EXECUTIVE SUMMARY

◆ The European auto industry has been on a recovery track with new car registrations in the region reached a decade-high 15 million units in 2017 with all but one of the top 5 region recording growth. We see continued recovery in revenue growth in 2018, but at a slower pace considering that Brexit negotiations, the possibility of a trade war between the U.S. and China, and other macroeconomic and geopolitical factors are in play.

◆ Similar to the revenue trend, industry profitability is also on the recovery track with industry EBIT margins recovering from c.4.5% in 2014 to c. 8.0% in 2017. A tapering off of margin improvement is likely in 2018, in CFRA’s opinion, as fixed costs hold steady while revenue growth eases.

◆ The industry P/E multiple has dropped to c.8x in 2017 from c.12x in 2015, coinciding with the start of the emissions scandal surrounding Volkswagen AG (VW). Historically, market reaction to earnings growth is sluggish which has led to lower P/E multiples in times of higher earnings growth. We believe the industry is due for some multiple expansion as the current trough valuations have persisted for a while but concede that the expansion is likely to be slight as regulators continue to investigate the industry for emission cheating.

◆ The European Union via European emissions standards, which are generally renewed every five years, regulates the European auto industry. The current version of the standard is Euro 6 came into effect in late 2014. Considering the emissions scandal in 2015, the upcoming refresh of the emissions standard is likely to be stricter, in our opinion. Complicating matters however is the unpredictability of the current U.S. administration, which has relaxed its emission standards. This may provide ammunition for European lobbyists to push for weaker regulation in the E.U. in the name of competition.

◆ Other major factors affecting the industry are foreign trade policy and currency movements, given its global nature. Given the aforementioned unpredictable nature of the current U.S. administration, we expect these factors to play a large role in industry developments in 2018. The exact direction of influence is very difficult to predict. For example, a more protectionist U.S. will close off one major market for European automakers, but China may take the opportunity to bolster international trade by lowering its own trade barriers, thereby helping European automakers strengthen their foothold in a major market. We believe foreign trade policy will also determine which party comes out dominant in the future of the industry.

◆ Electrification, digitization, full electric mobility and autonomous driving are the major trends driving the future of the industry, and all European automakers has included as part of their mid-long term strategy, targets and roadmaps to keep up with the trends. Despite the need to adhere to stricter emissions regulation and efforts to keep up with the new trends in the industry, we only expect capital expenditures to increase marginally as a percentage of revenue.

◆ In CFRA’s opinion, it is unlikely that we will see large-scale industry consolidation via M&A. However, there is a small possibility that larger conglomerates (e.g. VW) could carve out parts of its business (e.g. Lamborghini, Audi) in a separate listing to unlock some value if industry multiples remain low.
INDUSTRY OVERVIEW: AUTOMOBILES REMAIN A CORE EUROPEAN INDUSTRY

Industry Performance

Sales
The European Union’s (E.U.) demand for new passenger cars has generally been correlated to the consumer confidence index and has been on an uptrend for the past four years, according to the European Automobile Manufacturers Association (ACEA). New car registration in the region reached a decade-high 15 million units in 2017 with all but one of the top 5 region recording growths. The figure accounted for 19.0% of new cars registered globally, up from its 18.0% share in 2016.

In the first two months of 2018, the E.U. had sold 3.0 million new light vehicles, up 6.6% from the prior-year period, according to automotive research and analysis firm, WardsAuto. Spain had the strongest growth at 16.5%, followed by Germany (9.5%), France (3.6%), and Italy (1.5%). U.K. vehicle growth, on the other hand, decreased 4.5% over the same period.

Production
In 2017, world passenger car production reached 80.2 million units, up 2.6% from the prior year, according to the ACEA. Europe produced a total of 19.6 million units last year, an increase of 2.6% compared to the year before and accounting for a share of 24.4% of the global passenger car production. Growth in the European production was driven by Eastern Europe’s production recovery, which saw Ukraine’s production more than doubled in the past year. Production had also increased in Turkey and Russia by 21.4% and 19.9%, respectively. China remains the largest vehicle manufacturer with a 29.3% market share, slightly down from its 29.6% share in 2016.

Automobiles industry index performance
Share prices in the European autos & auto parts segment (represented by the S&P Europe 350 Automobiles & Components index) increased 1.9% for the year through March 2018. The industry fared better as compared to the drop of 4.9% for the broader S&P Europe 350 stock index during the same period. Over the past five years (March 2013–2018), the S&P Europe 350 Automobiles & Components index surged 72.7%, tripling the 23.4% increase of the S&P Europe 350 stock index during the same period.

The twelve companies in the S&P Europe 350 Automobiles & Components index cover three sub-industries, namely Automobile Manufacturers, Auto Parts & Equipment, and Tires & Rubber. The index’s three largest constituents are automobile manufacturers and they include Volkswagen of 31.0%, BMW of 21.4% and Daimler of 12%. The fourth largest constituent is tyre manufacturing giant, Continental, making up to 8% of the index.

Industry Revenues

◆ The automobile manufacturers sub-industry is influenced by general GDP growth, interest rates, employment, consumer confidence, availability of credit and other economic factors. The auto parts & equipment, and tires & rubber manufacturers sub-industry is similarly but not identically correlated to the same factors.
Automobile manufacturers’ activity (85% of the industry by market capitalization) is an important part of the aggregate financial performance for the industry. The automotive manufacturing industry is a cyclical one, with cycles spanning an average of two and a half years. The 2015 – 2017 cycle did not perform as well, with revenue per share hovering just above the $1,600 mark at its peak, as compared to the previous two peaks of around $1,800 per share. The poor performance could be attributed to uncertainties surrounding Brexit negotiations and VW’s emission scandal in September 2015.

Revenues however picked up towards the end of 2017 following general optimism in the region due to improving labor markets, strengthening domestic demand, and a stronger euro.

In CFRA’s view, revenue growth for the rest of 2018 is expected to be positive but may be tapered as Brexit negotiations continue and the possibility of a trade war between U.S. and China, as well as implications of the ongoing NAFTA review.

**Industry Profit Margins**

**Operating Income**

Earnings before interest and taxes (EBIT) margins had improved from the low of 5.5% in the first quarter of 2014 and had largely stayed above the average buoyed by sales and cost efficiencies (including labor). The recent decline in both EBIT and selling, general and administrative expenses (SG&A) margin was mainly due to a surge in revenues.

Despite increasing competitive pressures, a sustainable gross margin is likely to be achieved after years of investments in enhanced manufacturing flexibility. However, factors such as currency fluctuations, regional mix and raw materials price swings could pose risks to these expectations. For 2018, CFRA is of the opinion that gross margins will stabilize while SG&A margins are expected to improve further, leading to a modest expansion of EBIT margin.
SG&A Margin

Industry SG&A margin trended down from 10.9% to 9.4%, between 2011 and 2017, as a result of successful costs-cutting strategies, increase operating efficiencies and leverage of higher sales. This however, masks some variation among sub-industry components.

CFRA expects limited progress in reducing SG&A margins in 2018 as fixed costs are likely to increase the same time when revenues ease due to limited upside to the global vehicle demand.

Capital Expenditures

Capital Expenditure (Capex) as a percentage of sales have largely stabilized over the last 3 years. The backdrop of an increasing revenue translates to higher capex spending in monetary terms.

European carmakers are constantly investing in the development of new models that are more fuel efficient to meet stricter emission regulations and environmental standards.

Electrification, digitization, full electric mobility and autonomous driving are major trends in the industry. All major European automakers have as part of their mid-to-long term strategy, a plan to tackle these themes.
Industry Valuation

- Historically, price-to-earnings (P/E) ratios in the automobiles industry expanded during recessions or times of economic weakness. During flusher times, ratios often contract. The reason for this counterintuitive action reflects the cyclical nature of the industry: when profits rise, the stock prices do not appreciate in tandem as the market anticipates an inevitable decrease in profits, and when profits fall, the stock prices do not fall as quickly, causing the multiple to increase.

P/E Ratio
- When valuing a company’s stock, a good place to start is the basic investment ratio of stock price-to-company performance relative to firms in the same industry and in other industries.
Using a 12-month forward earnings expectation in the first quarter of 2018 for the automobiles industry, the forward P/E multiple remained stable at 8.2x as compared to 8.3x in the first quarter of 2017.
INDUSTRY TRENDS

Competitive Environment:

The automotive industry is a major contributor to Europe’s prosperity in that it provides 12.6 million jobs and accounts for 4% of the European Union’s GDP. Data from the European Automobile Manufacturers Association’s (ACEA) “The Automobile Industry Pocket Guide 2017–2018” showed an increase of 3.3% in total vehicle registrations in Europe in 2017 over the previous year; it also showed that Europe made up 19.0% of the global motor vehicle registrations the same year. Passenger car exports totalled €125 billion in 2016 (with the lead destination being the U.S., at €37.7 billion, followed by China at €19.8 billion); on the contrary, imports were just €38.0 billion, according to the Pocket Guide.

The industry is the largest private investor in research and development (R&D) in the E.U., with investments of around €50 billion per annum, thus making it a key driver of innovation and economic growth. About one-fifth of the 96.1 million cars produced globally were sourced from the E.U. and, according to the ACEA’s 2017–2018 report, contributed to 5.7% of total employment in the E.U., directly and indirectly. With its significance to the economy, it is not surprising that the industry has been subject to substantial political influence.

The E.U. recorded a 10-year-high GDP growth of 2.4%, supported mainly by robust domestic demand and improved labor markets. The European Commission (EC) projected for E.U.’s GDP to grow by 2.3% in 2018 and 2.0% in 2019. ACEA however, is in opinion that talks on Brexit and the protectionist trade trend could post a threat to such growth.
### WORLD PASSENGER CAR SALES

<table>
<thead>
<tr>
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<td>NAFTA</td>
<td>9,195</td>
<td>9,121</td>
<td>8,600</td>
<td>7,752</td>
<td>(0.8)</td>
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<td>(9.9)</td>
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<td>United States</td>
<td>7,689</td>
<td>7,517</td>
<td>6,873</td>
<td>6,096</td>
<td>(2.2)</td>
<td>(8.6)</td>
<td>(11.3)</td>
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<td>Canada</td>
<td>760</td>
<td>712</td>
<td>661</td>
<td>639</td>
<td>(6.3)</td>
<td>(7.2)</td>
<td>(3.3)</td>
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<tr>
<td>Mexico</td>
<td>745</td>
<td>892</td>
<td>1,066</td>
<td>1,017</td>
<td>19.7</td>
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<td>EU 28 and EFTA</td>
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<td>14,288</td>
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<td>15,660</td>
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<td>EFTA</td>
<td>456</td>
<td>488</td>
<td>490</td>
<td>494</td>
<td>7.2</td>
<td>0.4</td>
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<tr>
<td>EU 15</td>
<td>11,693</td>
<td>12,773</td>
<td>13,481</td>
<td>13,824</td>
<td>9.2</td>
<td>5.5</td>
<td>2.5</td>
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<tr>
<td>France</td>
<td>1,796</td>
<td>1,917</td>
<td>2,015</td>
<td>2,110</td>
<td>6.8</td>
<td>5.1</td>
<td>4.7</td>
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<tr>
<td>Germany</td>
<td>3,037</td>
<td>3,206</td>
<td>3,352</td>
<td>3,442</td>
<td>5.6</td>
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<tr>
<td>Italy</td>
<td>1,361</td>
<td>1,576</td>
<td>1,825</td>
<td>1,969</td>
<td>15.8</td>
<td>15.8</td>
<td>7.9</td>
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<tr>
<td>Spain</td>
<td>890</td>
<td>1,094</td>
<td>1,147</td>
<td>1,235</td>
<td>22.9</td>
<td>4.8</td>
<td>7.7</td>
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<td>United Kingdom</td>
<td>2,476</td>
<td>2,634</td>
<td>2,693</td>
<td>2,539</td>
<td>6.3</td>
<td>2.3</td>
<td>(5.7)</td>
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<tr>
<td>EU new members</td>
<td>913</td>
<td>1,027</td>
<td>1,189</td>
<td>1,341</td>
<td>12.5</td>
<td>15.8</td>
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<td>Japan</td>
<td>4,700</td>
<td>4,216</td>
<td>4,146</td>
<td>4,391</td>
<td>(10.3)</td>
<td>(1.6)</td>
<td>5.9</td>
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<tr>
<td>Asia/Middle East, excl. Japan</td>
<td>30,136</td>
<td>31,894</td>
<td>35,342</td>
<td>36,356</td>
<td>5.8</td>
<td>10.8</td>
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<td>China</td>
<td>19,708</td>
<td>21,210</td>
<td>24,377</td>
<td>24,962</td>
<td>7.6</td>
<td>14.9</td>
<td>2.4</td>
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<td>India</td>
<td>2,571</td>
<td>2,772</td>
<td>2,967</td>
<td>3,228</td>
<td>7.8</td>
<td>7.0</td>
<td>8.8</td>
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<td>South Korea</td>
<td>1,360</td>
<td>1,534</td>
<td>1,534</td>
<td>1,495</td>
<td>12.8</td>
<td>0.0</td>
<td>(2.5)</td>
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<tr>
<td>Russia, Turkey, Other Europe</td>
<td>3,093</td>
<td>2,123</td>
<td>2,132</td>
<td>2,278</td>
<td>(31.4)</td>
<td>0.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Russia</td>
<td>2,333</td>
<td>1,283</td>
<td>1,240</td>
<td>1,393</td>
<td>(45.0)</td>
<td>(3.4)</td>
<td>12.4</td>
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<tr>
<td>Central and South America</td>
<td>4,270</td>
<td>3,543</td>
<td>3,148</td>
<td>3,550</td>
<td>(17.0)</td>
<td>(11.1)</td>
<td>12.8</td>
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<td>Mercosur</td>
<td>4,080</td>
<td>3,349</td>
<td>2,928</td>
<td>3,315</td>
<td>(17.9)</td>
<td>(12.6)</td>
<td>13.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>2,795</td>
<td>2,123</td>
<td>1,677</td>
<td>1,844</td>
<td>(24.0)</td>
<td>(21.0)</td>
<td>10.0</td>
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<tr>
<td>Africa</td>
<td>1,246</td>
<td>1,142</td>
<td>979</td>
<td>863</td>
<td>(8.4)</td>
<td>(14.3)</td>
<td>(11.9)</td>
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<tr>
<td>WORLD TOTAL</td>
<td>65,700</td>
<td>66,327</td>
<td>69,507</td>
<td>70,849</td>
<td>1.0</td>
<td>4.8</td>
<td>1.9</td>
</tr>
</tbody>
</table>


