



DUFF & PHELPS

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INDUSTRY INSIGHTS

# Automotive

June 2018 Review

# Highlights

The auto industry showed signs of moderate improvement in the beginning of 2018, as global sales and earnings increased. The automotive industry continues to evolve as electrification gains a stronger foothold globally but North American automakers shift towards larger, more profitable vehicles.

Global light vehicle sales increased 2.3% in Q1 2018 relative to Q1 2017. In the United States, light vehicle sales grew 2.0% in Q1 2018 to 4.1 million units. Over the last-twelve months, overall light vehicle sales have grown at a slightly slower pace of 1.6% over the prior twelve-month period<sup>1</sup>. In March 2018, U.S. light vehicle sales reached an approximately 17.4 million-unit seasonally adjusted annual rate (SAAR)<sup>2</sup>, offering hope that vehicle sales will remain steady into 2018.

Interest rates on consumer installment loans for new automobiles reached 4.74% in February 2018, up from 4.52% in February 2017, providing a headwind for the industry<sup>3</sup>.

In 2017, auto production and sales in China were up 2.89% and 3.04%, respectively, over 2016; However, SAAR has remained flat through March 2018<sup>4,18</sup>.

In Europe, January and February increases in new passenger registrations offset a decrease in March, which culminated in a 0.7% increase in Q1 2018 relative to Q1 2017<sup>5</sup>.

M&A activity in the automotive sector decreased for the fourth quarter in a row, to 71 deals in the last twelve months (LTM) from 95 over the same period a year ago<sup>6</sup>.

Public company equity performance in the Automotive Original Equipment Manufacturer (OEM), Dealer, Aftermarket and Supplier sectors all trended downward over Q1 2018<sup>6</sup>.

While OEMs are transitioning to focus on truck and SUV manufacturing in response to consumer demand in North America, new technologies such as autonomous vehicles, ride-hailing/sharing and electrification, continued to dominate headlines.

See page 31 for data sources

## Q1 2018 BY THE NUMBERS



2.3% increase in global light vehicle sales in Q1 2018<sup>1</sup>



In March 2018, U.S. light vehicle SAAR increased slightly to 17.4 million<sup>2</sup>



1.4% increase in new passenger registrations in Europe in the LTM period<sup>5</sup>



In March 2018, China's auto sales rose 1.9% y-o-y<sup>4,18</sup>



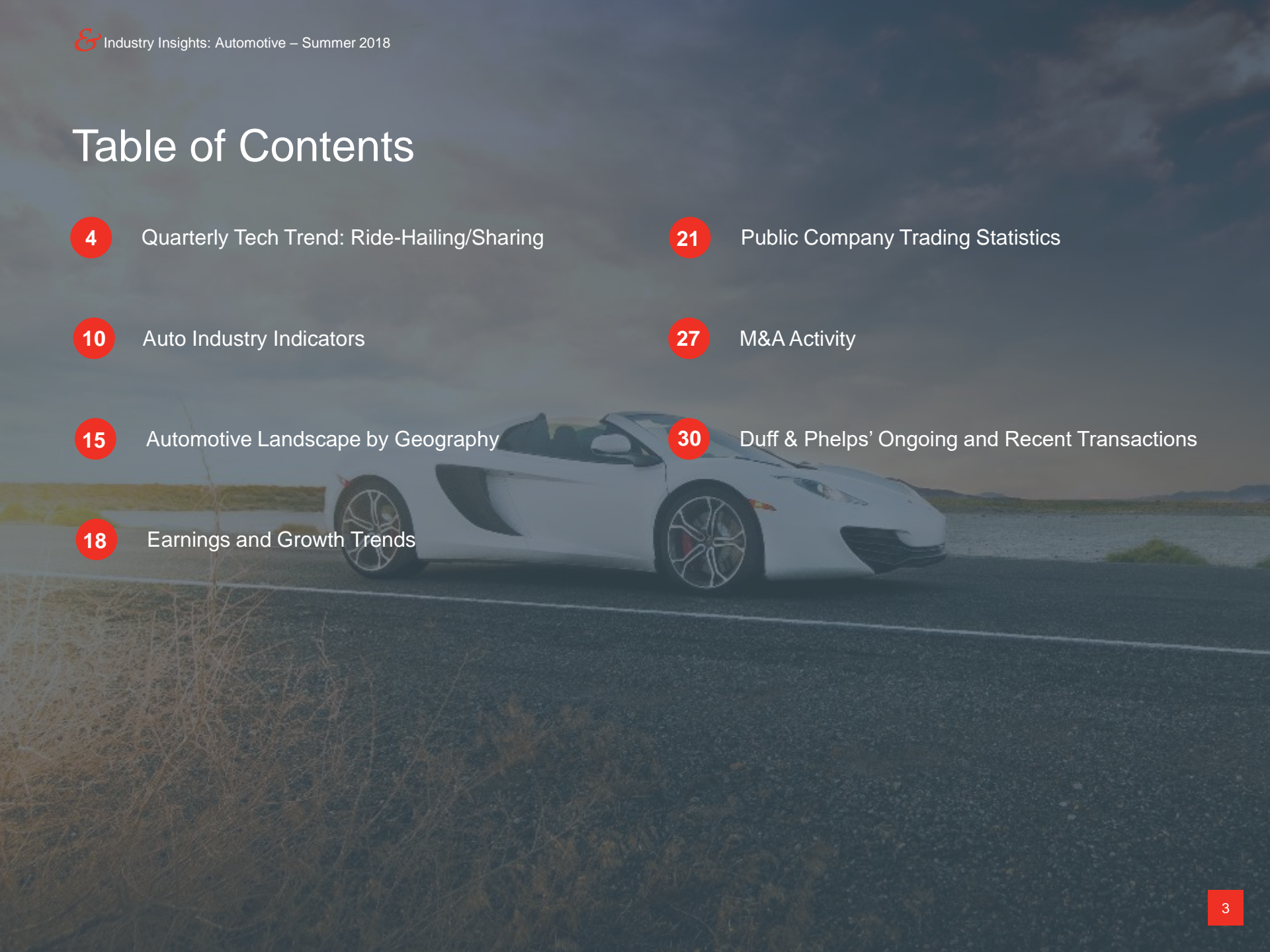
2.4%, 3.5%, 4.3% and 6.4% decreases in Duff & Phelps' market-weighted indexes of automotive OEMs, Dealers, Aftermarket Parts & Repair and Suppliers, respectively, over Q1 2018<sup>6</sup>



Global electric vehicle sales surpassed 1 million units in 2017 for the first time ever<sup>7</sup>



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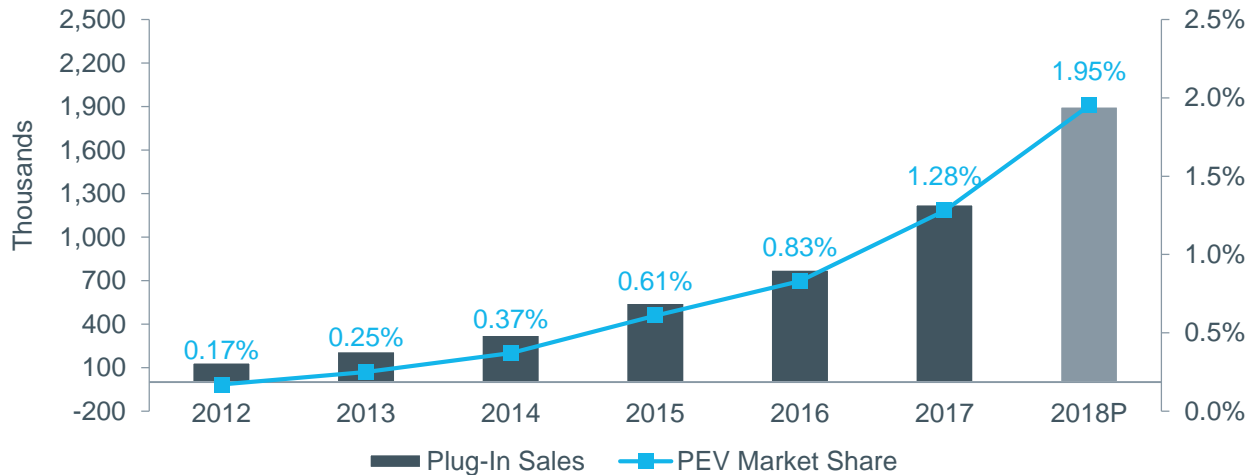
# Quarterly Tech Trend: Electrification

Legislation and consumer demand for more environmentally friendly vehicles is driving production of models that can run on alternative fuels, such as ethanol, hydrogen fuel cells, clean diesel, electric power and hybrid solutions. Governments are helping push growth in an effort to reduce energy use and greenhouse emissions, while consumer demand is driven by the cost of gas and environmental concerns.

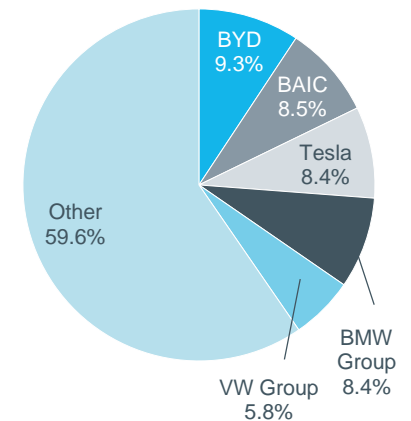
Global plug-in vehicles sales in 2017 were up 27% from 2016, surpassing 1 million units for the first time. 66% were pure electric cars and 34% were plug-in hybrids. At the end of the 2017, 3.2 million electric vehicles were on the road worldwide. Over the past year, public charging locations have doubled while the number of plug-in models available surpassed 170, up from 70 in 2013. China's market for New Energy Vehicles (NEV) is the clear global leader in the movement, with sales in China representing 49.5% of the global plug-in market in 2017<sup>7</sup>.

Although automotive OEM BYD, which sells mostly plug-in hybrid vehicles, lost 3.9% of the plug-in market share in 2017, the company led the market for the third straight year. BAIC, which produces pure electric vehicles (BEV) took the second global market position. Despite delays in Model-3 production, Tesla held the third highest market share in 2017, tied with BMW. Volkswagen rounded out the top five OEMs in the space. VW, BMW and Daimler estimate 25% of their sales will be electric vehicles over the next decade<sup>7</sup>.

Global Electric Vehicle Sales



Global EV Market Share



Source: "Global Plug-in Vehicle Sales for 2017 – Final Results." EVVolumes.com.

Source: "Global Plug-in Vehicle Sales for 2017 – Final Results." EVVolumes.com.

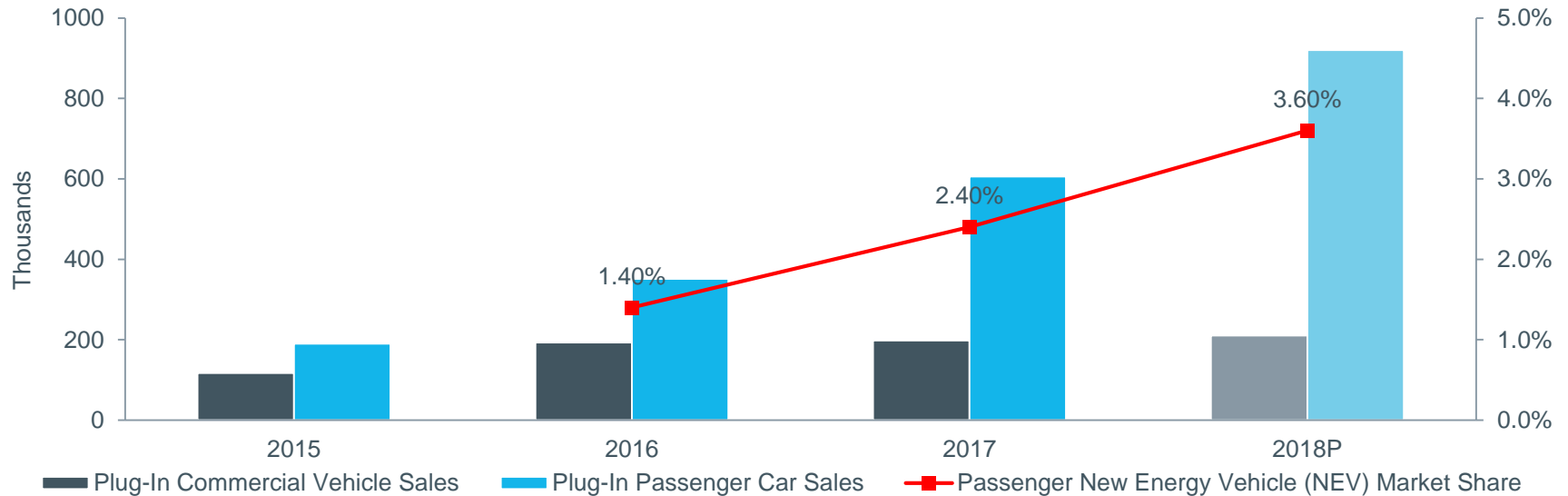
# Quarterly Tech Trend: Electrification

## China

Electric vehicle sales increased 73% in 2017 to 605,000 passenger vehicles and 198,000 commercial vehicles, representing a growth rate 30 times faster than the overall car market in China<sup>17</sup>. In 2017 the country reduced its purchase tax waiver for small-engine vehicles, an incentive that was introduced in 2016, and implemented a rollback in NEV policies<sup>18</sup>. Federal subsidies for NEVs decreased by 20%, and local subsidies were reduced by as much as 50%, making China's 2017 electric vehicle growth even more impressive<sup>18</sup>. Such strong growth is driven by mandated ownership restrictions on internal combustion engine vehicles. Notably, domestic production drives over 95% of China's electric vehicle sales<sup>17</sup>.

