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Special Report Research

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European Autos & Auto Parts

China – the temperamental dragon

Following our China Field Trip earlier this month, we today publish a market deep dive report. In an attempt to establish a better picture of likely auto market dynamics, we spent a week meeting local and global industry and mobility players on the ground. We have also collaborated with our Chief China Economist Jian Chang to examine macro-economic prospects, changing consumer priorities and the government's policy objectives. We have analysed local tech transition trends, refreshed our thinking around near- and longer-term prospects for automotive demand and tried to establish what it takes for an OEM to thrive even at a time of industry turmoil.

1. Chinese consumer – hampered by rising house prices, but still keen on status. Chinese retail sales including autos are being cannibalised by residence-related expenditure. At the same, however, the demand for premium goods remains strong and with more households entering the middle class income bracket we expect the 'consumption upgrade' trend to continue.

2. Chinese government – focused on reducing pollution and creating wealth, but also wants to see auto industry consolidation. We continue to believe that Beijing would like to see a smaller number of stronger auto players emerge and is willing to make some near-term economic sacrifices to achieve this outcome. We believe all recent auto relevant policy measures need to be seen in this context (limited demand stimulus, P2P crackdown, China 6 acceleration, NEV support roll-back).

3. Chinese auto tech transition – increasingly electrified, connected and shared, but mixed prospects for automation. Given the government's desire for emissions reduction we expect the electrification trend to continue. We also anticipate a rapid advance of connected and shared driving given consumers' demand for speedy innovation and more limited concerns around data privacy. The prospects for automation, however, are mixed in light of China's complex traffic conditions.

Near-term pressure remains, mid-term prospects brighter. Near term we anticipate continued downward pressure on volumes and earnings from China 6 emissions distortion, a weaker year-ago base dynamic and real estate cannibalisation of auto demand (we estimate volumes Q3 -5.3%, Q4 -1.9%). Mid-term growth prospects look more promising given consumers' preference for rapid vehicle renewal, still low ownership rates and limited FS penetration. However, a maturing market, a burgeoning used car offering and the advent of mobility services are likely to restrain growth (BE +2.5% in 2020E, +3% 2021E and 2022E).

Make like the 'precious horse'. The more premium, new and high-quality the OEM offering, and the more in tune with China's tech-savvy consumer desires, the better. It is these factors, we believe, that have allowed BMW to shine in China (+17% ytd).

INDUSTRY UPDATE

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FOR ANALYST CERTIFICATION(S) PLEASE SEE PAGE 41.

FOR IMPORTANT FIXED INCOME RESEARCH DISCLOSURES, PLEASE SEE PAGE 41.

FOR IMPORTANT EQUITY RESEARCH DISCLOSURES, PLEASE SEE PAGE 42.

EXECUTIVE SUMMARY

Following our China Field Trip earlier this month we today publish our deep dive China report. In an attempt to establish a better picture of likely auto market dynamics we spent a week meeting local and global industry and mobility players on the ground. We have also collaborated with our Chief China Economist Jian Chang to examine macro-economic prospects, changing consumer priorities (including the impact of the housing market on retail demand) and the government's longer-term policy objectives. We have analysed local tech transition trends and refreshed our thinking around near- and longer-term prospects for automotive demand. Finally, we flag what we regard as the crucial factors that allow OEMs to thrive even at a time of industry turmoil.

Macroeconomic backdrop – slowing growth

China's economic growth prospects depend crucially on the outcome of China US trade negotiations. While we find ourselves in ceasefire mode at present and progress is being made on resuming negotiations towards a deal, tech and geopolitical conflicts continue. A further escalation of the China US trade dispute can by no means be ruled out.

Under their current 'ceasefire/escalation' scenario, our China economics team expects a moderation of economic growth in H2 to 6.0% in Q3 and 5.7% in Q4. Retail sales are likely to retreat (pulled down in particular by weak auto demand and downward pressure on property-related consumption), investment growth is likely to moderate (recovering infrastructure investment is unlikely to offset the slowdown in property and manufacturing investment) and exports are likely to remain in contraction mode (given the tariffs still in place on USD200bn of Chinese goods, previous frontloading ahead of further expected tariff hikes and weaker growth in the US and the EU).

Government monetary policy – targeted and reactive

With the government willing to accept lower growth (as long as it is stable) and keen to address financial and housing bubble risks, we do not expect to see aggressive pre-emptive monetary easing or a large credit-driven stimulus. Instead we believe the government favours a policy of targeted monetary easing combined with some expansionary fiscal measures. In essence, we think Beijing will support the economy, combat rising unemployment and respond to escalating trade tensions when necessary but its response is more likely to be selective and reactive than broad and proactive.

Housing market – a drag on consumption

House prices look to be constraining consumption amid rising residence-related expenditure and surging mortgage loans. Our economists have found that provinces with higher household loan levels are seeing slower growth in retail sales and have also identified an inverse relationship between the proportion of mortgage loans to deposits and auto retail sales growth. Anecdotal evidence we heard during our conversations on the ground in China supports the view that stretched consumers are prioritising real estate spending over new car purchases.

Consumer trends – 'consumption upgrade' continues

At the same time Chinese consumers remain keen on representative consumption and premium product segments continue to grow. Consumers are also spending increasing amounts on services and less on goods, while the proportion of expenditure on necessities is on the decline. This trend towards 'consumption upgrade' is likely to continue given the rapid development of online sales (which should support luxury goods demand given social media investment is on the rise), more attractive pricing (given an attempt by luxury brands to narrow the price gap between China's onshore offering and the overseas market) and, most importantly, more households entering the middle-class income bracket (achieving greater spending power and becoming more willing to consume than save).

Government's approach to the auto industry – appetite for consolidation

When it comes to the government's approach to the auto industry we believe it is worth bearing in mind the 'three critical battles' comprising systemic risk reduction, wealth creation and environmental initiatives (aka 'the blue sky campaign'). The blue sky campaign's ambitious environmental targets reflect not only a desire to mitigate air pollution and reduce oil consumption but also the push to a further acceleration of domestic auto industrialisation and the creation of a smaller number of stronger players. Indeed, as we have argued for some time, we believe Beijing would actually like to see a degree of overcapacity come out of the Chinese auto industry and likely regards the current downturn as an opportunity to force industry consolidation. No doubt the auto industry is an important contributor to the Chinese economy and the government remains focused on wealth creation. However, we also think Beijing is willing to accept some short-term economic pain for the longer-term good of the industry; we believe all the government's recent auto and auto-relevant policy measures need to be seen in this context (limited demand stimulus, P2P crackdown, China 6 acceleration, NEV support roll-back).

ACES dynamics – rapid advance of electric, connected and shared driving, more mixed prospects for automation

When it comes to the industry's tech transition we expect the Chinese trend towards electrification to continue. Chinese consumers are no doubt still reticent to buy BEVs (just like consumers in Europe and the US they are anxious about range, charging opportunities and safety) and the current roll-back of NEV (new energy vehicle) subsidies is likely to result in a sharp drop-off in demand. Nonetheless, we think the government is 100%-focused on winning the 'blue sky battle' and a concerted longer-term NEV strategy and ambitious volume targets are in place. The current reduction in NEV subsidies is more likely a reflection of the desire for industry consolidation into a smaller group of national champions mentioned above (there are currently close to 500 EV start–ups in China) than any reduced desire for electrification, in our view. Moreover, licence plate restrictions remain in place and attractive new BEV launches, particularly at the premium end of the market, should boost demand further.

We also expect China to drive the global shift towards increased vehicle connectivity and higher applications of AI given that consumers tend to be tech-savvy, demanding of rapid innovation, and, according to many people we met on the ground, less concerned about sacrificing data privacy than consumers typically are elsewhere.

We regard shared mobility as a key growth area too. With urban congestion already high it is no surprise that shared mobility services are increasing in popularity. Incumbent domestic OEMs and import JV partners we spoke to were adamant that car ownership in China has a long way to go to reach maturity, and that new mobility cannot compete with the status acquired by car ownership in the region. But the new mobility start-ups, unsurprisingly, agreed more with our view that consumers in Asian markets might leapfrog car technology entirely and switch directly to MaaS. The truth is probably somewhere in between but, in our view, there is certainly a risk in China that the millennial (and upcoming Gen Z) demographic is focused more on property ownership than vehicle ownership (as outlined above) and much more comfortable utilizing shared services, given already high usage of e-commerce, mobile banking and ridehail/dockless shared mobility.

In contrast we regard the prospects for vehicle automation as more mixed. On the one hand, the strength and funding capabilities of Chinese technology companies such as the BATs (Baidu, Alibaba and Tencent), each of which have invested heavily in future mobility start-ups, should help place China at the forefront of autonomous developments. However, much depends on the government's willingness to see disruption to existing mobility modes and ensure regulation does not stifle autonomous innovation. And, it is also worth remembering that the complex traffic environment in China (aggressive driving behaviour, poor road conditions, non-standardized traffic signage) makes optimising AV decision algorithms hard and may lengthen adoption horizons.

Near-term market outlook – a sharp contraction in the full year, downside risks for H2

Following our field trip we do not expect a recovery in Chinese vehicle sales and production levels in the near term, especially in the typically slow months of July and August. While trade war fears may be easing a little following a de-escalation in the US China trade conflict, we still expect to see downward pressure on volumes and earnings from China 6 emissions distortion (a likely lack of compliant vehicles, price pressure), a weaker-than-expected year ago base dynamic and real estate cannibalisation of auto demand. Our current forecasts are for a sales contraction of -5.3% in Q3 and -1.9% in Q4, but we see more downside than upside risk to these estimates.

Longer-term market outlook – a return to growth but in a slower mode

Nonetheless we expect the negative near-term growth dynamics outlined above to ease from 2020. Indeed, there are several factors that lead us to remain optimistic about a return to growth. Chinese consumers change their vehicles relatively frequently (on average every 5 to 6 years compared to every 9 to 11 years in the US and Europe) and ownership rates remain relatively low in a global context. Based only on a vehicle park of 230m vehicles and ownership rates of 166 vehicles per 1000 individuals, we think the longer-term CAGR in the next two decades could easily be mid to high single digits. At the same time financial services penetration rates are at a mere 45% but should continue to expand rapidly (having increased fourfold since 2007).

There are, however, also several factors that lead us to see downward pressure on China's longer-term growth. The first factor is that the Chinese auto market is gradually beginning to mature and replacement demand rather than first-time-buyer demand is becoming increasingly important. As a result, demand becomes more sensitive to pricing/incentives and less sensitive to GDP/income growth. In addition, the used car market, while currently still relatively small, is growing rapidly and this too will increasingly weigh on new vehicle demand, particularly in lower-tier cities. Hence low vehicle ownership rates may be less of a new vehicle demand driver than they might appear at first glance. Finally, the advent of mobility services, including micromobility, mentioned above will, in our view, replace vehicle ownership for some demographics altogether. Our forecasts are for sales growth of 2.5% in 2020 and 3% in 2021 and 2022.

How do OEMs thrive in China? – make like the precious horse[1]

Finally we have examined what separates the winners from the losers in the Chinese auto market. We conclude that the more premium and the newer your product, the fewer quality issues you've grappled with and the more in tune you are with China's tech-savvy consumer demand for rapid AI and connected innovation, the better you will fare. In combination, we believe these factors have allowed BMW to outperform China's auto market ytd (volumes +17% in a market down 9.4%), even in the most challenging of circumstances.

