

A photograph of an automotive assembly line. Several car chassis are visible, with their hoods and rear trunks open. The factory floor is yellow, and the ceiling is filled with complex metal structures and overhead lighting. The scene is brightly lit, showing the intricate details of the manufacturing process.

DUFF & PHELPS

Protect, Restore and Maximize Value

INDUSTRY INSIGHTS

Automotive – Winter 2019

Highlights

The automotive industry slowed in the second half of 2018 as global sales, earnings and stock prices stalled due primarily to economic uncertainty and declining consumer confidence globally after a strong opening half to the year. The automotive industry continues to evolve as electrification gains a stronger foothold globally and autonomous vehicle development remains a focus. Late in the year, North American automakers implemented drastic restructuring plans to eliminate less profitable sedans from their lineups and focus on larger vehicles.

Global light vehicle sales declined 0.5% in 2018 relative to 2017 driven by the unexpected decline in China. In the U.S., light vehicle sales grew 0.6% in 2018 to 17.3 million units.¹ In December 2018, U.S. light vehicle sales reached 17.51 million units at a seasonally adjusted annual rate (SAAR), in line with recent historical periods.²

Interest rates on consumer installment loans for new automobiles reached 5.30% in November 2018 in the U.S., up from 4.81% in November 2017 and the 5.05% mark in August 2018, creating further headwinds for the industry.³

In 2018, auto production and sales in China declined 4.29% and 2.8%, respectively, compared to 2017. Despite this decline, commercial vehicle production and sales increased 1.7% and 5.1%, respectively.^{4,5}

In Europe, decreases in new passenger registrations occurred throughout Q4 2018, which culminated in a 8.4% decline in December 2018 relative to December 2017.⁶

M&A activity in the automotive sector continued to slow in the second half of the year. Deal count in 2018 consisted of 33 deals transacted, compared to 80 in 2017.⁷

Public company equity performance in the Automotive Original Equipment Manufacturer (OEM), Dealer, Aftermarket and Supplier sectors all trended significantly downward in 2018, especially throughout the second half of the year.⁷

2018 BY THE NUMBERS



Global light vehicle sales decreased by 0.5% in 2018 compared to 2017.¹

For the year, China's auto sales fell 1.7% with 27.7 million units sold.^{1,4}

In 2018, U.S. light vehicle SAAR was 17.29 million units, up from the 17.19 million mark in 2017.²

New passenger registrations increased by 0.1% in Europe in 2018, despite an 8.4% decline in December.⁶

Declines of 22.7%, 14.1% and 10.3% in Duff & Phelps' market-weighted indexes of Automotive OEMs, Dealers and Suppliers respectively, while Aftermarket Parts and Repair increased 1.2% over Q3 2018.⁷

U.S. EV sales surpassed 2% of total vehicles sold in Q3 2018 for the first time ever.⁸ EVs in China reach 6.3% market share in December 2018.⁹

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Year in Review: Auto Sales Trends



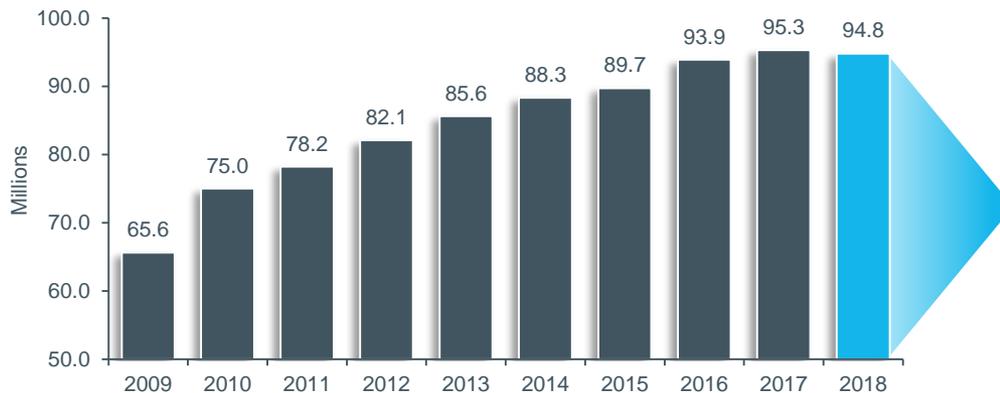
Auto Sales Trends

At the outset of 2018, analyst estimates pegged the auto industry to suffer a downturn in the U.S. and worldwide. Chinese sales met the negative outlook with light vehicle sales declining 1.7% in 2018.¹ However, the U.S. auto market defied expectations, notching 2018 as the fourth consecutive year with over 17 million vehicles sold. Automakers reported generally flat volume sales for the year, including Ford and GM. Fiat Chrysler was an exception, increasing sales ~9%, driven by strength in the Jeep brand. Nissan suffered the largest decline, as sales fell ~6%.¹⁰

The continuing trend towards larger vehicles was evidenced by sales of crossovers, SUVs and trucks (~50% of global sales) increasingly dominating car sales (~33%).¹¹ Industry experts anticipate trucks and SUVs to capture 75% of U.S. vehicle sales by 2025.¹² This trend is matched globally as SUV sales have risen 87% since 2013 while car sales have dipped 8%.¹³ While the Toyota Corolla and Honda Civic continue to pace the world as the first and fourth most popular vehicles, the top 5 was rounded out by the Ford F-Series (#2), Toyota RAV4 (#3) and the VW Tiguan (#5) – all larger vehicles.¹⁴

European sales remained flat as a weak end to the year drained all growth. Western Europe had a decline of 0.3%, which was supported by a 0.5% increase in the considerably smaller Eastern European market.¹ Marred by uncertainty in the major markets of the U.K., Italy and Germany, car sales fell 6.8%, 3.1% and 0.2%, respectively.¹⁵

Global Vehicle Sales



2018 Global Best-Selling Vehicles (Units)

1.	Toyota Corolla	 TOYOTA	1,181,445
2.	Ford F-Series		1,080,757
3.	Toyota RAV4	 TOYOTA	837,624
4.	Honda Civic	 HONDA	823,169
5.	Volkswagen Tiguan		791,275

Year in Review: GM and Ford's Elimination of Sedans



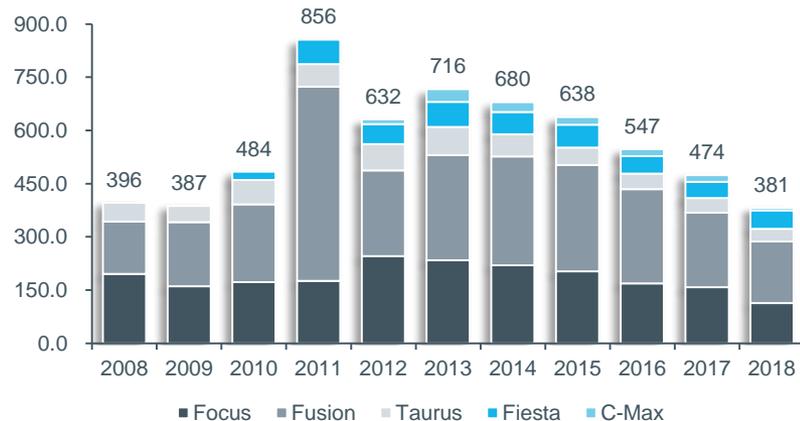
Market Trends Propel Strategic Changes for Ford and GM

American market trends have indicated that today's predominant car buyers, millennials and baby boomers, have a preference for larger vehicles including SUVs, trucks and crossovers.¹⁶ Iconic models for General Motors and Ford are being discontinued as part of major restructuring efforts for both companies to focus on the most profitable and growing platforms.

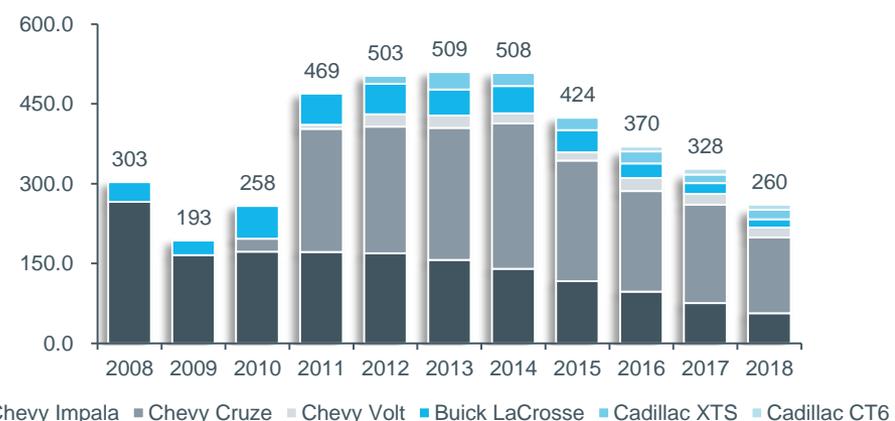
In April, Ford announced that some of their most well-known sedans – the Focus, Fusion, Taurus, Fiesta and C-Max – would be phased out in favor of their larger, better selling trucks and SUVs. It is reported that Ford loses money on every Fiesta, Focus and Fusion sedan sold, and eliminating these sedans should help Ford elevate profit margins to 10%, more in line with GM and other major players.¹⁷ Surviving lines include the Ford Mustang, F-150 and Escape. The company also plans to transition towards electric vehicles by 2022 as a part of a five-year, \$11 billion restructuring plan.¹⁸