China, South Korea and Japan remain dominant in the space for EV battery production, benefiting from the shift toward EVs both at home and globally.

## China Electric Vehicle Sales



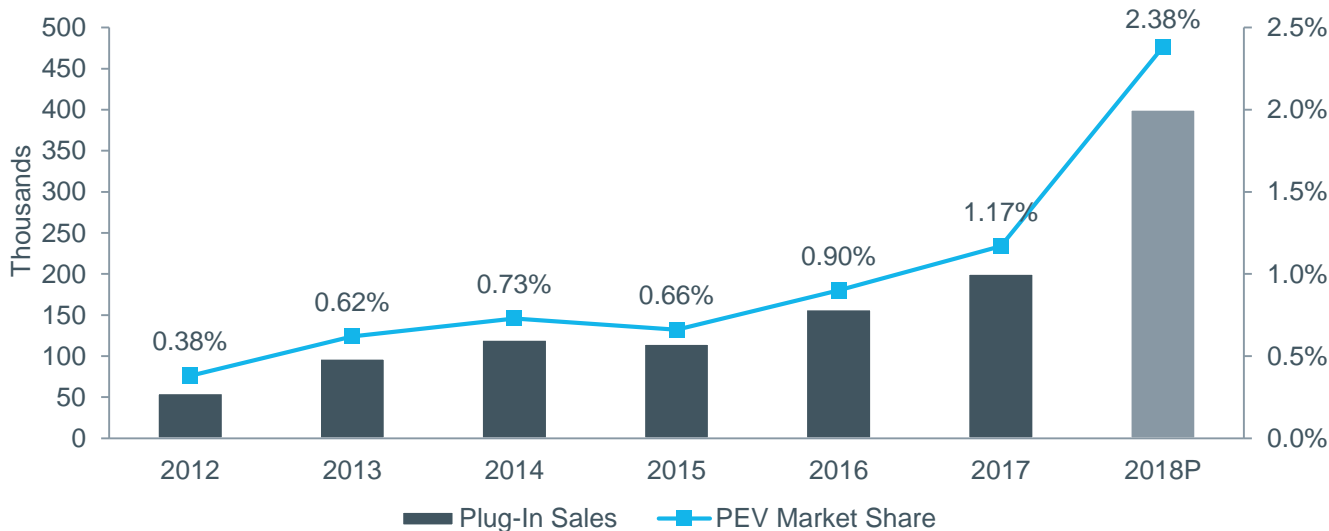
# Quarterly Tech Trend: Electrification

## United States

On April 1, 2018 the Environmental Protection Agency (EPA) revised the federal vehicle emission standards which were last updated by the Obama administration in 2016. The new plan, a joint proposed rule between the EPA and the National Highway Traffic Safety Administration (NHTSA), would ease regulations for vehicle model years 2022-2025, and could potentially halt all stricter requirements for vehicle model years 2020-2026<sup>8</sup>.

States currently have the option to abide by the emission requirements of the state of California, which has an EPA waiver for permission to set its own stricter standards. Current federal rules, which the Obama administration negotiated with California in order to set a consistent national policy, mandate an average Fuel Economy of 36 miles per gallon for all vehicles sold by the year 2025. The new draft proposal, however, seeks to override California's waiver in order to lower emission standards under one national program. In late April, California and 16 other states, as well as the District of Columbia, sued the Trump administration, stating that the reduction in vehicle emission standards would violate the Clean Air Act and the Administration Procedures Act<sup>9</sup>. OEMs have voiced their preference for a policy that is consistent across state lines<sup>13</sup>.

## U.S. Electric Vehicle Sales



Electric vehicle sales surpassed 1% of the U.S. market for the first time in 2017, but growth in market share remains modest<sup>10</sup>.

2017 plug-in vehicles sales were up 27% from 2016, reaching just below 200,000. 53% were pure electric cars<sup>10</sup>.

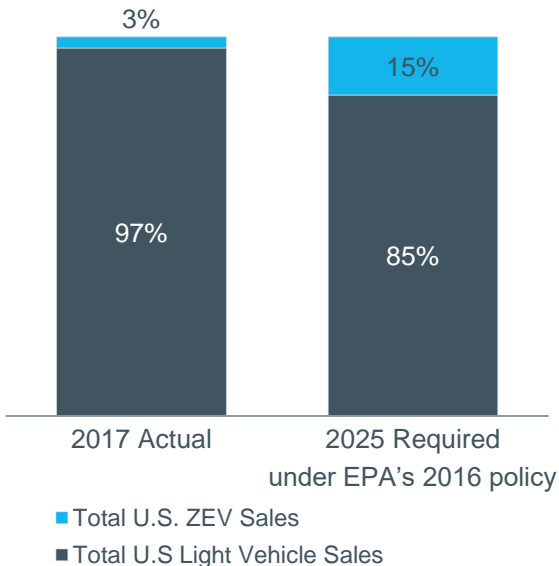
Source: "USA Plug-in Vehicle Sales for 2017 Q4 and Full Year." EVVolumes.com

# Quarterly Tech Trend: Electrification

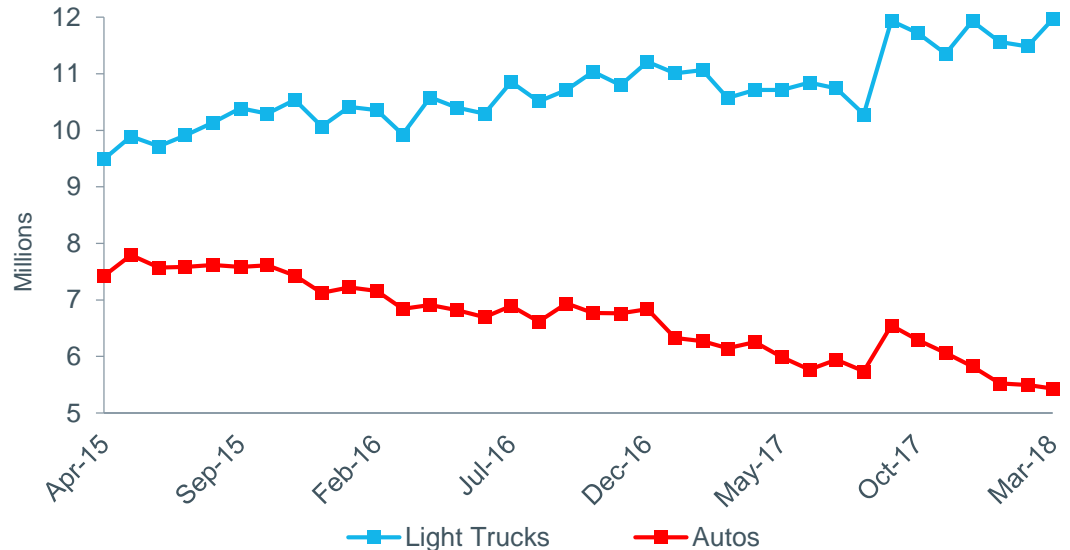
## United States

Sales of Zero Emission Vehicles (ZEVs) will need to demonstrate significant growth in order to meet current government targets<sup>12</sup>. However, U.S. automakers have voiced complaints over producing smaller, less profitable electric, hybrid and fuel efficient vehicles. The “footprint” model for efficiency regulations, which requires smaller incremental increases in efficiency as vehicle size increases, exacerbates the gap in profitability between passenger vehicles and light trucks. Further, consumer demand for SUVs and pick-ups has soared over the past few years in alignment with decreased fuel costs, resulting in lower-than-expected demand for the most energy-efficient vehicles<sup>11</sup>.

### U.S. Zero Emission Vehicle Sales



### U.S. Light Vehicle Sales, SAAR



Source: “Consumers and Auto Sales.” Alliance of Automobile Manufacturers

Source: Federal Reserve Economic Data (FRED), May 3, 2018

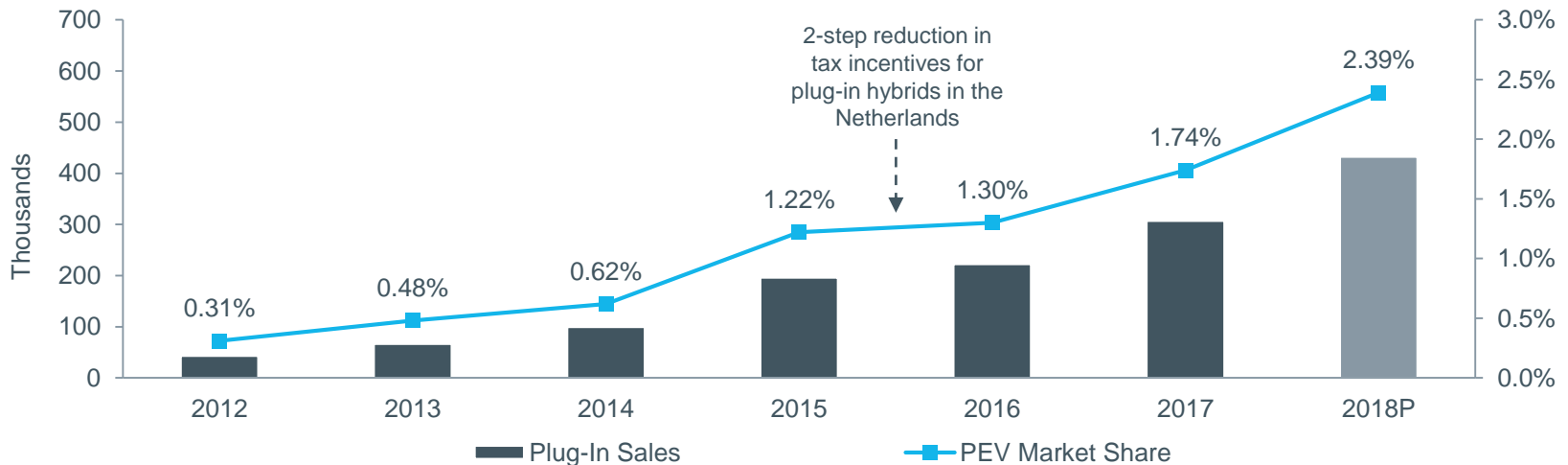
# Quarterly Tech Trend: Electrification

## Europe

In Europe, 2017 electric vehicle sales were up 39% from 2016 to 307,400 units. 51% were BEVs and 49% were plug-in hybrids. Share of the total vehicle market reached 1.74% for the year. With varying incentives and vehicle emission regulations among European countries, the market share and the mix between plug-in hybrids and BEVs remain quite diverse. Norway's electric vehicle share of its market hit 32.5% in 2017<sup>14</sup>. Germany, with the second highest electric vehicle penetration, more than doubled market share in 2017 after implementing a new incentive scheme in 2016<sup>15</sup>. The Renault Zoe EV, BMW i3 EV/EREV, Mitsubishi Outlander PHEV, Nissan Leaf EV and Tesla Model S were the top selling models in Europe in 2017<sup>14</sup>.

Last fall, the Frankfurt-based IAA exhibited a strong focus on electric vehicles, and included an announcement from Volkswagen to offer 80 battery-powered zero-emission models by 2025. While European OEMs are investing heavily in the electric vehicle transition, they remain worried about competition from Asia. VW's Chief Executive Herbert Diess announced at the Frankfurt auto show his belief that European automakers and suppliers should collaborate in order to play a larger role in the market for electric battery technology, suggesting an area of coming growth in the European auto industry<sup>16</sup>.