[1] BMW's brand name in Chinese

Economics Research

CHINA'S GEOPOLITICAL AND MACROECONOMIC BACKDROP

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Outcome of trade negotiations key for growth outlook

At the Osaka G20 summit in early July, President Trump and President Xi agreed to resume trade talks, with the US abstaining from implementing new tariffs and lifting some restrictions on Huawei, and China agreeing to buy more agricultural goods (see *China-US trade talks: A ceasefire of mutual interest*, 30 June 2019).

While progress is being made on resuming negotiations – including discussions over the phone between the negotiators and China starting to arrange the purchase of US agricultural products - it remains to be seen whether the ceasefire will lead to a deal at some point in the coming months, which would involve the gradual removal of part or all of the existing tariffs. An escalation could also still occur, with tariffs on part of the remaining USD300bn of goods being imposed after a 3-6-month ceasefire. We list China's growth outlook under different tariff assumptions for 2019-2020 in Figure 1.

Apart from the lingering trade uncertainties, we think tech and geopolitical tensions will continue. Increasing reports that the tech supply chain is moving out of China will further add downward pressure to the economy (see *China outlook: Stabilising growth amid leverage, bubble and trade concerns*, 18 July 2019).

Downward pressure remains on H2 growth

The latest economic data from China, on balance, points to a further moderation of growth into Q3. China's economy already slowed in the second quarter, registering growth of 6.2% y/y vs. 6.4% in Q1 and Q4. While June's activity levels surprised on the upside, we expect growth momentum to continue to moderate in the coming months. Indeed, some high-frequency data including auto sales reported by China's Passenger Car Association and coal consumption at major power plants show activity weakened in the first two weeks of July. As we look to H2 we see the following economic dynamics:

- On consumption, we expect retail sales to retreat in the coming months due to likely payback from the temporary auto-boosted retail sales level in June (Figure 3). Ahead of the implementation of new emissions standards (on 1 July) that only allows the sale of China 6 cars thereafter, dealers in many provinces offered steep discounts to clear

FIGURE 1
China's growth outlook under different tariff assumptions

		Ceasefire	Escalation	De-escalation
Tariff assumptions	25% on $50bn	To stay	To stay	To stay
	25% on $200bn	To stay	To stay	To be reduced to 10%/0% in phases
	25% on $300bn	To be imposed in Jan 2020	To be imposed in Q3 19 or imposed with some exemptions	
2019 GDP growth		6.0 ~ 6.3%	5.8 ~ 6.0%	6.3 ~ 6.5%
2020 GDP growth		5.8~6.0%	5.5-5.7%	6.0 ~ 6.2%
2019 export growth		-8~ -4%	-10 ~ -8%	-2~ -0%
2020 export growth		-10 ~ -5%	-15 ~ -10%	0~ 2%

Source: Wind, Barclays Research

FIGURE 2
Baseline economic forecasts

	2020F (Escalation)	2019F (Ceasefire)	2018	2010-17
GDP (%y/y)	5.5	6.0	6.6	7.9
--Consumption (pp)	4.6	4.8	5.0	4.3
--Investment (pp)	1.7	1.8	2.2	3.8
--Net exports (pp)	-0.8	-0.6	-0.6	-0.2
FAI (%y/y)	5.0	5.2	5.9	16.2
Property inv't (%y/y)	6~7	7~8	9.5	16.7
Infrastructure inv't (%y/y)	6~8	5~7	1.8	16.0
Manufacturing inv't (%y/y)	0.0	0-2	9.5	16.2
Exports(%y/y)	-12.0	-8.0	9.9	8.8
Retail sales(%y/y)	7.5	8.0	9.0	9.0
IP (%y/y)	5.5	5.8	6.2	9.5

Source: Wind, Barclays Research

inventories of older China 5 cars (see further details on China 6 on pages 17 and 29). Moreover, we think the still-elevated housing prices, despite likely some moderation in H2, could continue to constrain non-property-related retail sales including auto (see more below).

- On investment, while we expect infrastructure to continue to recover following the acceleration of special bond issuances, we expect some moderation in real estate investment following double-digit growth in H1 as regulators re-tightened developer financing and mortgage loans ('Trust firms call off real estate financing products', Caixin, 12 July 2019). Meanwhile, we think the downward pressure on manufacturing investment will remain given looming PPI deflation risks (which would weigh on industrial profits) and still high levels of macroeconomic uncertainty.
- On exports, we expect outbound shipments to stay in contraction mode at single-digit levels in H2 given the tariff hikes on USD200bn of Chinese goods, payback from previous frontloading and weaker economic growth for China's major trading partners (see *China: June exports: Back to contraction, expect soft H2*, 12 July 2019).

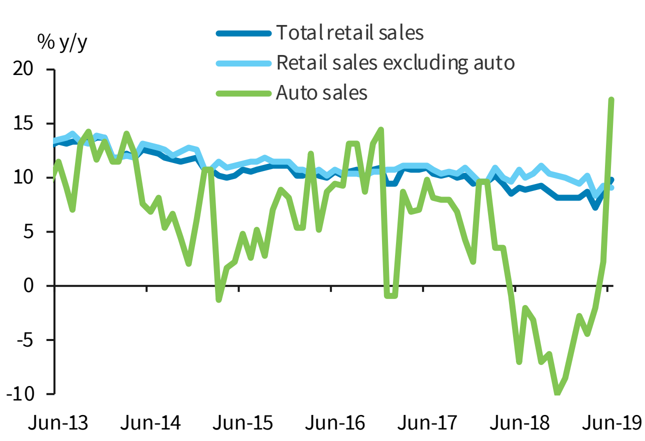
Macro and monetary policy – more targeted and reactive

We believe the government's desire for high quality growth and concern for major financial and housing bubble risks have led it to resist pre-emptive aggressive easing or a large credit-driven stimulus. Moreover, the government re-focused attention on structural issues, with the PBoC normalising liquidity since March, property tightening being intensified since May, and guaranteed payments in the interbank market being broken in Q2. In our view, the Chinese central bank, the PBoC has been balancing growth objectives against high leverage, housing bubble and financial stability concerns.

This leads us to expect a government preference for more targeted easing (including pro-consumption measures) to support the economy and combat rising unemployment. As growth moderates, we believe the government will roll out more supportive measures. We expect fiscal policy will play a bigger role and think the central bank is open to more easing, though it will more likely be reactive in nature, adjusting based on data points and trade negotiation outcomes. As further slowdown materialises, we expect the PBoC to guide interest rates lower via a variety of tools including targeted RRR cuts, following the Fed in lowering policy rates, or guiding LPR (loan prime rate) lower.

FIGURE 3

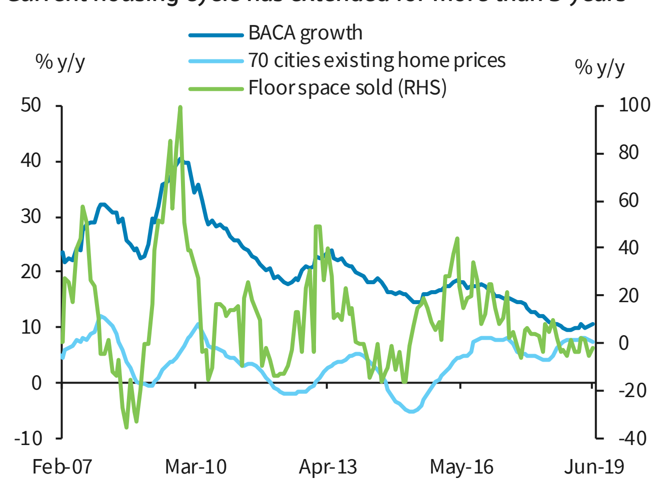
Auto sales a big driver of retail sales



Source: Wind, Barclays Research

FIGURE 4

Current housing cycle has extended for more than 3 years



Note: BACA refers to Barclays Alternative Credit Aggregate (18 October 2016).
Source: Wind, Barclays Research

CHINESE CONSUMER DYNAMICS

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Housing market dynamics and consumer spending

Earlier policy stimulus has supported the housing market

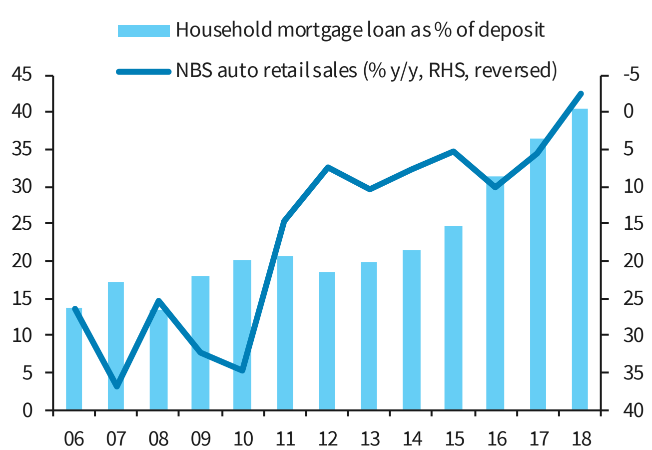
The current housing cycle has extended for more than three years, in contrast to around two years in the past three cycles (Figure 4). In our view, this reflects government policies in 2016-17 that have boosted demand and restricted supply (see *China: A different policy-driven housing cycle*, 6 Feb 2018), resulting in sustained upward price pressure that in turn drove speculative demand and boosted sales and prices.

Housing market resilience was maintained in 2019, due to policy stimulus which saw the central bank cutting RRR by 100bp and mortgage rates being lowered during Dec 2018 – Jun 2019 in many cities. Moreover, as the government has intensified its support for SME financing since Q4 2018, some SME loans were used to purchase properties, leading the CBIRC to issue a notice in March 2019 forbidding SME loans from being channelled to the housing market. Despite sluggish sales overall, we note home prices remained resilient, with y/y growth in second-hand home prices staying at 7~8% in H1 (Figure 4). As developer financing restrictions have been eased since end 2018, they have also been actively acquiring land, pushing up land prices.

Both research and anecdotal evidence show that buoyant housing market and elevated home prices have crowded out household consumption due to huge down payment and sizable mortgage loans. We show that the visible moderation of auto retail sales came against the backdrop of elevated household loans (mainly mortgage loans, Figure 5). Our analysis shows that coastal provinces (associated with higher household leverage) experienced lower growth in retail sales than in inland provinces (associated with lower household leverage, Figure 6). The PBoC also finds that 1pp increase in household debt as % of GDP results in a 0.3pp decline in retail sales growth, suggesting some crowding-out effect from high leverage on consumption (see Chinese Regional Financial Operation Report, 2019).