GM's restructuring announcement came in November to backlash as the company announced the closure of five plants in the U.S. and Canada and a reduction of 15% of its workforce – both in the plants and at the executive level. As part of this restructuring, GM announced a slew of sedans would be discontinued, including the popular Chevrolet Cruze which, for a time, seemed to reboot GM's position in the sedan market before sales began declining in recent years.¹⁹ The reception has been particularly bitter in Oshawa, Ontario – the location of one plant GM is closing – where Unifor, Canada's auto workers union, has fought the closure but to no avail.²⁰

Ford Discontinued Models – U.S. Sales (Thousands of Units)



General Motors Discontinued Models – U.S. Sales (Thousands of Units)



Year in Review: Impact of Tariffs and Trade



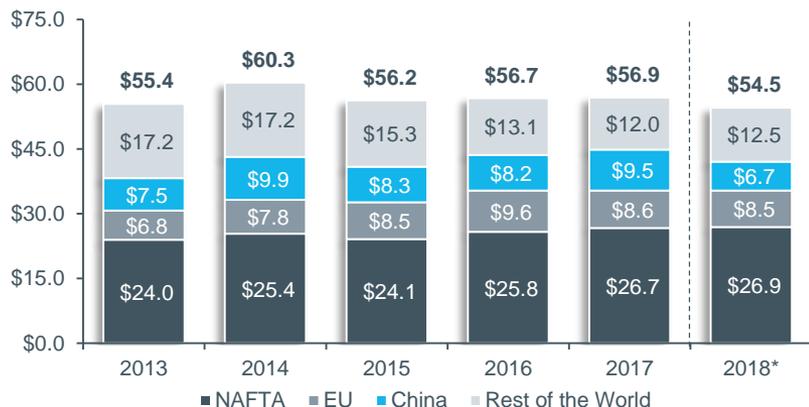
Trade and Tariffs in 2018

The U.S.-China trade war began in early 2018 and was elevated in July when China imposed significant tariffs of 40% on imports of U.S. vehicles.²¹ Ford has estimated the tariffs will cost the company \$1 billion annually and will impact U.S. production. With this increased cost, analysts expect auto prices to rise if the issues are not resolved as Ford and other auto manufacturers will push the cost onto consumers.²² Impacting not only U.S. brands, but also U.S.-manufactured vehicles of German brands including BMW and Mercedes-Benz, international pressure mounted to resolve the issues before the elevated costs hit car buyers.²³

In response to the pressure, China and the U.S. held a summit on December 2 in an effort to resolve or stall trade issues. Negotiations resulted in China reducing auto tariffs to 15% while the U.S. agreed to not follow through with the threat to increase. These provisions opened a 90-day window, beginning January 1, with hope the tariff issue can be resolved.²⁴

While the U.S.-China trade war continues, the U.S. was successful in renegotiating NAFTA in 2018, resulting in the signing of the USMCA on November 30. The U.S. sought to reduce the export of labor and manufacturing to Mexico and bring jobs back to the U.S.²⁵ Notable updates include that 75% of parts must be manufactured in North America, up from the previous NAFTA deal, and 40% of every vehicle must originate from \$16 per hour wages – two policies that are expected to benefit American and Canadian auto workers.²⁶

U.S. Vehicle Exports (\$ in Billions)



U.S. – China Trade Deficit (\$ in Billions)



Source: Office of Transportation and Machinery – U.S. Exports of New Passenger Vehicles and Light Trucks, October 31, 2018.

* Annualized based on data through October 2018.

Source: "Trade in Goods with China." U.S. Census Bureau

Year in Review: Impact of Autonomous Vehicle Crashes



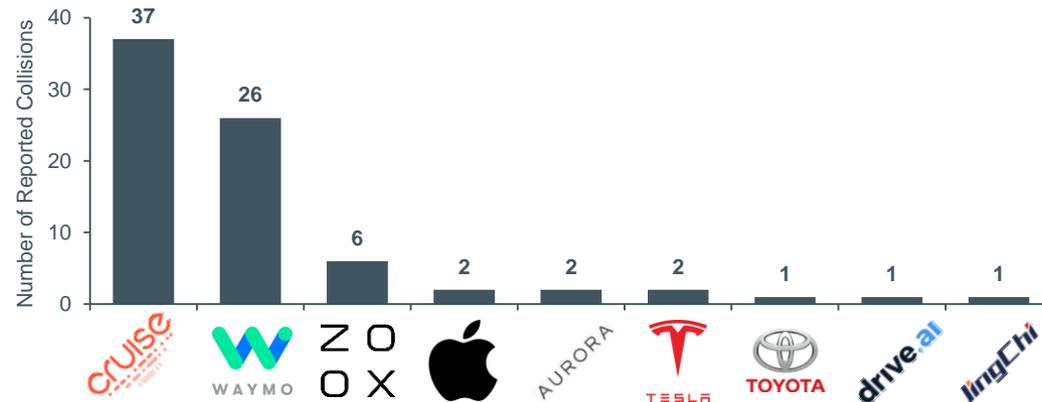
Self-Driving Car Crashes

With continued progress in autonomous vehicle development, U.S. states have been pushing legislation for road testing self-driving cars. Two epicenters are California and Arizona where GM, Apple and Google are sharing the road with new, innovative players such as Uber, Zoox and Tesla.

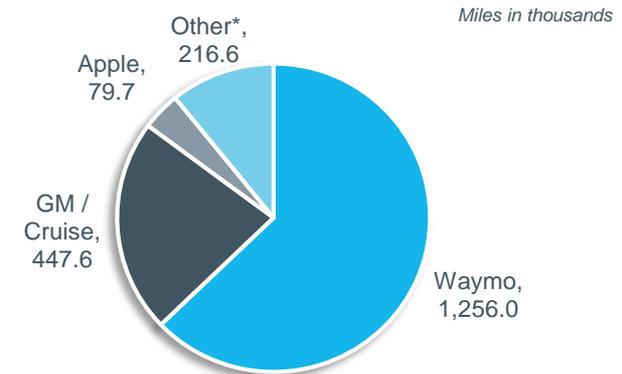
2018 hit tech and auto enthusiasts with the truth that autonomous vehicles are still far away from being widely available in showrooms. Collisions may have led to investigations and speculation that regulators may be cautious in allowing widespread road testing.²⁷ After testing in Arizona for two years, multiple collisions resulted in the indefinite suspension of Uber's testing license.²⁸ In December, the company's testing ban was lifted in Toronto, where it had been in place since March,³² after reviewing safety standards and mandating increased driver control.²⁸

General Motors' foray into the autonomous vehicle market came through the acquisition of Cruise in 2016 in a \$580 million deal with the goal of eventually integrating Cruise's technology into GM's existing fleet.^{7,30} GM's Cruise division has received investment and support from private investors as well as from Honda, which invested \$2.75 billion in October 2018, despite having the highest number of collision reports in California in 2018.^{30,31} In 2018, Cruise logged 447,600 miles on California roads, primarily in San Francisco. In comparison, Waymo (Google's autonomous vehicle company) logged over 1.2 million miles over the same period with testing based in San Jose.³¹ Waymo's total testing eclipsed the 10 million mile threshold through 2018.

California Self-Driving Car Collisions in 2018



California Autonomous Test Miles Driven in 2018



*Other includes: Aptiv, Baidu, Bosch, Drive.ai, Nissan, Zoox

Source: California Department of Motor Vehicles.

Source: "California's Self-Driving Car Reports are Imperfect, but They're Better than Nothing", The Verge. February 13, 2019

Year in Review: Electric Vehicle Volume Growth



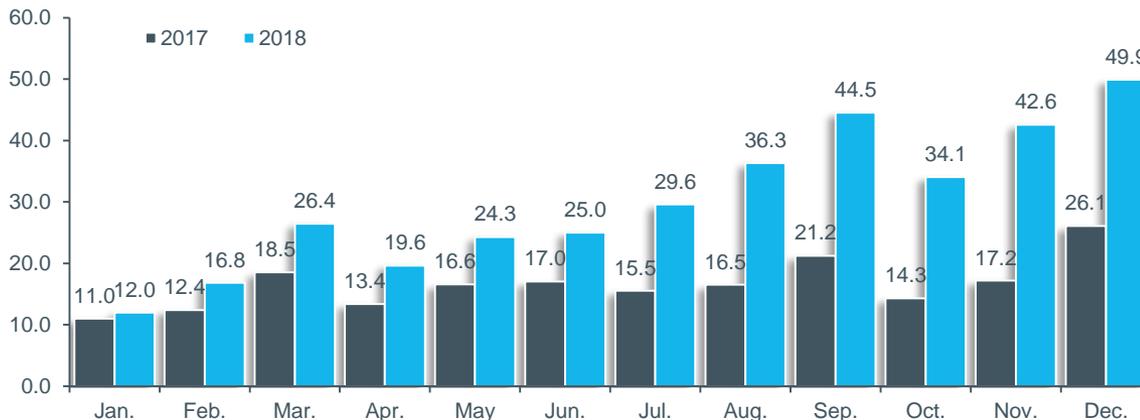
Electric Vehicle Trends

Since 2015, Tesla has led U.S. electric vehicle sales, which continued in 2018, with three cars in the top five EVs ranked by sales. In December, Tesla sold 25,000 Model 3s, accounting for over half of U.S. EV sales for that month. Tesla accounted for 53% of electric vehicles sold, followed by the Toyota Prius Prime with 7.6% of sales in 2018. Other brands made strides as electric vehicles outside of the Model 3 had sales increase 11%.³³ This clip bests the overall U.S. market and is likely driven by new mass-market EVs such as Kia's Soul and Niro. Luxury manufacturers also had strong years with the BMW i8's sales doubling in 2018 while Jaguar debuted the I-Pace, an electric version of the F-Pace.³⁴