### WESTERN EUROPE: A MATURE MARKET

The Western European market is a mature one. Car sales in 2013 declined to levels not seen since 1993 due to the recession, it rebounded marginally in 2014 before increasing through 2017. Europe (defined as the EU28 and EFTA nations) accounted for around 22.1% of global passenger car sales in 2017 (compared with 35.2% for China, 8.6% for the U.S., and 6.2% for Japan), according to the International Organization for Motor Vehicle Manufacturers (OICA). In view of the growing sales in emerging markets, we can see that the importance of the European market is clearly diminishing when we consider that this market accounted for approximately 32.0% of global sales from 2006 to 2009. Europe’s five leading markets are France, Germany, Italy, Spain, and the U.K., which accounted for 72.1% of the region’s sales in 2017 (down from 82.0% in 2009). Demand patterns vary distinctly from country to country across the region, but small cars typically account for a significant share of European demand, due to the region’s relatively high fuel costs, congestion, taxes, and more. In terms of performance within Europe, 2017 saw a slowdown in recovery. Notably, the overall EU28 and EFTA region saw a 3.3% year-over-year increase compared with a 6.1% growth in 2016 and 9.4% in 2015. The following countries all reported growth last year: Italy (7.9%), Spain (7.7%), France (4.7%), and Germany (2.7%). The U.K. however, experienced a decline.
in car sales of 5.7% mainly due to uncertainties surrounding the Brexit transition. Based on a forecast for a sluggish economic recovery in the region, which reflects pent-up demand, CFRA expects growth to continue to taper in 2018.

**Germany**

With sales of 3.4 million units in 2017, up 2.7% compared with the prior year, Germany remains Europe’s largest car market. Car registrations increased 4.0%, year on year, in the first quarter of 2017, according to the ACEA. However, German car production decreased 8.0% to 523,600 vehicles in the same period, according to Verband der Automobilindustrie (VDA), a trade group for German automakers and suppliers. Despite the growth in car registrations of 2.7% in 2017, production dropped 1.8%, pointing to a trend of globalization in production.

**The U.K.**

This market turned upwards in early 2012 and is now the second-largest market in Europe. October 2015 marked the first annual growth decline (1%) following record growth over three-and-a-half years. In 2016, the car market was still buoyant with a 2.3% increase, but tumbled subsequently in 2017 by 5.7%, according to numbers from ACEA.

Registration numbers in the first quarter of 2018 did not fare any better with a decline of 12.4% year-over-year according to ACEA. PwC forecasted an 8 percent decline in British car sales to approximately 2.35 million units while LMC Automotive estimates showed a more optimistic 5 percent drop. The Society of Motor Manufacturers and Traders (SMMT), U.K.’s largest automotive trade associations, on the other hand, is in opinion that Britain will likely head into rocky territory where sales are forecasted to fall for two years with a total of 11% due to political and economic uncertainties caused by Brexit. A U.K. decline would drag down growth in the European region due to its sheer size.

**France**

Registrations returned to modest growth in 2017 at 4.7% to 2.1 million units, according to the OICA. This is in line with the growth rate for car registrations for the whole of Europe at 3.3%. Year to date through March 2018, passenger vehicle sales in France increased 2.9%, according to WardsAuto.

**Spain**

The Spanish car market has been under significant pressure from local economic problems. However, as the European economy recovers, Spain’s car market demonstrated significant improvement in the last couple of years, increasing 7.7% year over year to 1.1 million units in 2017. In the quarter of 2018, sales of passenger vehicles in Spain surged 10.5%, according to WardsAuto.

**THE BRIC COUNTRIES**

The BRIC countries, Brazil, Russia, India, and China, offer significant potential for long-term car sales growth, in CFRA’s view. Despite facing challenges recently, we see longer-term growth among the BRIC countries, driven by economic development and increases in per capita GDP and personal income. Further, car ownership levels remain at very low levels relative to developed markets. With an improving infrastructure, rising levels of automotive financing, and increased product offerings, vehicle sales levels move up sharply. Such strong growth prospects have already led to huge investment from the OEMs and suppliers within these countries and many OEMs have already delivered impressive returns and margins in the region.
Brazil
Historically, Brazil has shown strong growth helped by government stimulus measures, a growing middle class, and increased availability of finance. However, after a decade of growth, Brazil vehicle sales fell in recent years, due to weakening economic conditions, dropping 20.2% in 2016, before finally recovering in 2017. Year to date through March, vehicle sales increased 10.1%, according to WardsAuto. Brazil’s government supported the financing of car loans in 2012, but this resulted in an increase in bad debts by the start of 2013, which led banks to curtail their lending to the industry. It appears that conditions are easing once more, allowing improved access to financing.

The Brazilian auto industry had historically enjoyed protection of a 30% import tariff under the country’s automotive incentive program, termed Inovar-Auto, and, as a result, saw only 20% imported vehicles in the market. The heavily-criticized tariff, however, was lifted when Inovar-Auto expired in December 2017. While Rota 2030, a new incentive program to replace the former, is being drafted, WardsAuto opines that the tariff will not be included so as to avoid any dispute from the World Trade Organization.

Russia
Russian demand has been volatile. After reaching 2.9 million units in 2008 and becoming the second-largest light-vehicle market in Europe behind Germany, sales collapsed in 2009, falling over 50%. Dislocations in the credit market effectively froze vehicle financing, and consumer confidence suffered against a background of high unemployment and falling real wages. Through much of 2009, a loan interest subsidy scheme was offered, but pick-up rates were relatively low. Then in 2014, the market fell significantly following geopolitical tensions in Ukraine, and consequent economic sanctions from the U.S. and the E.U.

In 2015, the Russian economy contracted for the first time since 2009, after the sanctions and the steep decline in global oil prices. With the ruble’s weak performance against the dollar, automakers have been pushed to raise prices, resulting in a drop in car sales. Russian car sales plunged 44.9% to 1.3 million units in 2015 and fell another 3.4% in 2016. The market however, recovered with a 12.4% growth in 2017 mainly due to an improving economic backdrop.

For 2018, car sales in Russia are expected to grow 6.5% with a possibility to reach growth of 10% if the government continues its fleet renewal programs and loan subsidies, according to the Association of Russian Automobile Dealers (ROAD).

India
India’s light-vehicle market is an important one that grew strongly in the fiscal years from March 2008 to 2012, according to the Society of Indian Automobile Manufacturers (SIAM), an Indian trade group, supported by strong discounting, debt availability, new models, improving confidence, and pent-up demand. However, growth in passenger vehicles slowed in 2013 and 2014 due to weakening demand amid the faltering economy and rising interest rates. Sales had since recovered with an average sales growth of 7.9% for the three years ending 2017. 2017 posted the strongest growth at 8.8% as passenger car sales broke the 3-million-unit mark.

The Indian automotive market remains very much dominated by small motorcycles. This has prompted the launch of a number of small, low-cost family cars aiming to give an attractive and affordable alternative to two-wheel vehicles. There are a number of successful local brands such as Maruti and Tata, but global OEMs, including Toyota, Honda, and Ford, are increasingly looking at India as a potential small-car export hub. The market is also opening up for luxury marques, as a new generation of super-rich and middle classes emerge (as in China).
Light-vehicle demand is forecasted to grow at a rate of 7-8% in 2018, according to Automotive World’s (AW) “The world’s new vehicle market: Outlook for 2018” on the back of the country’s economic growth. AW also noted that despite the forecasted 7.4% growth for the Indian economy, consumer and business sentiment as uncertainty looms following roll out of the GST regime in July 2017.

**China**

China reached sales of 25.0 million units in 2017, up 2.4% from the prior-year period, a slower pace compared with the 14.9% annual increase in 2016, stemmed mainly from the overdraft effect from the implementation of the country’s preferential tax reduction on purchase of locally produced vehicles. In 2017, China contributed to more than one-third of the global passenger vehicle sales. In the first seven months of 2017, China recorded light-vehicle sales of 4.5 million units, up 1.7% from the prior-year period, according to trade group China Association of Automobile Manufacturers (CAAM). China is expected to retain its 30% share of global automotive production this year, supported by a 3.0% sales growth in 2018. According to S&P Global’s “Global Auto Industry 2018: At A Crossroad”, automotive sales growth is likely to remain sustainable for the next two years at a pace in line with China’s GDP growth.

In May 2015, inspired by Germany’s “Industry 4.0” plan, China came up with its own “Made in China 2025”. This strategic plan aims to guide the country towards industrial modernization, thus moving China up the value chain by putting emphasis on quality over quantity on manufactured goods. In CFRA’s view, the move away from being a quantity producer may be a catalyst for the nation’s growth as the higher margins that more “premium” products yield would translate to increased consumer spending power. This in return, will have a positive impact on the automotive industry.

Air pollution has been a significant problem in some major cities in the eastern part of the country. The government had successfully lowered sulphur dioxide levels, through limiting coal use, by 70% last year from the 2012 high and is now focused on targeting the next major source of pollution – vehicle emissions. Several big cities in China such as Beijing, Shanghai, and Guangzhou had introduced licence plate lotteries and/or auctions to limit the number of vehicles on their streets. In a bid to further discourage purchase of fossil-fuelled vehicles, nearly all big cities had allotted separate quotas on license plates for emission-free electrical vehicles. This fits neatly into another of China’s goals to spur and dominate the global electric-vehicle industry.

**EUROPEAN OEM OVERVIEW**

Following is a summary of the key European original equipment manufacturers (OEMs).

**Volkswagen**

In 2016, Volkswagen (VW) overtook Toyota as the largest automaker in the world despite the emission scandal. In 2017, according to the group’s annual report, the company managed to retain the first spot with an even greater margin at 10.8 million vehicles sold. This implies a 15.2% share of the global car market, based on data from VW and OICA. The group sells its vehicles in 153 countries and has 120 production plants spread across Europe, the Americas, Asia, and Africa.

VW has 12 brands with activities focused on the automotive division, broken down as follows: Volkswagen passenger cars (34.7% of group revenues in 2017); Audi (26.1%); Porsche (9.3%); Skoda (7.2%); SEAT (4.3%); Scania (5.5%); Volkswagen Commercial Vehicles (5.2%); MAN (4.8%); and Bentley (0.1%). [Totals do not add up to 100% due to intercompany eliminations and the exclusion of the financial services operations.]
Other auto brands include Bugatti and Lamborghini, and motorcycle manufacturer Ducati, which was acquired in 2012. Its top models in terms of volume are Golf, Passat/Santana, Jetta/Bora, and Polo. Volkswagen Financial Services, the largest auto financial services provider in Europe, offers dealer and customer financing, leasing, banking and insurance, and fleet management.

VW’s updated “Together—Strategy 2025” is based on the following points:

- **Major electrification initiative.** VW plans to introduce more than 30 new e-vehicles by 2025 and has an annual unit sales target of two to three million.

- **New group competencies.** Battery technology, digitization, and autonomous driving are going to be developed into new Group competencies.

- **Mobility services as additional growth driver.** VW plans to develop a cross-brand mobility solutions business unit that will tailor car models to customer requirements and will focus on on-demand mobility services (starting with ride hailing).

- **Significant efficiency improvements.** VW targets a ratio of capex to sales revenue of 6% by 2025.

In September 2015, in a scandal later dubbed “Dieselgate,” the U.S. Environmental Protection Agency (EPA) found VW guilty of shipping cars equipped with a software designed to detect and fool emission tests to meet strict U.S. pollution standards. This scandal resulted in the company’s first quarterly loss in 15 years of €2.5 billion in October 2015. Facing a possible fine of $18 billion for breaching its standards (up to $37,500 for each vehicle), VW signed a 20 billion-euro bridge loan with 13 banks to create a financial cushion.

In June 2016, in a deal announced by the Department of Justice, the Federal Trade Commission, the EPA, and California state regulators, VW agreed to pay $15.3 billion in settlement fees. The company will pay $2.0 billion over 10 years to fund programs supervised by California and the EPA to support the construction of an electric vehicle-charging infrastructure and to promote zero-
emission ride-sharing fleets and sales of cars that do not burn petroleum. VW announced a separate settlement with 44 U.S. states, the District of Columbia, and Puerto Rico that will total at least $600 million.

In addition, a U.S. federal judge had on April 2017 ordered VW to pay $2.8 billion in criminal penalty. Then, in June 2017, a British firm took up a “super claim” class action against the manufacturer, with 41,000 claimants. VW’s then CEO, Martin Winterkorn stepped down taking full responsibility despite disclaiming any personal wrongdoing. Separately, in December 2017, a former VW engineer was sentenced to 7 years imprisonment for his role in conspiring the scheme and defrauding the United States.

While the investigation is still ongoing, it has been tedious as all of them are citizens of Germany, a country the U.S. has no extradition treaty with. In January 2017, six VW employees, including former CEO, Martin Winterkorn, were named in the indictment as co-conspirators to the emission scandal. Of the six, five – with exception of Winterkorn – were charged. In May 4, 2018 however, U.S. prosecutors brought charges against Winterkorn, after gathering enough evidence to suspect that he had instructed employees to “mislead and deceive” regulators back in 2015 knowing that if they had not done so, VW would not be given the approval to sell the subject vehicles in the U.S.