## E.U. & E.F.T.A Electric Vehicle Sales





# Quarterly Tech Trend: Electrification

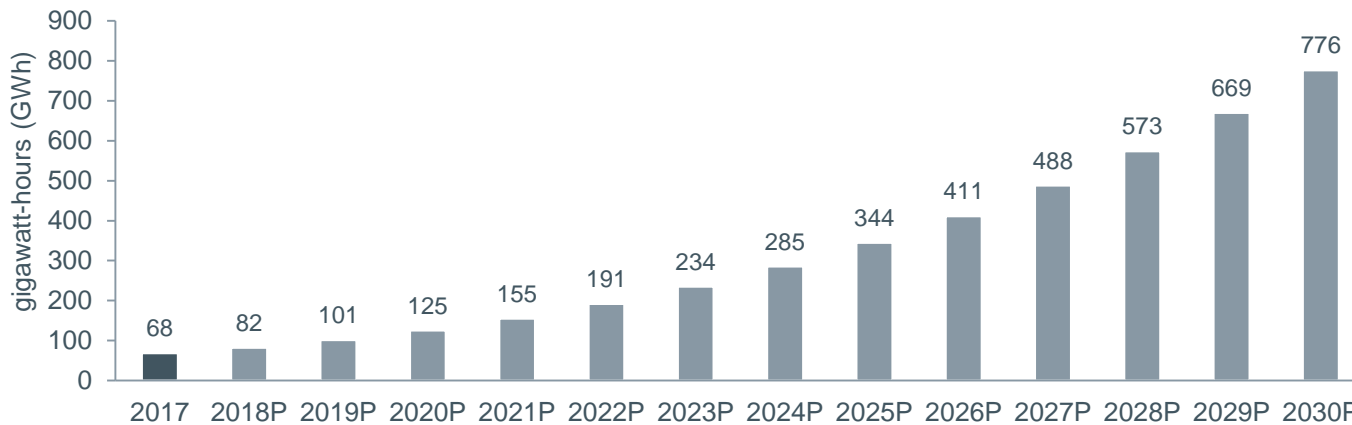
## Electric Battery Technology

The International Energy Agency (IEA) predicts the number of EVs on the road will more than triple to 13 million by the end the decade, but the expected growth in the electric vehicle market will depend on consumer demand<sup>30</sup>. EV sales are highest among cars with the furthest driving range, and for consumers to continue buying, performance will need continued improvement<sup>11</sup>. Consumer demand for EVs will also be dependent on cost; battery costs are the main driver of higher selling prices for EVs compared to internal combustion engine vehicles<sup>31</sup>.

Cost reduction and performance drivers of lithium-ion batteries used in electric vehicles include battery chemistry, energy storage capacity, manufacturing scale and charging speeds. OEMs have announced investments in large-scale battery manufacturing facilities, providing optimism about future production capacity and that will provide economies of scale. Cost reduction will also be driven by increased battery capacity, which will allow for larger driving ranges, as a shift in battery chemistry away from cobalt, which will allow for higher energy density as well<sup>31</sup>.

Advancements in lightweight material technology will further enhance EV performance, as lower-weight vehicle components, both in and out of the battery cell, will allow for improved electric driving ranges. The IEA predicts that by 2030, lithium-ion battery components will have completely shifted from graphite and carbon alloys along with organic solvents and lithium salts to graphite/silicon composites and polymers<sup>31</sup>.

## Annual Demand for Added EV Battery Capacity



Demand for batteries is expected to rise by a factor of 15 between 2017 and 2030<sup>30,31</sup>.

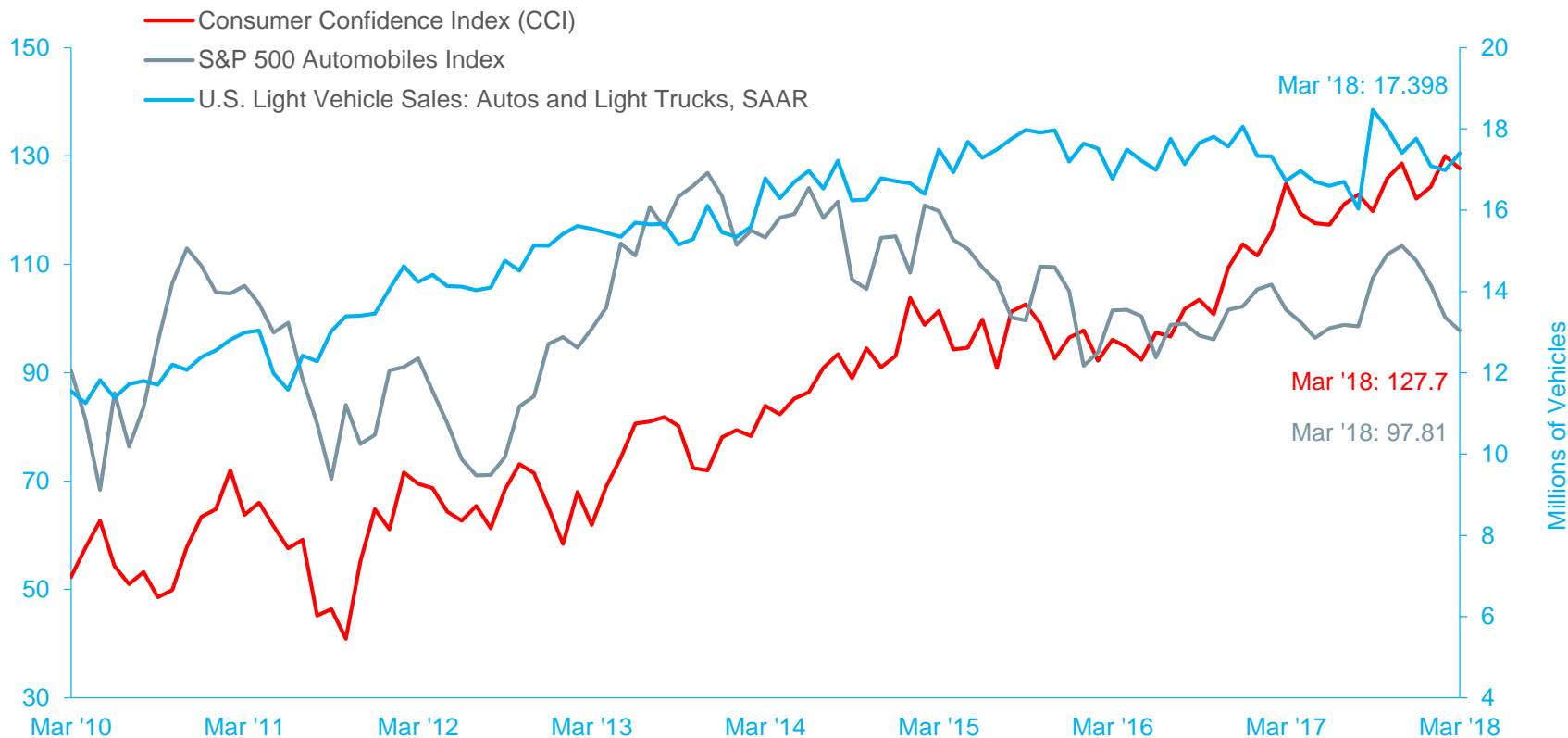
Sources: "Electric Vehicles on the Road Are Set to Triple in Two Years." Bloomberg. May 30, 2018.; "Global EV Outlook 2018." International Energy Agency. May 30, 2018.

# Auto Indicators ●○○○○

In March 2018, the Consumer Confidence Index (CCI) declined further from its 17-year high in November, but is still up 2.2% from a year ago<sup>19</sup>. The S&P 500 Automobiles Index also decreased. It fell to 97.81 in March 2018, after reaching the highest peak since 2015 in November 2017<sup>6</sup>.

In March 2018, U.S. light vehicle reached 17.40 million vehicles, slightly above March 2017 sales<sup>2</sup>. Meanwhile, auto loan balances and originations have continued their rise since 2011 along with the CCI. Debt balances on auto loans reached \$1.23 trillion in the first quarter, up \$8 billion quarterly and \$62 billion annually, continuing their 6-year upward trend<sup>20</sup>.

## Consumer Confidence

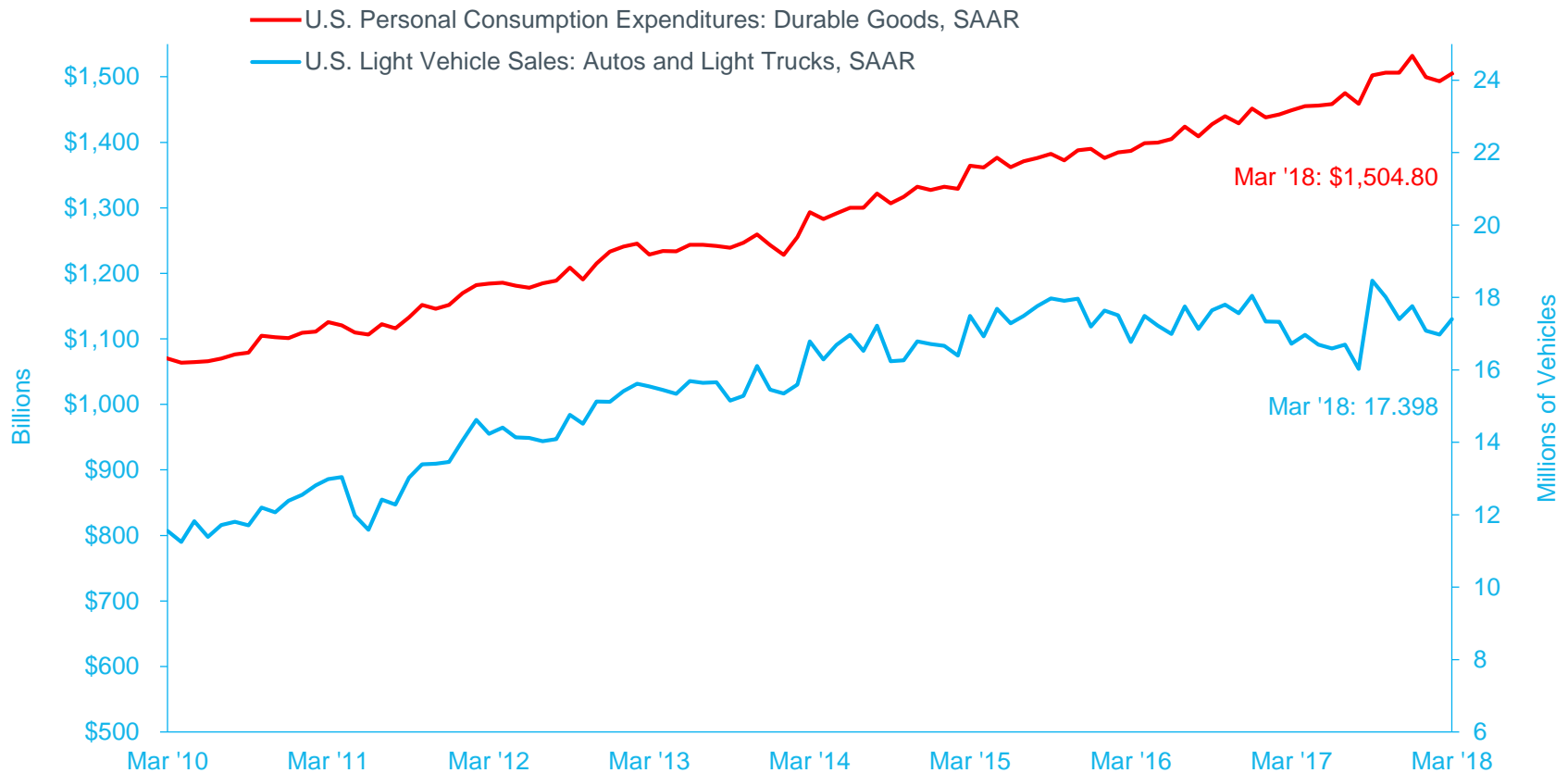


# Auto Indicators ○○○○

U.S. consumer spending has seen a relatively steady increase since late 2013. Expenditures on durable goods reached a record level of \$1,504.80 billion in March 2018 after a slight drop in the first two months of the year<sup>6</sup>.

The rising trend in auto sales has slowed compared to overall durable goods spending. September 2017 saw a big push after an 8-month decline, but sales have fallen back down to levels seen a year ago. In March 2018, U.S. light vehicle sales reached 17.40 million vehicles<sup>2</sup>.