FIGURE 5

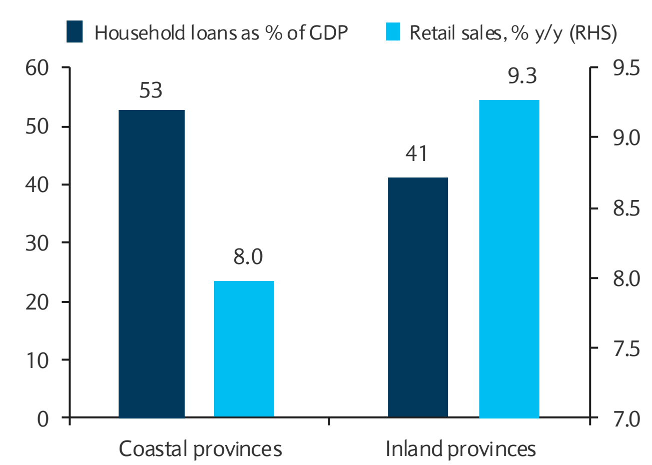
Rising mortgage loans vs declining retail sales



Source: Wind, Barclays Research

FIGURE 6

Coastal provinces with higher HH leverage saw lower retail sales growth than in inland provinces with lower leverage



Source: Wind, Barclays Research

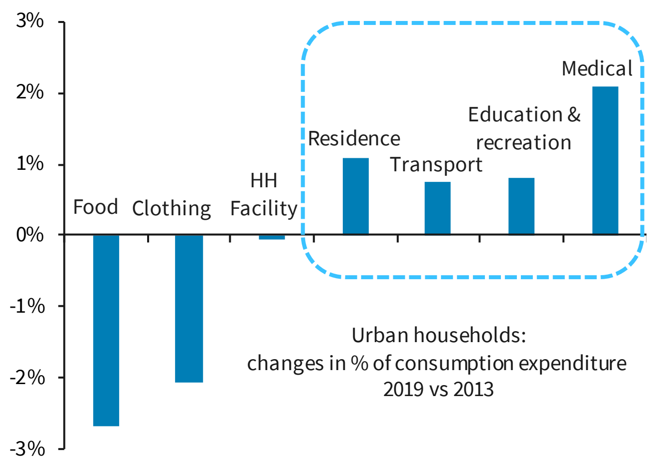
Trend remains towards 'consumption upgrade'

A shift towards spending on services

We have long documented consumption upgrading trend in China (*The great wave of consumption upgrading*, 9 January 2012) and one aspect of the upgrading story is reflected in a shift towards spending on services. We show that Chinese households have been shifting from spending on necessities such as food and clothing, to more services consumption including education, recreation, medical, transportation and communication (Figure 7 and Figure 8). As a result, household services consumption has outpaced goods consumption in the GDP expenditure statistics in recent years (Figure 9). Note that the official retail sales data only measure goods consumption but not services consumption.

FIGURE 7

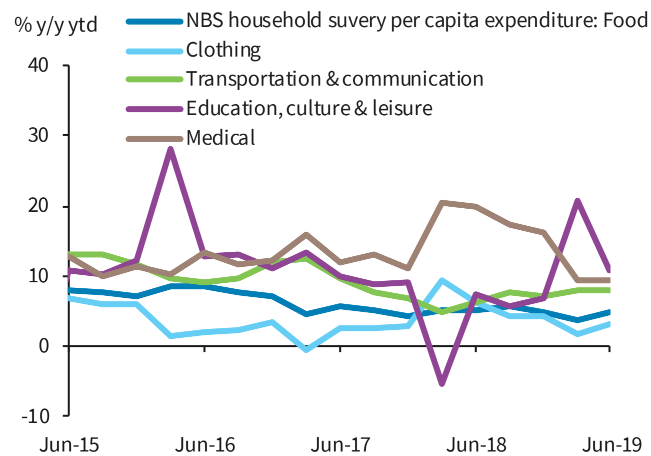
Consumption expenditure shifts to services…



Note: 2019 data is as of Q2. Source: Wind, Barclays Research

FIGURE 8

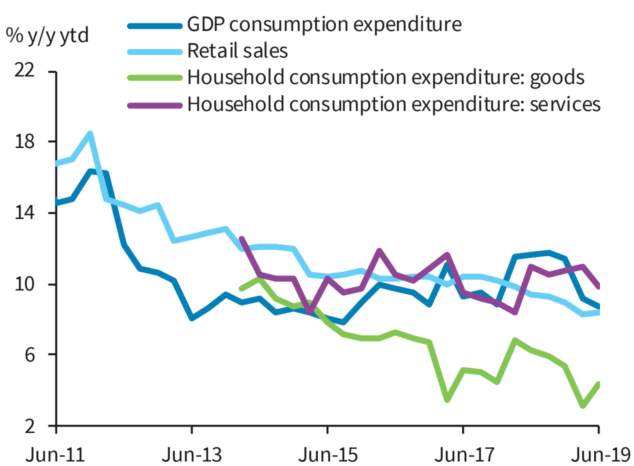
…led by medical and education/recreation services



Source: Wind, Barclays Research

FIGURE 9

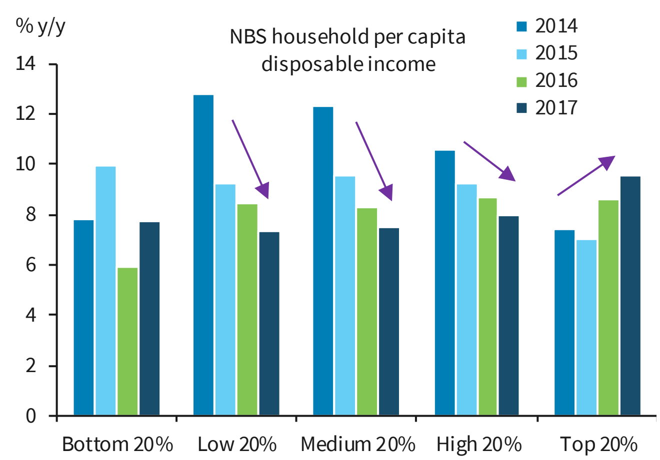
Services consumption has outperformed retail sales



Source: Wind, Barclays Research

FIGURE 10

Accelerating income growth for top earners



Source: Wind, Barclays Research

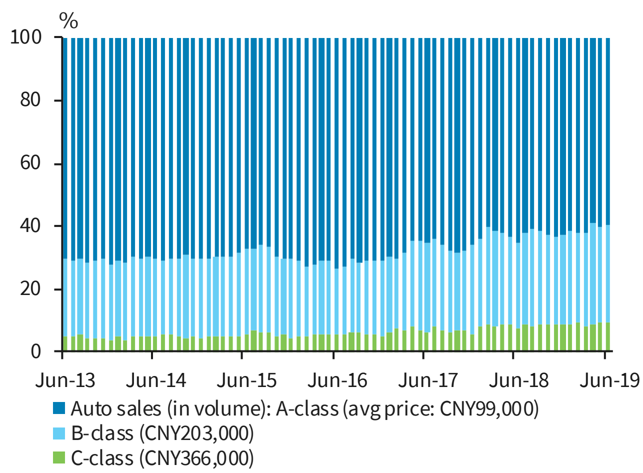
Focus on 'status' and upgrading within consumer goods continues

Consumption upgrading is also reflected in stronger premium brand goods sales versus mass market goods sales, in consumer goods such as cars, cigarettes and liquor. For auto sales, the share of more expensive higher-end cars (e.g., B- and C-class) has been increasing visibly in recent years (Figure 11). Meanwhile, although the headline auto sales have fallen to and stayed in contraction since Q3 2018, luxury car sales (by our definition referring to Mercedes Benz, BMW and Audi) have outperformed the others, remaining in double-digit growth until end-2018, and recovering to growth again in recent months (Figure 12).

Similar upgrading patterns can be seen in both liquor and cigarette consumption. While the overall Chinese liquor sales registered a contraction of more than 20% in both 2018 and H1 19, some high-end brands – represented by Moutai and Wuliangye – still managed to achieve healthy growth during the same period (Figure 13). The combined market share of grade-1 (most expensive brands) and grade-2 (second most expensive) cigarettes increased to 42% in 2018, from 27% in 2013 (Figure 14).

FIGURE 11

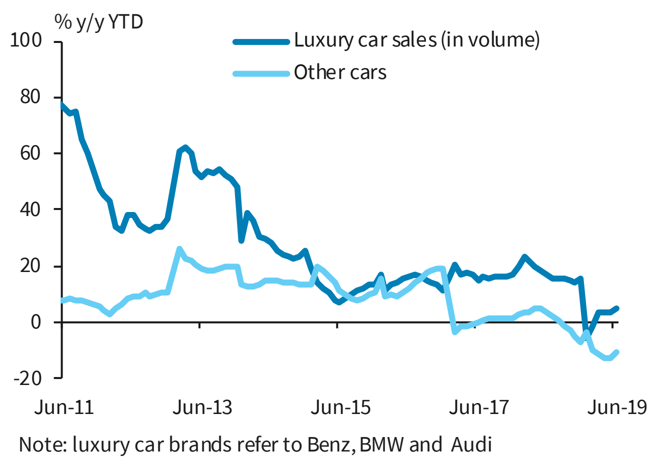
Share of high-end car sales keeps rising



Source: China Passenger Car Association, Wind Barclays Research

FIGURE 12

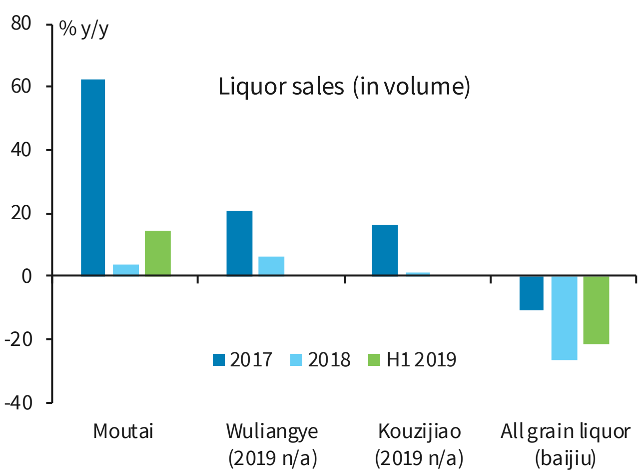
Luxury car sales outperform others



Source: China Passenger Car Association, Wind Barclays Research

FIGURE 13

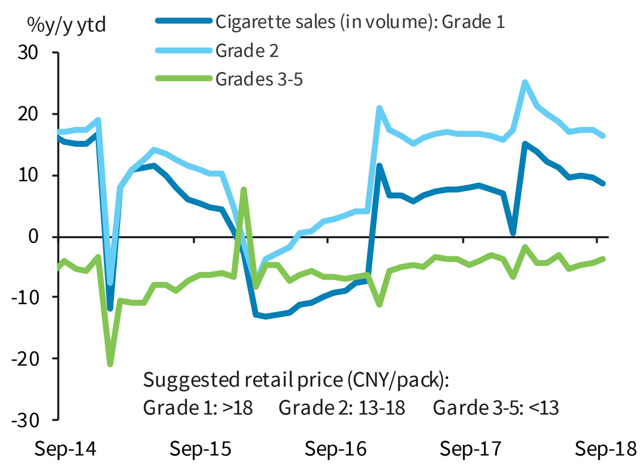
High-end liquor brands outperform



Source: Bain & Company, Barclays Research

FIGURE 14

High-grade cigarette sales grow faster



Source: Bain & Company, Barclays Research

We expect luxury consumption to stay robust

Further supporting the upgrading consumption story is the resilient luxury goods sales, despite moderating overall retail sales growth in past years. Bain & Company (2019, Figure 15) estimate that the size of the mainland China luxury goods market reached CNY170bn in

2018 (20% y/y growth) and CNY142bn in 2017 (21% y/y). Indeed, Chinese spending on luxury goods accounted for 33% of the global luxury market in 2018 (2015: 31%; 2010: 19%; Figure 16), followed by American (22%) and European (18%).