VW started a series of asset reviews since 2016 and attempted to streamline its business by selling its motorcycle division, Ducati. The sale, however, was unsuccessful due to strong opposition from the workers’ union. VW continued its effort to revamp the corporate structure and had in April 2018 appointed a new CEO, a former BMW executive and famed cost-cutter, Herbert Diess. Diess’ appointment came two years before the expiry of former CEO, Matthias Müller’s five-year contract term. The early departure of Müller was not commented on. VW’s structure overhaul was centered around improving integration among individual operating units and to hasten the decision-making process which includes the possible spin-off of its commercial vehicle division to be merged into a MAN-Scania group.

**Daimler AG**

Daimler AG is one of the leading suppliers of premium automobiles and the world’s largest manufacturer of medium and heavy trucks, with van and bus operations and a complementary financial services business.

Daimler's core profit generator is the Mercedes-Benz Cars (MBC) division, which accounted for 64% of group profits in 2017, according to Daimler’s annual report. Last year, MBC sold about 2.4 million vehicles, of which the C and E Class cars and their variants accounted for 38% of sales. Europe remained the largest contributor to unit sales at 43% (of which 12% from Germany), followed by Asia at 36% (of which 25% from China), and 17% from NAFTA.

China has been important to all premium automakers and has provided supernormal profits because of a very high model mix (both car type and option content levels), in CFRA’s view.

Daimler Trucks (21.7% of revenues and 16.6% of earnings before interest and tax, or EBIT, in 2017) is the other core asset within the portfolio and is the world’s No. 1 manufacturer of heavy trucks. In 2017, 35% of truck sales went to NAFTA, 32% to Asia, 17% to EU30, and 6% to Latin America. The brands include Mercedes-Benz, Freightliner, Bharat Benz, Western Star, Thomas Built Buses and Mitsubishi Fuso. Approximately every two vehicle sold by Daimler was financed by its own financial services unit, with contract volume of nearly €139.9 billion in 2017. The division has been benefiting from higher volumes and reduced delinquencies as the market recovers from cyclical low levels of activity and output.
In terms of group strategy, Daimler targets an operating margin (EBIT in relation to revenue) for the automotive business of 9% on a sustained basis.

**BMW**

BMW group’s activities comprise cars, motorcycles, and financial services. With its three brands (BMW, MINI, and Rolls-Royce Motor Cars), the group pursues a premium strategy, from exclusive smaller cars to top-of-the-range luxury limousines. The Financial Services unit provides financing and leasing services, as well as asset management, dealer financing, and company car pools. Its relatively early recognition of CO2 regulation prompted the “Efficient Dynamics” program, aiming to reduce total fuel consumption.

The group derived 45.6% of revenues from Europe (including Germany) in 2017, with 30.1% in Asia, and 21.2% in the Americas. China is increasing in importance, accounting for 18.5% of revenues. With the majority of assets outside of the Eurozone, the company is highly exposed to currency risk.

Mercedes-Benz and Audi are still BMW’s main competitors in Europe, with Lexus, Infiniti, and Acura in the U.S. at the premium end. On the product side, while the historical reliance on two key models (the 3- and 5-Series) continues, BMW now offers premium products covering most segments, including sports cars and sport-utility vehicles (SUVs). BMW also has joint ventures with other carmakers, mainly covering power trains.

About 46.8% of vehicle sales in 2017 were leased or financed through BMW’s captive Financial Services business (down from 49.6% in 2016). The credit loss ratio, which stood at 0.34% in 2016, appears to have fully recovered from 2009, when it soared to 0.8%. The segment achieved a 18.1% return on equity (ROE) last year, in line with the long-term target of at least 18.0%, despite a decrease from 2016’s 20.1% due to stricter regulatory requirements.

**PSA Peugeot Citroën**

PSA Peugeot Citroën (Peugeot) is Europe’s second-largest auto manufacturer, selling 3.6 million assembled vehicles in 2017. The 4% increase in market share as at March 2018 compared to year-end 2017 was partly attributed to the acquisition of Opel/Vauxhall from General Motors in August 2017. Europe was the automotive group’s largest market in 2016, comprising 73.2% of total revenue, followed by Latin America at 7.2%. Peugeot’s European exposure is high relative to its peers; in addition, its historically strong position in weak markets such as Spain, Italy, and France has affected its performance. Latin America, historically its second-largest market, plunged 21.4% in 2015, before recovering 4.6% in 2016 and regained the second position in the current year.

Peugeot’s sales in 2017 comprised 72.3% automotive (cars and light commercial vehicles), 27.5% automotive equipment, and 0.2% financial services. The highest vehicle sales gains were made in the Middle East region (surging 61.4% due to the lifting of sanctions in Iran), Eurasia (55%) and Europe (23.2%), while sales in China and Southeast Asia increased marginally by 0.3% after a 16% decline in 2016.

Peugeot has two 50%-owned joint ventures in China—Dongfeng Peugeot Citroën Automobile Co. (DPCA) and Chang’an PSA Automobile Co. (CAPSA). The company cooperates on engines with BMW, Ford, and Renault. In March 2012, Peugeot announced an alliance with General Motors (GM), targeting $2 billion of synergies from procurement and platform sharing over the next five years. However, after barely more than a year, GM sold its 7% stake in PSA. Nonetheless, the alliance remains in place, according to GM.
The auto equipment business is represented by Peugeot’s 47% holding in Faurecia, a public company that manufactures major component modules through four divisions (seating, interior systems, emissions-control systems, and automotive exteriors), and is the E.U. leader or No. 2 in most of its businesses. Management has emphasized that Faurecia will continue to be part of the group.

Peugeot’s focus is on small cars and light commercial vehicles. However, in Europe, this segment suffers significant overcapacity, tight competition, aggressive pricing, and limited brand differentiation, in CFRA’s view. Poor profitability has meant that Peugeot has continually needed to cut costs even while needing to invest heavily in R&D for new models and to meet increasing environmental demands. To promote growth, management is prioritizing investment in emerging markets (aiming for more than 50% of deliveries outside Europe). Peugeot’s financial targets, set out in its “Back in the Race” strategy update in April 2014, include returning to positive recurrent operational free cash flow by 2016, generating €2 billion of cumulated operational free cash flow from 2016 to 2018, and reaching a 2% operating margin by 2018 in the automotive business. In 2015, the company’s operating margin reached 5%, well above its target. With its new “Push to Pass” strategy released in April 2016, Peugeot plans to maintain a 4% automotive operating margin from 2016 to 2018 and a 6% margin by 2021.

In the wake of the VW scandal in 2015, the French government officially launched an investigation into suspected diesel emissions test-cheating by Peugeot in April 2017 and was subsequently accused in September for installing suspect software in 2 million of its vehicles. The company had denied any wrongdoing in response to that.

**Renault**

Renault, an automotive group with a presence in 134 countries, manufactures and sells passenger cars and light commercial vehicles worldwide, but is notably absent from the U.S. and Canada. It operates five automotive brands: Renault (global), Renault Samsung Motors (Korea), Dacia (Europe/Mediterranean basin), Alpine, and Lada. Renault Group has its own Sales Financing division. It also provides dealer financing and has set up a savings plan open to the general public in France.

Renault sold 3.8 million units globally in 2017, up 15.4% from 2016. Europe accounted for 61.7% of revenues in 2017, a decline from last year’s 64.8%. France remains Renault’s single most important market, where it delivered 673,852 units in 2017, followed by Russia at 228,270, Germany at 228,046 and Italy at 215,901.

Automotive sales for Renault grew 8.4% in 2017, and they have contributed a higher share to group profitability. The five best-selling passenger cars at Renault last year included Renault Sandero, Clio, Duster, Mégane, and Captur.

In January 2016, the French government’s fraud investigators searched Renault’s offices as part of a vehicle emissions probe, which sent Renault’s shares plunging to their lowest levels in almost seven years. However, no fraudulent devices or systems were found on the Renault cars that were tested. A year later, Renault is once again being subjected to investigations by French prosecutors, a day after the U.S. authorities charged Fiat Chrysler.

**TAPERING SALES VOLUME GROWTH IN EUROPE**

The outlook for the European automobiles industry for 2018 is neutral. After six years of volume decline since the U.S. recession, European vehicle sales improved 8.9% in 2015, before moderating
to a growth of 5.9% in 2016 and 2.5% in 2017. For 2018, growth is still expected to be positive but likely to be further tapered, in CFRA’s view. This is mainly due to heightened uncertainties stemming from Brexit negotiations, the possible trade war between U.S. and China, and implications of the ongoing NAFTA review.

European car demand peaked at 15.1 million vehicles in 1999 and again at 14.8 million vehicles in 2007 in the E.U. nations and the four European Free Trade Association (EFTA) nations (Iceland, Lichtenstein, Norway, and Switzerland), commonly referred to as EU15 + ETFA; but fell away to just 12.3 million in 2013, according to data from the International Organization of Motor Vehicle Manufacturers (OICA). After increasing 5.8% year over year to 13.1 million units in 2014, car sales in EU28 and EFTA continued to strengthen by 9.4% in 2015, the largest growth experienced in the past decade, before moderating to a growth of 6.1% in 2016 and subsequently to 3.3% in 2017.

According to the ACEA, E.U. passenger car registrations grew 0.7% in the first quarter of 2018 compared to the corresponding period. Spain registered the highest growth during the period of 10.5%, followed by Germany and France at 4.0% and 2.9%, respectively. Growth in the region was largely dragged down by a contraction of 12.4% in the U.K. due to lower demands amid economic uncertainty and the growing aversion towards diesel-powered vehicles.

European automobile companies will likely find a source of growth in the emerging markets, especially in Asia, due to the rising income of the Asian middle class, with household spending in urban areas shifting to lifestyle and technology, among other things.
The most important automobiles industry trends involve several related developments: competition, regulation, and globalization. As the European market matures and global competition increases, environmental concerns have risen, and as always, new products, as well as infotainment, fuel-saving, and safety-related features, are crucial for automakers.

Pricing beginning to improve in Europe
CFRA feels that one of the vicissitudes of the auto & auto parts industry is that managements have historically favoured volume over pricing. Once lost, pricing takes time to restore, in our view. The long period of weak demand over during the period of 2009–2014 inevitably resulted in very weak pricing in the European market, as manufacturers tried to find buyers for their production. Since then, however, motor vehicles sales have been growing at a decent rate, which allows those companies with stronger brand and quality images to reduce their discounts. We also see this trend spreading to the volume sector as capacity utilization improves. However, with the implementation of the Worldwide Harmonised Light Vehicle Test Procedure (WLTP), it is uncertain if pricing will be affected by new taxation schemes.

Car manufacturers in Europe have seen little benefit from lower global oil prices. Further, fuel costs twice the amount per gallon in the E.U. compared with the U.S. Hence, Europeans tend to buy economy cars such as Ford Fiestas and Volkswagen Polos, rather than pricier sport-utility vehicles and trucks, which have buoyed the U.S. market.

Pent-up demand to replace older cars
The average car in the E.U. in 2015 (latest available) is 10.7 years old, up from 9.6 in 2014, according to the latest ACEA “The Automobile Industry Pocket Guide” report. This suggests that there is pent-up demand to replace aged cars. There are also good reasons to buy new cars. They are likely to be significantly cheaper to run and have better safety and infotainment features, so CFRA thinks the stage is set for further recovery. In addition, we think new regulations set to control diesel emissions are likely to see more existing old vehicles no longer road-worthy once implemented.

Global Sales and Production Outlook

In 2017, global vehicle sales grew 2.7% to 96.0 million units, compared with the prior-year period, buoyed by market growth in Asia and Europe, according to market intelligence firm WardsAuto. The global sales growth in 2017 was due to higher sales in most major markets with the exception of U.S., U.K. and South Korea. In the first two months of 2018, global light-vehicle sales reached 14.4 million units, up 2.3% from the prior-year period, according to WardsAuto. The growth was primarily driven by sales increases in South America (Brazil/Argentina), and Europe. The global vehicle market is expected to post its ninth year of growth this year, albeit at a slower rate than in 2017, according to Automotive World.

With Asia-Pacific in the lead in terms of its share in world vehicle sales, the global automobiles industry is increasingly shifting its focus to the emerging markets. In the first two months of 2018, Asia-Pacific had a 48.8% market share in global vehicle sales, down 0.2% from the prior-year period, according to WardsAuto. In 2017, Asia-Pacific had a 47.3% share in global vehicle sales, up from 46.8% in 2016.

China reached sales of 24.7 million units in 2017, up 1.4% from the prior-year period, a slower pace compared with the 15.5% annual increase in 2016, stemmed mainly from the overdraft effect from the implementation of the country's preferential tax reduction on purchase of locally produced vehicles. In terms of production, Asia-Pacific grabbed more than half of global vehicle production in 2017, which includes China's 30% contribution. In the first seven months of 2017, China recorded
light-vehicle sales of 4.5 million units, up 1.7% from the prior-year period, according CAAM. China is expected to retain its 30% share of global automotive production this year, supported by a 3.0% sales growth in 2018. According to S&P Global’s “Global Auto Industry 2018: At A Crossroad”, automotive sales growth is likely to remain sustainable for the next two years at a pace in line with China's GDP growth.

Auto demand from emerging markets such as South America and Russia has recovered last year, according to the International Organization of Motor Vehicle Manufacturers. Numbers from WardsAuto showed global vehicle sales improved in the first two months of 2018 over the same period in 2017 despite a 2% drop of in February figures from the same month last year. The decline in February was attributed mainly to the Chinese New Year falling on a January in 2017 as compared to February in 2018. Sales in other parts of the Asian region also showed declines, such as Taiwan (-9.9%), South Korea (-8.4%), Japan (-2.2%) and Indonesia (-0.9%), amid weaker demand.

Nevertheless, the decline in February 2018 was moderated as sales improve across European countries due to increased demand in the crossover utility vehicle (CUV) segment with Russia’s sales increasing 23.3%, Germany of 7.1%, France by 4.5% while U.K.’s sales contracted by 1.7%. The same increase was witnessed in South America. Biggest gainers include Chile of 23.2%, Brazil of 15.7%, and Argentina of 17.9%.