## Consumer Spending

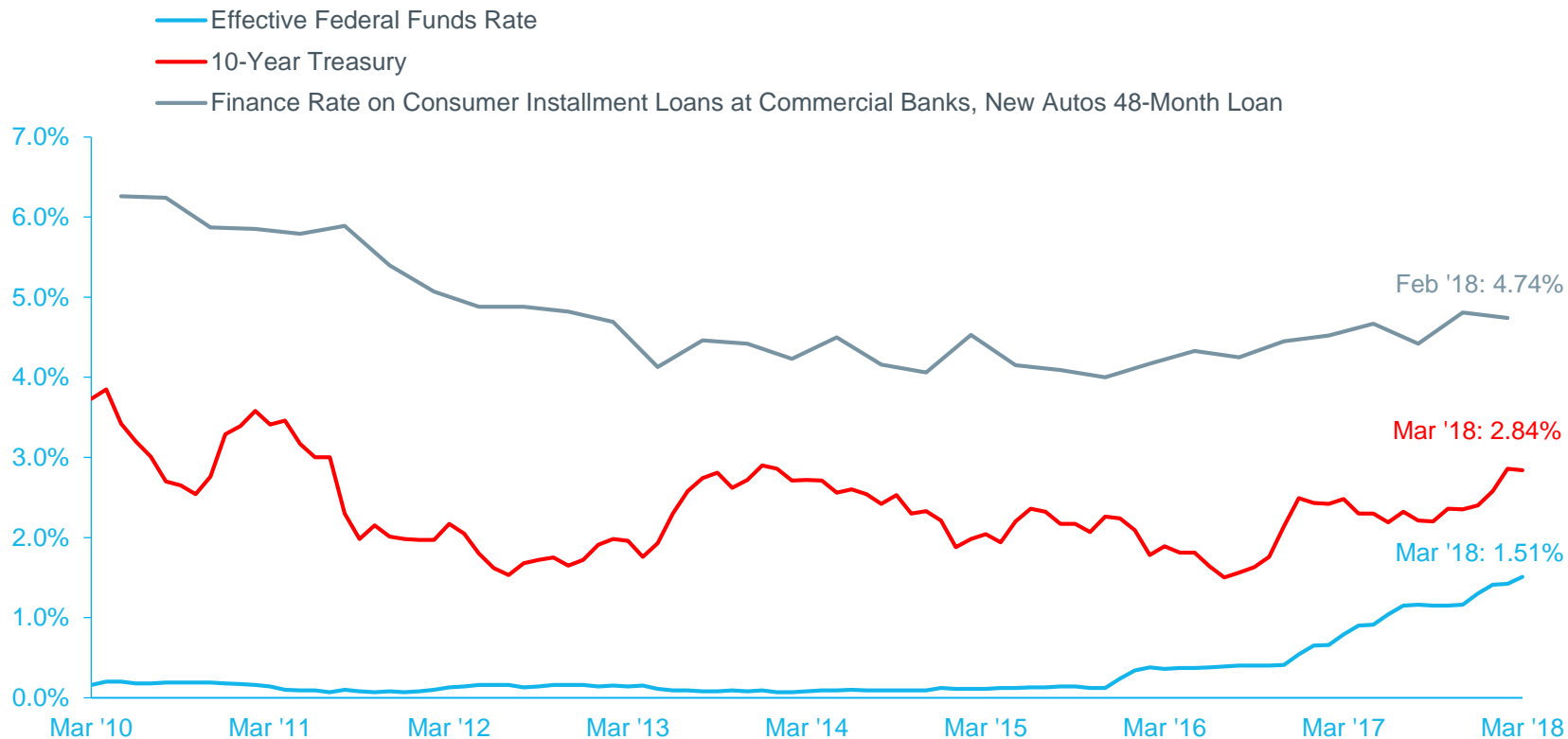


# Auto Indicators

As most consumers lease or buy cars with loans, increases in interest rates can reduce consumer ability to buy vehicles and lower auto sales volumes. Low interest rates help drive car sales.

As the benchmark federal funds rate has continued to rise since 2015, car loans stand to become more expensive. Finance rates on new auto loans have followed suit, reaching 4.7% in February 2018<sup>3</sup>. The gradual rise since 2015 has complemented a modest rise in delinquency rates, which reached 4.3% of auto loan balances in Q1 2018, up from 4.1% in Q4 2017<sup>20</sup>.

## Key Interest Rates

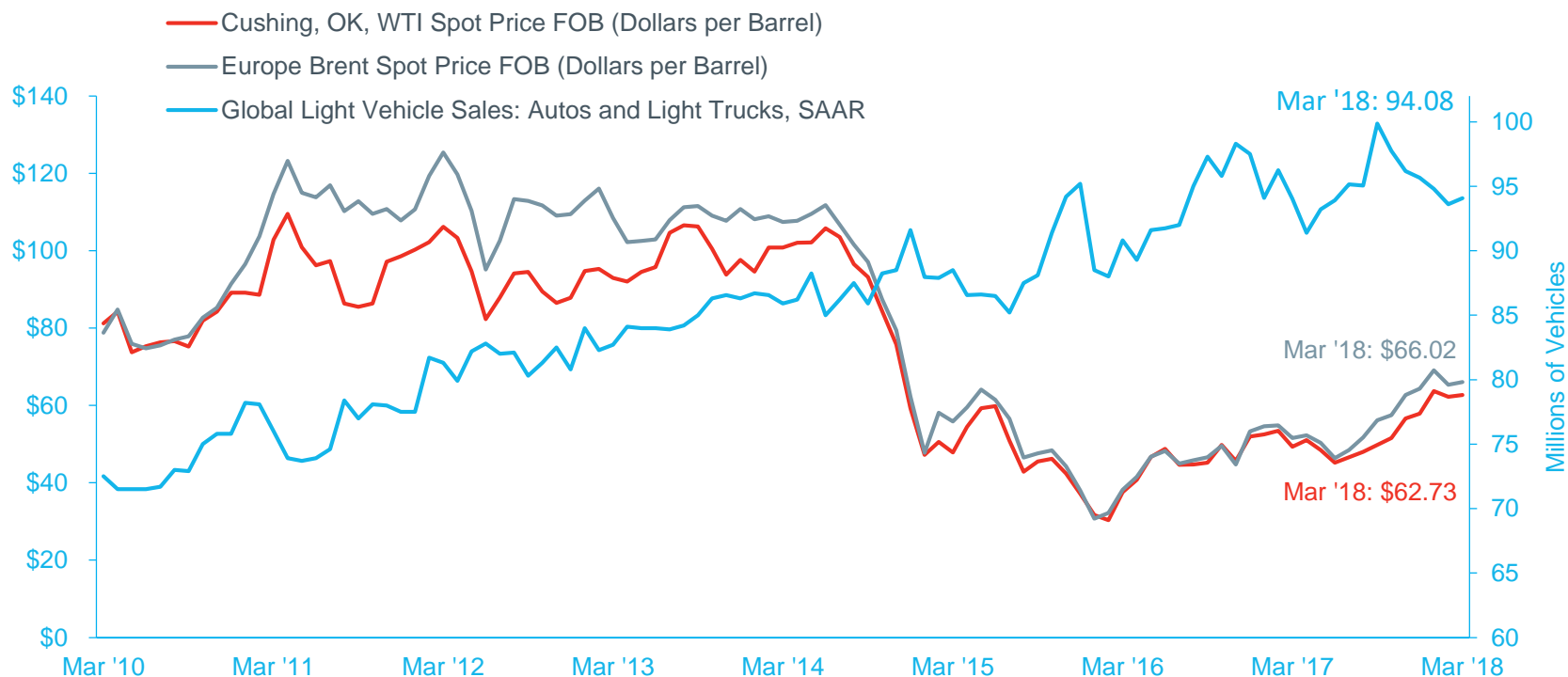




# Auto Indicators

Crude oil prices have steadily risen since early 2016. In March 2018, the West Texas Intermediate (WTI) spot price averaged \$62.73 per barrel and the Brent spot price averaged \$66.02 per barrel<sup>21</sup>. Oversupply, largely due to growth in U.S. production, and the decision by Organization of the Petroleum Exporting Countries (OPEC) to maintain rather than cut production levels in response to declining prices, led to a 56.3% drop in crude oil prices between June 2014 and January 2015<sup>22</sup>. Before the drop, global light vehicle sales continued to grow despite rising gas prices; since the drop, lower gas prices have provided tailwinds for further growth in auto sales. The increase in oil prices over the last two years has not correlated with an impact on the global auto SAAR, however. September 2017 saw a record high global SAAR of 99.88, though it has fallen back to 94.08 in March 2018<sup>1</sup>.

## Crude Oil Prices



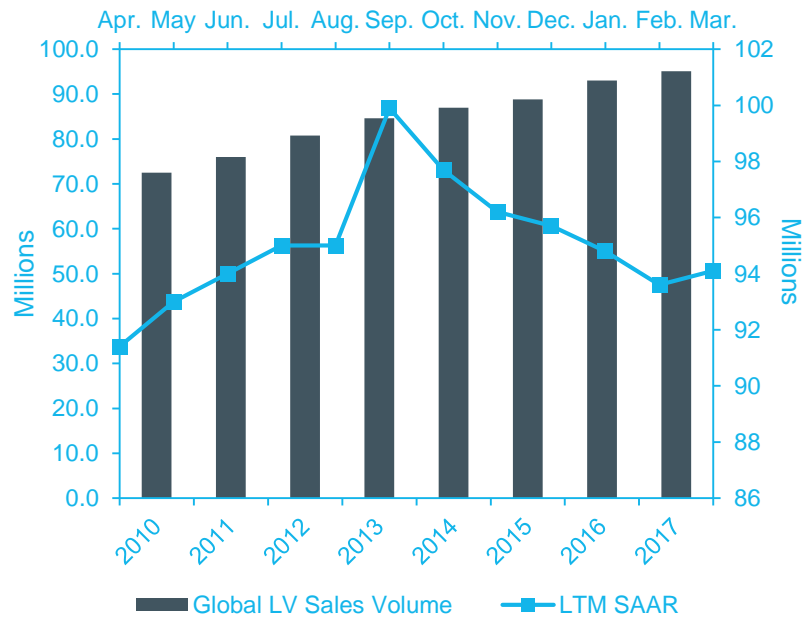
Sources: S&P Global Market Intelligence; "Global Light Vehicle Sales Update." LMC Automotive Public Data; U.S. Energy Information Administration, April 30, 2018

# Auto Indicators ○○○○●

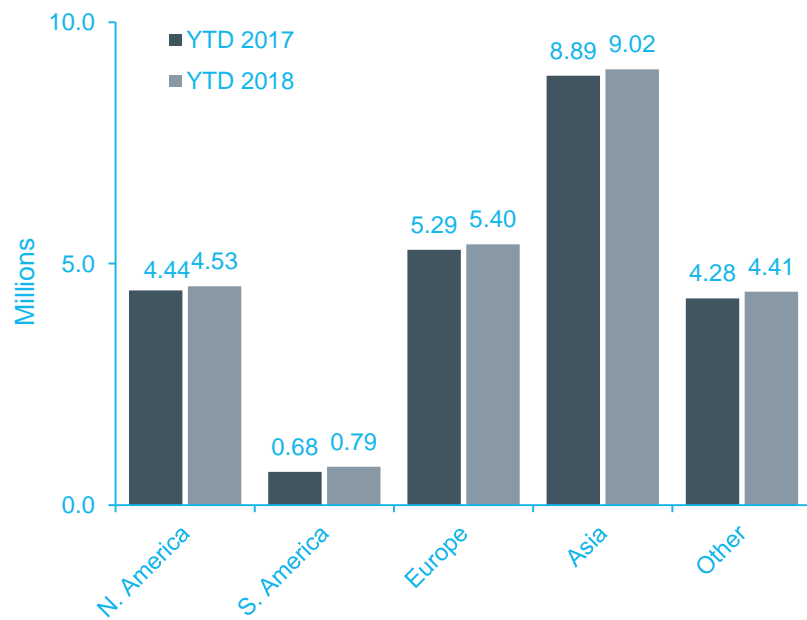
Global light vehicle sales have risen approximately 1.6% in the last-twelve months, with 8 of the 12 months experiencing light vehicle sales growth y-o-y. March generated the highest light vehicle sales volume at 9.40 million, while February registered the lowest, totaling just 6.75 million. Over the last-twelve months, January saw the strongest y-o-y growth (7.0%), driven by significant sales increases in Eastern Europe (21.6%), South America (23.5%), China (10.2%) and Korea (9.3%), Finally, September registered the highest SAAR in the last-twelve months, reaching just above 99.5 million-unit, while January generated the highest SAAR in 2018, reaching 94.8 million units<sup>1</sup>.

In 2018, South America has registered the highest sales volume increase at 15.4%, followed by Eastern Europe (13.5%). During this time period, the three largest markets, China, Western Europe and the U.S. have grown 2.4%, (0.1%) and 2.0%, respectively<sup>1</sup>.

**Global Light Vehicle Sales**



**Global Light Vehicle Sales YTD**



Sources: "Global Light Vehicle Sales Update." LMC Automotive Public Data.

Sources: "Global Light Vehicle Sales Update." LMC Automotive Public Data.

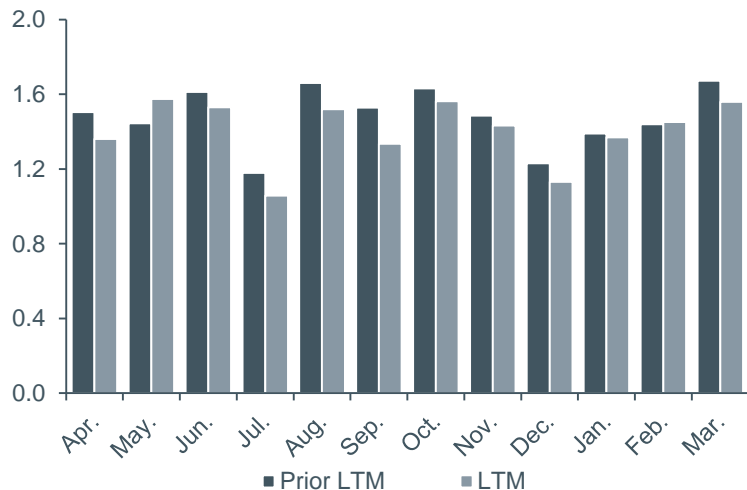
# North American Automotive Landscape

While U.S. sales are up y-o-y, reaching 17.2 million vehicles through the first quarter of 2018, North American automobile manufacturers' light vehicle production fell slightly in Q1 2018. In the first three months, North American light vehicle production fell 2.7% over the prior year, driven mostly by a 6.8% decrease y-o-y in March, from 1.67 million to 1.56 million<sup>23</sup>. Production cuts suggest OEM's predictions given an increasingly dynamic and uncertain marketplace, amid escalating trade war threats and replete with new technology and trends.