China continued to lead the way in electric vehicle sales with 1.3 million vehicles sold in 2018, triple the size of the U.S. market.³⁵ Due to environmental restrictions in Chinese cities, registering a gas vehicle in China has become increasingly difficult, paving the way for EVs. In response, sales have spiked and demand outpaces the supply, despite the drop in overall vehicle sales.³⁶

Overall, global EV sales were up 80.8% in 2018 as consumers indicated a desire to purchase more cost-efficient and environmentally-friendly cars.³³ As the cost of owning and charging electric cars declines, economic incentives have encouraged many people to switch.³⁷ Still a subset of the market, EV sales hovered around 2% of overall light vehicle sales toward the end of 2018, a position double historical standards. In progressive states such as California, sales have eclipsed 10% of total market share in the second half of 2018, a trend that is expected to continue.⁸

U.S. Electric Vehicle Monthly Sales (Thousands of Units)



2018 Best-Selling Electric Vehicles (Units)

1.	Tesla Model 3		139,782
2.	Toyota Prius Prime		27,595
3.	Tesla Model X		26,100
4.	Tesla Model S		25,745
5.	Honda Clarity PHEV		18,602

Year in Review: Notable Transactions



Notable M&A Transactions

While M&A activity declined in the auto sector in 2018, there were several notable transactions, the largest of which are highlighted below.

Johnson Controls (JCI) sold its Power Solutions business to Brookfield Business Partners for \$13.2 billion. The Power Solutions business is a worldwide producer of lead-acid batteries for automakers and aftermarket distributors. The transaction allows JCI to focus on its core Building Technologies and Solutions business.³⁸

GKN was acquired via a hostile takeover by Melrose with the bid representing a 40% premium over the offering price. Melrose, a turnaround specialist, plans to strip down the management team and divide up the company, seeing more value through a sum-of-the-parts approach.³⁹

Fiat Chrysler (FCA) sold Magneti Marelli to Calsonic Kansei for €6 billion in an effort to focus on assembly operations. The combination of Calsonic Kansei and Magneti Marelli creates the seventh largest global automotive components supplier, a company that FCA has negotiated multi-year supply agreements with.⁴⁰

Duff & Phelps performed the fairness opinion on JCI's \$13.2 billion divestiture of their Power Solutions Business to Brookfield Business Partners.

2018 Largest Automotive Transactions

Announced	Target	Acquirer	Enterprise Value	EV / Revenue	EV / EBITDA	Announced	Target	Acquirer	Enterprise Value	EV / Revenue	EV / EBITDA
8-Jan-18			£8,100	0.84x	9.3x	19-Jul-18	 a portfolio company of 		\$1,060	2.23x	NA
10-Apr-18			\$5,400	0.7x	7.9x	22-Oct-18	 a division of  FIAT CHRYSLER AUTOMOBILES	 a portfolio company of 	€ 6,200	1.17x	6.9x
29-May-18			€ 770	0.43x	7.0x	13-Nov-18	 Power Solutions business		\$13,244	1.66x	7.9x

2019 Outlook: Global Sales Expectations



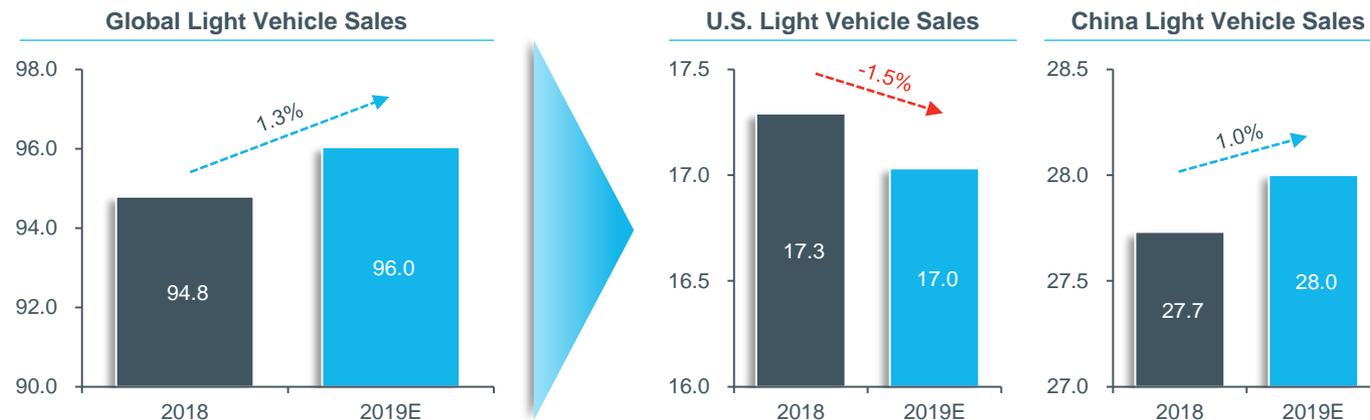
2019 Forecasted Car Sales

The global economy enters 2019 with some market volatility fueled by uncertain international relations between the U.S. and China. Brexit is also hanging over the EU with Britain having no set plan of exit with the deadline looming. This all drives an overall lack of consumer confidence and a hesitancy to make large purchases, including cars.⁴¹

In the U.S., the National Automobile Dealers Association has forecasted a decline in sales to 17 million vehicles sold, representing a 1.5% decline. In 2018, expectations were for light trucks and SUVs to contribute the majority of sales, up to 70% of all vehicles, a growing trend that is expected to continue in 2019 with roughly 12 million units expected to be sold. Analysts estimate that the 2018 sales figure was slightly elevated as a result of the tax cuts that encouraged more spending and note that the drop-off in 2019 will likely be amplified by this one-time spending spike.⁴²

Coming off a year of sales decline in China where sales fell 1.7% with a notable drop-off in the second half of the year, some estimate that this could be the end of the elevated growth that has been experienced for the past few decades. There are conflicting opinions with regards to the Chinese light vehicle market as some analysts expect the worst year in history⁴³ while some analysts estimate that 2019 will see either flat growth or a 1% increase.^{44,45}

2019 Light Vehicle Sales Projections (Millions of Units)



Global LV sales are expected to increase slightly with an anticipated decline in the U.S. buoyed by an improved year in China.

Sources: LMC Automotive Public Data. "Annual Retail Sales Fall for Second Consecutive Year but Consumer Expenditure Reaches Highest Level Ever." J.D. Power. December 21, 2018. Goh, Brenda; Sun, Tilei. "Automakers in China Brace for Another Bumpy Ride after Tough 2018." CNBC Markets. January 13, 2019.

2019 Outlook: UAW Negotiations

United Auto Workers (UAW) Labor Negotiations

The UAW looks to move past a difficult 2018, which saw former senior officials charged with accepting bribes from Fiat Chrysler executives, and into a pivotal 2019 with major negotiations ahead and a new management team in place. The new management team is led by longtime UAW member Gary Jones who begins his four-year term negotiating with the Big 3 Detroit automakers.⁴⁶

As sales have stalled and wages grew, the Big 3 increased Mexican manufacturing, and ultimately decided to shut down multiple U.S. assembly plants as the companies announced major restructurings. With labor pacts at each of these automakers set to expire in the year, Jones and the UAW are tasked with supporting their members in this tumultuous market and gaining favorable terms despite the major corporate overhaul. The UAW does have the benefit of the support of the U.S. government through President Trump, who is looking for a political win, in part by restricting vehicle imports from Mexico and keeping auto manufacturing jobs in the U.S.⁴⁷

The UAW is also looking for a win by unionizing Tesla's workforce after joining an unfair labor practices complaint on behalf of the workers.⁴⁷ This comes as Tesla announces a Gigafactory in China as well as a surprise announcement of the cutting of 7% of its workforce in an effort to reduce the cost of the Model 3.⁴⁸

In addition, Jones will look to guide the UAW through an investigation into a scandal that saw UAW officials fined and sentenced for pocketing bribes in order to push forward negotiations.⁴⁹



UAW Membership (Thousands)



Union membership has grown slowly since the recession in 2009, but is expected to stall as U.S. assembly plants close.