According to WardsAuto, year-over-year through February, South America saw the largest growth of 19.7% with 668,000 units sold, followed by Europe with a 6.7% growth and 3.14 million units sold. Asia-Pacific and North America's sales through February grew 2.4% and 2.6% with 7.27 million and 14.92 million deliveries, respectively during the period despite declines in February for both regions.

In November 2016, the Organization of the Petroleum Exporting Countries (OPEC) agreed to a reduction in oil production, which immediately increased oil prices. Oil exporting regions such as South America and Russia will likely benefit from this move, and in turn, so will the automotive markets in those countries. In November 2017, OPEC and non-OPEC producers led by Russia agreed to extend the production cuts into the end of 2018.

In 2017, North America’s light-vehicle production decreased 1.4% compared 2016, and is expected to decline slightly this year, according to Automotive World’s “Global Vehicle Market Outlook 2018”. In the U.S., the drop in vehicles sold reflected a glut of newly purchased vehicles and had forced dealers to lower prices to entice buyers, according to Reuters. Canada’s sales is also expected to marginally decline after exceeding 2 million units for the first time last year. The outlook on the automotive market under the Trump administration remains unclear, with a boost in economic growth anticipated due to the planned deregulation and fiscal stimulus. On the other hand, trade barriers are expected to increase vehicle prices, which will adversely affect sales, according to Reuters.
Meanwhile, sales for Europe are expected to grow this year, albeit at a slower rate as the market upturn had expired, uncertainty remains over implications of Brexit and as the U.K. undergoes a cyclical downturn where vehicle demands will likely fall by 6-7%, according to Automotive World’s. In 2017, light-vehicle sales in Europe increased but at a slower pace of 4%. In the first two months of 2018, sales in Europe increased 6.7% from the prior-year period, according to WardsAuto.

Global light-vehicle sales increased 2.3% year over year to 14.4 million units year to date through February 2018, according to WardsAuto. Sales growth was recorded for South America (18.8%), Asia Pacific (2.1%), Europe (6.6%), and North America (-0.7%). For full-year 2018, slower growth is expected in North America, Western Europe, China, and other parts of Asia, while signs of recovery in the automotive market are expected to emerge in South America and Russia, based on Automotive World’s estimates in December 2017.

Global light-vehicle sales are projected to reach 95.0 million this year, a 1-2% increase from last year. The slower growth can be attributed to slower demands from various markets that peaked recently, and a continuing mild downturn in the U.S. Overall, CFRA thinks higher global auto sales will help corporate profits and cash flows in 2018, helped in part by the wide availability of consumer credit, rising consumer confidence and employment, a strong stock market, and lower gas prices.

Global GDP is expected to increase 2.0% in 2018 and 2019, reflecting an increase in demand with expectation of a bullish global economy, according to the January 2018 "World Economic Outlook" report by the International Monetary Fund (IMF). India and China are forecast to lead the way with GDP growth of 7.4% and 6.6%, respectively, in 2018. Meanwhile, the Eurozone is expected to grow only 2.2% this year.

THE OEM MARKET

Premium resilience remains a key feature
Next to the levels of actual units sold, the product/segment mix also makes a significant and important difference on sales and profitability at auto OEMs. Major trend changes here can have material implications for the companies involved.

Scrappage incentives caused the Western European car market to experience deterioration in product mix through 2009 and 2010. During that time, small-car manufacturers saw significant market share gains, while the large makers and premium brands saw little benefit. In the following two years, manufacturers of small cars suffered because of weak car demand in the region, particularly in Southern Europe. However, conditions began to ease toward the end of 2013 and into 2014 as volumes began to recover. CFRA expects the production of small cars to continue to improve very slowly over the next three to four years.

Segments with contrasting performance
CFRA continues to see better pricing power, a reflection of stronger brands, and higher growth rates for the premium original equipment manufacturers (OEMs) relative to the mass-market producers. However, with the European market reaching an inflection point in 2014 and returning to volume growth after six years of declines, share prices for mass-market names such as Peugeot are holding up better than the premium players. Premium players have a more global sales footprint, with greater exposure to the Chinese market, which is slowing. Nevertheless, OEMs and suppliers have generally strived for global sales growth, leveraging automobile platforms in many
regions and opting for scale wherever possible. While improvement in sales generally leads to better gross profitability, we foresee headwinds from increased research and development costs, particularly related to more stringent emission regulations.

Mass-market players have suffered more from the small-car battleground in Europe. CFRA has seen recovery so far in 2018, although we think that recovery is now tapering. For example, “no-frills” brands Dacia and Renault saw vehicle sales increase 16.6% and 5.9% year to date through February 2018, respectively, according to data from research and analysis firm WardsAuto.

Volume producers are trying to address their structural problems of ongoing overcapacity and low capacity utilization. However, utilization remains far below the levels seen in North America after the industry’s restructuring during the Great Recession as seen in the decrease in. Year to date through the first quarter of 2018, scheduled North American production decreased 2.5%, production in the second quarter, however, is estimated to increase 2.1%, according to WardsAuto. Meanwhile, total vehicle production in Europe increased 2.4% year to date through September 2017 (latest available). In particular, passenger car production as at the fourth quarter of 2017 rose 2.6% from the corresponding quarter, according to the ACEA “Economic and Market Report: Quarter 4 2017” report published in March 2018. While trying to upgrade their brand image and work on pricing, volume players are also investing in emerging markets to support longer-term growth. Meanwhile, CFRA thinks that the smaller-car segments are likely to experience growing competition from Asian OEMs and more affordable models launched by the premium OEMs.

Premium players have strong balance sheets, while challenges in the operating environment and weaker profitability for mass players will keep their balance sheets in focus, in CFRA’s view. We also think that financial services divisions remain in good shape. In 2017, financial services’ profitability increased for most companies in the industry, following volume growth and stable or improving bad debt trends; this however, is partially offset by increased funding and regulatory
costs. In general, the industry’s financial services businesses remain sound, in our view, with strong balance sheets, greater conservatism, and more diversified funding than in the prior downturn.

On a longer-term basis, CFRA continues to highlight the automobiles industry’s structural challenges, such as mature market profiles, increased competition from Asia, and tightening environmental regulations driving increased capital expenditure.

**Weak return on investments seen in the short term**

Although it seems that the global automobiles industry is recovering well this year, with profit margins reaching a 10-year high, trends in total shareholder returns and return on invested capital tell another story. In particular, capital expenditure (capex) for innovative automobile software developments make it difficult for original equipment manufacturers (OEMs) to recover capital costs. PwC’s most recent “2017 Automotive Trends” reported that in 2016 total OEM investments worldwide reached $195 billion compared with $186 billion in 2015. However, the world’s top 10 OEMs only had 4.0% capital returns in 2016, which is about half the cost of capital. Nonetheless, capex for automobile manufacturers will continue to rise in order to keep up with innovations. For example, capex for one of the leaders in auto innovation, Tesla, declined in 2016, but soared by almost three times in 2017 to cater for the launch of their newest electric vehicle (EV), the Model 3. Aside from increasing R&D expenses, automakers are feeling additional pressure from the rising costs of safety and environmental regulations, particularly with the implementation of the Worldwide Harmonised Light Vehicle Test Procedure (WLTP).

To cope with rising non-maintenance capex, companies are increasingly turning to consolidation to reduce competition and maximize economies of scale. Another cost-saving method is to outsource technology developments to other firms that specialize in this segment, particularly those in Silicon Valley.
Operating Environment

The E.U. is one of the largest producers of motor vehicles and contributed the most in terms of privately-funded research and development (R&D). The industry is also critical in enhancing the region’s growth with their extensive interconnections across industries and cultures. With 80% of growth expected to occur outside the E.U., success of the industry will be dependent on various preferential trade and investment agreements that enables easier access to third markets and to benefit from economies of scale.

Brexit

Fear intensifies as the March 29, 2019 deadline for the U.K. to enter a transition period quickly approaches. The 21-month-long transitionalary period was put in place to allow for the government, businesses and everything in between to accommodate for the new post-Brexit rules and to allow for more time between governments to negotiate details yet to be finalized.

Last year, U.K. car sales took a beating that persisted through the first quarter of 2018 as, according to The Guardian, cash-strapped British households became more reluctant to splurge on big ticket items amid concerns over Brexit and its economic implications.

British carmakers export approximately 80% of their production out of the country – 56% of which to the E.U – and according to the Society of Motor Manufacturers and Traders (SMMT), the introduction of trade barriers is estimated to cost them £4.5 billion per year. Such trade barriers will see British carmakers losing their competitive advantage as most car parts are sourced from the E.U. SMMT also warned of a possible complex supply chain reorganization should the barriers come into effect.

In its assessment of Brexit’s effect on the British Automotive industry, the select committee of U.K.’s Department of Business, Energy and Industrial Strategy (BEIS) stated that there are no evidences nor arguments that suggest any potential benefits the automotive industry would gain from U.K.’s departure from the E.U. The aim now is to explore means that does the least damage to the sector.

BEIS also stressed that the Government’s ability to maintain the existing close relationship with their E.U. counterparts would be crucial for survival of the carmakers in the country. An ideal situation would be for trade to be borderless and for regulations to be consistent. A “hard” Brexit would be most disastrous for investments and jobs. The committee said in its report “The Impact of Brexit on the Automotive Sector”, that it will not be realistic for the Government to count on trade expansions with the rest of the world to offset possible trade loss with its European counterparts in the event of a “hard” Brexit.

Implications of a Trade War

According to Time magazine, a high U.S. trade deficit with China and alleged intellectual property theft had prompted Trump to threaten with the imposition of tariffs on $150 billion worth of Chinese goods. Trump took the auto industry as an example of the trade disparity – U.S. imposes an import tariff of 2.5% while China 25% – calling such a trade term “stupid” on his April 9 tweet.

A general uneasiness looms across American businesses as Trump attempts to negotiate for fairer trade terms, fearing that things could go from bad to worse, thus jeopardizing their businesses in China altogether. As for the automotive industry, three automakers stand to be the biggest loser in the event of a trade war; BMW, Mercedes-Benz and Tesla produce high-margin luxury vehicles which combines to make up to more than 70% of all U.S. auto exports to China, according to LMC
Automotive. A senior market analyst for LMC Automotive commented that a trade war might urge these foreign automakers to relocate their production, thus losing Americans thousands of jobs.

Auto production in both countries would be greatly affected, according to Reuters, if neither of them walked away from retaliation. U.S. automakers, however, will be at a more disadvantaged position because the Chinese imported 266,657 vehicles worth $11 billion in 2017, according to data from LMC Automotive, and exported relatively few.

In April 10 however, according to the Washington Post, President Xi Jinping reiterated that his administration would lower existing import tariffs for vehicles as soon as possible, the same promise he made back in November when Trump visited Beijing, and again in Switzerland, during the World Economic Forum. Other promises include better safeguard of intellectual properties and relaxation of controls on foreign investment in autos and financial services. Notably, China did not mention the U.S. when announcing the promise, which may come with a large unspoken asterisk of “does not apply to the U.S.” As such, CFRA thinks this announcement heavily favors Volkswagen, which manufactures most of the vehicles it sells in China domestically and imports the rest from the E.U. Hardest hit would be BMW, which is the largest vehicle importer in China, importing most of these from the U.S. One thing to be mindful of is the impact of tariffs and taxes on the individual components used to build cars. Unfortunately, the details on what these would be are unclear at this point.

An average car uses about 1.5 metric tons of steel and 0.2 metric tons of aluminum. We estimate that the proposed 25% tariff on steel and 10% tariff on aluminum would add USD 300-500 per average vehicle. CFRA opines that if the tariffs stick, the price increases would be passed on to the end customer, as margins are already thin among the automakers (EBIT margin: c. 7-11%). We calculate a c. 1%-pt impact on EBIT margin in this case.

German automakers are pledging to invest heavily into EV, which in CFRA’s opinion, is partly a way to make amends for the diesel-related scandals that have embroiled the industry in recent years. The Chinese government and corporations are also making large moves to accommodate the rise of the industry as a way to take leadership. CFRA thinks that an antagonistic trade relationship with China and skepticism over EVs may see the U.S. cede leadership to China as EVs will be heavily reliant on free trade. For example, cobalt is required to produce the batteries used in EVs and its reserves are concentrated largely in the Democratic Republic of Congo. However, China dominates the production of refined cobalt, producing more than 80% of the world’s supply. Eventual Chinese leadership and an accommodative regime for EV production are positive for companies like Volkswagen, with a strong base in China and a heavy interest in EVs.

**Internal combustion engines (ICE) continue to dominate in the near term**

OEMs and suppliers are investing heavily in alternative powertrain technologies. Approaches vary by region and OEM. European OEMs have long had a strong focus on diesel engines, which are fundamentally more fuel-efficient than gasoline powered four-stroke engines. The Japanese and U.S. OEMs have favored a gasoline hybrid approach, which is a function of North American consumer preference for gasoline (though CFRA notes some early signs that this could be changing) and a different pricing regime. Although the term “hybrid” is used to cover a wide range of technologies, what it typically means is a system whereby an electric motor is used in conjunction with a smaller combustion engine, which boosts power when needed.

The conventional ICE currently dominates global powertrain technology. Through 2015, CO2 improvements in Europe and Japan are largely being met by a combination of engine downsizing, gasoline direct fuel injection, and turbo charging to sustain performance, alongside an increased
number of gears, as well as various other technologies including stop-start systems that are relatively cost-efficient. Targets for 2020 will require increased use of alternative drive technologies, which will be a challenge for the industry, given the five- to seven-year model lifecycles.

**Different picture long term**

The emissions reductions moving toward 2025 and particularly beyond should be significantly more challenging for the OEMs, as they may imply a more radical step away from ICE. The main alternatives at this stage are hydrogen fuel cells and the electric car. Both offer potential for zero tailpipe emissions, although technical and cost issues remain pronounced. There are several advantages and disadvantages with each.