In an effort to maintain profitability and growth, the "Detroit 3" (Ford, GM and FCA) are all considering cutting sedan production as a response to shifting consumer trends towards SUVs and trucks<sup>24</sup>. In April, Ford announced it will cut all sedan production except the Mustang and the Chinese-built Focus, but plans to add five new SUVs to its lineup by 2020<sup>26</sup>.

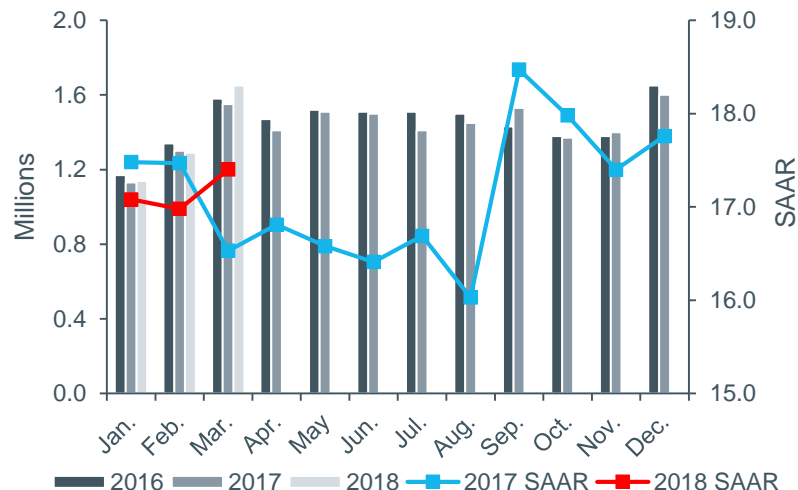
On the trade war front, China is contemplating placing tariffs on U.S.-made automobiles in response to President Trump's push to place a 25% tariff on steel and aluminum imports that would affect Chinese suppliers<sup>27</sup>. China's 25% automobile tariff threat would significantly impact several OEMs that rely on exporting to China; Tesla, BMW's South Carolina facility, Daimler's Alabama factory and Ford all stand to be negatively impacted<sup>25,27</sup>. Trump has also threatened to increase tariffs on European cars in the event that the European Union follows through on its expressed intent to respond to Trump's steel and aluminum imports<sup>32</sup>.

Monthly North American Light Vehicle Production (millions)



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

Monthly U.S. Light Vehicle Sales (millions)



Seasonally Adjusted  
Source: "US Light Vehicle Sales." WardsAuto Public Data.

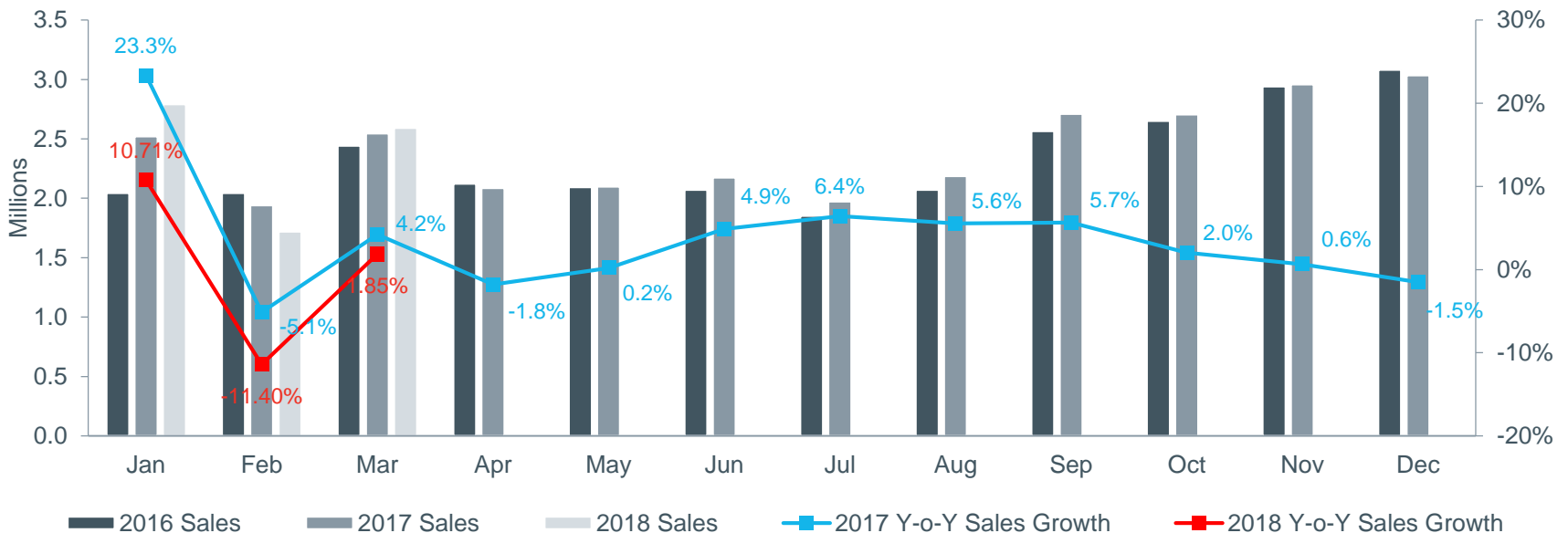
# Chinese Automotive Landscape

In March 2018, China's auto sales were significantly higher than February's sales and up 1.85% y-o-y<sup>4,18</sup>. Sales volume for the first quarter of 2018 was up just slightly over the same period in 2017. Auto production in China was up 0.3% y-o-y in March, but was down over the three months through Q1 2018 compared to Q1 2017. Weak production levels were driven by high dealership inventory levels<sup>18</sup>. China's light vehicle SAAR in March was 28.9 million vehicles, up 4.0% from February and inline with 2017 annual sales<sup>18</sup>.

The weak auto market in China for the quarter is partly due to decreased demand after a rush to buy cars before the end of 2017 when China's purchase tax waiver for small-engine vehicles expired. The China Association of Automobile Manufacturers estimates the market share of small-engine vehicles fell 1.7% from December 2017 to January 2018<sup>4</sup>.

In April, China's National Development and Reform Commission (DNRC) announced a plan to remove foreign equity restrictions on NEVs and special-purpose vehicles this year. The released five-year plan will eventually be extended to commercial vehicles and passenger vehicles, as well<sup>18</sup>. Meanwhile, the threat of a tariff war persists between China and the U.S.

## Monthly Auto Sales

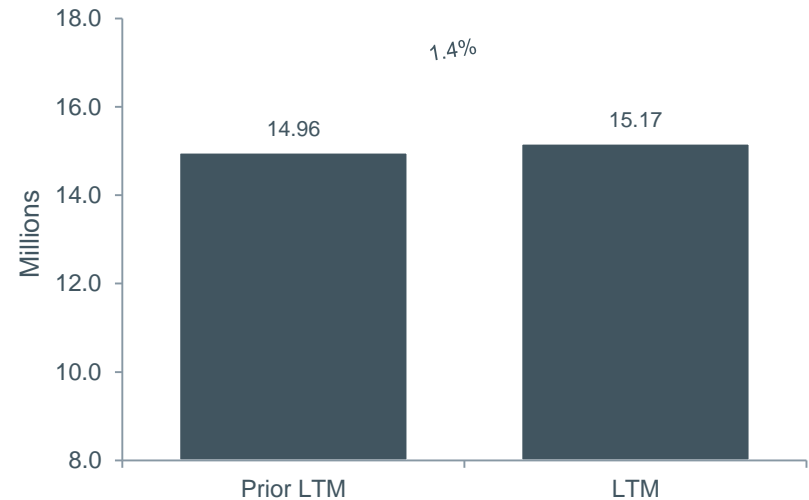
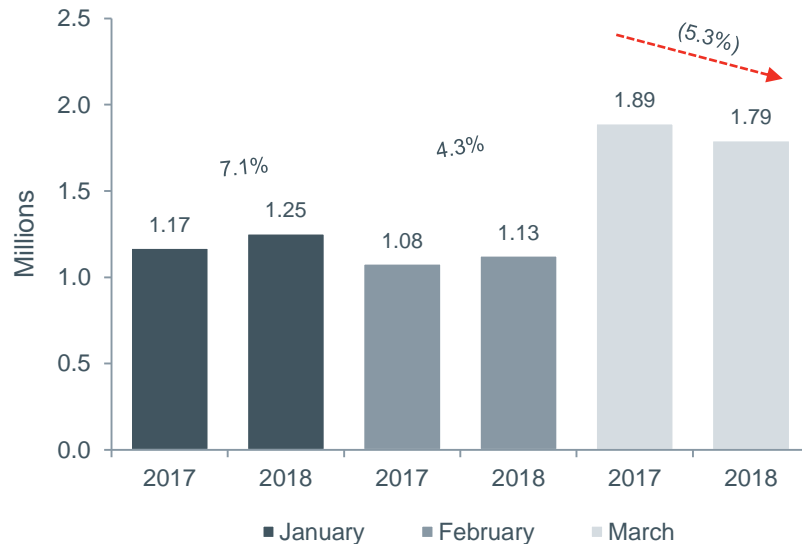




# European Automotive Landscape

New passenger vehicle registrations in Europe demonstrated healthy growth in the first two months of 2018, followed by a decline in March, which resulted in 0.7% growth quarter-over-quarter. In addition, for the last-twelve months, new passenger registrations grew 1.4% over the prior last-twelve month period. New registrations increased 7.1% in January y-o-y to 1.25 million, however, March saw new passenger registrations slip 5.3% y-o-y to 1.79 million. This overall decrease in registrations in March was the first y-o-y decline since 2013, and was driven by a substantial decrease in Europe's largest market, the United Kingdom (15.7%), and a slight decrease in Europe's second largest market, Germany (3.4%). Overall, in Q1 2018, 21 of the 27 countries in the European Union have demonstrated new passenger registration growth over Q1 2017, and 11 of those 21 have generated double-digit growth over that time period<sup>5</sup>.

## New Passenger Vehicle Registrations



Note: Europe is defined as the European Union  
 Source: "Passenger Car Registrations: +5.8% first two months of 2018; +4.3% in February." European Automobile Manufacturers Association. March 15, 2018.

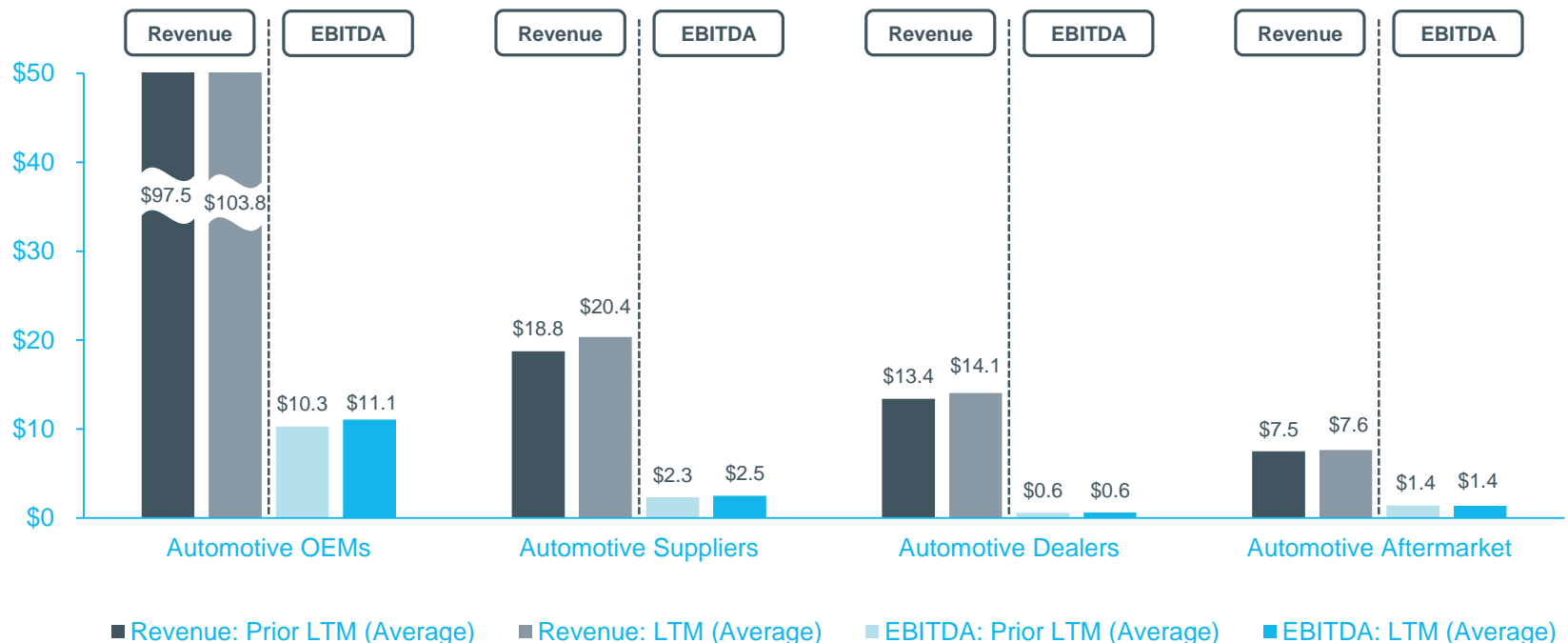
Source: "Passenger Car Registrations: +5.8% first two months of 2018; +4.3% in February." European Automobile Manufacturers Association. March 15, 2018.