2019 Outlook: Mobility Trends – Electric Vehicles, Autonomous Vehicles and Ride-Sharing Applications

Future Auto Trends

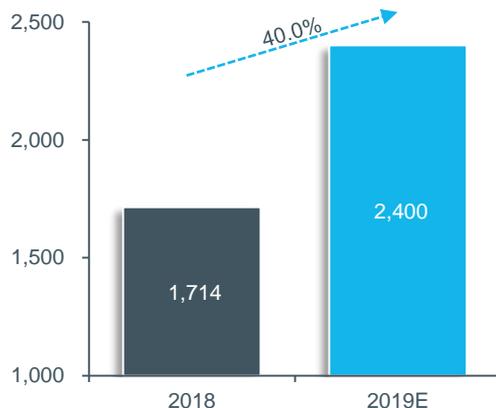
Recent advancements have been made in cars and transportation with strides in electric vehicles, the first autonomous cars hitting the road for testing and ride-sharing becoming increasingly popular. These trends enter 2019 with continued high expectations for each of these advancements.⁵⁰

Electric vehicles have gone from being a small subset of the industry to a burgeoning market after gaining market despite fluctuating oil prices. China is expected to dominate this market with 1.5 million units in 2019 while northern Europe projects to follow with 0.5 million. North American sales, led by Tesla, are expected to grow 4.9% to 425,000 units sold in 2019.⁵¹

Autonomous cars are ranked on a technology scale up to 5 (fully autonomous, no human involvement) with some vehicles achieving Level 2 (the car controls the steering and speed for short periods). While Level 3 vehicles (autonomous in most situations) are currently being tested, Level 2 advancements in 2019 include lane departure warnings and adaptive cruise control as standard features.⁵⁰

Led by Uber and Lyft, ride-sharing is expected to grow at a 17.3% CAGR through 2023. These two companies are expected to IPO in 2019 with values up to \$120 billion and \$20 billion, respectively, with the goal of converting popularity into major tech and auto innovators.⁵² In Asia, where Uber has yet to gain a foothold, Grab, the equivalent market leader, received \$1 billion from Toyota to research autonomous driving.⁵³ In Europe, the major leader has been the BlaBlaCar, a ride-sharing app for long, cross-border trips. With a 60 million person userbase, its popularity dwarfs Uber's 10 million.⁵⁴

Global EV Sales (Thousands of Units)



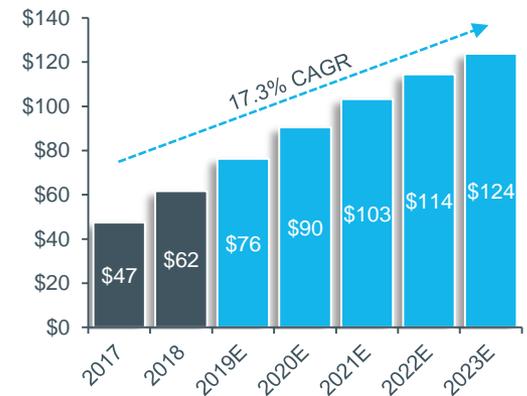
Sources: "Monthly Plug-In EV Sales Scorecard." InsideEVs. January 3, 2019. "BloombergNEF Expects 40% Growth in Global EV Sales in 2019." Green Car Congress. January 16, 2019.

2018 U.S. Semi-Autonomous Vehicle Sales (Units)

1.	Mercedes-Benz E-Class		45,481
2.	BMW 5 Series		43,937
3.	Volvo XC60		32,689
4.	Tesla Model X		26,100
5.	Tesla Model S		25,745

Source: Vincent, John. "Cars that are almost Self-Driving." U.S. News Best Cars. October 23, 2018. CarSalesBase – U.S. Car Sales Data. January 16, 2019.

Global Ride-Hailing Revenue (\$ in Billions)



Source: "Ride Hailing." Statista.

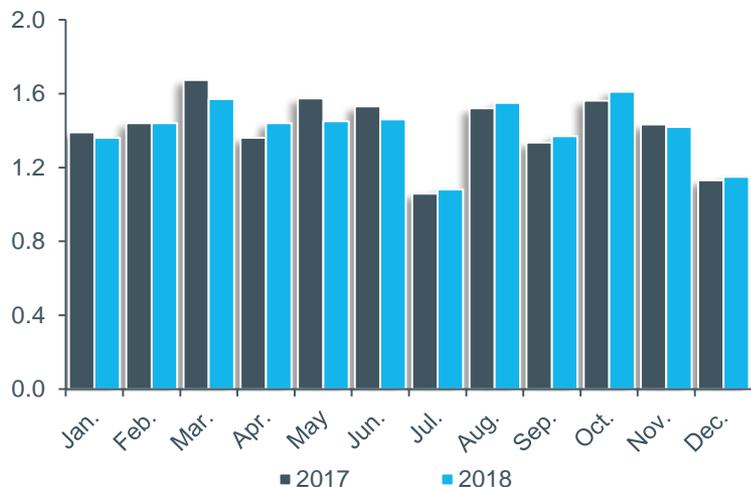
North American Automotive Landscape ● ○ ○

While automotive sales fell in December, sales experienced a modest uptick in 2018, with the industry achieving its fourth straight year above 17 million vehicles. North American automobile manufacturers' light vehicle production rose slightly in 2018, in line with sales increases.⁵⁵ U.S. auto inventories have been steadily declining over the past few years down to a low of 708.8 thousand units in November 2018 compared to 910.7 in November 2017 and a five-year high of 1.3 million units in March 2014. This represents the lowest inventory levels since immediately following the recession in mid-2009.

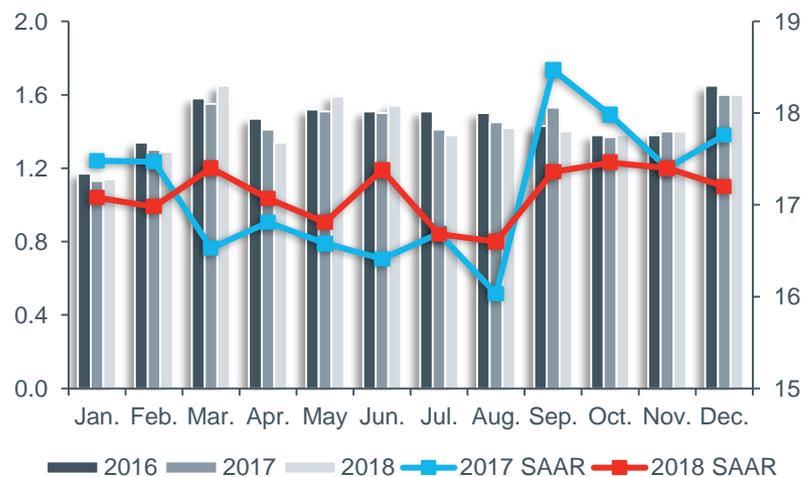
Major news revolved around Ford's announcement to cut sedan production while adding five new SUVs to its lineup by 2020.⁵⁶ GM followed with a plan to cease production of poor-selling sedans in an effort to focus operations on its best-selling vehicles and on electric vehicles.⁵⁷

The trade war between the U.S. and China began to impact the industry as China announced a 25% tariff on U.S.-made goods, including large passenger cars and motorcycles, in response to President Trump's push to place a 25% tariff on steel and aluminum imports that would affect Chinese suppliers.^{58,59} China's automobile tariffs significantly impact several OEMs that rely on exporting to China. Tesla, BMW's South Carolina facility, Daimler's Alabama factory and Ford may be negatively impacted, pending a quick resolution in the 90-day negotiation window opened January 1, 2019.^{58,60}

Monthly North American Light Vehicle Production (Units)



Monthly U.S. Light Vehicle Sales (Units)



Source: "North American Light Vehicle Production." WardsAuto Public Data.

Note: Seasonally Adjusted
Source: "U.S. Light Vehicle Sales." WardsAuto Public Data.

Chinese Automotive Landscape

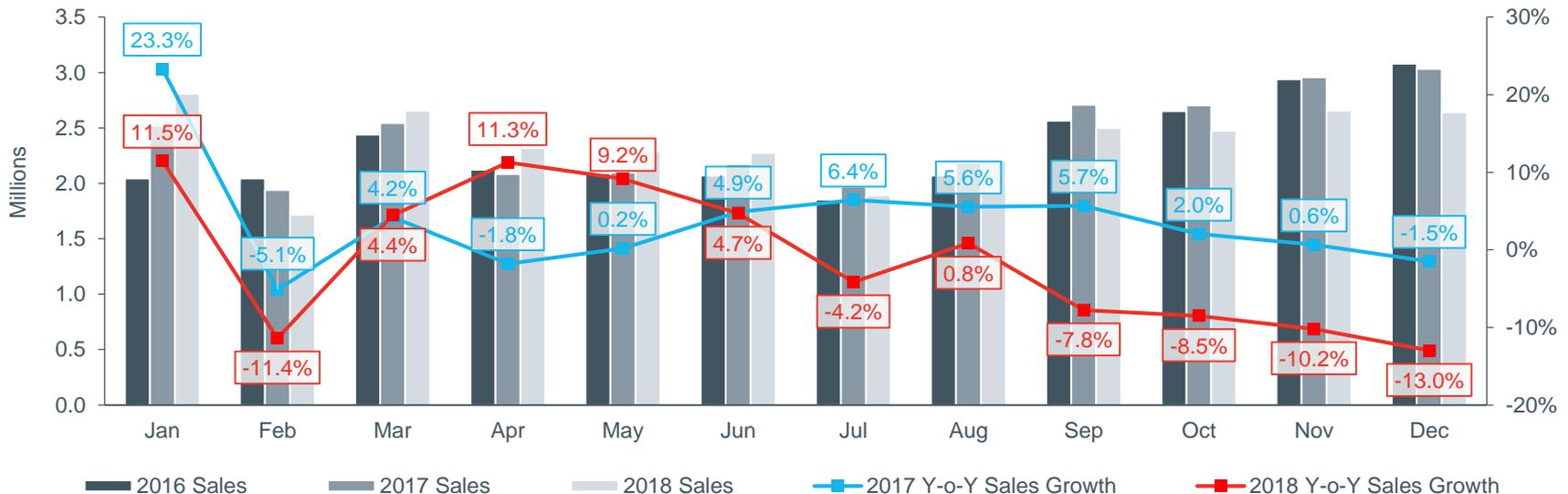
In 2018, China's auto sales declined for the first time since the early 1990s and were down 1.7% compared to 2017.^{1,4} Sales volume for the fourth quarter of 2018 was significantly down over the same period in 2017 with December sales declining 13% relative to December 2017. Weak sales were driven by a lack of consumer confidence and U.S.-China trade tensions.⁶¹