### CHANGES IN FUEL EFFICIENCY

*(most fuel-efficient diesel model variant)*

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<td>89</td>
<td>NA</td>
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<td>0.00</td>
</tr>
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<td>BMW 3-series</td>
<td>109</td>
<td>125</td>
<td>99</td>
<td>99</td>
<td>14.68</td>
<td>(20.80)</td>
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<td>85</td>
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<td>(3.53)</td>
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<td>Ford Focus</td>
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<td>Vauxhall Corsa</td>
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<td>(6.38)</td>
<td>(1.14)</td>
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<td>95</td>
<td>89</td>
<td>102</td>
<td>(4.04)</td>
<td>(6.32)</td>
<td>14.61</td>
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*Source: Vehicle Certification Agency.*

**WILL NEW TECHNOLOGIES BRING NEW WINNERS AND LOSERS?**

Estimations of the future importance of the various technologies vary. However, CFRA thinks that changes in technology offer both risks and opportunities for investors. We can already see that the development of electric cars has allowed new entrants into the car market (such as Tesla), which, although small today, could result in increased competition across the industry. Manufacturers are continuing to spend heavily on the development of new technologies such as fuel cells and electric cars (BMW refers to this as “future-proofing”).

In CFRA’s view, CO₂ emissions have become an important selling point for cars. In Europe, the most important point may still be the feel-good factor for the customer derived from environmental awareness. However, there are now significant financial reasons to buy a low-emissions vehicle. The most obvious of these is fuel costs, but most E.U. countries now have CO₂-related car taxation as well. In the U.K., for instance, CO₂ consumption not only sets annual vehicle excise duty, it also affects personal income tax levied on company cars and can affect the payment of the Congestion Charge in London.

The automobiles industry is also facing challenges in terms of emerging trends. Digitization and increasing automation have led to four major disruptive trends that will challenge the way automobile manufacturers develop and market their models, according to research firm McKinsey & Company. These trends are diverse mobility, autonomous driving, electrification, and connectivity. By 2030, new services brought about by on-demand mobility and data connectivity...
will likely create additional revenues of up to $1.5 trillion. On-demand and shared mobility services include car-sharing and car-hailing, while data-driven services comprise applications, remote services, and software upgrades. Connectivity and autonomous technology will likely increase the demand for upgradability in cars. Today, 80% of the top 10 automotive OEMs have announced plans for driverless technology to be ready by 2025.

In market research firm KPMG’s “Global Automotive Executive Survey 2018,” automotive executives worldwide ranked developments in fuel cell electric mobility as a higher priority than connectivity and digitization. In the 2017 edition of the survey, developments in battery EVs was ranked first. Other trends that global executives think will affect the automobiles industry include hybrid EVs, market growth in emerging economies, and creating value out of big data. The surveyed executives also acknowledged the increasing significance of self-driving vehicles.

Although software companies such as Alphabet Inc. initiated the race to develop fully autonomous vehicles and make them commercially viable, traditional automobiles manufacturers are also heavily investing in creating their own models of self-driving cars. In addition, traditional manufacturers are partnering with or acquiring their own software companies to speed up the development process. German manufacturer Audi, for example, revealed a number of autonomous vehicle prototypes, and plans to incorporate “Audi Piloted Driving” in its next-generation A8 models, which will be capable of SAE Level Three conditional automation.

However, unlike U.S. vehicle manufacturers, which are already testing prototypes on the road, E.U. manufacturers face legislative hurdles. Lobbyist are still in the midst of negotiating with the United Nations on a regulation that prevents autonomous driving above 10 km per hour. Self-driving cars could also fail safety tests according to existing E.U. rules, which the European Parliament said need more assessment. In contrast, U.S. regulations are less detailed, and allow for more latitude in testing self-driving cars and new technologies.

Electronic and Autonomous Vehicles

The advancement of technology allowed automakers to add more features to their vehicles. Current technological endeavors in the automobiles industry include electric vehicles (EVs), which encompass electric/plug-in vehicles (including hybrids) and autonomous vehicles. EVs use negligible diesel/petrol and generate little noise or emissions. Battery development remains a limiting factor; the ongoing development appears to be following a route to lithium-ion units. The high cost of EVs, limited driving range, long charging cycle, and lack of recharging infrastructures had deterred potential buyers. CFRA thinks that despite their infancy and relatively miniscule market share, EVs and autonomous vehicle sales should rise steadily and rapidly. Accelerated mass market EV growth is generally expected whereas fully autonomous vehicles are in the testing stage and adoption may be years away.

Global sales of plug-in passenger cars increased 58% to 1.2 million units in 2017, led by growth in China's NEV market, according to EV-volumes.com. As of end-2017, electric car and hybrid vehicles represented 1.3% of global sales volume. In the next five years, CFRA expects a multifold increase in EV sales volumes and at this pace, we question whether regulators will be ready for these developments, but we think automakers and suppliers will push to accelerate the approval process. Automobile manufacturers have noted this trend and have responded with plans to bring more electric vehicles to market. A total of 127 electric models will be introduced worldwide in the next five years according to researcher LMC Automotive.

Electric cars are just 1% of worldwide auto sales volume. Although relatively small today, electric vehicles (EV) and autonomous vehicle (AV) sales will likely rise steadily and rapidly, in CFRA’s
view. Even among suppliers that will participate successfully in the electric/autonomous vehicle era, some will likely face pressure on parts of their legacy businesses that may see lower demand, especially if and when some countries ultimately ban the production of ICE vehicles. CFRA does not expect any bans in effect prior to the 2030s.

Interestingly, Alphabet Inc. (formerly Google Inc.) had been developing self-driving cars in partnership with Fiat Chrysler Automobiles (FCA) U.S. LLC (formerly Chrysler Group LLC). The company began testing its self-driving vehicle prototypes in summer of 2015. In December 2016, Alphabet’s self-driving car project became a separate entity called Waymo.

Not to be outdone, Huawei Technologies is currently designing self-driving cars that will be connected to the Internet (particularly 5G), which the company expects to be commercially available by 2020. In February 2017, Huawei and Vodafone, with the support of Audi, demonstrated their new C-V2X technology at the Mobile World Congress 2017. The new technology enables direct communication between vehicles and enhancements toward autonomous driving. In June 2017, Huawei, in partnership with other China tech companies, demonstrated a 5G-based remote driving technology with a consumer car, a development that Huawei claims will make driverless cars more safe and reliable in the future.

Over in Europe, BMW, in partnership with Israel-based chipmaker for cameras and driver-assistance features, Mobileye NV and Intel Corp. (which completed the acquisition of the former in August 2017), plans to deploy 80 of test vehicles to various cities around the world in countries like the U.S., Germany, Israel, and China by end of 2018 to gather real world data and to improve on edge-case scenarios. In April 2018, the company officially opened its autonomous driving campus in Unterschleißheim (near Munich). The 5.6-acre campus will help to systematically develop self-driving systems in line with BMS’s commitment to put autonomous driving vehicles on public roads by 2021.

In July 2016, Renault-Nissan announced that they will be implementing their ProPILOT semi-autonomous technology first in Japan and later in Europe, China, and the U.S. The system, albeit not as sophisticated as Tesla’s, allows for engagement of the autonomous mode only on highways at a speed range of 18 to 62 miles per hour. Nissan is targeting for the system to be able to handle urban roads and intersections by 2020.

With wireless technology proliferating in cars, cybersecurity in vehicles is becoming an area of increased focus and opportunity, mostly since the hacking experiment with FCA. Hackers have demonstrated how they can control the brakes, transmission, and other safety-critical systems in the internal network of Jeep Cherokees using a wireless communication system. In July 2016, FCA decided to implement a program under which the company will pay hackers $150–$1,500 every time they detect cybersecurity flaws in the company's vehicles.

Cybersecurity is not the only challenge in autonomous vehicle development. Safety concerns are also becoming an issue and are raising questions as to how automakers plan to ensure that their autonomous or semi-autonomous cars meet safety procedures. Two of the most recent high-profile fatal accidents involving autonomous vehicles happened in March of 2018. The first involving an Uber car while in autonomous mode (with a safety driver) killing a pedestrian, and the second involving a Tesla car crashing into a concrete divider while in semi-autonomous mode. While investigations are still ongoing for both crashes, human error and overreliance on vehicle automation is widely blamed the cause for those accidents.
FOREIGN EXCHANGE EXPOSURE

Forex has historically been both a blessing and a curse for European automakers as the euro has fluctuated versus the U.S. dollar, due to a high degree of revenue not matched by local costs. This significant transaction exposure comes from the still-high level of exports from Europe of both completely built up units and value-added components for assembly into locally built units. This transaction exposure has increased significantly in recent years. In the premium sector, the boom in the Chinese market has been met predominantly by the European export of completely built ups (CBU), thus helping group margins at the premium European makers. However, since the beginning of 2017, the euro has rallied against the U.S. dollar, brought about by the improving Eurozone economy and political uncertainties in the U.S.

Meanwhile, the anticipated effects of the British pound falling against the euro and the U.S. dollar in the wake of Brexit are causing concerns among large auto manufacturers. The U.K.’s Society of Motor Manufacturers and Traders thinks that Brexit will likely undo the progress made in the U.K. car segment for decades and could prompt small manufacturers to close. Investments, in particular, will likely plummet because manufacturers will be planning for risks. Car manufacturing in Britain is likely to be hit hard because the U.K. car segment has become dependent on outsource manufacturing and will soon stop benefiting from the integration of products and employment with other E.U. members. While the adverse effect of Brexit is unlikely to be felt in the short term, the long-term effects are now being seen in increased prices, softening demand, and investment decisions being put on hold. Further, in August 2017, the British pound fell to an eight-year low against the euro as the euro rose to its two-years-high as the European Central Bank (ECB) kept interest rates and the asset purchase program on hold. The pound had since recovered but still below its pre-Brexit range.

The strengthening euro and the upcoming Brexit uncertainty will affect companies that have significant exposure overseas. In 2017, the U.S. accounted for 17.3% of revenues at BMW and 24.6% at Daimler AG, while 16.8% of VW sales were in North America. China represented around 18.5% of sales at BMW, and 11.1% at Daimler. China sales were not included in VW’s revenue, the figure was in fact, consolidated using the equity method (thereby displaying as a one-liner in the income statement). However, if the net operating profit from China sales were included in the group’s, it would represent a share of 29.8%. Thus, these companies’ earnings sensitivity to forex movement has become even more pronounced, especially when we consider that their Chinese joint venture sales are not consolidated.

Increased exposure to forex rates does increase the volatility of earnings. As a result, the OEMs continue to seek to reduce transaction exposure by building more localized capacity and increasing local sourcing.

FINANCIAL SERVICES OUTLOOK SOLID

Automakers’ financial services divisions are of key importance within the industry. As at the end of 2017, Volkswagen, Renault, BMW, and Daimler lent more than €491.1 billion. PSA had recently entered the arena with acquisition of Opel/Vauxhall from General Motor, of which Opel Vauxhall Finance is a subsidiary. To put into perspective, Commerzbank, Germany’s leading multinational commercial bank, had total assets of only €458.5 billion as during the same period.

Vehicle finance accounted for around €141.5 billion (31.0% of the total) of new credit granted in 2016 (latest available), with new-car lending increasing 3.5% and used car lending increasing 7%, according to the European Federation of Finance House Associations (Eurofinas), the trade group
for European consumer credit providers, members of which represent 48% of the European credit market.

Financial services businesses return to focus
Non-captive lenders reduced their lending exposure during the global recession and euro crisis. This reduced competition, at least temporarily, but the ability of captives to support financing needs became even more important, in CFRA’s view, to the health and growth of the OEMs. There are several aspects to automakers’ financial services businesses, as discussed below.

- **Residual value risk**: The valuation of a car returned at the end of a lease can be a significant factor in the overall profitability of the contract. The key leasing markets are the U.S., the U.K., and Germany. As of March 2018, wholesale used-vehicle prices rose 5.4% from the prior year, according to the Manheim Index, which tracks U.S. used-vehicle prices. In the U.S., incentive levels of new cars have been relatively low, but in Europe, they have been high, which puts pressure on second-hand values. Given the 2008–2009 recession, automakers are likely to have sufficient balance sheet cushioning despite the write-back of provisions. Nevertheless, the evolution of new-car pricing and incentives, particularly at the premium end of the market, will need to be monitored closely, as always.

- **Credit loss risk**: During the 2008–2009 downturn, defaults were low (they remained below 1%). Since automakers’ financial services assets are secured by a tangible asset (i.e., the car), a default returns the vehicle to the OEM for resale, which makes such assets very different from unsecured commercial bank assets.

- **Funding costs/access**: Auto OEMs have been successful in diversifying their funding sources. The German OEMs have been growing their customer deposit banking businesses, for instance, while reducing asset-backed security and commercial paper exposure. However, unsecured bonds continue to represent the lion’s share of industry funding. As such, while CFRA does expect the cost of funding to rise, this will likely be limited, and downside risks remain relatively low. Funding can become an issue in times of stress, and we note that the French government stepped in to guarantee Peugeot’s funding of its financial services arm in 2012. In May 2016, the French government was weighing the possibility of selling some or all its shares in the company but announced in January 2017 that it would retain its stake in Peugeot.

- **Asset growth**: While many factors complicate the rise in captive penetration, including cultural ownership preferences, capital market access, and limited leasing history, the upside nevertheless remains significant. At the same time, in developed markets, a move within the banking industry to shrink balance sheets means that the captives themselves could need to take up the slack, implying a notable rise in the asset base going forward, in CFRA’s view.

Regulatory Environment: Huge Regulatory and Environmental Challenges

In the coming years, the global vehicle fleet is expected to grow, helped by wealth and aspirations of the new middle classes in emerging markets. For instance, the International Monetary Fund (IMF) has forecast a four-fold rise in global vehicle volumes by 2050, with vehicles on the roads globally rising from 600 million to almost three billion. Therefore, it is perhaps unsurprising that the auto & auto parts industry is facing ever-tightening regulations requiring significant progress in emissions
reductions from improved powertrain technologies. The long-term aim is a zero-emissions powertrain, but in the short to medium term, CFRA expects continued reliance on ICEs.