We think luxury consumption will likely remain robust owing to a combination of factors.

First, we think the rapid development of online retail sales will continue to lend support to luxury goods sales. Many luxury brands have engaged with millennials (who now drive most of the sector's growth) through increased social media investment. While the Chinese luxury goods market is still mostly an offline market, the share of online sales in the luxury market has almost doubled in the past four years, rising to 10% in 2018.

Second, many luxury brands are trying to narrow the onshore-offshore price gap. This, along with luxury goods price adjustments in response to the government's lowering tariffs since H2 18, will likely result in more Chinese consumers purchasing luxury goods domestically.

Third, as more Chinese households enter the middle class with greater spending power, we should expect more demand for better quality/high-end products. Moreover, we note that income growth for richest households has still been accelerating, compared to a generally moderating trend among others (Figure 10).

Differentiated consumer dynamics by region

Last but not least, we highlight differentiated consumption growth by region given China's wide regional growth disparity (Figure 17). We note that growth in retail sales in central (Q1: 9.4% y/y) and western (6.8%) provinces outperformed eastern (6.2%) and north-eastern provinces (5.2%). We think such differentiated levels of retail sales growth reflect: 1) relatively stronger regional GDP growth in central and western provinces (Figure 18); 2) a relatively smaller crowding out effect from buoyant property markets (we note provinces with higher household leverage tend to have slower growth in retail sales, Figure 19); and 3) more pronounced consumption upgrading trends in inland provinces.

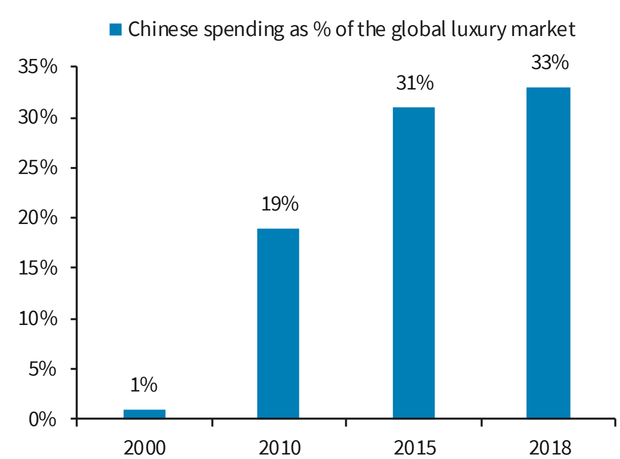
FIGURE 15

Chinese luxury market growth remains strong

Note: Luxury markets comprise nine segments, including luxury cars, personal luxury goods, luxury hospitality, fine wines and spirits, gourmet food and fine dining, fine art, high-end furniture and housewares, private jets and yachts, and luxury cruises.
Source: Bain & Company, Barclays Research

FIGURE 16

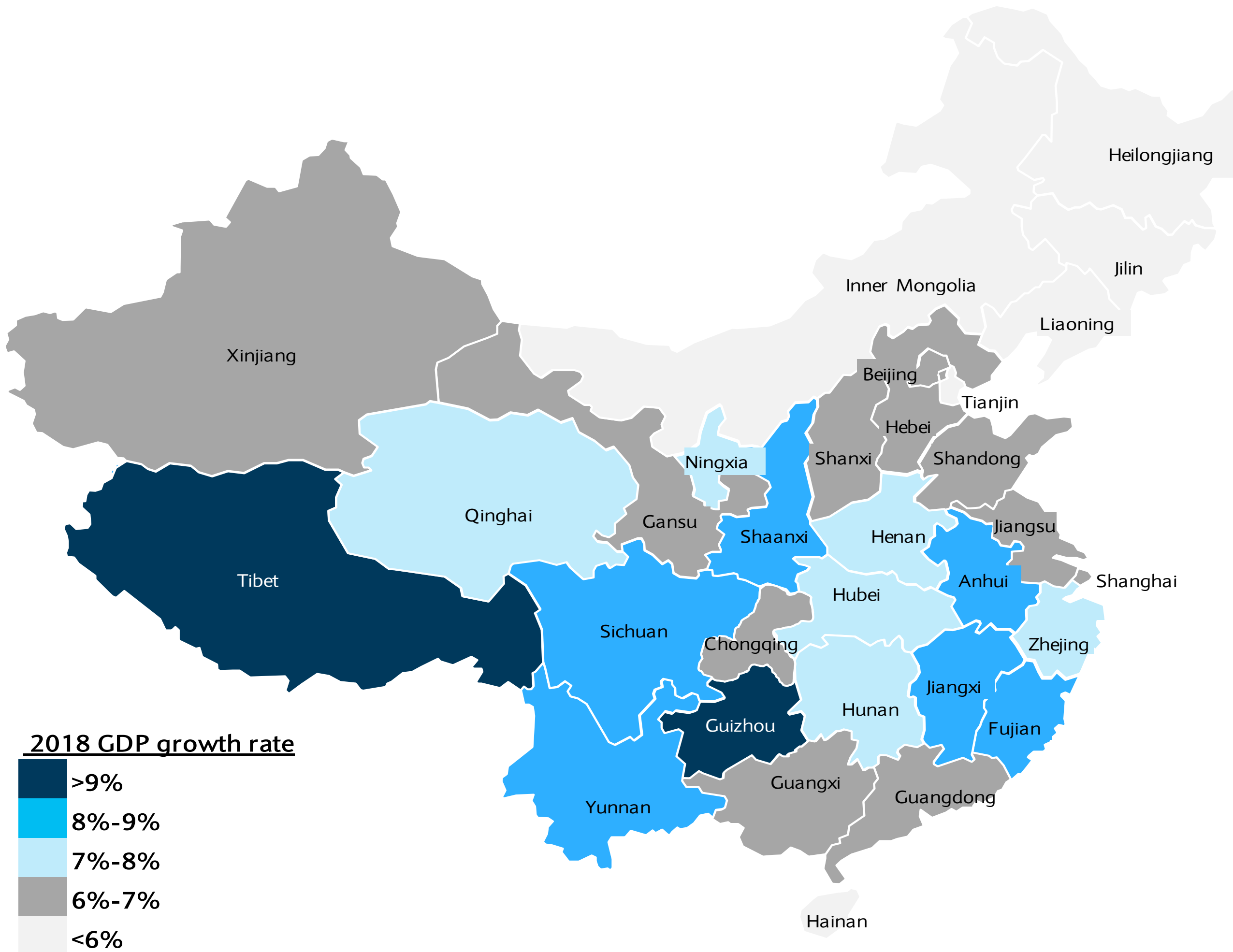
Chinese spending contributes a third of global luxury market



Source: Bain & Company, Barclays Research

FIGURE 17

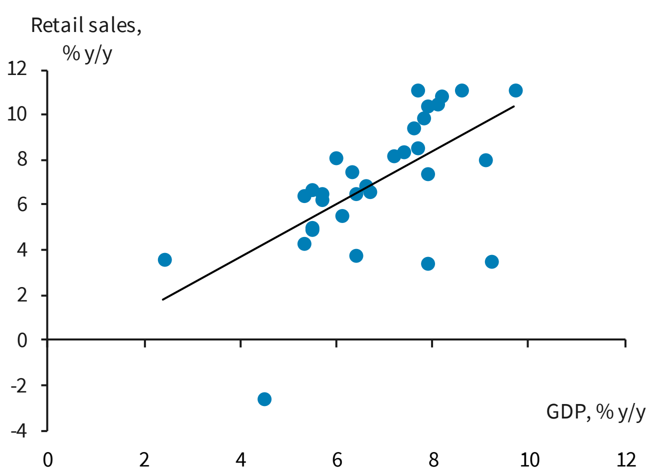
Wide regional GDP growth disparities



Source: Wind, Barclays Research

FIGURE 18

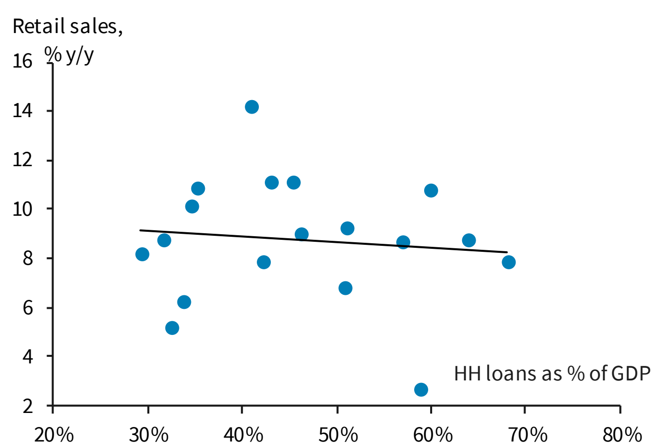
Regional retail sales vs. GDP growth



Source: Wind, Barclays Research

FIGURE 19

Regional retail sales vs household leverage



Source: Wind, Barclays Research

Equities Research

CHINESE GOVERNMENT'S AUTO POLICIES AND OBJECTIVES

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Three critical battles

We think it is helpful to remind investors of the Chinese government's three 'critical battles', which are summarized in Figure 20 and include systemic risk reduction, wealth creation and environmental initiatives, aka the 'blue sky campaign'.

FIGURE 20

Three 'critical battles' (2018-20) for the Chinese government

Preventing and defusing major risks	• Adhere to structural deleveraging • Guard against abnormal fluctuations and resonances in financial markets • Handle local government debt risk steadily
Targeted poverty alleviation	• Intensify efforts to fight against poverty in deep poverty-stricken areas and special poverty groups • Reduce and prevent the return of poor people to poverty
Tackling pollution	• Win the "blue-sky battle" • Have holistic view and avoid simple and harsh measures • Help enterprises formulate environmental solutions

Source: CEWC Dec 2018, Barclays Research

Announced in July 2018, the State Council's action plan for 'Winning the Blue Sky Defence Battle', stressed the importance of pursuing air pollution control initiatives, especially in the Beijing-Tianjin-Hebei region and surrounding areas, the Yangtze River delta, and the Fenhe-Weihe Plain. The plan also laid out a list of specific emissions objectives[2] and set EV sales targets of ~2mn to be achieved by 2020 (2018 sales: 1.26mn), implying annual growth of ~26% in 2019-20. At the same time public buses and other public utility vehicles must be replaced by EVs in provincial capital cities and other major cities by the end of 2020.

We think such ambitious environmental targets reflect two environmental priorities for the Chinese government: 1) mitigating air pollution, and 2) reducing oil consumption and dependence on oil imports. However, we also think the government is focused on accelerating domestic auto industrialisation and creating players who can compete with or even overtake western auto manufacturers.