# Revenue and EBITDA Growth



Automotive OEMs averaged approximately \$103.8 billion and \$11.1 billion in LTM revenue and EBITDA, respectively, demonstrating significant EBITDA growth (6.4%) over the prior last-twelve-months period. Automotive Supplier revenue and EBITDA both grew at rates of 10.3%, respectively, exhibiting slightly lower sales growth than their customers but higher EBITDA growth. Automotive Dealers generated an average of \$13.4 billion in revenue and \$605 million in EBITDA, and demonstrated limited top- and bottom-line growth in the LTM period. Finally, the Automotive Aftermarket Parts and Repair industry on average experienced revenue growth (3.9%), but EBITDA contraction, declining 3.8% to an average of \$1.35 billion<sup>6</sup>.

LTM Revenue and EBITDA (\$ billions)



**Definitions**

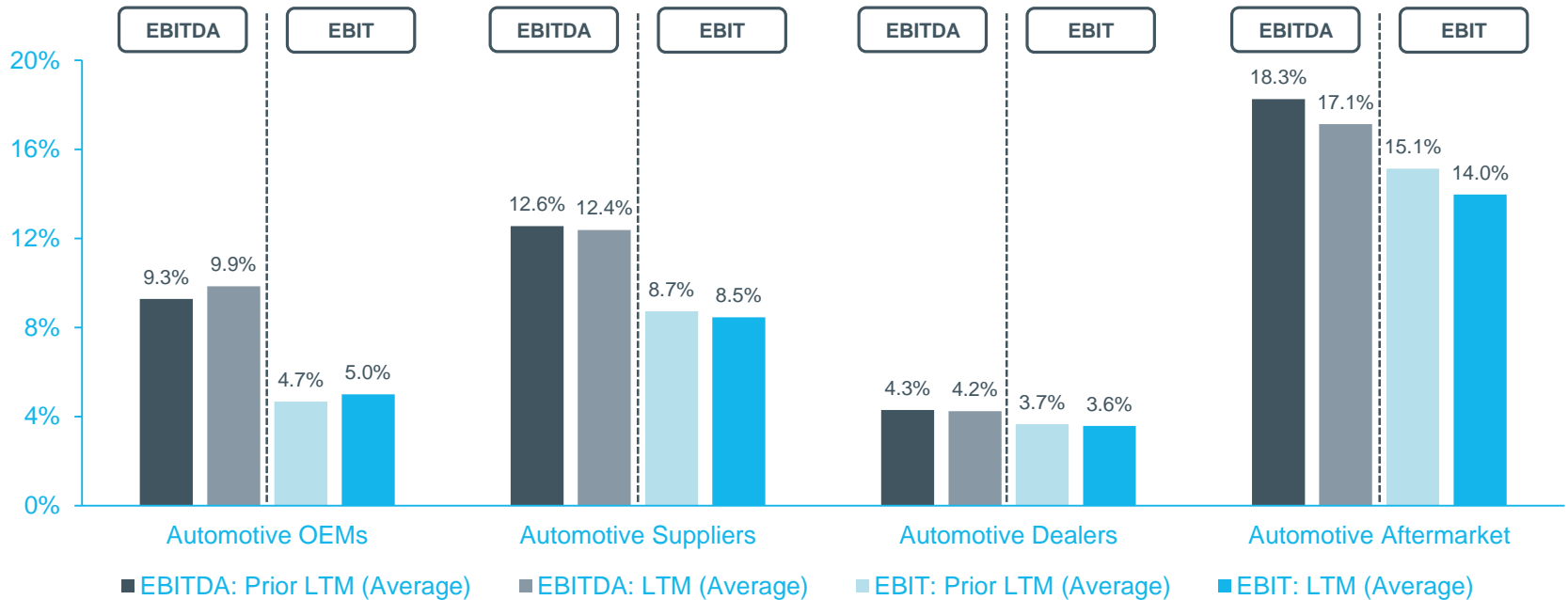
EBITDA: Earnings Before Interest, Taxes, Depreciation and Amortization  
 LTM: Last Twelve Months

Note: LTM as of the most recently available reporting date for each company  
 Source: S&P Global Market Intelligence as of March 31, 2018 and company filings

# Earnings Performance

Average LTM EBITDA margins exhibited varying levels of consistency relative to the prior LTM period, depending on the automotive segment. On an EBITDA basis, Automotive OEMs experienced a roughly 60 basis points (bps) increase, while Automotive Aftermarket Suppliers saw an average decrease of nearly 120 bps y-o-y. Meanwhile, Automotive Suppliers and Automotive Dealers saw EBITDA margins contract by only 20 and 10 bps, respectively<sup>6</sup>. In all cases, EBIT margin delta was either equal to or less severe y-o-y.

## Margin Performance



### Definitions

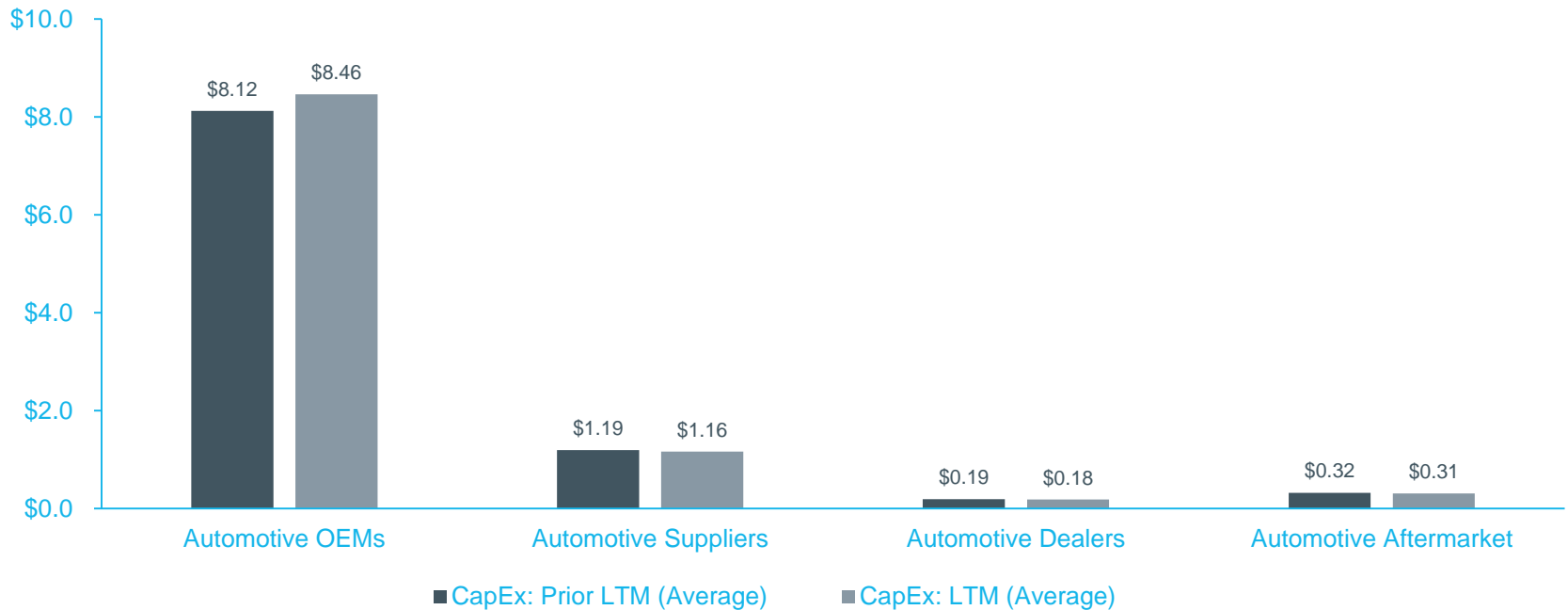
**EBITDA:** Earnings Before Interest, Taxes, Depreciation and Amortization  
**EBIT:** Earnings Before Interest and Taxes  
**LTM:** Last Twelve Months

Note: LTM as of the most recently available reporting date for each company  
 Source: S&P Global Market Intelligence as of March 31, 2018 and company filings

# Capital Expenditures

Automotive OEM capital expenditures increased approximately 4.2% in the LTM period versus the prior LTM period. On the other hand, Automotive Suppliers, Dealers and Automotive Aftermarket each decreased their capital expenditures over the prior LTM period, at 2.8%, 4.4% and 3.6%, respectively<sup>6</sup>.

## Capital Expenditures



Note: LTM as of the most recently available reporting date for each company  
Source: S&P Global Market Intelligence as of March 31, 2018 and company filings



# Public Company Equity Performance

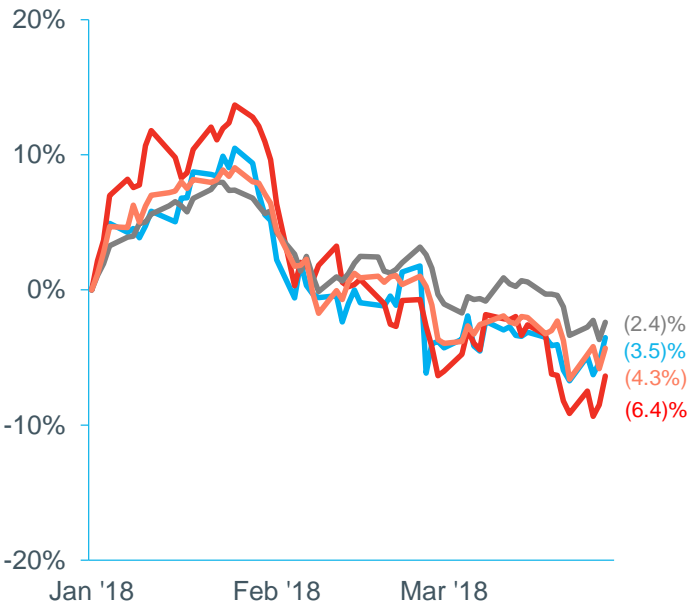


Over the past 12 months, the Automotive OEM index and Automotive Suppliers index have trended similarly to each other, with the Automotive Supplier index barely outgaining the Automotive OEM index, 18.7% to 18.2%. These indices outperformed the S&P index, which saw 12.0% growth in the over the last 12 months, but along with Automotive Dealers and Aftermarket Parts and Repair, underperformed relative to the S&P index for the first quarter of 2018, which is down 2.0% since January 2018<sup>6</sup>. The Aftermarket Parts and Repair continued its recent trajectory, declining 7.9% over the last 12 months and 6.4% over the quarter<sup>6</sup>. This decline in Aftermarket Parts equity performance is due in part to online retailers gaining market share<sup>28</sup> as well as recent attempts by OEMs to integrate aftermarket services into their offering<sup>29</sup>; however, some industry analysts believe that the increased market share of foreign vehicles is also to blame, as consumers are more likely to visit the dealership for service on foreign vehicles, rather than automotive repair shops<sup>28</sup>.