Demands for increased safety are adding to challenges facing the automakers. So far, consumers seem to have been largely unwilling to pay for fuel-saving technology, which places a huge burden on the OEMs themselves. BMW, for instance, stated that its EfficientDynamics programme had an incremental cost of €900 per car, which was not passed on to the customer.

Improvements in fuel efficiency are coming from a number of measures, including the drive train (optimized engine, gearbox design, regenerative braking), vehicle design (aerodynamics, weight reduction, rolling resistance), and alternative drive trains (increased electrification, alternative fuels).

The European automobiles industry has already made substantial progress in terms of improved engine designs, greater use of lightweight new materials, development of alternatively fueled vehicles, and in-vehicle driver aids. This has combined to reduce average new-car CO2 emissions by 32% (to 127g CO2/km from 1995 to 2013; in 2016, emissions dropped further to 120g CO2/km, before further decreasing 1.2% to 118g CO2/km in 2016. Emissions also dropped more than 9.2% from 2012 to 2016, according to the European Environment Agency's “Transport and Environment Reporting Mechanism” published on January 2018.

Particulates and other pollutants have fallen more than 95% compared with the early 1990s. However, there have been concerns that some of this improvement may simply be due to manufacturers optimizing results in test conditions. In the area of safety, vehicle technology has helped halve the number of deaths on European roads, despite a three-fold increase in traffic volumes.

Relative to other regions, Europe already has a high penetration of smaller gasoline and diesel engines. From January 2015, the industry must meet new requirements for emissions from diesel engines (Euro 6) and improve fuel economy. Legislation also covers a number of complementary measures (tire pressure monitoring, gearshift indicators), mandatory electronic stability control, pedestrian protection phase 2, brake assist, and daytime running lights, for example.

In September 2015, the latest E.U. emissions legislation required all new cars sold to meet the “Euro 6” standard, the European Commission requirement that aims to cut the level of nitrogen oxide that diesel cars emit. The quinquennially reviewed E.U. standards’ most current Euro 6 is a continuation of the Euro-5 introduced in 2011, which mandated all new cars to reduce nitrogen oxide emissions to 0.06 g/km.

Also in September 2015, 11 governments from Europe and the U.S. founded the International Zero Emissions Vehicle Alliance, which encourages the development and adoption of zero-emission vehicles globally. In December 2015, during the United Nations’ COP21 climate-change conference in Paris, the alliance signed an agreement to make all new cars sold under their jurisdictions emission-free by 2050.

Emission investigations have intensified since VW's scandal in 2015. In January 2017, Renault found itself once again subjected to investigations by French prosecutors for allegedly cheating emission tests; at the same time, U.S. authorities charged Fiat Chrysler with the same offence. In April 2017, the French government officially launched an emissions investigation at Peugeot. Then, in July 2017, German lawmakers issued a search warrant for Daimler over the suspected use of illegal software to manipulate emissions tests on Mercedes-Benz vehicles sold between 2008 and 2016.
In the wake of such emission test scandals since September 2015 that involved mostly diesel engines, Europeans came to realize that diesel engines are not as clean as automakers claim them to be. According to ACEA, market share of diesel engines dropped by 5%-pts across Western Europe with Luxembourg and Greece declining the most by 11.0%-pts and 10.5%-pts, respectively. Germany, home to many automotive giants also saw a plunge in its diesel market share by 7.2%-pts to 38.7% last year. Diesel market share are likely to shrink further this year after the top German court ruled in February 2018 to allow cities to ban entrance of diesel cars to help combat pollution.

Tighter regulation in Europe for CO₂ reduction
Light-duty vehicles (cars and vans) contribute around 12% of manmade CO₂ emissions in Europe, compared with around 25% total transport, so the segment has been a target for reduction as part of the European energy and climate-change packages. As part of this, in December 2008, the European Parliament and Council approved new CO₂ emissions rules for passenger cars, and the E.U. passed new legislation. Key areas of the legislation include the following:

- Automakers have to reduce CO₂ emissions from new cars to an average 130 grams per kilometer (g/km) across their fleet by 2015 (in 2015, the actual average was 120g CO₂/km, even lower than the target).
- These emission rules are backed by penalties imposed on a sliding scale; manufacturers that exceed their target by more than three grams will pay €95 per excess gram, and from €5 to €25 for lower misses. From 2019, the cost will be €95 per gram for any excess above the target.
- A target of 95g CO₂/km will apply from 2021 (phased in from 2020) following legislation passed by the European Parliament in April 2014 despite lobbying from the German automobile industry. CFRA sees this as a stretch target for the auto manufacturers.
- The European Commission has indicated a range of 68–78 g/km for 2025, and this should be reviewed in 2017. A lower target is expected for 2030.

There are similar E.U. targets for light commercial vehicles: 175 g/km in 2017 and 147 g/km from 2020. CO₂ targets are not limited to Europe; the U.S. has a Fuel Efficiency Policy that is set to improve fuel efficiency to 34.1 mpg by 2016 and 54.5 mpg by 2025 (this target has been adjusted to 50.0–52.6 mpg, depending on fuel prices). Japan has a fuel efficiency target set at an average of 17.9 km/L by 2022, compared with 14.2 km/L in 2012, while China’s target is 5l/100km for 2020.

While increasingly stringent emission regulation is expected to compel both European auto OEMs to spend more on research and development (R&D), historically these companies have been able to keep R&D costs in line with revenues—even during period of weak sales. For context, the market-weighted R&D expense as percentage of revenue for the six biggest European car manufacturers (Daimler, VW, BMW, Renault, FCA and PSA) has been very stable for the past 5 years, ranging between 3.8%-4.7%. However, from 2012 to 2017, compounded revenue growth for the same companies was volatile, at 7.9%, 3.9%, 5.1%, 13.9% and 3.3%, respectively.

New emission tests to put pressure on automobile manufacturers
In July 2017, the E.U. announced a new emissions test to replace the current New European Driving Cycle test first used in the 1980s. Starting on September 1, 2017, the Worldwide Harmonised Light Vehicle Test Procedure (WLTP) and Real Driving Emission (RDE) will be used to measure fuel consumption, and carbon dioxide (CO₂) and nitrogen oxide (NOₓ) emissions from new passenger cars or models that are introduced to the European market for the first time. After one year, these tests will be expanded to apply to all new cars purchased across Europe. The two tests complement each other; the WLTP measures the car model’s pollutant emissions and the RDE confirms WLTP results in real-life driving or on-the-road performance. However, the ACEA said that the WLTP
standard would affect vehicle taxation, because this more rigorous test would likely result in higher CO₂ values. Nineteen E.U. members currently apply car taxes based on CO₂ values in emission tests; therefore, the ACEA urges national governments to ensure that taxations will remain fair, to prevent an increase in the financial burden on customers.

The European Environment Agency reported that average passenger car fleet emissions in the E.U. in 2016 dropped 1.2% to 118g CO₂/km year over year. Emissions also dropped more than 27% from 2005 to 2016. The E.U. already met its 130 g CO₂/km target for vehicles in general in 2015, two years ahead of schedule. A second official target of 95g CO₂/km has been set for 2021, which is likely to occur if the current decline in emission rates is maintained. The industry has spent billions of dollars to reach its carbon emission targets and CFRA foresees further investment to meet the requirements of E.U.

**M&A Environment: Key Themes Behind the Latest Global Automotive M&A Deals**

In the first quarter of 2018, global automotive merger and acquisition (M&A) deal value was $29.8 billion, up 272% from the fourth quarter of 2017 and 23% year-over-year; the number of transactions had also increased by 7% to 217 deals, according to market research firm PricewaterhouseCoopers (PwC). The increase was largely driven by two mega deals involving Melrose Industries PLC’s acquisition of GKN PLC in the U.K. and Hyundai Glovis Co. Ltd.’s acquisition of Hyundai Mobis Co. Ltd. In South Korea, collectively accounting for transaction value of $20 billion. 54% of the total transaction value in the first quarter of 2018 originated from Asia and Oceania. Most transactions during the quarter were domestic in nature. PwC expects for M&A activity to remain strong throughout the year, with large cash balances, continued pressure from shareholders and new competitors, and increasing R&D activity.

Emerging technologies and new business models spurred majority of the transactions, particularly in the areas of ride-hailing and autonomous driving. For the remainder of the year, more investments in innovation and advancements in technologies are likely as vehicle manufacturers seek to enhance fuel efficiency to meet emission targets and digital connectivity to support autonomous driving. Consolidation was also very strong in the parts and components manufacturing segment, with six of the top ten transactions accounted total transaction value of $23.3 billion.

**Peugeot’s acquisition of Opel-Vauxhall**

One of the biggest M&A scene in the European automotive industry during the past year is PSA Peugeot Citroën’s (Peugeot) acquisition of GM’s European operations, which includes operations of Opel-Vauxhall, for €2.2 billion.

The combined entity saw Peugeot moved up the board to become one of the largest car producers in Europe, second only to VW. Peugeot stated that synergies created from this merger is estimated to reach €1.7 billion yearly.

According to an article in the U.K.’s Telegraph, the Opel-Vauxhall business has not been profitable and is also the main reason for GM’s sale. Peugeot however, had a different opinion. In an interview with British automotive magazine, Peugeot’s CEO said that by integrating Opel-Vauxhall’s operations in Europe with Peugeot, the company he successfully turned around, it would be possible for Opel-Vauxhall to turn profitable. In the article, he disclosed Opel-Vauxhall’s turnaround plan, targeting to increase its net income margin by 2% in 2020 and by the industry norm of 6% in 2026.
As of April of 2018, the turnaround plan appeared to be effective. Peugeot’s first quarter revenues surged 42% as compared to the corresponding period in the previous year. According to Financial Times, Peugeot’s global sales volume increased in all regions, with a record-breaking sale of 1.05 million vehicles.

With the Opel-Vauxhall’s operations in U.K. employing more than 4,500 jobs, Brexit will likely be a major factor in determining company’s profitability. In the Telegraph article, PSA’s CEO stated that there are risk and opportunities of having manufacturing plants within the U.K.; he elaborated that a hard Brexit may be beneficial to the company as it presents an export opportunity.
HOW THE INDUSTRY OPERATES

The automobiles industry is engaged in the design, production, marketing, sale, provision of spares, and service of motor vehicles. The largest market for these products is the individual consumer. Demand is typically highly cyclical, reflecting macroeconomic factors such as interest rates, unemployment levels, and oil prices. The industry has long development and production cycles.

Replacement demand for automobiles is driven by product wear and tear, as well as changes in consumer preferences, technological advancements, and changes to regulatory requirements related to environmental factors and vehicle safety. Improvements in quality have increased the life of automobiles and reduced the frequency of repairs. Model lifecycles also affect sales: during the end of a model lifecycle, sales tend to decline, prices are cut, and larger incentives are offered. Consumers often will hold off on purchasing a model if they are aware that an updated version will soon become available.

AUTOMAKER REVENUE

Automakers generate revenues from sales of vehicles to dealers and through financing operations. Revenues from vehicle sales depend on the automakers’ market share, product mix, and pricing. In addition to the general macro-situation and consumer confidence, which drives overall volume, this volatile and cyclical business can be vulnerable to shifting consumer tastes and gyrating fuel prices. Given the industry’s high fixed costs, volume is necessary to ensure profitability. This leaves the industry prone to bouts of price competition, exacerbated by significant industry overcapacity. This, in CFRA’s view, has been the case in Europe with external players, such as Japanese and Korean original equipment manufacturers (OEMs), targeting rising sales in Europe at the same time as incumbents sought to cut. Market share movements tend to follow country and segment exposure as well as new model activity.

Europe and the U.S. are key developed markets that will likely offer growth in the near term, in CFRA’s view. In the long term, we think that global economic and demographic trends will favour emerging markets.

The growth of financial services businesses over the past decade and the age of cheap credit also improved sales and mix in the European automobiles industry. The possible longer-term reversal of the era of cheap credit could be a risk to mature market volume and mix growth in the future, in CFRA’s view.

Automotive pricing

Several factors can force retail auto prices to rise. Over time, consumers come to value, as standard equipment, features once offered as optional. New safety or emissions-control items may be required to comply with government regulations. Prices may also rise as new models are launched that are perceived as higher value-added or improved quality, or consumer demand for a model increases.

Competitive pressures can result in lower prices. Lower automobile prices, however, can be supported through higher unit production volume, cost savings on parts and labor, and manufacturing efficiencies. When costs are reduced through innovation, savings can be shared between manufacturer, supplier, and consumer; therefore, profits can still rise. However, when prices are reduced solely to stimulate demand (for instance, following over-production) and there are no offsetting cost savings, profitability often declines.
When sales lag, automakers use numerous tactics to stimulate demand, including discounts, cash rebates, or optional equipment added for “free.” Dealers can—and often do—give their own discounts in addition to those offered by manufacturers. An auto company's captive finance subsidiary can spur sales by offering car buyers financing or insurance at lower rates than those available elsewhere. Alternatively, manufacturers may eliminate options on a particular model to offer buyers a low-priced alternative. Other tactics that may be used to boost sales include preregistering cars so they are effectively sold to their first owner as a used car, or placing cars with rental companies, often at a significant discount to the retail price. Both these tactics are dangerous, in CFRA's view, as they may lead to a fall in value of quality second-hand vehicles, which ultimately undermines the pricing of new vehicles.

**Demand factors**

The economic environment naturally affects demand for automobiles. Principal end purchasers include private individuals, corporations, and short-term rental companies. Cars are a major purchase for most families, and consumers need to feel comfortable before they spend so much of their hard-earned money. During periods of sustained economic growth and plentiful employment, sales typically rise as customers feel flush and confident enough to buy new vehicles. Conversely, when the economy weakens and jobs are hard to come by, consumers are more likely to delay the purchase of new vehicles.

