AMERICA

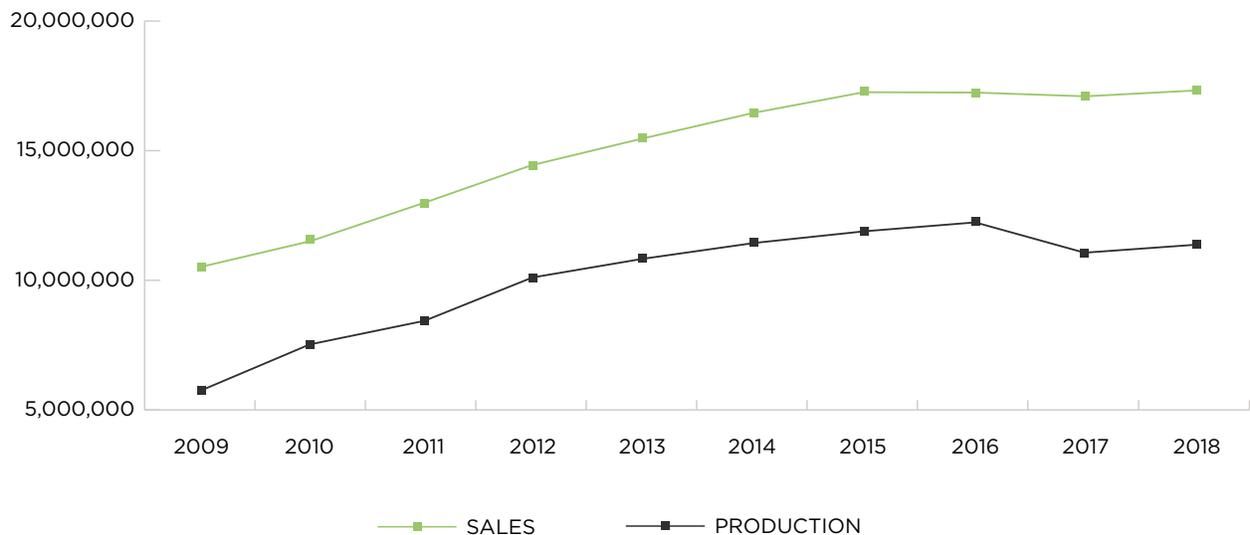
Auto sales, production, and employment rebound

The auto sector was hit hard by the Great Recession and the resulting credit crunch. As auto sales rebounded, the sector contributed greatly to the ongoing recovery. Approximately 10% of economic growth from the second quarter of 2009 to 2013 was produced by the auto sector.

U.S. auto sales have increased by 66% since the financial crisis (from 10.4 million in 2009 to 17.4 million in 2018). CAR projects sales will exceed 17.7 million vehicles per year in 2025.⁴¹

During that same period, U.S. auto production has more than doubled (from 5.6 million vehicles produced in 2009 to 11.1 million vehicles in 2018). U.S. auto production is expected to reach 11.7 million by 2025.⁴²

REBOUND IN U.S. SALES AND PRODUCTION (2009-2018)



Increased production in the U.S.

As the economy recovered from the Great Recession, FCA US, Ford, and General Motors dramatically increased their U.S. vehicle production, while foreign automakers also invested here.

Throughout the automotive industry, automakers are reducing their research, development, and production costs by building their models from a smaller number of body platforms. They are also centralizing production of those platforms. In such cases, more efficient and innovative markets, like the U.S., can gain volume, by exporting the same body frame or major component to assembly facilities around the world.⁴³

Recent investment announcements and their implications for American manufacturing

Last year, FCA US, Ford, and General Motors announced more than \$17 billion in new capital investment in U.S. plants and equipment from 2020 through 2024 (on top of nearly \$6 billion in previously pledged investments). FCA US pledged \$4.5 billion in new investment in 2019. Ford pledged \$4.92 billion in new investment (on top of \$1.10 billion previously pledged). General Motors pledged \$7.70 billion in new investment.

These investments are critical to maintaining America's leadership in auto research, design, manufacturing, and assembly. For example, FCA US will invest in five of its Michigan plants, including building an all-new assembly plant in Detroit. This investment will result in the creation of 6,500 new jobs. For example, Ford's new investments will support production of a new, all electric F-150 pickup truck. Ford will also retool and upgrade its Wayne, Michigan, assembly plant to produce autonomous vehicles (starting in 2021). General Motors's investments will help it introduce 20 new all electric models by 2023.⁴⁴ These new investments will also promote the U.S. market's leadership on the transition to all electric vehicles and autonomous vehicles.