LTM Equity Market Performance



YTD Equity Market Performance



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

Source: S&P Global Market Intelligence as of March 31, 2018; represents most actively traded public automotive sector companies

# Public Companies' Trading Statistics ●○○○○○

Company	3/31/18 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
<b>Automotive OEMs</b>															
<b>North American OEMs</b>															
Fiat Chrysler Automobiles N.V.	\$20.33	81.7%	30.1%	\$31,505	\$36,048	0.26x	0.25x	0.25x	2.5x	2.0x	1.9x	6.8x	5.0x	10.7%	(0.1)%
Ford Motor Company	\$11.08	82.2%	(7.5)%	\$44,244	\$22,287	0.15x	0.15x	0.15x	2.3x	1.9x	1.9x	11.9x	7.2x	6.5%	2.9%
General Motors Company	\$36.34	77.7%	4.2%	\$50,895	\$43,690	0.33x	0.30x	0.30x	2.2x	2.6x	2.5x	NM	5.7x	14.6%	(4.5)%
Tesla, Inc.	\$266.13	68.3%	(10.7)%	\$44,955	\$56,845	4.83x	2.91x	2.14x	NM	NM	16.0x	NA	NM	0.3%	NM
<b>Asian OEMs</b>															
Faw Car Co., Ltd.	\$1.63	67.5%	(17.4)%	\$2,646	\$2,233	0.51x	0.46x	0.45x	12.0x	7.7x	7.4x	NA	26.2x	4.2%	22.3%
Geely Automobile Holdings Limited	\$2.88	75.8%	(17.9)%	\$25,839	\$23,291	1.58x	1.24x	1.03x	12.5x	8.3x	6.7x	16.2x	12.0x	12.6%	72.7%
Honda Motor Co., Ltd.	\$34.46	88.2%	(10.7)%	\$61,282	\$43,524	0.35x	0.30x	0.29x	2.9x	3.4x	3.1x	NA	8.9x	12.1%	8.4%
Hyundai Motor Company	\$135.18	82.9%	(10.9)%	\$27,991	NM	NM	NM	NM	NM	NM	NM	NA	8.3x	10.2%	1.7%
Nissan Motor Co., Ltd.	\$10.39	92.2%	(3.8)%	\$40,648	\$24,607	0.24x	0.22x	0.21x	3.3x	2.4x	2.3x	NA	7.4x	7.2%	2.9%
SAIC Motor Corporation Limited	\$5.42	90.3%	13.1%	\$63,341	\$52,286	0.38x	0.35x	0.33x	9.7x	7.1x	6.5x	11.7x	10.4x	3.9%	15.0%
Suzuki Motor Corporation	\$53.95	84.1%	(4.2)%	\$23,806	\$21,083	0.61x	0.58x	0.55x	4.0x	4.0x	3.7x	10.2x	11.4x	15.4%	18.4%
Tata Motors Limited	\$5.03	67.2%	(34.4)%	\$15,966	\$21,205	0.52x	0.42x	0.38x	4.7x	3.1x	2.7x	NA	7.7x	11.0%	(4.1)%
Toyota Motor Corporation	\$64.26	87.4%	(4.0)%	\$186,989	\$102,813	0.40x	0.37x	0.36x	3.0x	3.3x	3.2x	9.6x	9.3x	13.4%	7.8%
<b>European OEMs</b>															
Bayerische Motoren Werke AG	\$108.41	90.7%	(2.1)%	\$70,482	\$95,924	1.09x	0.77x	0.74x	7.1x	5.2x	4.9x	9.3x	7.7x	15.4%	3.8%
Daimler AG	\$84.97	90.2%	(12.9)%	\$90,904	\$52,461	0.30x	0.25x	0.24x	2.8x	2.1x	2.0x	8.8x	7.3x	11.0%	6.0%
Peugeot S.A.	\$24.09	93.0%	17.6%	\$21,520	\$19,219	0.24x	0.20x	0.20x	3.0x	2.3x	2.1x	9.2x	7.9x	8.1%	21.1%
Renault SA	\$121.35	97.7%	(1.5)%	\$32,590	\$2,750	NM	NM	NM	NM	NM	NM	6.7x	6.2x	8.8%	14.8%
Volkswagen AG	\$198.82	83.9%	(3.3)%	\$100,328	\$38,846	0.16x	0.13x	0.13x	1.4x	0.8x	0.8x	7.1x	6.0x	11.8%	5.9%
<b>Median</b>		<b>84.0%</b>	<b>(4.1)%</b>			<b>0.37x</b>	<b>0.33x</b>	<b>0.32x</b>	<b>3.0x</b>	<b>3.1x</b>	<b>2.9x</b>	<b>9.3x</b>	<b>7.7x</b>	<b>10.8%</b>	<b>6.0%</b>
<b>Mean</b>		<b>83.4%</b>	<b>(4.2)%</b>			<b>0.75x</b>	<b>0.56x</b>	<b>0.48x</b>	<b>4.9x</b>	<b>3.7x</b>	<b>4.2x</b>	<b>9.8x</b>	<b>9.1x</b>	<b>9.9%</b>	<b>11.5%</b>

Source: S&P Global Market Intelligence as of March 31, 2018 and company filings; 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 24.

# Public Companies' Trading Statistics ○○●○○○

Company	3/31/18 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 Margin	Revenue Growth
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS		
<b>Automotive Suppliers</b>															
Adient plc	\$59.76	69.2%	(32.4)%	\$5,579	\$7,116	0.43x	0.42x	0.41x	6.6x	5.0x	4.3x	8.5x	7.9x	6.5%	(1.2)%
Aisin Seiki Co., Ltd.	\$54.42	84.5%	(13.4)%	\$14,730	\$19,624	0.54x	0.52x	0.49x	4.6x	4.1x	3.8x	12.9x	10.7x	11.9%	11.4%
American Axle & Manufacturing Holdings, Inc.	\$15.22	75.1%	(7.1)%	\$1,699	\$5,301	0.85x	0.76x	0.75x	5.1x	4.3x	4.3x	3.3x	4.3x	16.7%	58.7%
Aptiv PLC	\$84.97	80.9%	14.9%	\$22,572	\$25,252	1.96x	1.82x	1.71x	12.1x	10.7x	9.9x	20.6x	16.5x	16.2%	5.0%
Autoliv, Inc.	\$145.94	95.7%	16.4%	\$12,710	\$13,116	1.26x	1.14x	1.06x	10.3x	8.9x	7.8x	22.0x	19.1x	12.3%	3.1%
BorgWarner Inc.	\$50.23	86.3%	(4.5)%	\$10,586	\$12,099	1.23x	1.13x	1.07x	7.4x	6.7x	6.3x	21.0x	11.5x	16.6%	8.0%
Continental AG	\$274.73	86.9%	(3.3)%	\$54,948	\$57,709	1.06x	1.01x	0.96x	7.7x	6.4x	6.0x	14.4x	12.9x	13.8%	8.5%
Cooper-Standard Holdings Inc.	\$122.81	91.0%	1.4%	\$2,200	\$2,471	0.68x	0.69x	0.68x	5.5x	5.3x	5.0x	13.7x	10.7x	12.3%	4.2%
Dana Incorporated	\$25.76	73.0%	(30.3)%	\$3,747	\$5,065	0.70x	0.65x	0.62x	6.4x	5.3x	4.9x	28.5x	8.8x	10.9%	23.7%
DENSO Corporation	\$54.80	80.6%	(21.8)%	\$42,729	\$40,228	0.87x	0.85x	0.79x	6.4x	6.4x	5.9x	14.2x	14.4x	13.5%	10.1%
Faurecia S.A.	\$80.97	88.2%	11.3%	\$11,110	\$11,828	0.48x	0.53x	0.50x	6.0x	4.7x	4.3x	13.2x	12.4x	7.9%	7.9%
Lear Corporation	\$186.09	91.9%	12.1%	\$12,453	\$13,165	0.64x	0.61x	0.58x	6.3x	5.8x	5.5x	9.6x	9.6x	10.3%	10.3%
Magna International Inc.	\$56.28	96.9%	16.7%	\$20,169	\$21,593	0.55x	0.53x	0.51x	5.2x	5.0x	4.7x	9.4x	8.3x	10.7%	6.9%
Schaeffler AG	\$15.42	74.8%	(12.6)%	\$10,269	\$13,275	0.77x	0.74x	0.71x	4.7x	4.4x	4.2x	8.1x	8.2x	16.5%	5.1%
The Goodyear Tire & Rubber Company	\$26.58	72.3%	(24.4)%	\$6,392	\$11,325	0.74x	0.71x	0.69x	5.3x	4.7x	4.2x	15.7x	7.1x	13.9%	1.4%
Valeo SA	\$66.08	79.1%	(12.8)%	\$15,723	\$18,460	0.81x	0.75x	0.68x	7.3x	5.7x	5.1x	13.8x	12.7x	11.1%	12.3%
Visteon Corporation	\$110.24	78.4%	(0.1)%	\$3,409	\$3,179	1.01x	0.98x	0.92x	10.8x	8.4x	7.6x	24.5x	16.6x	9.3%	(0.5)%
<b>Median</b>		<b>80.9%</b>	<b>(4.5)%</b>			<b>0.77x</b>	<b>0.74x</b>	<b>0.69x</b>	<b>6.4x</b>	<b>5.3x</b>	<b>5.0x</b>	<b>13.8x</b>	<b>10.7x</b>	<b>12.3%</b>	<b>7.9%</b>
<b>Mean</b>		<b>82.6%</b>	<b>(5.3)%</b>			<b>0.86x</b>	<b>0.81x</b>	<b>0.77x</b>	<b>6.9x</b>	<b>6.0x</b>	<b>5.5x</b>	<b>14.9x</b>	<b>11.3x</b>	<b>12.4%</b>	<b>10.3%</b>

# Public Companies' Trading Statistics

Company	3/31/18 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 Margin	Revenue Growth
						LTM	2018E	2019E	LTM	2018E	2019E	EPS	EPS		
<b>Automotive Dealers</b>															
Asbury Automotive Group, Inc.	\$67.50	88.4%	8.7%	\$1,412	\$2,370	0.37x	0.36x	0.36x	7.7x	7.2x	7.0x	10.9x	8.9x	4.7%	(1.1)%
AutoNation, Inc.	\$46.78	75.4%	(11.0)%	\$4,296	\$6,930	0.32x	0.32x	0.32x	8.1x	7.2x	7.1x	13.8x	9.6x	4.0%	(0.3)%
CarMax, Inc.	\$61.94	79.8%	7.5%	\$11,202	\$24,179	1.35x	1.33x	1.25x	18.0x	17.7x	16.8x	16.6x	13.6x	7.5%	10.1%
Group 1 Automotive, Inc.	\$65.34	77.4%	(1.0)%	\$1,320	\$2,698	0.24x	0.24x	0.24x	7.2x	7.3x	7.3x	7.4x	7.7x	3.4%	2.2%
Lithia Motors, Inc.	\$100.52	78.5%	(13.9)%	\$2,515	\$3,505	0.35x	0.28x	0.28x	8.1x	7.2x	6.7x	11.8x	9.5x	4.3%	16.2%
Penske Automotive Group, Inc.	\$44.33	80.8%	0.6%	\$3,767	\$4,661	0.22x	0.21x	0.21x	7.2x	5.9x	5.8x	NA	8.7x	3.0%	6.3%
Sonic Automotive, Inc.	\$18.95	83.3%	15.4%	\$804	\$1,822	0.18x	0.18x	0.18x	6.4x	6.3x	6.1x	9.3x	8.4x	2.9%	1.4%
<b>Median</b>		<b>79.8%</b>	<b>0.6%</b>			<b>0.32x</b>	<b>0.28x</b>	<b>0.28x</b>	<b>7.7x</b>	<b>7.2x</b>	<b>7.0x</b>	<b>11.3x</b>	<b>8.9x</b>	<b>4.0%</b>	<b>2.2%</b>
<b>Mean</b>		<b>80.5%</b>	<b>0.9%</b>			<b>0.43x</b>	<b>0.42x</b>	<b>0.40x</b>	<b>9.0x</b>	<b>8.4x</b>	<b>8.1x</b>	<b>11.6x</b>	<b>9.5x</b>	<b>4.2%</b>	<b>5.0%</b>

# Public Companies' Trading Statistics ○○○○●○

Company	3/31/18 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
<b>Automotive Aftermarket Parts and Repair</b>															
Advance Auto Parts, Inc.	\$118.55	78.1%	29.0%	\$8,770	\$9,268	0.99x	0.99x	0.97x	10.2x	9.7x	9.0x	15.8x	17.7x	9.7%	(2.0)%
AutoZone, Inc.	\$648.69	81.3%	(8.7)%	\$17,450	\$22,173	1.99x	1.95x	1.89x	9.3x	9.0x	8.8x	12.4x	13.3x	21.5%	3.6%
Monro, Inc.	\$53.60	83.6%	(1.5)%	\$1,758	\$2,149	1.96x	1.81x	1.66x	12.7x	11.3x	10.3x	30.4x	20.6x	15.5%	9.6%
O'Reilly Automotive, Inc.	\$247.38	88.6%	12.0%	\$20,607	\$23,539	2.62x	2.48x	2.35x	12.0x	11.5x	10.9x	19.6x	16.0x	21.8%	4.5%
	<b>Median</b>	<b>82.4%</b>	<b>5.3%</b>			<b>1.98x</b>	<b>1.88x</b>	<b>1.77x</b>	<b>11.1x</b>	<b>10.5x</b>	<b>9.7x</b>	<b>17.7x</b>	<b>16.9x</b>	<b>18.5%</b>	<b>4.0%</b>
	<b>Mean</b>	<b>82.9%</b>	<b>7.7%</b>			<b>1.89x</b>	<b>1.81x</b>	<b>1.72x</b>	<b>11.0x</b>	<b>10.4x</b>	<b>9.7x</b>	<b>19.5x</b>	<b>16.9x</b>	<b>17.1%</b>	<b>3.9%</b>