Other factors affecting new-car sales include cost of ownership, changes in style, engineering, safety, and quality (which hasten the obsolescence of existing models), and the cost and availability of fuel and insurance. Safety has captured vehicle buyers’ attention in recent years and has become a pervasive theme in automakers’ ad campaigns. In response to consumer demand for safer vehicles, automakers have made wide use of components such as airbags and antilock brake systems (ABS). ABS has now been superseded by electronic stability control (ESC) systems in many countries. Other new driving aids include automated parking assist and the current introduction of advanced driver assistance systems, which may eventually lead to fully automated driving.

**Automaker costs**

Auto parts, materials, and labor are the chief components of automaker operating costs. These costs are determined by the location of automaker plants, fluctuations in the price of key materials, and the terms of contracts between the automaker and parts/materials providers. Research and development (R&D) is another significant expense.

Operating leverage is generally very high in the European automobiles industry given generally low operating margins and high fixed investment in plant, machinery, and capitalized development costs. Operating leverage remains lower at the premium makers (given superior operating margins) than the mass makers, which are more heavily geared into volume, with lower revenue per unit and already thin margins. Pricing and mix also affect automaker profitability to a large extent.

◆ **Auto parts.** Auto parts and components, along with raw materials, constitute purchased materials, the biggest cost category for automakers. Auto parts prices may include indirect costs, if suppliers are called upon to subsidize the automaker through R&D expenditures and investment in capital equipment.

◆ **Raw materials.** The key raw materials used in automobiles are steel, plastics and composites, iron, and aluminium, with metals comprising over 75% of a vehicle’s total content. Spot prices for steel are easily accessible, but automakers typically sign undisclosed long-term contracts with steel suppliers to lock in prices, often on a volume-based level, which adds a higher degree of fixed costs
to their structure, in our view. In contrast, parts suppliers and tyre makers often buy on shorter contracts, and are thus more exposed to the risks of rapid price changes, with typically a six-month delay between the changes in spot prices and the impact on the profit and loss statement. CFRA thinks that mechanisms to pass on variations in raw materials have increasingly become a feature in component supply contracts.

◆ Labor. Labor is one of automakers’ key operating costs. Factors weighing on labor expenses include hourly wages; the skill and productivity levels of the workforce; flexibility to learn new production techniques; and the presence of strong labor unions. Employee costs may be fixed or variable, depending on labor contracts that affect the employer’s ability to adjust staffing levels and schedules according to demand. In Europe, labor costs have become increasingly variable through the implementation of time bank agreements, increased reliance on temporary labor, and government-backed, short-time working schemes.

◆ Research and development. The research and development (R&D) demands on the automobiles industry are unrelenting given the highly competitive structure and increased consumer and government-led demands for improved fuel efficiency, safety, performance, and comfort. Increasingly stringent emissions controls and safety regulations have meant that European companies have had to increase spending on R&D.

In recent years, there has been a trend toward the formation of alliances (e.g., Renault/Nissan/AvtoVAZ or Peugeot/GM), which allow economies of scale through the joint development of new platforms/models/engines and joint purchasing. This has the effect of spreading costs over a significantly larger number of cars. It is not unusual to see one company assembling a vehicle that will be badged, marketed, and sold under its partner’s brand. Contract manufacturers may be used to outsource capacity for successful models or for smaller manufacturing runs.

Currency risk/reward another factor
With auto OEMs as one of the world’s largest exporters, foreign exchange (forex) can be a significant challenge as European OEMs have relatively high naturally unhedged positions. U.S. dollar weakness can seriously hurt profitability, most notably for the German OEMs.

Currency affects in three ways: translation, transaction, and competitiveness:

- **Translation:** The translation of revenue and profits into a reported currency.
- **Transaction:** Vehicles produced in Europe and sold in non-euro countries suffer from revenue deterioration, while the euro-based cost structure remains intact, causing a structural margin impact.
- **Competitiveness:** Manufacturers from regions with relative currency weakness have increased flexibility in terms of pricing in export regions. Historically, this has particularly supported the Japanese OEMs in the U.S. and in Europe to a much lesser degree.

Currency risks can be mitigated by hedging strategies, mainly futures and options, which can essentially lock in set exchange rates, but this remains a relatively short-term strategy. Going forward, OEMs are seeking to increase their natural hedging through greater local production and local content. Given the duration of the investment cycle, however, this will not be a quick solution to currency volatility impacts on profitability.
Financial services operations: an important source of earnings

Over the past decade, automakers’ financial services operations have offered growing support to volume and earnings developments. Given the longer-term nature of financing contracts (typically three years), these divisions have also offered a relatively stable source of earnings versus the more cyclical industrial business.

Financial services profitability is basically derived from the interest rate spread on receivables, with other influences being credit losses as well as general administrative costs. Leasing is predominantly U.S.-based, as VAT issues make leasing in Europe a much more expensive option; the U.K. has the highest leasing exposure in Europe. The prospects for a financial services division can be affected by the following:

- **Higher cost of capital**: This squeezes interest rate and thus financial services margins, although it depends on the ability to pass the higher cost on to the end consumer.
- **Higher delinquencies and defaults**: Difficulty in meeting payments pushes up credit losses. Cyclical highs of credit losses have historically been more than 2%.
- **Lower residual values**: For a vehicle coming off lease, a lower value versus expectations affects profits. Write-downs may also be taken to adjust for overly optimistic assumptions on financial services assets. In Europe, this affects the premium names—BMW and Mercedes-Benz—both of which took substantial residual value charges through 2008 on lower U.S. and U.K. used-vehicle prices.
- **Credit availability**: Access to financing markets has been a concern for the automakers' financial services arms needing to roll over debt to fund their businesses during the credit crunch. However, national and central bank schemes supported funding through 2008–2009 and conditions have greatly improved, with the average return on equity (ROE) on the assets across the European OEMs back well more than 10% again.

SUPPLIERS

The automotive supply component comprises manufacturers of factory-installed automotive components, replacement (aftermarket) parts manufacturers, rubber fabricators, and distributors. The aftermarket segment of the industry includes manufacturers that sell replacement parts to repair facilities, individual consumers, service providers, and distributors. The automobiles industry is the primary source of revenues for parts suppliers.

Mature, capital-intensive business

The auto parts segment is a mature and capital-intensive business, with high operating leverage amid volatility in end-market demand and raw material price inputs. Auto suppliers have a highly concentrated OEM customer base. Price pressure is intense given the challenges facing the OEMs themselves, and real annual price deterioration is the norm, with flexibility, quality, and innovation expectations high. This follows down through the entire supply chain.

Added value, growth product segments key

Growth rates generally follow automotive production levels, which in mature markets can mean only 1%–2% annual growth. Above-average growth rates can result from market share gains, but more often from increased content per vehicle. This is particularly the case in the specialized areas of safety, comfort, electronics, fuel efficiency, and emissions-related technology. This can be prompted by tighter government legislation or proactively by the OEMs themselves as a competitive advantage, which increasingly becomes an industry standard. Parts suppliers with
solid market shares in these growth areas typically have greater pricing resilience versus the more commoditized companies within the industry.

It is important to an OEM that its auto supplier base adds value to its product by investing heavily in research to provide innovative products, while improving manufacturing flexibility and good reliability, and allowing productivity improvement opportunities. The stronger European suppliers generally enjoy premium operating margins, returns, and free cash flow versus U.S. suppliers and even versus the OEMs themselves.

Focus on emerging markets offers revenue and cost benefits
As the OEMs increase their production footprint in new emerging markets, auto suppliers follow suit. This shift to low-cost countries can generate higher revenue streams and accelerate growth and can help reduce suppliers’ production costs. Emerging economies tend to have lower levels of unionized plants than Western markets do, and suppliers do not face the same type of political pressure as OEMs regarding lowering labor costs.

Auto suppliers may also gain access to markedly lower-priced component sources when using overseas production bases, such as Russia. The rise in raw materials prices can be a major challenge for the entire supply chain as well as the OEMs, with little opportunity to pass on any price increases to end customers. An obvious exception would be the tyre segment, which has greater potential for price rises given the high degree of replacement sales making up their total demand, the oligopoly structure of the industry, and the increasingly disciplined nature of this segment. Some suppliers have agreements that allow changes in raw material prices (up and down) to be passed on to OEMs, usually with a lag of three to six months.

Other means for suppliers to reduce their cost structure include consolidation and attaining economies of scale, although leading European players already enjoy relatively high market shares, in our view. Consolidation in the industry is sometimes driven by OEMs reducing their number of suppliers by awarding larger contracts in exchange for lower pricing. Improved efficiency gains remain ongoing targets for the industry and areas include increased use of automation and reduction in parts complexity. The outsourcing of non-critical activities and higher collaboration down the supply chain can also reduce the capital intensity of the suppliers’ business profile.

Tough pricing environment, but close OEM relationship
Supplier contracts are frequently written for the life of a vehicle model (currently as few as three to five years, from the previous norm of eight); contract terms typically include goals for cost, quality, performance, timing, and product features. The relationship between an auto supplier and an OEM is increasingly close. While price reductions remain part of the business, it makes no sense for OEMs to threaten the financial viability of their supply base by demanding excessive pricing cuts, given the greater disruption to production (and thus earnings) that a financial collapse could cause, and the ongoing need for suppliers to invest heavily in R&D, innovation, and quality.

Some OEMs and Tier 1 suppliers were forced to absorb costs to prop up their supply base after the sharp and pronounced nature of the production cuts from late 2008 (output fell by as much as 40%–50% in one quarter, year on year). This hurt suppliers, given the pressure on working capital.

In CFRA’s view, European automotive suppliers typically have a more stable risk profile than U.S. suppliers. This relates to a more diversified customer base, platform and segment coverage, and geographical spread. U.S. suppliers that historically had close relationships with the U.S. OEMs offering significant North America–based volume had suffered disproportionately from the decline
of the U.S. Big Three’s U.S. volumes over an extended period, the rise of the Japanese transplants, and the relatively limited geographic expansion of the U.S. players versus the European names.

CFRA thinks European suppliers have also typically had a higher focus on such growth areas as safety and fuel efficiency, with European OEMs historically taking a more proactive approach to content installation, particularly at the premium end of the market.
KEY INDUSTRY RATIOS AND STATISTICS

Measures used in forecasting European economic trends are good indicators of how revenues and profits will move.

♦ Economic growth. The automobiles industry is highly cyclical, so changes in volume tend to correlate with economic conditions. Even if pricing is used to support volume, automakers’ earnings and share prices will follow the macro picture. There is typically a close correlation between automotive share-price performances and the key lead indicators such as the German IFO Business Climate Index, the U.S. ISM Manufacturing Index, and consumer confidence data, giving an indication of the possible future direction of the macro environment. In terms of the share-price performance, the industry tends to be early cycle.

♦ Currency exchange rates. The industry remains one of the most currency-sensitive industries. Despite increasing local production outside Europe (in the U.S., China, and Brazil) and apparent rising local content ratios, much of the value-added componentry may still be sourced in Europe and, as such, the German automakers remain large net exporters from Europe, with large U.S. dollar and U.K. sterling exposures.

♦ Commodity prices. Raw materials have a significant impact on automakers’ earnings, both directly through input costs, but can also affect volume and mix through cost of ownership. Manufacturers typically cannot pass higher input costs on to consumers.

♦ AUTOMOTIVE-SPECIFIC DATA. As the following section discusses in detail, there is a plethora of automotive-related data to help monitor and analyze the industry on a short- and longer-term basis, including country sales, market share, and pricing data. These can then be analyzed for segment and mix trends.
HOW TO ANALYZE A COMPANY IN THIS INDUSTRY

A number of qualitative and quantitative factors should be considered when evaluating an auto company. A plethora of statistics is available to help track the state of the industry and its participants.

Seasons and cycles
The automobiles industry is a highly cyclical and seasonal one, with the second and fourth quarters typically the strongest volume periods of the year. The industry’s profitability also typically follows pronounced macro-related cycles.

Geographic diversity
A company’s current geographic spread, as well as its plans for global expansion to emerging markets, is important. On a short-term basis, each country typically produces monthly sales statistics (including data down to the manufacturer level) that can help gauge country sales performance. In Europe, the European Automobile Manufacturers Association (ACEA), a trade group, produces a monthly pan-European summary. Data are also available on most other key global markets, including the U.S., Brazil, and China.

Obviously, an OEM’s relative exposure to certain markets is an indication of overall sales prospects. The relative contribution from emerging and mature markets is a key indication of longer-term future growth prospects. However, pricing, and thus, margins, tend to be better in home markets, particularly at the early stages of development.

Market share evolution and product mix
Market share evolution is important when analyzing an automaker and can typically be highly correlated with model cycles. However, pricing also remains key, as automakers can “buy” share in various ways—by high sales to low-value rental fleets, for example, or by highly incentivized sales, both of which hurt earnings. Model line data can also provide valuable insight when analyzing product mix developments. Pricing and margins tend to be better in the larger segments, with content in general increasing across all segments, but the ability to “price” that in is much more restricted in more compact segments.

A number of factors influence product mix, including changes in regulations, customer preferences, commodity prices, and demographics. Product mix can also be influenced by government-backed scrappage incentives, as was witnessed in 2009, when monetary incentives encouraged a temporary sales shift to small cars, which favoured the small Carmakers.

Model changeovers
There has typically been a tight inverse correlation between the average age of an automakers’ product range and its earnings before interest and tax (EBIT) margin. This effectively means that when an automaker has a young, fresh product range, it is often rewarded with higher production volume, with the obvious operating leverage benefits, as well as improving market share. New models also help improve pricing, as older models increasingly need higher incentives, and increase showroom traffic in general. Production costs also typically fall from one generation model to the next, with greater commonality, lower complexity, and use of modular designs, all helping to reduce costs.
**Pricing: new and used**

Pricing is a key earnings contributor for autos companies but is much more difficult to track on an ongoing monthly basis given the lack of consistent data, not least because of variations in the levels of standard equipment. In North America, incentives per vehicle can be monitored using monthly estimates from Autodata; in Europe, however, data are less consistent, so qualitative manufacturer offers/discounts (which are often not specification-adjusted) can be viewed as a gauge. Pricing is highly linked to branding and customer perceptions of quality; customer loyalty offers higher profitability. Typically, higher specification vehicles fitted with more optional extras offer higher profitability than entry-level vehicles.