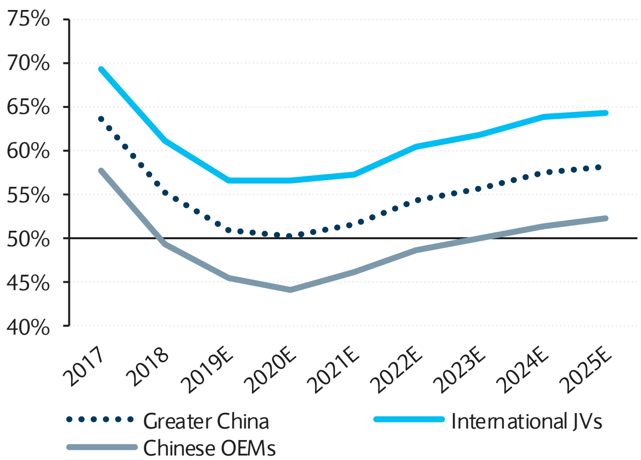
Overcapacity needs to be addressed

Indeed, as we have highlighted in past reports we believe Beijing would actually like to see some overcapacity come out of the autos industry via a process of consolidation. Based on our latest market assumptions, Chinese capacity utilization rates continue to deteriorate. Local auto players excluding the top 5 'national champion' OEMs (Geely, Chang'an, Dongfeng, Great Wall and SAIC) are now operating at plant capacity utilization rates below 40% (see Figure 21 & Figure 22). To put this into context, both Ford and PSA JVs have been operating with similar utilization rates and have either been loss-making or only just breakeven in China over the past few quarters. Longer term therefore these capacity utilization rates appear simply unsustainable. In our view, this dynamic is well understood by Beijing and we believe that the government actually regards the current downturn as an opportunity to finally force the industry to consolidate into fewer, stronger and more profitable companies able to compete on the world stage.

[2] By the year 2020, the total annual emissions of either sulfur dioxide or nitrogen oxides are to be down >15 percent from the 2015 baseline; the concentration of fine particulate matters in nonattainment cities at or above the prefectural level is to be down >18 percent from the 2015 level; the cities at or above prefectural level are to record clean or fairly clean air during 80 percent of the days across the year, and the number of the days with heavy or severe pollution are to drop >25 percent from the 2015 level.

FIGURE 21

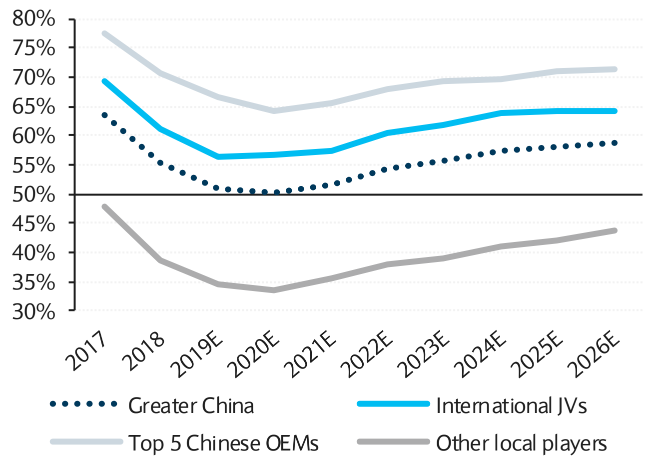
China – Straight-line production utilization rate (%)



Source: IHS, Barclays Research estimates

FIGURE 22

China – Straight-line production utilization rate (%)

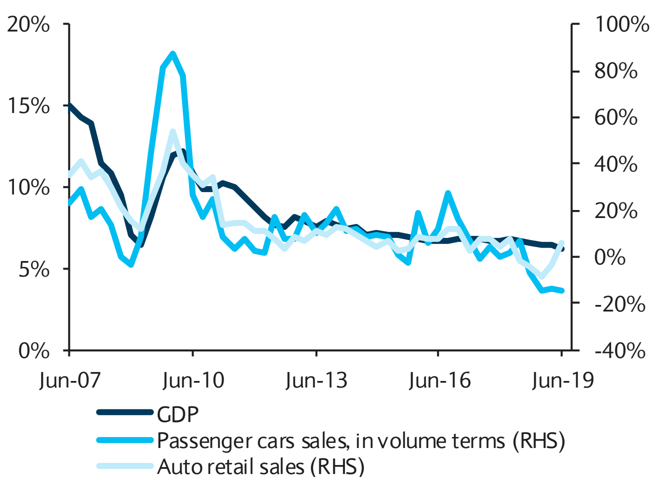


Source: IHS, Barclays Research estimates

This may seem counterintuitive given that the automotive industry remains an important contributor to the Chinese economy (see Figure 23 and Figure 24), but we believe Beijing is keen to take the long view and would like to see the establishment of a smaller number of globally competitive players.

FIGURE 23

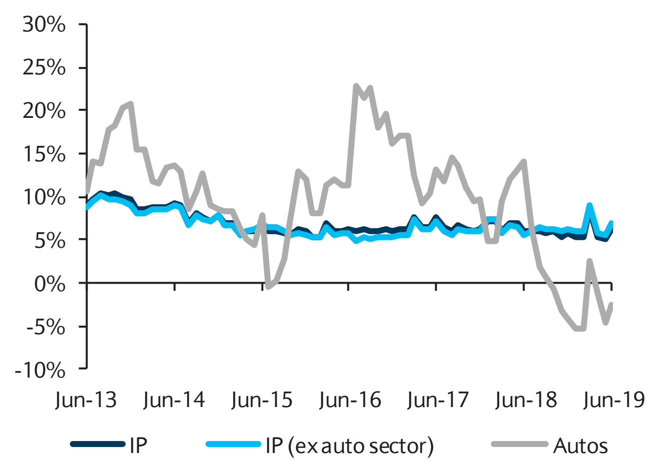
Auto accounts for ~30% of retail sales (yoy)…



Source: Wind Barclays Research

FIGURE 24

…and ~6% of IP (yoy)



Source: Wind Barclays Research

The strategy may also appear to run contrary to critical battle number 2 (poverty alleviation), but we understand that this initiative is focused on 'deep' poverty levels in rural areas rather than more economically advanced regions that may feel some temporary economic pain following automotive capacity adjustments.

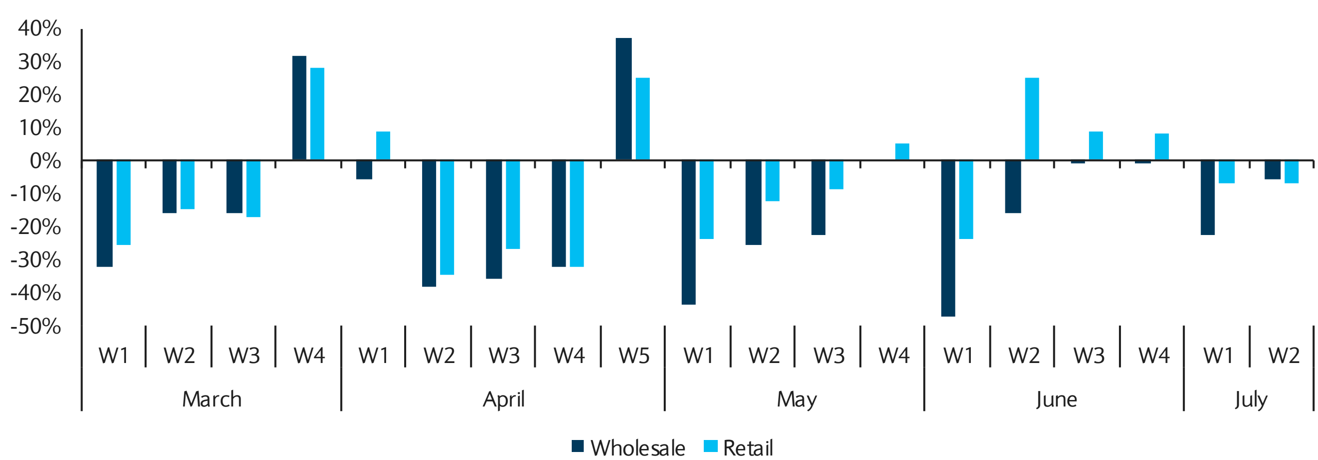
Auto policies in the context of a desire for industry consolidation

We believe the government's auto industry policies need to be seen in the context of a desire to see weaker players leave the industry. Indeed, upon closer examination virtually all auto policy decisions implemented by Beijing over the last 24 months appear designed to directly and/or indirectly weaken smaller domestic automakers:

Limited/ineffective demand stimulus

The Chinese government's stimulus measures announced year to date have been relatively limited in scope and without a discernible effect on overall sales volumes. In an action plan released in late January, the NDRC (National Development and Reform Commission) proposed a range of measures to support car demand. These included subsidies in rural areas designed to encourage the trade in of older (2007 emission regulation) or less powerful (≤1.6l) vehicles, VAT cuts on businesses' used car purchases from 3% to 2%, an expansion in subsidies for high-performance NEVs and an easing of city driving restrictions for pick-up trucks. However, both weekly and monthly sales continued to contract thereafter. Similarly, April's VAT cut appears to have had very little effect on volumes, boosting sales for merely a week following its implementation (see Figure 25). Most recently the NDRC called for cities that limit licence plate issuance to increase their quotas (leading to a 50% increase in licences in 2019 and 100% more in 2020). Guangzhou (120k limit) and Shenzhen (100k limit) have announced that they will increase their licence plate issuances by an additional 100k and 80k in the next 18 months and other cities may follow suit, but any impact has yet to be felt. According to HIS, even if all eight cities and one island province with licence caps in place at present were to relax these, the potential impact on sales volumes from the likely pull-forward effect would be limited.

FIGURE 25
Weekly passenger car wholesale and retail volumes yoy



Note: No wholesale data provided by CPCA in final week of May
Source: CPCA

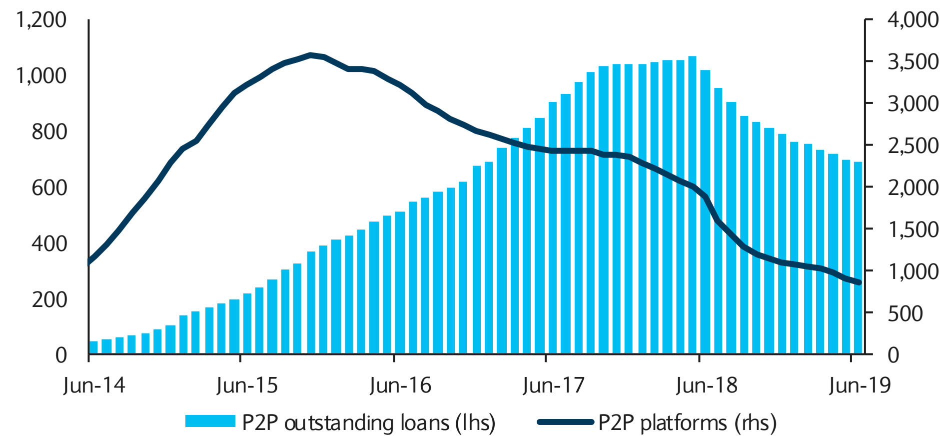
We believe this half-hearted approach to stimulating auto demand is intentional even if Beijing's objectives may at times stand in contrast to the targets of local and regional authorities, who depend upon smaller/weaker players in tier 3-5 cities that have made a significant contribution to economic development in those areas (through direct/indirect employment and infrastructure investments etc.). Local support measures for domestic players are, however, unlikely to prove sufficiently supportive longer term, in our view.