SOURCES

- 1 This report includes references to both FCA US LLC (FCA US) and Fiat Chrysler Automobiles N.V. (FCA). FCA US is the American subsidiary of its global parent company, FCA.
- 2 Center for Automotive Research (CAR), *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to Michigan Economy* (March 2013). Hill, Kim, Bernard Swiecki, Deb Menk, Joshua Cregger, and Michael Schultz. Page 25.
- 3 CAR, *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to Michigan Economy* (March 2013). Hill, Kim, Bernard Swiecki, Deb Menk, Joshua Cregger, and Michael Schultz. Page 25.
- 4 United States Department of Commerce, International Trade Administration (2019).
- 5 Motor & Equipment Manufacturers Association, *Driving the Future* (2019).
- 6 Result calculated by multiplying foreign automakers' 2018 U.S. sales by American automakers' 2018 U.S. production as a percent of sales rate.
- 7 Result calculated by multiplying foreign automakers' 2018 U.S. sales by American automakers' sales-weighted domestic content average for the 2018 model year.
- 8 CAR analysis (2014).
- 9 European Commission Joint Research Centre, *2018 EU Industrial R&D Scoreboard*.
- 10 European Commission Joint Research Centre, *2018 EU Industrial R&D Scoreboard*.
- 11 CAR, *U.S. Light Vehicle Sales and Production Forecast 2018-2025* (April 2018).
- 12 CAR, *U.S. Light Vehicle Sales and Production Forecast 2018-2025* (April 2018).
- 13 For a more complete examination of this trend, see CAR's *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to Michigan Economy*.
- 14 Assumes autos are 190 inches each (approximate size of popular mid-sized sedans).
- 15 For a more complete analysis of "job multipliers" see reports from CAR's Sustainability & Economic Development Strategies group.
- 16 CAR, *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to the Michigan Economy*. Hill, Kim, Bernard Swiecki, Deb Menk, Joshua Cregger, and Michael Schultz (March 2013).
- 17 CAR, *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to the Michigan Economy*. Hill, Kim, Bernard Swiecki, Deb Menk, Joshua Cregger, and Michael Schultz (March 2013).
- 18 CAR, *The Effect on the U.S. Economy of the Successful Restructuring of General Motors*. McAlinden, Sean P., and Debra M. Menk (2013).
- 19 Motor & Equipment Manufacturers Association, *Driving the Future* (2019).
- 20 National Science Board, *2016 Science and Engineering Indicators* (February 2016).
- 21 The National Science Foundation (NSF) estimates U.S. auto industry R&D totaled \$13.2 billion in 2012. Since that time, global auto R&D has increased by 9.9% each year. Assuming U.S. automotive research matched the global rate, baseline auto research totaled \$23.3 billion in 2018. New entrants into the automotive industry (including Apple, Google, Lyft, Tesla, and hundreds of start-ups) represent billions more in auto R&D.
- 22 CAR, *The Potential Effects of the 2017-2025 EPA/NHTSA GHG/Fuel Economy Mandates on the U.S. Economy*. McAlinden, Sean P., Yen Chen, Michael Schultz, and David J. Andrea (September 2016).
- 23 In 2018, foreign automakers sold 9,595,692 cars and trucks in the U.S. and produced 5,071,363 cars and trucks here, for a U.S. production rate of 53%.

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- 24 To match FCA US, Ford, and General Motors's 75% sales-weighted U.S. production rate, foreign automakers would have had to produce 2,142,727 more cars and trucks here (moving from 5,071,363 out of 9,595,692 sold, to 7,214,090 out of 9,595,692 sold).
- 25 Assuming each plant produced 300,000 vehicles, it would require 7.14 plants to produce 2,142,727 vehicles. Plants capable of producing 300,000 vehicles per year employ 3,000 to 4,000 workers. New plants require \$1 to \$2 billion in capital investment.
- 26 United States Department of Commerce, International Trade Administration (2019).
- 27 IHS Markit analysis (2019).
- 28 European Commission Joint Research Centre, *2018 EU Industrial R&D Scoreboard*.
- 29 CAR analysis (2014).
- 30 European Commission Joint Research Centre, *2018 EU Industrial R&D Scoreboard*.
- 31 CAR, *Just How High-Tech Is the Automotive Industry?* Hill, Kim, Bernard Swiecki, Debra M. Menk, and Joshua Cregger (January 2014).
- 32 CAR, *Just How High-Tech Is the Automotive Industry?* Hill, Kim, Bernard Swiecki, Debra M. Menk, and Joshua Cregger (January 2014).
- 33 CAR, *Just How High-Tech Is the Automotive Industry?* Hill, Kim, Bernard Swiecki, Debra M. Menk, and Joshua Cregger (January 2014).
- 34 European Commission Joint Research Centre, *2018 EU Industrial R&D Scoreboard*.
- 35 Alliance of Automobile Manufacturers, *U.S. Auto Industry Fact Sheet* (2019).
- 36 Automaker employment (both in the U.S. and globally) is obtained from their respective annual reports and corporate websites, as well as reports from the trade groups they support. FCA data is used for their global employment, while FCA US data is used for their U.S. employment.
- 37 CAR, *The Effect on the U.S. Economy of the Successful Restructuring of General Motors*. Sean McAlinden and Deb Menk (2013).
- 38 Motor & Equipment Manufacturers Association, *Driving the Future* (2019).
- 39 Motor & Equipment Manufacturers Association, *Moving America Forward* (2013).
- 40 CAR, *Economic Contribution of the Ford Motor Company Michigan Assembly Plant to the Michigan Economy*. Hill, Kim, Bernard Swiecki, Deb Menk, Joshua Cregger, and Michael Schultz (March 2013).
- 41 CAR, *U.S. Light Vehicle Sales and Production Forecast 2018-2025* (April 2018).
- 42 CAR, *U.S. Light Vehicle Sales and Production Forecast 2018-2025* (April 2018).
- 43 CAR, *Contribution of the Automotive Industry to the Economies of All Fifty States and the United States*. Hill, Kim, Deb Menk, Joshua Cregger, and Michael Schultz (January 2015).
- 44 Capital investment totals provided by CAR. Investment details provided by AAPC member companies.

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