Used-vehicle pricing is highly important, not just for the implications that it has on the general health of the new-car market and pricing, but more directly for the impact it has on the leasing business and the potential residual value impact. Typically, consumers may require higher discounts on cars that see their value fall away the quickest. When an automaker offers a lease, it includes a value it believes the vehicle will be worth at the end of that lease. Should used-vehicle pricing fall notably, the automaker will have to take a provision for that change in asset value. Monthly data in the U.S. is provided by the Manheim Index, which tracks used prices, and by ADESA—North America's premier vehicle auction operator, which provides segment detail.

**Management**

CFRA looks favourably on seasoned management teams that have performed well, compared with their peers, in both good times and bad. However, some executives may be particularly good at containing costs, while others are better at creating new products or managing expansion. In evaluating a company, it is a good idea to look at top management’s track record—either at that company or at other firms—and to assess whether the skills demonstrated in the past match up well with the company's current needs or goals. It is worth highlighting, however, that due to the ownership structure of European autos companies—many have high family or government ownership—the ability to carry out what is believed to be the necessary restructuring can often be limited, even for managers with strong track records.

**Financial strength**

In assessing a company’s financial strength, it is important to look at whether it is likely to have enough cash to operate its business well. CFRA advises comparing the company’s cash interest costs with the amount of operating cash flow (before interest costs) that the business is expected to generate. It is also important to determine if a company is likely to seek additional funds (e.g., offering debt or equity) in the future, either to finance current operations, refinance existing debt, or to grow.

A company's financial strength affects its access to funds. We advise investors to look at the company’s debt rating by one of the major credit agencies, such as Standard & Poor’s Ratings Services or Moody’s. In general, debt instruments with a higher credit rating carry a lower interest rate than do those issued around the same time with a lower credit rating. However, once debt has been issued, the rating agencies may raise or lower their assessments in response to changes in business conditions.

**FINANCIAL ACCOUNTS**

When assessing any company, it is important to analyze income statement, cash flow, and balance sheet data. The measures of particular importance to autos companies are described below.
Analyzing the financial statements
Looking at financial statements is important. Sources of information include quarterly and annual reports to shareholders, filings with relevant bodies and reports put out by advisory firms (such as CFRA and ValueLine), and brokerage companies. Investors are increasingly able to hear corporate managements talk about their businesses, via conference calls or company-provided webcasts, often around the time that they release their quarterly earnings. Discussed later in this section are various significant financial considerations one should be aware of when analyzing an automobile company.

Sustainability of revenues and earnings
When looking at both revenues and profits, one must determine whether contributions to the current results are likely to recur in future periods. If one-time factors have either inflated or depressed results in a prior period, these should be examined as well. Furthermore, some ongoing costs of doing business can change significantly due to macroeconomic and industry factors, or world events.

Accounting items to review
There are various corporate accounting issues to consider. For example, an analyst should consider if the company has significant pension or employee benefit plans, and if it is accounting for them in a realistic and conservative manner.

THE INCOME STATEMENT
When analyzing an automobile company’s income statement, there are a number of important items to assess. Sales, profit margins, and earnings per share are among the major items, and are discussed below. Furthermore, automakers typically present two sets of accounts, one set of consolidated group accounts and a second set showing their industrial business and financial services business separately. Some analysts separate the divisions and value the industrial business using metrics such as earnings before interest, tax, depreciation, and amortization (EBITDA), EBIT, and free cash flow. The financial services business can be valued using book value or a premium/discount, which depends on a segment’s sustainable return on equity (ROE).

Revenues
Automakers derive the bulk of their revenues from the sale and financing of vehicles. European automobile companies report their revenues on a quarterly basis. Select companies and trade associations also provide monthly unit sales updates. For automakers, given the industry’s pronounced seasonality—with first and fourth quarters the key quarters and the third quarter typically much weaker due to holidays and production changeovers—it is important to analyze changes on a year-on-year basis, rather than sequentially. Average revenue per vehicle is another important measure, as it can give a solid indication as to pricing and mix and, thus, profitability.

Operating profit margins
Profitability ratios or margins are measures of how successful a company is in turning revenues into profits. When analyzing profitability ratios, an investor should compare a company against its own past performance and against the performance of similar companies.

Operating margins in the automobiles industry fluctuate greatly with production volume because of the high degree of fixed costs given the capital intensity involved with manufacturing. Increased use of outsourcing, hiring of temporary labor, the advent of time banks, and access to government-backed short-time working schemes mean that labor costs are no longer as firmly fixed in European countries. Nevertheless, the high degree of unionization may restrict layoffs or require automakers to pay certain
laid-off workers’ benefits worth up to 95% of their take-home pay. Automakers need to sustain relatively high production levels to break even. In addition to volume, pricing and mix are huge drivers of an automakers’ profitability.

**Earnings per share**

Earnings per share (EPS) can be analyzed in a number of ways. Be on the lookout for special (sometimes called “extraordinary” or “nonrecurring”) items, such as asset sales and restructuring charges (e.g., for plant closings or employee layoffs) that can significantly affect the reported EPS and are commonplace in the automobiles industry. Adjusting EPS to exclude special items may provide a more meaningful growth comparison between different quarters or years. In addition, adjusted EPS can be an important benchmark for valuing the company’s stock against those of its peers, as well as against companies outside the industry. However, keep in mind that special charges may occur regularly over a multiyear period, and this should be considered when assessing the business.

**CASH FLOW ANALYSIS**

Reported earnings do not always provide a clear reflection of cash flow generation or financial strength. It is important to evaluate businesses based on how much cash they generate and absorb. These figures may differ substantially from reported earnings. When looking at the income statement, be mindful that some expenses—such as depreciation, amortization, and write-downs in asset values, which are often significant in the automobiles industry—are likely to be non-cash items (i.e., not involving an outflow of cash). However, companies frequently have cash outlays that are not included on the income statement, such as capital expenditures, debt repayment, and dividends to shareholders. These items, which appear on the cash flow statement and are reflected on the balance sheet, are sometimes discretionary and should be considered when evaluating a company’s cash flow.

Historically, the automobiles industry has not been overly disciplined in the capital expenditures (capex) area, in CFRA’s view, with capex-to-depreciation ratios notably in excess of 1.0, which has drained cash flows. Most European companies have been investing heavily in new capacity in growth markets outside of Europe (e.g., China). Within Europe, the industry has become more disciplined in recent years, however, but there is still pronounced overcapacity as demand has slumped. Companies may also capitalize substantial proportion of research and development expenditures as new technologies are developed. It is important for a company to find the optimal balance between reinvesting surplus cash in its businesses and using the cash to reward current shareholders. The evolution of working capital is particularly important within the automobiles industry as it has the ability to absorb as well as release significant amounts of cash.

**BALANCE SHEET ANALYSIS**

Balance sheet ratios may offer a view of a company’s financial health. They also may indicate how well a company is putting its assets or capital to work. A company’s success in investing its capital is indicated by ratios such as return on assets, ROE, and return on total invested capital. Balance sheet ratios should be examined to spot possible cash flow problems. A significant change in a company’s current ratio (the ratio of current assets to current liabilities) can signal a potential drain in the capital needed to run the business. An unusual inventory increase could lead to an asset write-down (because accounting rules require that product inventories be carried as close to their “market value” as possible) or a slowdown in production. The rate of inventory turnover (measured by the ratio of inventory to sales) can reveal productivity changes and production bottlenecks.
As with their income statements, automakers produce two sets of balance sheets. One set uses the full consolidation method, and the other shows separate accounts for automotive and financial operations, usually with a column for eliminations. This separates the automaker’s financial services operation (which customarily operates with high debt leverage ratios) from its industrial operations. Auto analysts usually focus on the industrial balance sheets because these documents make it easier to determine the financial strength of a company’s manufacturing operations.

When studying an automaker’s balance sheets, it is easy to be impressed with the strong cash position the company may have accumulated in its industrial operations during a favourable economic period. When business slows, however, an automaker’s cash position can quickly erode for several reasons. First, the company receives less revenue. Second, the float created by timing differences between the purchase of supplies and materials and payment of accounts payable diminishes, as fewer materials are purchased and more bills are paid. Third, the automaker must continue to pay its fixed costs even as its business volume decreases. Thus, an automaker can see wide swings in liquidity in a short time.
GLOSSARY

Accessories—Products that are not essential to the performance of a vehicle but that provide comfort, convenience, and safety. Accessories include audio systems, security products, floor mats, and covers.

Aftermarket—Sales of replacement or add-on products after a vehicle’s original sale. The automotive aftermarket includes replacement parts, accessories, lubricants, fuel, appearance products, and repairs.

Appearance products—Chemicals and accessories that enhance the appearance of a vehicle, including waxes and polishes, protectants, and custom wheels.

Chassis—Generally refers to the frame, engine, front and rear axles, springs, fuel tank, and steering system.

Completely built up (CBU) vehicles—Vehicles imported in completely assembled form and ready for use by consumers.

Diesel engine—An internal combustion engine that uses diesel oil for fuel. Rather than using a traditional ignition system, it functions by injecting diesel oil into the cylinders when the piston has compressed the air to make it hot enough to ignite the diesel fuel without a spark.

Fuel injection—Using pressure to deliver fuel into an engine’s combustion chamber.

Hybrid—A vehicle equipped with two distinct but interdependent forms of propulsion, usually an internal combustion engine coupled with an electric motor.

Module—The assembly of small parts creating a larger automotive component.

Platform—Mechanical underpinnings of a vehicle.

Powertrain—An engine and transmission combination, which sometimes includes the drive shaft and drive axle.

Tier 1 suppliers—Automotive parts manufacturers that supply final equipment directly to automakers (OEMs or original equipment manufacturers). Increasingly, Tier 1 suppliers are becoming systems integrators or producers of major subassemblies and modular components that can be installed into a vehicle as a unit, such as a complete chassis.

Tier 2 suppliers—Manufacturers that produce components for Tier 1 suppliers.

Tier 3 suppliers—Manufacturers that supply raw materials used in the production of components.

Transplant—A production facility operated by an automaker outside its native country. The term often refers to cars or trucks with a foreign nameplate made within a country where it will be distributed.
INDUSTRY REFERENCES

PERIODICALS

Automotive News
http://www.autonews.com
Weekly publication that covers the global automotive industry. Also publishes Automotive News China (online only).

Automotive News Europe
http://www.europe.autonews.com
Published every two weeks, the publication provides a wide array of information about the European automotive industry. Articles are posted daily on the Automotive News Europe website.

Ward's Automotive Reports
Ward's Automotive Yearbook
Ward's Auto World
http://www.wardsauto.com
Ward's Automotive Reports is a weekly publication with information on the global auto industry, including the latest production and sales statistics. Ward's Auto World is a monthly publication with information on the auto industry. Ward’s Automotive Yearbook is an annual, with information on the auto business, including auto parts.

TRADE ORGANIZATIONS

Associação Nacional dos Fabricantes de Veículos Automotores (ANFAVEA)
http://www.anfavea.com.br
Trade group representing Brazilian automotive industry.

Associazione Nazionale Filiera Industria Automobilistica (ANFIA)
http://www.anfia.it
Trade group representing Italian automotive manufacturers and suppliers.

Automotive Component Manufacturers Association of India (ACMA)
http://acmainfo.com
Provides statistics on parts production and investment in the industry.

China Association of Automobile Manufacturers (CAAM)
http://www.caam.org.cn
Trade group that provides statistics on Chinese automotive markets.

Comité de Liaison Européen des Fabricants d’Équipements et de Pièces Automobiles (CLEPA)
http://www.clepa.eu
Trade association representing Europe’s auto parts suppliers.

Comité des Constructeurs Français d’Automobiles (CCFA)
http://www.ccfa.fr
Trade group representing French automobile manufacturers.

European Automobile Manufacturers Association (ACEA)
http://www.acea.be
Represents 13 of Europe’s biggest auto, bus, and truck manufacturers. Issues monthly and annual registration figures for Western Europe.

International Organization of Motor Vehicle Manufacturers (OICA)
http://www.oica.net
Global auto industry trade association that publishes sales and production reports.

National Automotive Dealers Association (NADA)
http://www.nada.org
U.S. trade group for new-car and new-truck dealerships.
CONSULTING AND RESEARCH FIRMS

The Conference Board
http://www.conference-board.org
Publishes the monthly consumer confidence survey, which measures consumer sentiment.

IHS Markit
http://www.ihs.com/industry/economics-country-risk.html
Provides economic and market forecasting services.

J.D. Power and Associates
http://www.jdpower.com
International marketing and information firm that studies consumer opinion and customer satisfaction; supplies auto industry statistics and survey information on the auto industry. (J.D. Power is a unit of McGraw Hill Financial.)

LMC Automotive Ltd.
http://www.lmc-auto.com
Provides global and national automotive production, sales, and powertrain forecasts, and automotive market intelligence.

PricewaterhouseCoopers (PwC)
http://www.pwc.com
Consulting firm that provides industry information, trends, and forecasts.
## COMPARATIVE COMPANY ANALYSIS

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Note: Data as originally reported. CAGR-Compound annual growth rate. [ ]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.

Source: S&P Capital IQ.
## Auto Parts and Equipment

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## Automobile Manufacturers

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## Tires and Rubber

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Note: Data as originally reported. CAGR-Compound annual growth rate. †Company included in the S&P 500. ‡Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #:Of the following calendar year.

Source: S&P Capital IQ.
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| Note: Data as originally reported. CAGR-Compound annual growth rate. [Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year. Source: S&P Capital IQ.
### Current Ratio

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### Debt/Capital Ratio (%)

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### Debt as a % of Net Working Capital

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### Price/Earnings Ratio (High-Low)

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### Dividend Yield (High-Low, %)

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### Dividend Payout Ratio (%)

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### Tires and Rubber

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Note: Data as originally reported. CAGR-Compound annual growth rate. [Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year. Source: S&P Capital IQ. [286x268]
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Source: S&P Capital IQ.
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