P2P crackdown

The government's crackdown on P2P lending, having started in 2016, accelerated in 2018. By the end of 2018 only around 1,000 P2P platforms were left in place vs. >3,500 in operation at the 2015 peak. According to Bloomberg News, a further 70% drop in the number of P2P platforms is likely by the end of 2019. Given that in 2017 P2P financing platforms facilitated around 36% of auto loans and thus financed between 10% and 15% of all new car sales, P2P credit constraints have been a clear, and quite possibly intentional drag on vehicle sales. Moreover, given that 75% of Chinese P2P borrowers have a monthly income below 5,000 yuan ($720) it has inevitably been sales of the cheaper locally made vehicles that have felt the pinch most.

FIGURE 26

P2P outstanding loans (CNY bn) and number of platforms



Source: Wind

China 6 pull-forward

We also note that changes in emission regulations represent a greater burden for smaller local automakers. As a reminder, China 6 rules were initially meant to come into force in 2020. However, instead they have launched sooner or at tighter levels (6b rather than 6a) across several major cities and key provinces (see Figure 27). This change was implemented with less than 6 months' notice and clearly favours bigger local players or international JVs with deeper pockets and more technological know-how.

FIGURE 27

China 6 early implementation schedule by region

Province	City implementation	Scheduled time	Provinces market share of passenger vehicle sales 2017	Sales CAGR 2012-2017 %
Anhui	All cities	1st July 2019 for China 6B	4%	17%
Beijing	Beijing	1st January 2020 for China 6B	2%	1%
Chongqing	Chongqing	1st July 2019 for China 6	2%	11%
Guangdong	All cities	1st July 2019 for China 6	10%	15%
Guangdong	Guangzhou, Shenzhen	1st July 2019 for China 6B	10%	15%
Hainan	All cities	1st July 2019 for China 6	1%	19%
Hebei	All cities	1st July 2019 for China 6	6%	9%
Henan	All cities	1st July 2019 for China 6	7%	15%
Jiangsu	All cities	1st July 2019 for China 6	8%	10%
Shaanxi	All cities	1st July 2019 for China 6	3%	7%
Shandong	All cities	1st July 2019 for China 6	8%	5%
Shanghai	Shanghai	1st July 2019 for China 6B	2%	10%
Shanxi	All cities	1st July 2019 for China 6	3%	5%
Sichuan	All cities	1st July 2019 for China 6	5%	12%
Tianjin	Tianjin	1st July 2019 for China 6	1%	-4%
Zhejiang	All cities	1st July 2019 for China 6	6%	6%
Total	-	-	**~65%***	**9%**

Note: *Refers only to impacted cities within the above provinces, as shown by the 2nd column

Source: IHS, Gasgoo, NBS, Barclays Research

NEV support roll-back

In March the Chinese Ministry of Finance announced an NEV subsidy cut, which came into effect on 25th June. It resulted in national subsidies (based on range) being cut by 50-60%, and the removal altogether of local subsidies. Given the way NEV subsidies are calculated (see Figure 28), their abolition will make a much greater difference to the purchase price of cheaper cars. We believe that, within the context of an incoming influx of electric cars from international OEMs within the next few years, Beijing is trying to narrow the currently overcrowded Chinese EV market (486 players as of March) into a smaller group of potentially more successful national champions.

FIGURE 28

National NEV subsidies now 50-60% lower than in 2018

Type of xEV	Mileage (km)	Subsidy/car (CNY)	Subsidy/car (CNY)	Subsidy/car (CNY)	Subsidy/car (CNY)
		2017	2018	2019	2020 *
BEV	100-150	20,000	-	-	-
	150-200	36,000	15,000	-	-
	200-250	36,000	24,000	-	-
	250-300	44,000	34,000	18,000	-
	300-400	44,000	45,000	18,000	-
	400+	44,000	50,000	25,000	-
PHEV		24,000	22,000	10,000	-
FCEV		200,000	200,000	tbc	

* Assuming subsidies fully removed in 2020

Source: Barclays Research, Chinese Ministry of Finance

At the same time NEV sales are still being supported, for example via the absence of licence plate restrictions for NEVs, which remain for ICE (internal combustion engine) vehicles, but gone are the days of overly generous subsidies that have in all likelihood kept a large number of small but barely profitable players afloat.

In this context it's also worth mentioning that the Chinese government is drafting new rules on the outsourcing of BEV manufacturing. Companies that want to farm out their electric vehicle production must have reported R&D investment of at least RMB 4bn over the last three years and have sold at least 15k pure BEVs over the past two years. Again, we view this as a measure designed to push smaller and weaker players out of the market (for further detail, see the next section of the report on longer-term electrification targets).

ACES – HOW FAR ADVANCED IS CHINA ON MOBILITY TECHNOLOGY?

It should come as no surprise to investors that future mobility trends are evolving rapidly in China and often come up against fewer regulatory hurdles in the region than they experience in the rest of the world. Not only is the government fully committed to its 'blue sky' pollution agenda but there is also a strong focus on finding a future mobility 'national champion'. Many Chinese new mobility start-ups are geared towards the domestic consumer and have a thorough understanding of the differences in taste between the tech-savvy, e-commerce-comfortable and data-sharing Chinese mobility user versus the more risk-averse western consumer.

It is worth bearing in mind that the government has publicly highlighted three key focus areas for mobility in the region:

1. Strengthen public transportation
2. Lower usage of personal vehicles
3. Promote NEV (new energy vehicles) and accelerate charging infrastructure build

Electrification – government stimulus highlights a shift in strategy

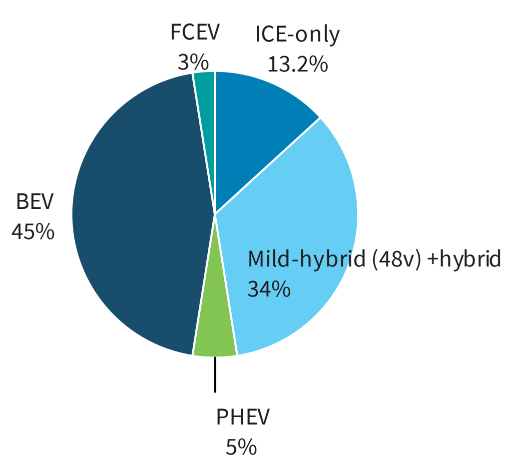
One of our key takeaways from our recent visit to China was that the national government is still 100%-focused on environmental concerns, with winning the 'blue sky battle' and tackling pollution one of its three 'critical battles' 2018-20 (see Figure 20). Therefore, while subsidies for NEVs may have stepped down since 25 June (see Figure 28), we do not think investors should view this as a step away from a concerted NEV strategy and volume targets. As a reminder, the medium-term targets for China electrification are:

- 2mn NEV sales by 2020E (5mn vehicles in the car parc)
- >20% of all vehicle sales to be NEVs by 2025E (or c7mn light vehicles)

Note that we forecast 30% BEV + PHEV penetration for China by 2025E; 50% by 2030E (see Figure 29).

FIGURE 29

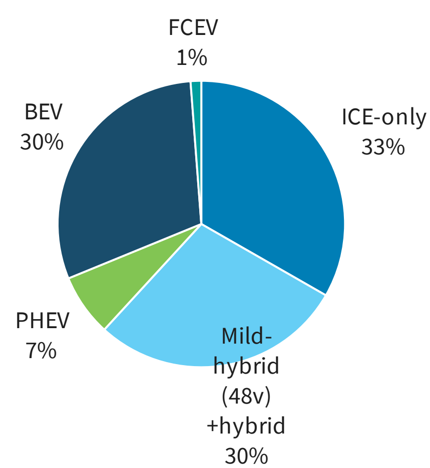
Barclays' forecast for powertrain penetration of new vehicle sales in China 2030E driven by government regulation



Source: Barclays Research

FIGURE 30

Globally we expect ICE-only penetration to remain higher by 2030E



Source: Barclays Research

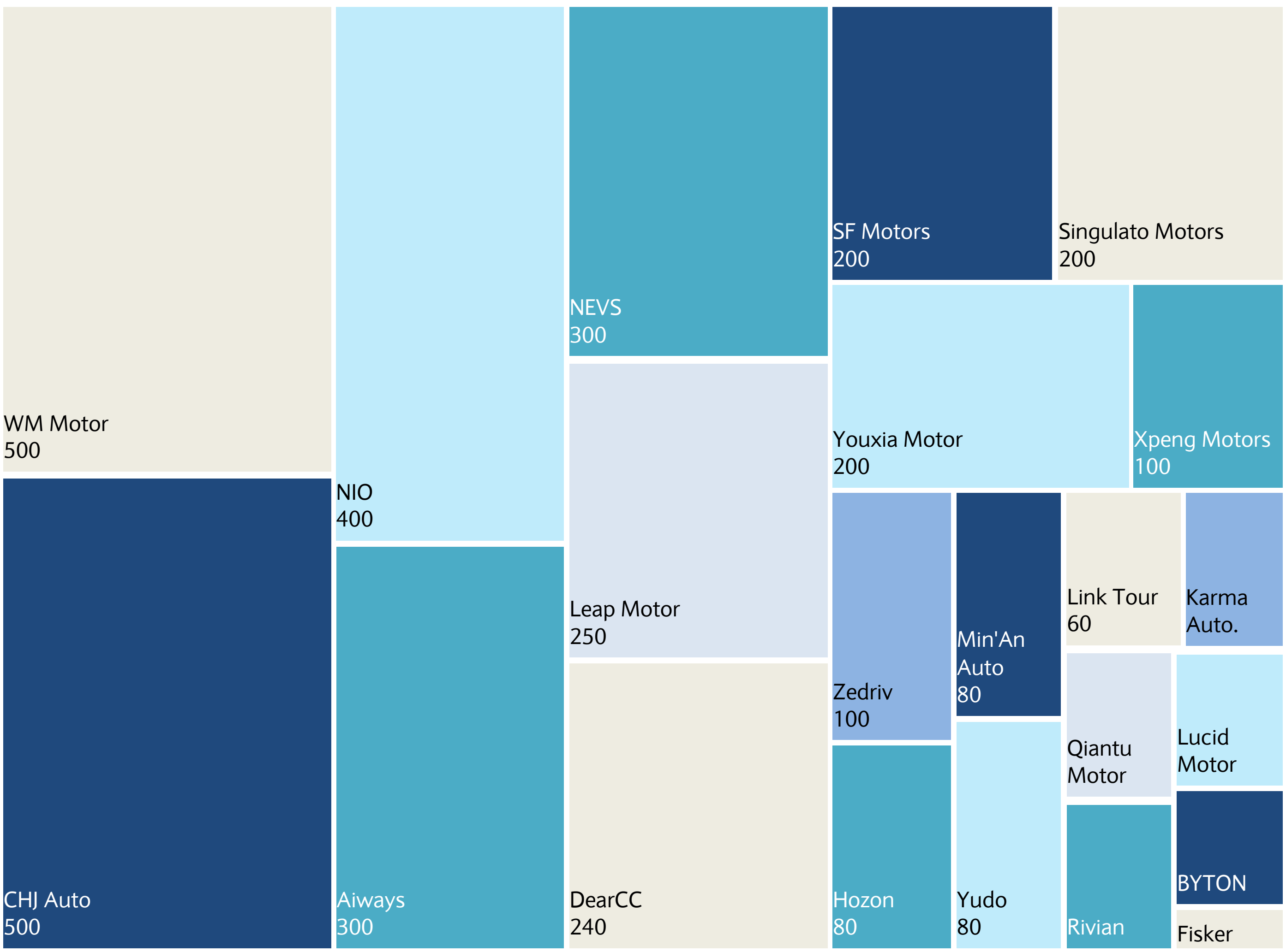
Cutting subsidies to deal with a fragmented, nascent NEV industry

We think the national government is aware that a proliferation of c500 start-ups focused on NEVs is not the way to build a profitable long-term industry and policies are therefore now focused more on improving vehicle quality, range and electric technology. We see the subsidy cuts as a sharp move to promote supply-side reform, given prior subsidies encouraged this glut of supply and drove fragmentation in the industry. As discussed earlier, the national government, in our view, would prefer stronger, more centralised growth from a small number of 'national champions'.