**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

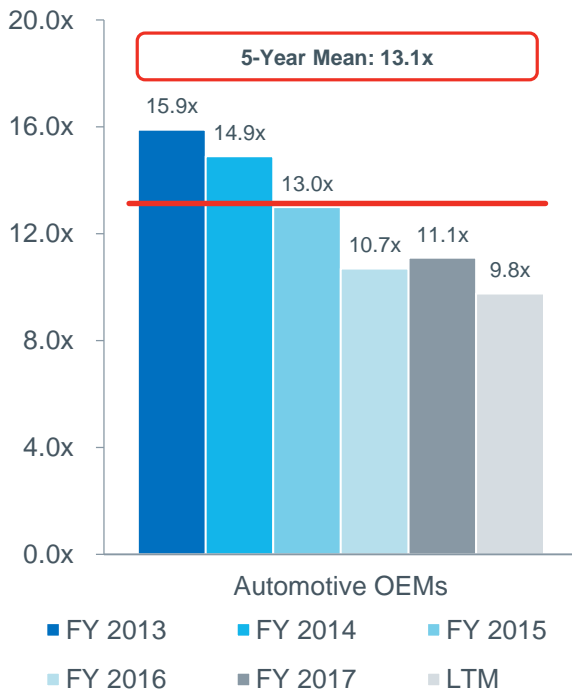
**EPS:** Earnings Per Share

Source: S&P Global Market Intelligence as of March 31, 2018 and company filings  
Represents most actively traded public automotive aftermarket companies

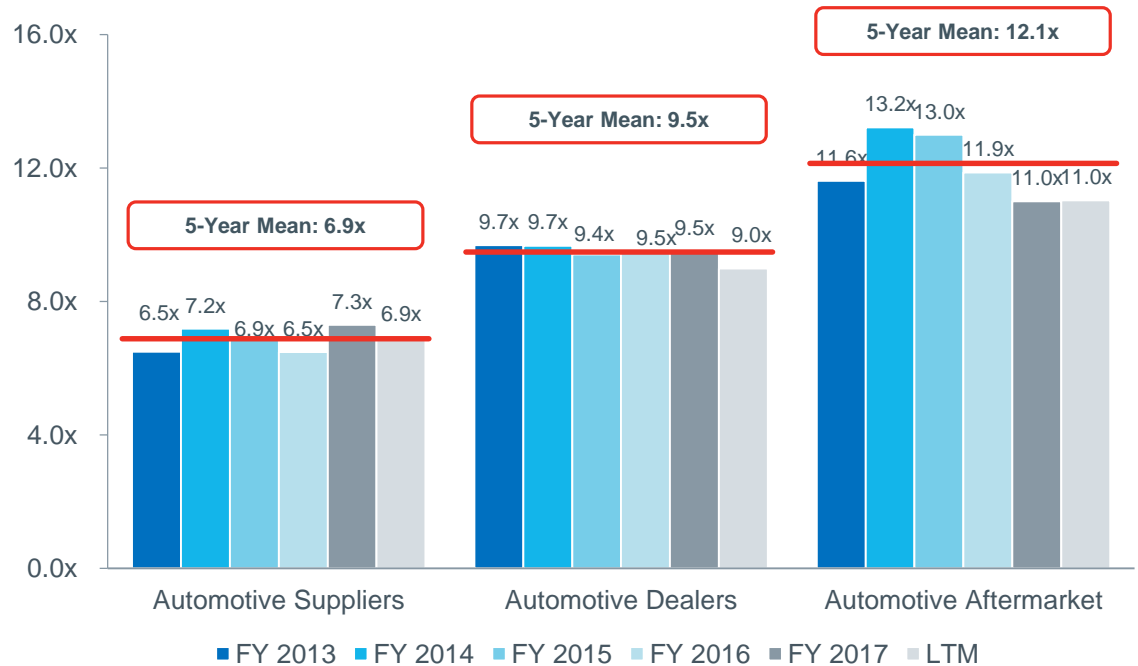
# Historical Trading Multiples

On average, Automotive OEMs are trading at 9.8x LTM EPS, more than 3.0x lower than their 5-year average price-to-earnings (P/E) multiple. Automotive Suppliers (6.9x) are on average trading at EBITDA multiples right in line with their 5-year average, while Automotive Dealers (9.0x) are approximately 0.5x lower than their 5-year average. The Automotive Aftermarket index is currently trading at a lower EBITDA multiple relative to their 5-year average, and their LTM average of 11.0x, while in line with their 2017 multiple, is lower than four of the last five fiscal year end average EBITDA multiples<sup>6</sup>.

Historical P/E Multiples Since 2013



Historical EBITDA Multiples Since 2013



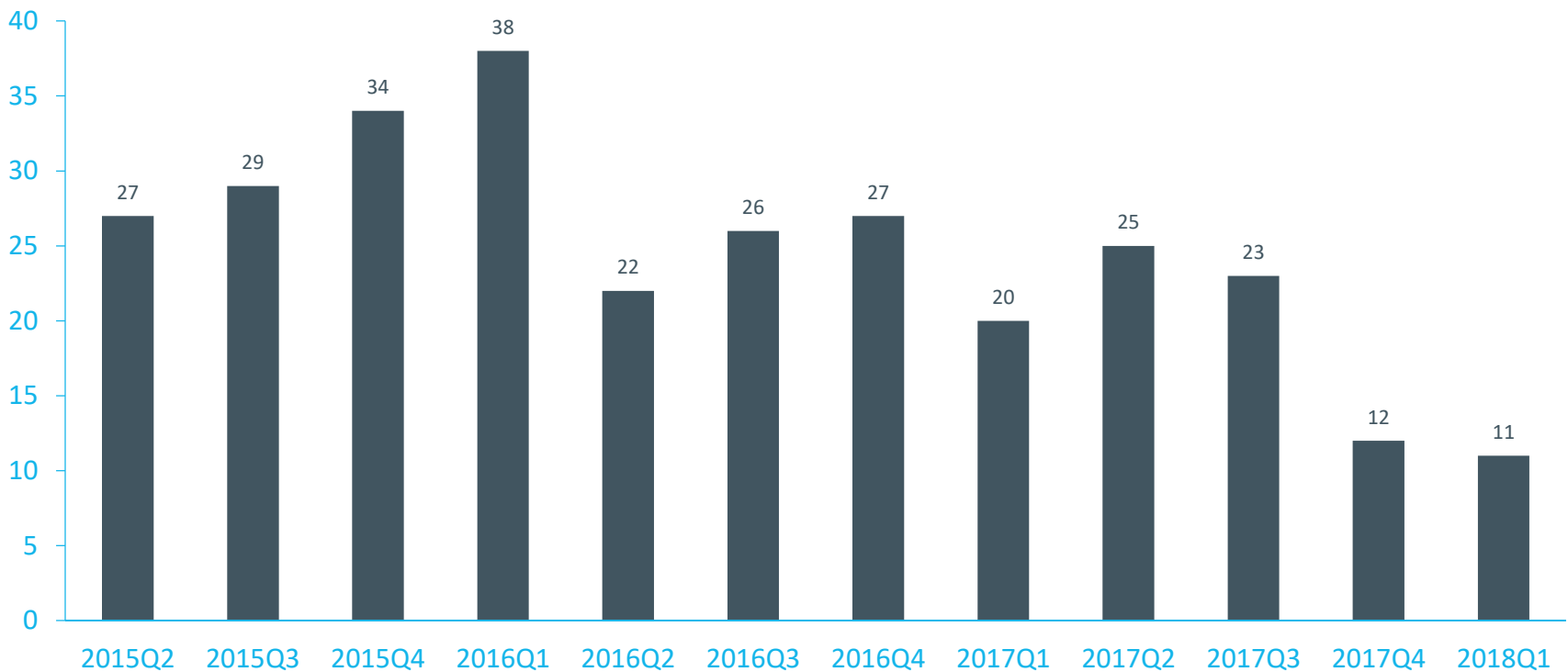
Multiples have been adjusted historically to reflect corresponding adjustments made on pages 21-24 Source: S&P Global Market Intelligence as of March 31, 2018 and company filings

Multiples have been adjusted historically to reflect corresponding adjustments made on pages 21-24 Source: S&P Global Market Intelligence as of March 31, 2018 and company filings

# M&A Activity by Quarter

M&A activity in the automotive sector decreased in Q1 2018 over the fourth quarter of 2017, with 11 completed transactions. With a total of 71 transactions for the last twelve months, M&A activity is weak compared to recent years. In 2017, 2016 and 2015, 80, 113 and 122 transactions, respectively, were closed in the automotive sector. Activity has been low since it dropped after Q1 2016, when 38 transactions were completed<sup>6</sup>.

## Automotive Industry M&A Trends





# Notable M&A Activity – Last 12 Months

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## Automotive Suppliers

### Selected M&A Transaction Analysis

(\$ in millions)

Announced	Target Name	Target Business Description	Acquirer Name	Enterprise Value	LTM Revenue	LTM EBITDA	EBITDA Margin	EV / Revenue	EV / EBITDA
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	MM Forgings Limited	\$0.7	\$2.1	NM	NA	0.34x	NA
Dec-17	Uni-Bond Brake, LLC	Manufactures brake components for automotive and heavy-duty applications	Amanda Products, LLC	\$3.0	\$13.0	NM	NA	0.23x	NA
Nov-17	AA Gaskets Pty Ltd	Designs, manufactures and supplies gaskets and sealing products for automotive markets and manufacturing industries	GUD Holdings Limited	\$22.9	\$12.8	NM	NA	1.78x	NA
Oct-17	CAP Corporation	Develops, manufactures and sells wiper blades wiper arms and related auto parts in South Korea	NPD Co., Ltd.; SG2017 Private Equity Fund	\$70.1	\$79.5	\$11.5	14.5%	0.88x	6.1x
Sep-17	STARCO Europe A/S	Manufactures and distributes wheel and tire solutions for OEMs worldwide	Kenda Rubber Industrial Co. Ltd.	\$21.2	\$129.4	NM	NA	0.16x	NA
Sep-17	IMC S.r.l.	Manufactures automotive parts	Mittel S.p.A	\$71.6	\$47.8	NM	NA	1.50x	NA
Aug-17	NEUE HALBERG-GUSS GmbH	Manufactures engine blocks, cam shafts and cylinder heads	S.D.L Süddeutsche Beteiligungs GmbH	\$16.4	\$483.4	NM	NA	0.03x	NA
Jul-17	METALLARTE srl.	Manufactures entry and compartment doors for manufacturers of leisure vehicles	Lippert Components, Inc.	\$16.7	\$12.5	NM	NA	1.34x	NA
Jun-17	Pacific Insight Electronics Corp.	Together with its subsidiaries, designs, develops, manufactures and sells electronic products and full-service solutions	Method Electronics, Inc.	\$104.4	\$92.7	\$10.8	11.6%	1.13x	9.7x
Jun-17	Groeneveld Groep B.V.	Engages in the development, production, marketing and sale of automatic greasing systems and effective safety systems for various vehicles and equipment	The Timken Company	\$280.0	\$105.0	NM	NA	2.67x	NA
Jun-17	Nexen Tech Corporation	Provides wiring harnesses for the automobile industry in South Korea	Route One Fund	\$65.5	\$69.5	\$5.8	8.3%	0.94x	11.3x

# Notable M&A Activity – Last 12 Months



## Automotive Suppliers

### Selected M&A Transaction Analysis

(\$ in millions)

Announced	Target Name	Target Business Description	Acquirer Name	Enterprise Value	LTM Revenue	LTM EBITDA	EBITDA Margin	EV / Revenue	EV / EBITDA	
Jun-17	United Welding Services Inc.	Manufactures truck accessories	CURT Manufacturing, LLC	\$21.5	\$35.3	NM	NA	0.61x	NA	
May-17	Yixing Prince Ceramics Co., Ltd.	Researches, produces and trades honeycomb ceramics for customers in China and internationally	Shandong Sinocera Functional Material Co., Ltd.	\$99.7	\$18.9	NM	NA	5.27x	NA	
Apr-17	Velvac Inc.	Designs, manufactures and supplies mirrors, parts and components to truck equipment and recreational (RV) aftermarkets, as well as heavy truck, RV and specialty vehicle OEMs	The Eastern Company	\$39.5	\$58.7	NM	NA	0.67x	NA	
				<b>Mean</b>	<b>\$466.9</b>	<b>\$589.9</b>	<b>\$216.3</b>	<b>11.3%</b>	<b>1.22x</b>	<b>8.6x</b>
				<b>Median</b>	<b>\$39.5</b>	<b>\$53.3</b>	<b>\$3.0</b>	<b>10.9%</b>	<b>1.03x</b>	<b>8.5x</b>

# Duff & Phelps' Ongoing and Recent Transactions

## Financial Advisor

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



Independent financial advisor to BMW Group and Daimler AG in connection with the transaction

## Sell Side Advisor



has been acquired by



## Solvency Opinion



has completed the spin-off of



## Sell Side Advisor



has been acquired by



## ERISA Advisory



Valuation opinion to determine fair market value of securities owned by the GM UAW Retiree Medical Benefits Trust

## Fairness Opinion



has been acquired by



## Sell Side Advisor



has been acquired by



## Financial Advisor



Takata Europe GmbH has completed the sale of certain assets and liabilities to Key Safety Systems, Inc.

# Sources

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