The Chinese economy experienced a slowdown in 2018 with consumers delaying purchases of big-ticket items, and the auto market slumps accordingly. Electric and hybrid vehicles, however, continued to grow at 62% over 2017.⁶² A large portion of this growth of battery and plug-in vehicles has come from sales of vehicles to Chinese carmakers' own ride-hailing companies, bolstered by subsidies from the Chinese government.⁶³

The trade war between China and the U.S. continued through the end of 2018, resulting in a cut in topline automotive forecasts in China as a result of tit-for-tat tariffs. However, the Chinese government, in an effort to support the industry, cut the import duty on vehicles entering China, and restrictions on foreign equity ownership were removed.⁵

In August, Tesla announced plans to build its first non-U.S. plant with a \$5 billion Chinese Gigafactory. This plant is to be constructed outside of Shanghai and is expected to be functional by 2021 with the capacity to produce 500,000 vehicles. The plant hopes to allow Tesla to avoid the risk of tariffs while tapping into the massive Chinese EV market.⁶⁴

Monthly Auto Sales

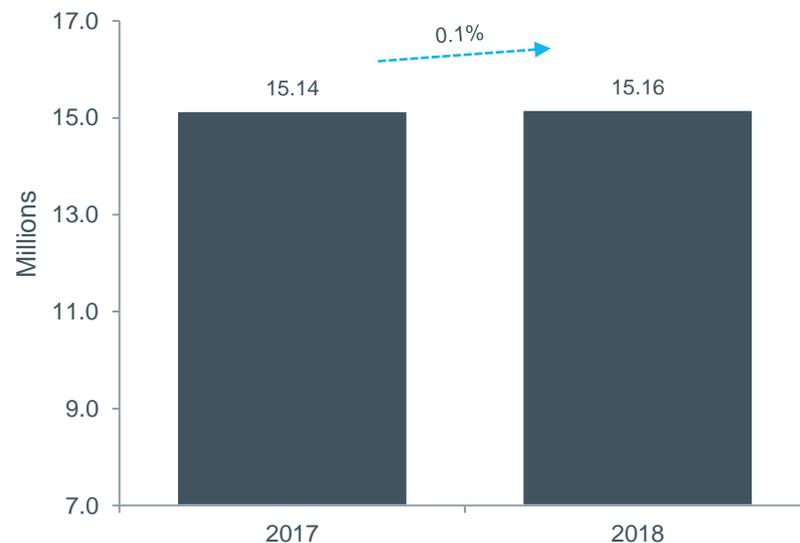
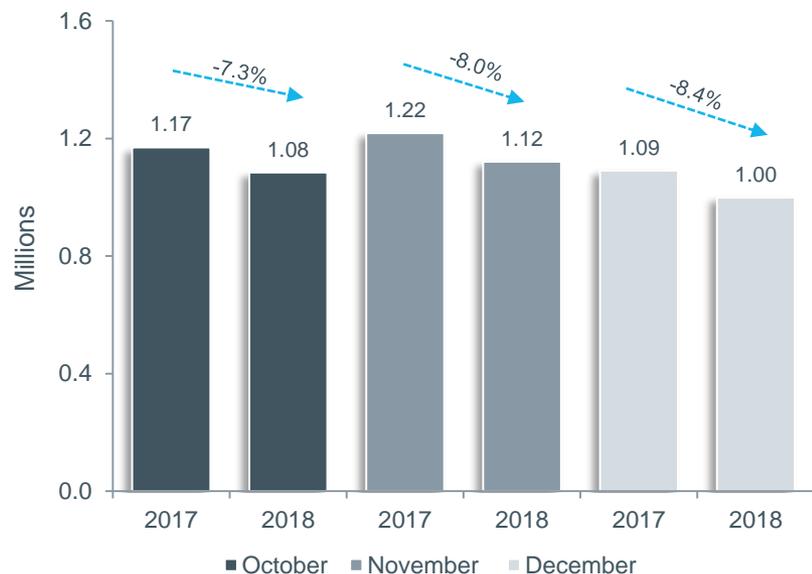


European Automotive Landscape

New passenger vehicle registrations in Europe were strong in the first half of 2018, a 2.9% increase over the first half of 2017. However, the second half of the year showed a substantial decline, with new registrations decreasing 8.4% in December Y-o-Y to 1 million, continuing the pattern of decline seen in prior months. Overall, 2018 passenger vehicle registrations in the EU are generally flat over 2017, with the increase propelled by substantial growth in smaller markets within Europe including Greece (+17.4%) and Croatia (+18.7%) among others, despite a dip in the U.K. market (-6.8%).⁶ In 2018, 19 of the 27 countries in the EU demonstrated new passenger vehicle registration growth over 2017, and five of those 21 have generated double-digit growth over that time period.⁶

The U.K. market declined in 2018, despite increases in other European markets, primarily as a result of uncertainty around Brexit. The European auto market is tightly integrated between countries as 54% of U.K.-manufactured cars are sold in the EU and 27.4% of EU-built cars are imported and sold in the U.K.⁶⁵ While a deal is yet to be signed, a fallback solution for Britain could be to have EU-U.K. trade temporarily governed by World Trade Organization rules.⁶⁶

New Passenger Vehicle Registrations



Note: Europe is defined as the European Union
 Source: "Passenger Car Registrations: +0.1% in 2018; -8.4% in December." European Automobile Manufacturers Association. January 16, 2019.

Source: "Passenger Car Registrations: +0.1% in 2018; -8.4% in December." European Automobile Manufacturers Association. January 16, 2019.

Public Company Equity Performance

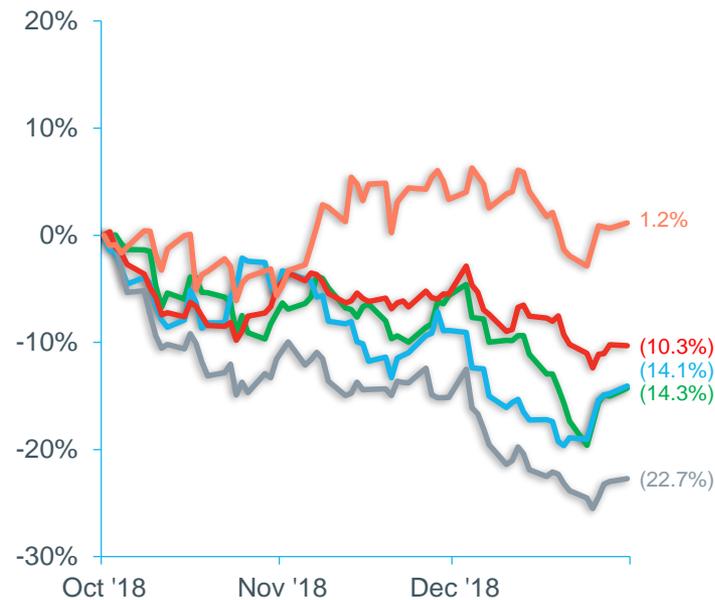


In 2018, to a degree greater than the S&P 500, automotive indexes have generally declined, with the Automotive OEM index taking a significant hit, down over 40% for the year. The Automotive Dealer, Suppliers and OEMs indexes underperformed relative the S&P index as well. However, the Aftermarket Parts and Repair index has remained strong relative to the markets, climbing 29.4% over the year despite just a 1.2% increase for the last quarter of the year.⁷ This index has been volatile over the last year, with volatile sales levels amongst companies in this group, as well as a restructuring effort for Advance Auto Parts, which analysts have looked at with initial success. This group continues to push back on companies like Amazon and Walmart entering the auto “do-it-yourself” market, which the incumbents still have a stronghold.^{67,68} The Aftermarket Parts and Repair equity performance took off in Q3 as it is generally countercyclical to the auto OEM index.⁶⁹

2018 Equity-Market Performance



Q4 2018 Equity-Market Performance



— S&P 500 — Automotive Dealers — Automotive OEMs — Automotive Suppliers — Automotive Aftermarket Parts and Repair

Note: Represents most actively traded public automotive sector companies
Source: S&P Global Market Intelligence as of December 31, 2018.