Of the c500 EV start-ups in China, 22 alone plan to build enough capacity for almost 4mn EVs over the next few years, according to Bloomberg…

FIGURE 31

EV start-ups in China plan to add capacity for 4mn cars (below are 22 of the largest start-ups with their production plans in 000s

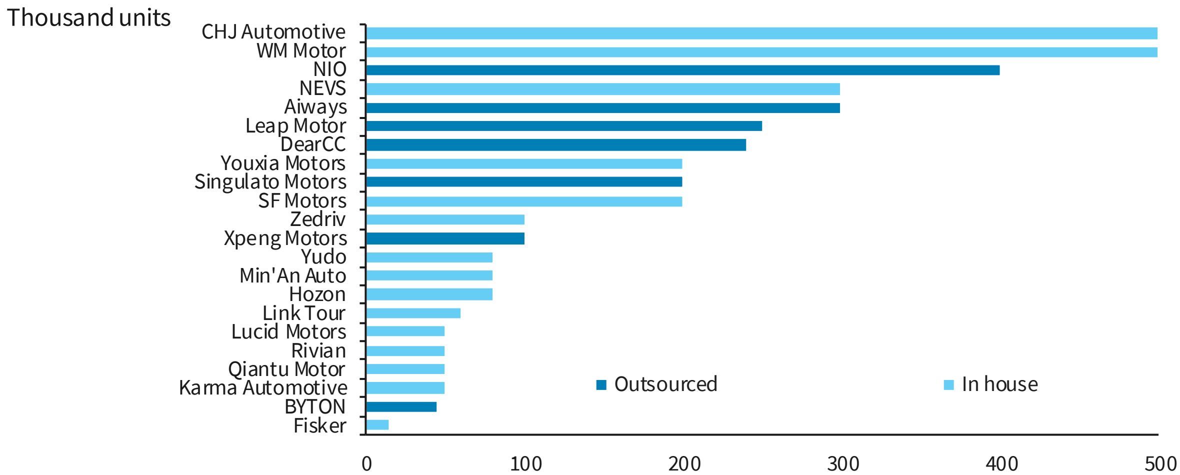


Source: BNEF, Barclays Research

…albeit not all of them are using their own production capabilities, given new government licence restrictions:

FIGURE 32

Announced manufacturing capacity of EV start-ups globally, in-house manufactured vs outsourced



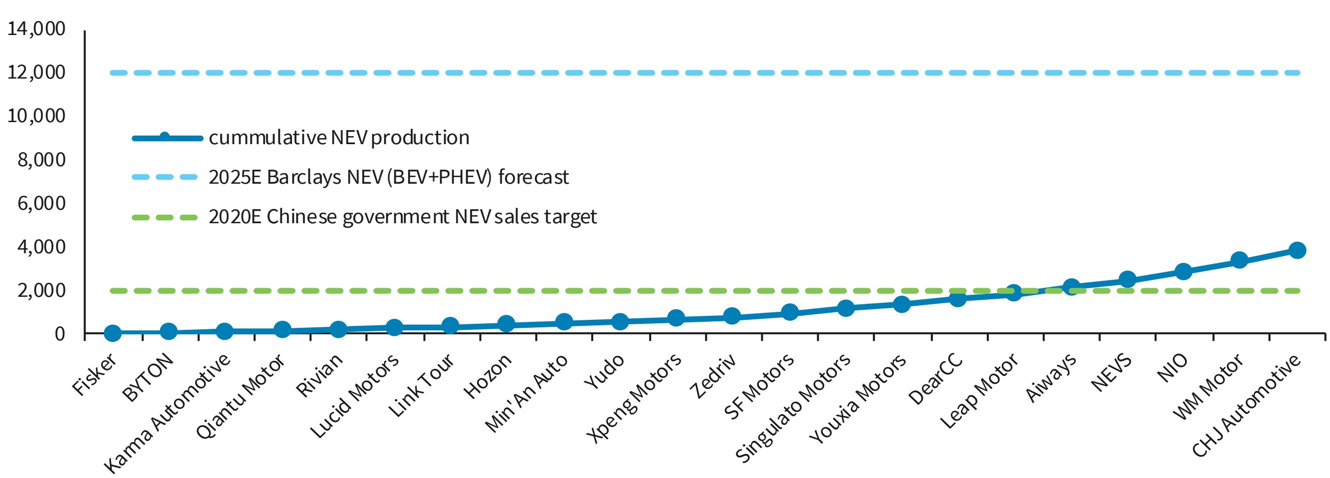
Source: BNEF, Barclays Research

Given what we have learnt from the incumbent car industry about scale being key to profitability, we can understand why the government is keen to make the industry more efficient and ensure its long-term survival. We believe that cutting subsidies will force unprofitable or sub-scale companies to shut-down or consolidate. This is arguably what should also happen to many of the >80 lower tier 1 traditional-powertrain, domestic automakers in China, but of course while the national government might be happy to see this occur, to date, local and provincial authorities have found ways to protect many of these players which offer important employment to their home regions.

However, while it may seem aggressive to have so many new entrants targeting such large volumes for NEVs, when put in the context of our Barclays' forecasts for powertrain penetration in China (let alone globally by 2025E), it is clear that there is room for significant growth. Of course, the incumbents are all targeting the market and have a raft of NEV product due to launch over the next few years, but we believe there is also space for some domestic players and new entrants to gain share. But we do expect to see consolidation among the pack and many of the start-ups to fail to reach maturity.

FIGURE 33

Cumulative NEV start-up production plans for 2025E leave a large gap to Barclays' 2025E penetration forecasts for PHEV + BEV units in China



Source: BNEF, Barclays Research

Short-term pain for longer-term strength

We think it is far too simple to think that the drop in subsidies means that the Chinese government has stepped back from investing in anti-pollution policies. But neither do we believe that any short-term pain felt via falling NEV demand will see an immediate reaction and re-instigation of subsidies. The more nuanced message that we took away from our multiple meetings on the ground in China was that the national government is much more willing to take such pain (i.e. near-term decline in auto demand and NEV demand) in order to strengthen the longer-term condition of the industry and drive 'national champions' to emerge.

Shifting from subsidies for new car sales to increased investment in charging infrastructure

We note that the government has decided to divert its efforts away from 'push' factors (new vehicle subsidies) and more into 'pull' factors, such as investing more heavily in vehicle infrastructure. That focus is not just on finding an OEM champion but also ensuring a Chinese technological lead in battery cell chemistry, electric architectures, connectivity and AI and charging infrastructure. Frost & Sullivan projects an increase in charging piles from 23k in 2013 to 6,618k in 2023 in China.

Do Chinese consumers want NEVs? Yes, where there are strict licence plate restrictions…

Both Tier 1 domestic OEMs and Chinese NEV start-ups told us that currently the Chinese consumer is not as ready for NEVs as sales data for the last few years might suggest. And just as the government is now keen to reverse the pull-forward impact of heavy auto subsidies over the last few years, so it is determined not to see similar effects on NEV demand as a result of over-inflated subsidies. Instead the government wants to drive consistent, 'real' demand over the longer term. We were told that the average Chinese consumer has similar worries and a lack of education on how to use and charge electric vehicles as other global consumers. They remain anxious about range, unsure about how, when and where to charge and nervous about safety issues. These safety worries have been exacerbated by the recent battery fires of Tesla and NIO vehicles (which has lead NIO to recall 4k vehicles over recent months). There is still more education on electrification needed before consumers will choose en masse to purchase electric vehicles, without some form of incentivisation in place.

Near term this could mean a sharp drop-off in NEV demand

Incumbent OEMs highlighted the reluctance of consumers to purchase EVs and therefore the likelihood of a continued fall in demand as government stimulus steps down sharply. Management at a tier 1 domestic OEM even suggested EV demand could fall 40% after 2020 when NEV subsidies are cut fully.

But licence plate restrictions continue to support NEV demand

We saw plenty of 'green' licence plates on the streets in Shanghai and Beijing, highlighting the ease of registration of these vehicles versus their ICE counterparts. Indeed, many larger cities have licence plate restrictions in place that penalize ICE vehicles but encourage NEVs. Just as many cities in Europe have started to focus on more restrictive, anti-car measures from urban centres, so the Chinese authorities are trying to ensure their multiple aims of reduced congestion, improved air quality and leadership in multi-modal mobility are met, without fully stifling innovation in the nascent *#disruptivemobility* market.

Indeed, representatives from NIO, a newly-listed NEV start-up, showed us statistics on the likelihood of getting a licence plate for an ICE vehicle in the 7 cities and one province where there are restrictions in place. The probability is as low as 0.1% in Beijing, 0.6% in Shenzhen and 1.2% in Guangzhou. It is therefore unsurprising that there remains demand for the more premium NEV products, even after the subsidies drop off. It is worth noting that the cities with ICE restrictions accounted for 18% of global EV sales in 2018.

New vehicle launches should boost demand further

NIO management pointed out that, while there are a large number of domestic OEMs competing at the mass end of the NEV market where the subsidy drop hurt much more, the premium offerings are continuing to experience growth. With non-native OEMs and JV partners alike having a busy schedule of new EV launches coming in China, many with a significantly higher level of technology than any prior generation, we expect the more premium consumer to be spoilt for choice with EV offerings at the higher-range level. And just as the overall premium car market has held extremely firm despite overall market softness, so we expect the higher-end NEV offerings in China to experience strong growth despite a softer subsidy schedule.