Public Companies' Trading Statistics

(\$ in millions, except per share data)

Company	12/31/18 Stock Price	% of 52 Wk High	% Change from 12/31/17	Market Capitalization	Enterprise Value	Enterprise Value as a Multiple of						Stock Price as a Multiple of		LTM	
						Revenue			EBITDA			LTM	2018	EBITDA	Revenue
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS	Margin	Growth
Automotive OEMs															
North American OEMs															
Fiat Chrysler Automobiles N.V.	\$14.52	62.8%	(14.9)%	\$22,515	\$23,896	0.18x	0.18x	0.18x	1.9x	1.6x	1.5x	5.0x	4.1x	9.8%	5.4%
Ford Motor Company	\$7.65	56.8%	(38.8)%	\$30,431	\$15,608	0.11x	0.11x	0.11x	1.8x	1.3x	1.3x	NM	5.8x	5.9%	3.3%
General Motors Company	\$33.45	73.5%	(18.4)%	\$47,211	\$42,068	0.32x	0.29x	0.29x	2.4x	2.7x	2.6x	NM	5.3x	13.2%	(2.3)%
Tesla, Inc.	\$332.80	85.9%	6.9%	\$57,153	\$71,567	4.08x	3.36x	2.45x	NM	NM	17.8x	NA	NM	3.5%	NM
Asian OEMs															
Faw Car Co., Ltd.	\$0.96	52.7%	(38.5)%	\$1,567	\$1,014	0.26x	0.24x	0.24x	12.5x	6.3x	6.4x	NM	NM	2.1%	(1.6)%
Geely Automobile Holdings Limited	\$1.76	48.0%	(49.1)%	\$15,827	\$13,718	0.88x	0.83x	0.73x	6.6x	5.3x	4.6x	8.9x	8.2x	13.3%	42.6%
Honda Motor Co., Ltd.	\$26.38	69.7%	(25.1)%	\$46,421	\$17,602	0.14x	0.12x	0.12x	1.2x	1.5x	1.4x	NA	7.0x	12.1%	9.0%
Hyundai Motor Company	\$106.45	70.7%	(24.0)%	\$21,336	\$106,087	1.62x	1.22x	1.18x	19.4x	18.0x	15.1x	NA	11.8x	8.4%	(11.1)%
Nissan Motor Co., Ltd.	\$8.02	73.5%	(21.6)%	\$31,382	\$8,179	0.08x	0.08x	0.07x	1.1x	1.0x	0.9x	NA	6.5x	7.6%	(3.0)%
SAIC Motor Corporation Limited	\$3.88	70.8%	(16.8)%	\$45,306	\$36,873	0.27x	0.27x	0.25x	6.5x	6.5x	5.2x	8.4x	8.4x	4.2%	12.5%
Suzuki Motor Corporation	\$50.74	72.5%	(14.8)%	\$23,368	\$21,607	0.61x	0.61x	0.58x	4.4x	4.3x	4.0x	10.4x	10.3x	14.0%	10.1%
Tata Motors Limited	\$2.48	38.9%	(60.0)%	\$7,930	\$15,513	0.36x	0.34x	0.31x	9.3x	3.3x	2.6x	NA	18.7x	3.9%	13.1%
Toyota Motor Corporation	\$58.39	82.1%	(11.2)%	\$167,012	\$80,073	0.32x	0.29x	0.29x	2.3x	2.5x	2.4x	9.1x	7.8x	13.9%	3.6%
European OEMs															
Bayerische Motoren Werke AG	\$80.80	72.7%	(18.9)%	\$52,594	\$84,656	0.88x	0.76x	0.73x	7.3x	5.3x	5.1x	8.5x	6.7x	12.0%	19.2%
Daimler AG	\$52.56	60.0%	(35.2)%	\$56,236	\$28,266	0.18x	0.15x	0.14x	1.7x	1.4x	1.3x	6.8x	6.1x	10.1%	1.2%
Peugeot S.A.	\$21.35	73.4%	10.0%	\$19,074	\$13,221	0.15x	0.15x	0.15x	1.7x	1.5x	1.4x	5.6x	5.6x	8.9%	42.0%
Renault SA	\$62.46	54.1%	(35.0)%	\$16,773	NM	NM	NM	NM	NM	NM	NM	3.9x	3.8x	9.1%	5.8%
Volkswagen AG	\$159.06	72.2%	(16.5)%	\$79,322	\$20,335	0.09x	0.07x	0.07x	1.0x	0.5x	0.4x	5.4x	5.7x	8.7%	3.5%
Median		70.8%	(20.3)%			0.27x	0.27x	0.25x	2.3x	2.6x	2.6x	7.6x	6.6x	9.0%	5.4%
Mean		66.1%	(23.4)%			0.62x	0.53x	0.46x	5.1x	3.9x	4.3x	7.2x	7.6x	8.9%	9.0%

Note: Represents most actively traded public automotive companies; EBITDA and Enterprise Value adjusted for pension liabilities; Enterprise Value adjusted for noncontrolling interests, equity investments and financial services segments

For definitions, see page 20

Source: S&P Global Market Intelligence as of June 30, 2018 and company filings.

Public Companies' Trading Statistics

(\$ in millions, except per share data)

Company	12/31/18 Stock Price	% of 52 Wk High	% Change from 12/31/17	Market Capitalization	Enterprise Value	Enterprise Value as a Multiple of						Stock Price as a Multiple of		LTM	
						Revenue			EBITDA			LTM	2018	EBITDA	Revenue
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS	Margin	Growth
Automotive Suppliers															
Adient plc	\$15.64	18.5%	(80.9)%	\$1,461	\$3,169	0.18x	0.18x	0.18x	4.5x	2.8x	2.4x	NA	3.5x	4.0%	7.6%
Aisin Seiki Co. Ltd.	\$34.61	55.8%	(39.7)%	\$9,327	\$14,422	0.39x	0.38x	0.36x	3.3x	3.1x	2.8x	7.0x	7.5x	12.1%	8.8%
American Axle & Manufacturing Holdings Inc.	\$11.13	56.7%	(34.8)%	\$1,243	\$4,695	0.64x	0.65x	0.65x	3.9x	4.0x	4.0x	2.5x	3.4x	16.4%	33.4%
Aptiv PLC	\$61.38	59.5%	(27.4)%	\$16,172	\$19,609	1.38x	1.37x	1.29x	8.6x	8.2x	7.7x	14.2x	11.9x	16.0%	52.0%
Autoliv Inc.	\$70.04	43.7%	(44.7)%	\$6,103	\$7,833	0.72x	0.89x	0.84x	6.0x	6.0x	5.6x	9.4x	9.8x	12.0%	26.9%
BorgWarner Inc.	\$34.51	59.3%	(32.0)%	\$7,187	\$9,066	0.86x	0.86x	0.82x	5.2x	5.2x	5.0x	11.4x	7.9x	16.5%	11.3%
Continental AG	\$137.36	46.8%	(46.8)%	\$27,473	\$30,381	0.60x	0.60x	0.57x	5.3x	4.2x	4.0x	7.9x	8.5x	11.2%	2.8%
Cooper-Standard Holdings Inc.	\$60.48	41.2%	(49.3)%	\$1,075	\$1,587	0.43x	0.43x	0.44x	3.7x	4.0x	4.2x	6.3x	6.5x	11.7%	3.9%
Dana Incorporated	\$13.52	38.3%	(57.4)%	\$1,956	\$3,565	0.45x	0.44x	0.43x	4.1x	3.7x	3.5x	8.2x	4.6x	11.0%	17.4%
DENSO Corporation	\$44.33	67.8%	(27.7)%	\$34,348	\$33,824	0.70x	0.69x	0.66x	5.9x	5.4x	5.0x	13.9x	12.4x	11.8%	13.9%
Faurecia S.A.	\$36.54	41.5%	(49.2)%	\$5,011	\$5,797	0.25x	0.28x	0.27x	3.1x	2.5x	2.3x	5.9x	6.1x	8.0%	16.4%
Lear Corporation	\$121.76	59.0%	(30.5)%	\$7,814	\$8,875	0.41x	0.42x	0.41x	3.9x	4.0x	4.0x	5.7x	6.7x	10.6%	9.2%
Magna International Inc.	\$45.60	71.3%	(13.0)%	\$15,255	\$19,492	0.46x	0.48x	0.47x	4.5x	4.4x	4.4x	6.7x	6.8x	10.1%	18.2%
Schaeffler AG	\$8.70	45.4%	(48.1)%	\$5,797	\$8,789	0.54x	0.53x	0.51x	3.5x	3.4x	3.2x	5.1x	5.4x	15.6%	3.0%
The Goodyear Tire & Rubber Company	\$20.34	56.4%	(36.8)%	\$4,739	\$10,563	0.67x	0.67x	0.66x	5.3x	5.2x	4.9x	17.1x	7.8x	12.7%	4.1%
Valeo SA	\$28.10	36.9%	(59.0)%	\$6,674	\$9,917	0.46x	0.45x	0.43x	4.0x	3.8x	3.5x	6.7x	8.6x	11.5%	6.5%
Visteon Corporation	\$60.95	43.3%	(51.8)%	\$1,762	\$1,779	0.58x	0.60x	0.60x	6.6x	5.5x	5.4x	15.2x	10.8x	8.8%	(3.6)%
Median		46.8%	(44.7)%			0.54x	0.53x	0.51x	4.5x	4.0x	4.0x	7.4x	7.5x	11.7%	9.2%
Mean		49.5%	(42.9)%			0.57x	0.58x	0.56x	4.8x	4.4x	4.2x	8.9x	7.5x	11.8%	13.6%

Public Companies' Trading Statistics

(\$ in millions, except per share data)

Company	12/31/18 Stock Price	% of 52 Wk High	% Change from 12/31/17	Market Capitalization	Enterprise Value	Enterprise Value as a Multiple of						Stock Price as a Multiple of		LTM	
						Revenue			EBITDA			LTM	2018	EBITDA	Revenue
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS	Margin	Growth
Automotive Dealers															
Asbury Automotive Group Inc.	\$66.66	85.7%	4.2%	\$1,307	\$2,251	0.33x	0.33x	0.33x	7.0x	7.2x	7.4x	8.8x	8.1x	4.8%	4.8%
AutoNation Inc.	\$35.70	57.6%	(30.5)%	\$3,210	\$5,725	0.26x	0.27x	0.26x	7.0x	6.0x	6.1x	9.9x	7.8x	3.8%	1.7%
CarMax Inc.	\$62.73	76.8%	(2.2)%	\$10,776	\$24,620	1.30x	1.34x	1.26x	18.6x	18.0x	17.1x	14.5x	13.3x	7.0%	5.4%
Group 1 Automotive Inc.	\$52.72	62.8%	(25.7)%	\$975	\$3,363	0.29x	0.29x	0.29x	8.1x	8.9x	8.9x	4.9x	5.9x	3.6%	6.8%
Lithia Motors Inc.	\$76.33	59.6%	(32.8)%	\$1,796	\$3,085	0.27x	0.26x	0.25x	6.4x	6.8x	6.5x	7.2x	7.8x	4.2%	19.4%
Penske Automotive Group Inc.	\$40.32	73.5%	(15.7)%	\$3,422	\$4,199	0.18x	0.18x	0.18x	6.1x	5.2x	5.2x	NA	7.5x	3.0%	8.9%
Sonic Automotive Inc.	\$13.76	58.3%	(25.4)%	\$588	\$1,569	0.16x	0.16x	0.15x	5.7x	5.6x	5.7x	7.1x	7.2x	2.8%	3.0%
	Median	62.8%	(25.4)%			0.27x	0.27x	0.26x	7.0x	6.8x	6.5x	8.0x	7.8x	3.8%	5.4%
	Mean	67.8%	(18.3)%			0.40x	0.40x	0.39x	8.4x	8.2x	8.1x	8.7x	8.2x	4.2%	7.1%

Note: Represents most actively traded public automotive dealers; EBITDA and Enterprise Value adjusted for floor plan debt and interest expense
For definitions, see page 20
Source: S&P Global Market Intelligence as of June 30 2018 and company filings.

Public Companies' Trading Statistics ○ ○ ○ ○ ● ○

(\$ in millions, except per share data)

Company	12/31/18 Stock Price	% of 52 Wk High	% Change from 12/31/17	Market Capitalization	Enterprise Value	Enterprise Value as a Multiple of						Stock Price as a Multiple of		LTM	
						Revenue			EBITDA			LTM	2018	EBITDA	Revenue
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS	Margin	Growth
Automotive Aftermarket Parts and Repair															
Advance Auto Parts Inc.	\$157.46	84.6%	57.9%	\$11,477	\$11,553	1.21x	1.21x	1.18x	12.1x	11.7x	10.8x	17.7x	22.2x	10.0%	1.0%
AutoZone Inc.	\$838.34	93.6%	17.8%	\$21,130	\$25,977	2.30x	2.20x	2.16x	10.4x	10.3x	10.1x	13.5x	14.1x	22.2%	2.4%
Monro Inc.	\$68.75	81.5%	20.7%	\$2,268	\$2,666	2.27x	2.22x	2.10x	14.3x	14.3x	13.0x	30.3x	29.0x	15.9%	7.1%
O'Reilly Automotive Inc.	\$344.33	94.8%	43.1%	\$27,582	\$30,717	3.26x	3.22x	3.04x	15.0x	14.9x	14.1x	21.7x	21.4x	21.7%	5.9%
	Median	89.1%	31.9%			2.29x	2.21x	2.13x	13.2x	13.0x	11.9x	19.7x	21.8x	18.8%	4.2%
	Mean	88.6%	34.9%			2.26x	2.21x	2.12x	12.9x	12.8x	12.0x	20.8x	21.7x	17.5%	4.1%

Definitions

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

Enterprise Value: Market Capitalization + Total Debt + Preferred Equity + Minority Interest – Cash and Short-Term Investments

LTM: Last Twelve Months

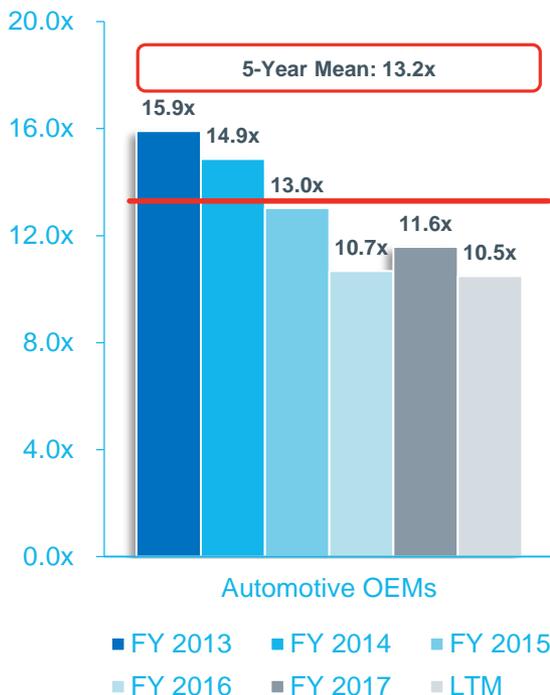
EPS: Earnings Per Share

Note: Represents most actively traded public automotive aftermarket companies
Source: S&P Global Market Intelligence as of June 30, 2018 and company filings.

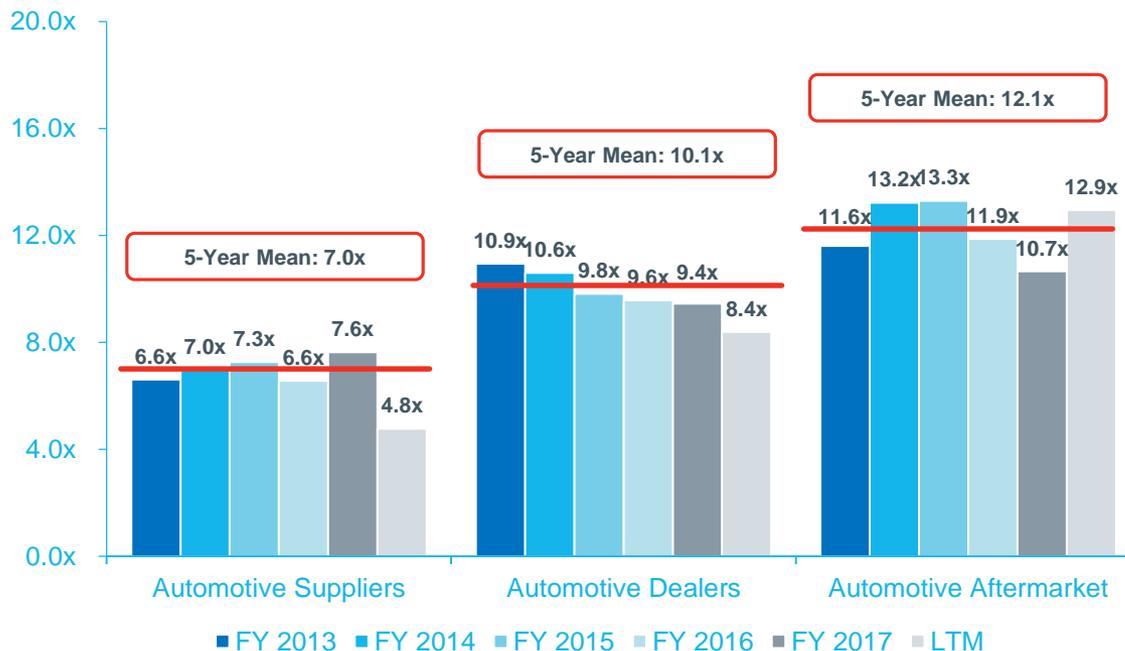
Historical Trading Multiples

On average, Automotive OEMs are trading at 10.5x LTM EPS, almost 3x lower than their 5-year average price-to-earnings (P/E) multiple. Automotive Suppliers (4.8x) are on average trading at EBITDA multiples just over 2x lower than their 5-year average, while Automotive Dealers are approximately 1.7x lower than their 5-year average. The Automotive Aftermarket index is currently trading above its 5-year average.⁷

Historical P/E Multiples Since 2013



Historical EBITDA Multiples Since 2013



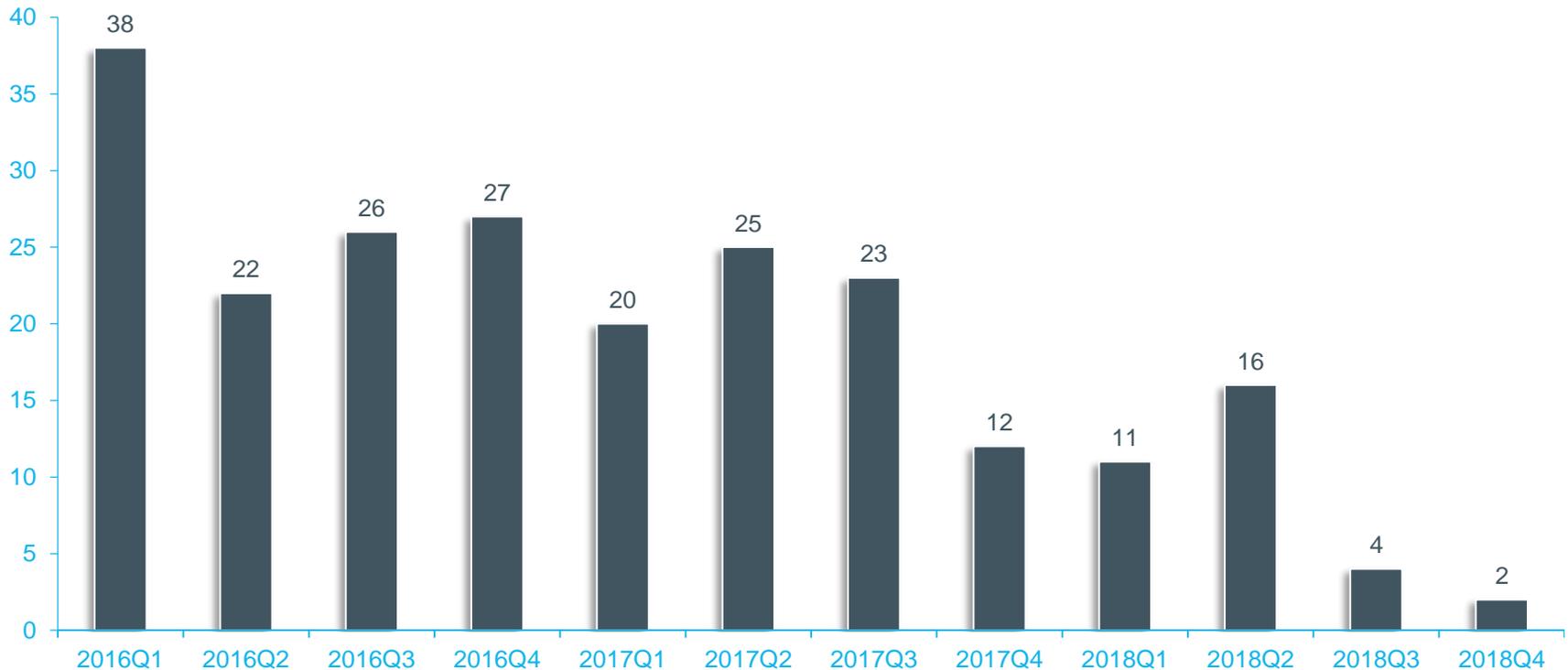
Note: Multiples have been adjusted historically to reflect corresponding adjustments made on pages 17-20
Source: S&P Global Market Intelligence as of December 31, 2018 and company filings.

2018 M&A Activity by Quarter



M&A activity in the automotive sector continued to remain slow to close out 2018 with six transactions completed in the second half of the year. With a total of 33 transactions for the year, M&A activity is weak compared to recent years. In 2017 and 2016, 80 and 113 transactions, respectively, were closed in the automotive sector. M&A activity has steadily fallen after a record high number of deals (38) were completed in Q1 2016.⁷

Automotive Industry M&A Trends



Notable M&A Activity – 2018



Automotive Suppliers

Selected M&A Transactions

(\$ in millions)

Announced	Target Name	Target Business Description	Acquirer Name	Enterprise Value	LTM Revenue	LTM EBITDA	EBITDA Margin	EV/ Revenue	EV/ EBITDA
Nov-18	Öhlins Racing AB	Manufactures suspension systems and components for the automotive and motor sport industries	Tenneco Inc.	\$160.0	\$130.0	NM	NA	1.23x	NA
Nov-18	Vignal Systems SA	Designs, manufactures and distributes industrial vehicle signalling products and systems to OEM and aftermarkets in Europe	EMZ Partners	\$134.3	\$119.6	NM	NA	1.12x	NA
Nov-18	Agility Fuel Solutions LLC	Designs and manufactures alternative fuel storage and delivery systems, and cylinders for medium- and heavy-duty trucks, buses and specialty vehicles	Hexagon Composites ASA	\$248.4	\$157.3	\$14.7	9.3%	1.58x	16.9x
Aug-18	Grakon Parent Inc.	Designs and develops interior and exterior lighting systems, and engineered trim components for original equipment vehicle manufacturers worldwide	Methode Electronics Inc.	\$496.6	\$155.7	\$37.8	24.3%	3.19x	13.1x
May-18	Motec GmbH	Develops and manufactures camera systems for commercial vehicles, construction vehicles and agricultural machines internationally	AMETEK Inc.	\$93.0	\$35.0	NM	NA	2.66x	NA
Jul-18	Sage Automotive Interiors Inc.	Designs, develops and manufactures automotive interior solutions for automotive manufacturers	Asahi Kasei Corporation	\$1,060.0	\$474.9	NM	NA	2.23x	NA
Jul-18	Camso Inc.	Manufactures and distributes tires, tracks and track systems as well as OEM undercarriages for material handling, agriculture and other industries	Compagnie Générale des Établissements Michelin	\$1,611.0	\$976.0	\$136.0	13.9%	1.65x	11.8x
Jun-18	Disc Brakes Australia Pty Ltd.	Manufactures, designs and markets disc brake rotors, brake drums and disc brake pads	GUD Holdings Limited	\$15.2	\$15.2	NA	NA	1.00x	NA
May-18	Grammer AG	Develops and manufactures components and systems for automotive interiors worldwide	Ningbo Jifeng Auto Parts Co. Ltd.	\$1,012.1	\$2,196.5	\$143.7	6.5%	0.46x	7.0x

Notable M&A Activity – 2018

○ ○ ●

Automotive Suppliers

Selected M&A Transactions

(\$ in millions)

Announced	Target Name	Target Business Description	Acquirer Name	Enterprise Value	LTM Revenue	LTM EBITDA	EBITDA Margin	EV/ Revenue	EV/ EBITDA
May-18	Toledo Molding & Die Inc.	Supplies HVAC, powertrain, and interior/exterior components and sub-systems to customers	Grammer AG	\$271.0	\$300.0	NA	NA	0.90x	NA
May-18	Valves Business of Sensata Technologies Holding PLC	Comprises mechanical valves and assembles tire hardware aftermarket products for pressure applications in tires and fluid control business	Pacific Industrial Co. Ltd.	\$173.0	\$117.0	NA	NA	1.48x	NA
May-18	EMOSS Mobile Systems B.V.	Designs, manufactures and supplies electric powertrains for trucks, busses, military vehicles and heavy equipment	PCL (International) Holding B.V.	\$17.0	\$7.0	NA	NA	2.43x	NA
Apr-18	Federal-Mogul LLC	Manufactures and distributes automotive parts, including original equipment powertrain products	Tenneco Inc.	\$5,400.0	\$8,003.0	\$681.0	8.5%	0.67x	7.9x
Apr-18	Reydel Automotive France SAS	Designs, develops, industrializes and manufactures complete and functional modular interior systems for car manufacturers	Samvardhana Motherson Automotive Systems Group B.V.	\$201.0	\$1,048.0	\$68.0	6.5%	0.19x	3.0x
Mar-18	Driveline Business of GKN plc	Comprises automotive driveline systems, solutions and off-highway powertrain businesses	Dana Incorporated	\$6,169.8	\$7,687.2	\$837.0	10.9%	0.80x	7.4x
Feb-18	DVS Industries Private Limited	Manufactures crankshafts for commercial, agriculture and off-highway vehicles	M M Forgings Limited	\$0.7	\$2.1	NA	NA	0.34x	NA
			Mean	\$751.5	\$968.9	\$241.2	11.8%	1.21x	9.2x
			Median	\$134.3	\$129.4	\$102.0	10.1%	1.12x	7.7x

Duff & Phelps' Recent Transactions

Board Advisor



BMW Group and Daimler AG combined their mobility services in an equally-owned joint venture

Sell Side Advisor



has been acquired by



Fairness Opinion



has acquired



Sell Side Advisor



has been acquired by



Fairness Opinion



has announced a transaction to be acquired by



Fairness Opinion



has been acquired by



Sell Side Advisor



has been acquired by



Solvency Opinion



Tekfor Global Holdings completed an internal restructuring

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