FIGURE 34

New BEV launches

Brand	2019	2020+
Audi	e-tron Q2 L e-tron	Q4 e-tron
BMW	BMW i8 Roadster	iX3 iNEXT i4 MINI Electric
Daimler	EQC	EQA EQE EQS
Porsche	Taycan	
Renault	KZ-E	Fluence
Skoda		Karoq
Volkswagen	e-Lavida e-Bora e-Golf	ID Crozz ID Roomzz ID.3

Source: Barclays, Company Reports, IHS

Domestic Chinese start-ups focus on Chinese consumer tastes

Start-up NEV manufacturers are hoping to disrupt not only incumbent vehicle manufacturing but also the traditional car sales model. For instance, NIO offers a full-round service from purchase, to insurance, to charging and servicing, and does so via a direct sales model (or app) similar to Tesla. NIO's next SUV, the ES6, will offer 430km range in a base model, and 510km with a larger battery pack option. The company views itself as a 'lifestyle brand', as opposed to a car company, and we experienced the luxury of one of the 16 'NIO houses', offering customers a place to meet, socialize and utilize both charging and childcare services. In addition, even charging offerings are advancing, with automated battery swap options and mobile power solutions available.

And the start-up approach to vehicle design is more akin to the tech industry than some of the more traditional automakers. Design is focused on the vehicle interior, with AI and entertainment systems geared towards Chinese interior tastes. NIO's 'nomi' AI voice-assistant robot is fun as well as functional, and is already being copied by many lower-end competitors. New mobility companies talk in terms of 'number of app downloads' and 'daily active users', rather than order backlog and vehicle sales.

Incumbent OEMs are not immune to tech advances

However, at the recent BMW CMD in China, company management pointed out that the incumbents too are becoming more willing to partner with tech players (including the BATs – Baidu, Alibaba and Tencent) in order to ensure vehicles in the Chinese market are geared towards the Chinese consumer's tech-focus. While the company was unable to give specifics, we would not be surprised if we saw an increase in announcements regarding partnerships on integrated payment apps and AI technology from these players within traditional premium vehicles for the Chinese market. BMW has recently signed a MoU with Tencent and states that it is the first premium OEM to integrate intelligent Tmall Genie in January 2019. The company has also signed up with Baidu Apollo since summer 2018 for autonomous driving in the region.

Jochen Goller, President & CEO, BMW Group Region China, made it clear that not only do consumers demand a high level of AI within the vehicle, they are also willing to sacrifice a much greater degree of data privacy in order to achieve this, which can aid tech penetration in China and in the longer term could boost data monetisation opportunities for premium OEMs.

5G is driving improved manufacturing efficiencies in China

Similarly, BMW highlighted that advances in IoT (internet of things) and 5G infrastructure in China are enabling greater efficiencies in manufacturing also. Jochen Goller flagged that the cost of 1GB data transfer has fallen 98% in China from €1.23 to €0.03 as a result of having 5G capabilities (vs the equivalent for Deutsche Telecom in Europe at €1.08). This ensures not only that Chinese factories are working at peak efficiency but also that they are well connected and able to deal with high levels of data transfer.

FCEVs represent a new government focus

Despite offering one of the first commercially available FCEVs (fuel cell electric vehicles) in China, the management team we met at a large Tier 1 OEM were pretty dismissive of the opportunities for FCEVs given the lack of infrastructure and consumer demand. But as we've seen with EVs more generally, when the government supports a technology, its growth potential seems assured. The latest government support for fuel cell technology and budgets for infrastructure imply we could see much higher penetration of the vehicles, particularly at the longer range end of the market and for commercial vehicles, than in other regions globally. We currently forecast passenger car penetration of FCEVs at 2.5% in China by 2030E vs 1.2% globally.

The 'Made-in-China 2025' strategy focuses on targets for fuel cell vehicles and technology and sets targets of having >1,000 fuel cell stacks manufactured/year by 2020 and 500k by 2030 (70% of components manufactured domestically). The Society of Automotive Engineers of China has proposed a target of 1mn FCEVs on the road by 2030, with 50k by 2025. To reach this 2030 goal there needs to be a significant increase in infrastructure investment but, given government support for domestic energy security, we expect to see more supportive regulation (and a lifting of some of the restrictive regulation on hydrogen usage) to encourage fast uptake of fuel cell vehicles, particularly for the commercial and long-distance markets.

Connected vehicles – driven by Chinese consumer tastes

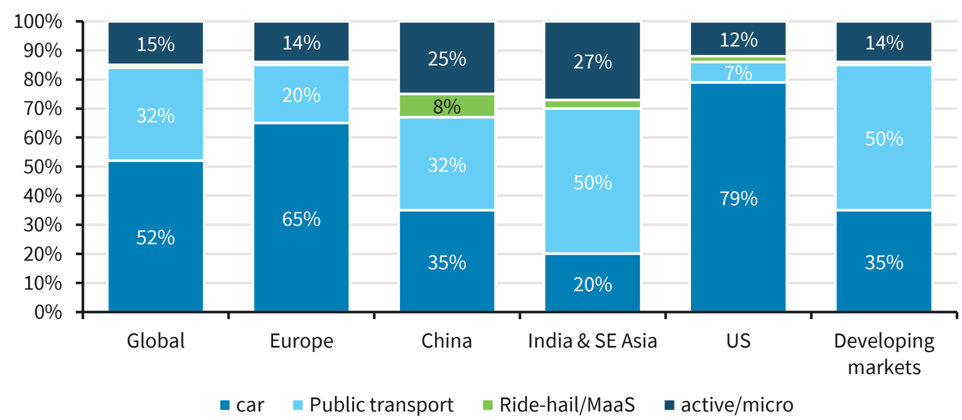
We expect many advances in vehicle connectivity to come from China, not so much because the domestic suppliers are at the forefront of the technology advances but because Chinese consumers are tech-savvy and demanding in their connectivity requirements. The consumer is used to the tech-industry's speed of product cycle development times and is demanding faster delivery on tech innovation within the car as a result. With many of the early-stage EV companies in China well-funded by powerful technology companies such as Alibaba and Tencent, it is no surprise that they are targeting products to appeal to a younger customer, often describing themselves as 'lifestyle businesses' as opposed to automotive companies. But, as we discussed above, this speed of innovation is also being copied by the incumbent automakers, and we expect to see continued advances in vehicle connectivity driven from the Chinese market.

Shared mobility a key growth area for China

With urban congestion already high in China (McKinsey estimates that Beijing's citizens spend an average 1.3 hours every day commuting, more than three times as much as the average US commuter), it is no surprise that shared mobility services are increasing in popularity. While ride-hail uptake globally is in the low-single-digit range, the popularity of Didi Chuxing in China has meant that penetration is now close to double-digit.

FIGURE 35

Mode of transport (trips) globally differs by region but the car dominates in all developed markets, with the US still the most car-centric geography



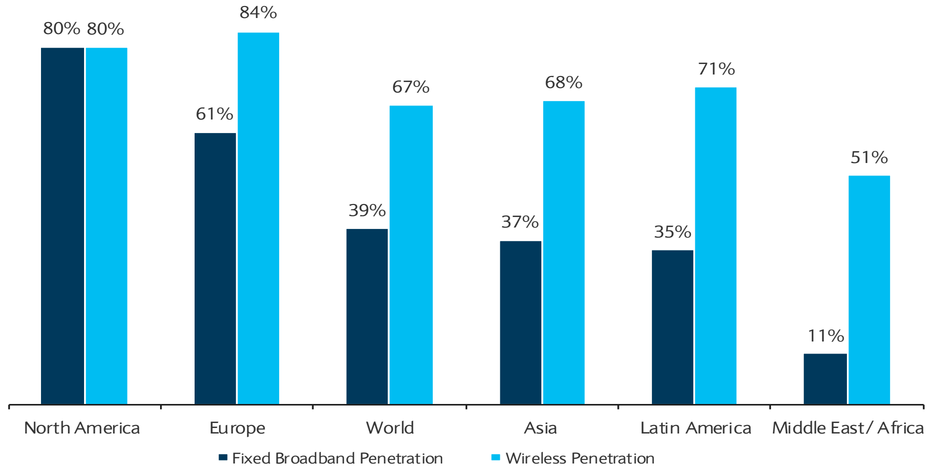
* Currently the majority of active/micro is 'walking' e.g. in the US 11% of trips are on foot versus 1% using bicycles or mopeds as per 2017 NHTS data Source: Barclays Research, NHTS, national statistics

Ridehail options (Didi being dominant) are numerous in China, but this does not mean that personal car ownership is unpopular in tier 1 cities – where penetration rates are as high as 300 vehicles/1000 inhabitants versus <100 in lower tier cities. However, we do see risks that these penetration rates do not reach levels achieved in other developed markets because the Chinese consumer leapfrogs the car technology (a phenomenon we discussed in more detail in our recent note *Cutting the car ownership cord*).

We believe that, whilst developed markets might suffer 'cord cutting' away from the car as shared mobility options proliferate, in China and SE Asian markets, the consumer might in fact never see the need for car ownership in the first place, if alternative mobility options are widely on offer. MaaS (mobility as a service) might follow a similar trend to wireless versus fixed broadband penetration, whereby fixed broadband never reached high levels of penetration in Asia before wireless technology leapfrogged it…

FIGURE 36

Fixed broadband penetration in many parts of the world is lagging wireless penetration, resulting in a transition to wireless first penetration – we think the same may easily be the case for car ownership vs MaaS

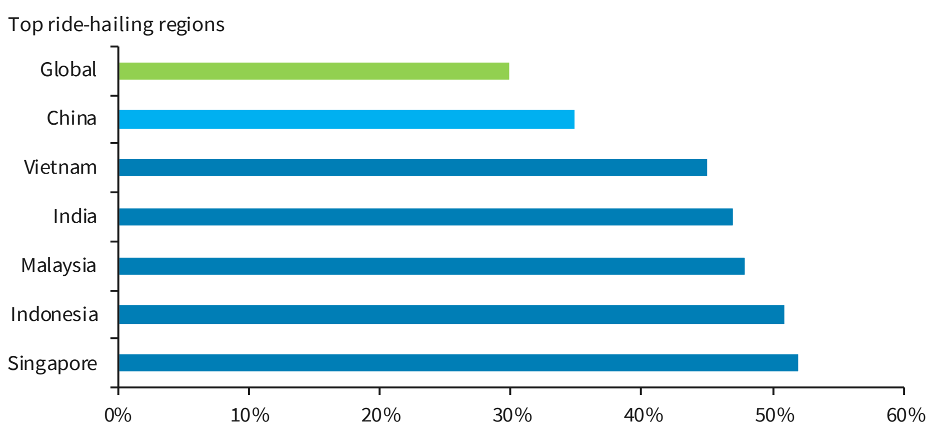


Note: Global Fixed Broadband penetration has been computed using total occupied households as the denominator
Source: SNL Kagan, GlobalWebIndex, World Bank

The views from management teams who we met on the ground in China differed widely on shared mobility. Incumbent domestic OEMs and import JV partners were adamant that car ownership in China has a long way to go to maturity, and that new mobility cannot compete with the status acquired by car ownership in the region. But the new mobility start-ups, unsurprisingly, agreed more with our view that consumers in Asian markets might leapfrog car technology entirely and switch directly to MaaS. Of course, the answer is probably in between the two, with economic developments that we discussed earlier in the report likely supportive of greater auto penetration but this penetration unlikely ever to reach levels experienced in developed markets as mobility service options (including micromobility too) gain popularity. We certainly see a risk in China that the millennial (and upcoming Gen Z) demographic is more focused on property ownership than vehicle ownership and much more comfortable utilizing shared services, given already high usage of e-commerce, mobile banking and ridehail/dockless shared mobility.

FIGURE 37

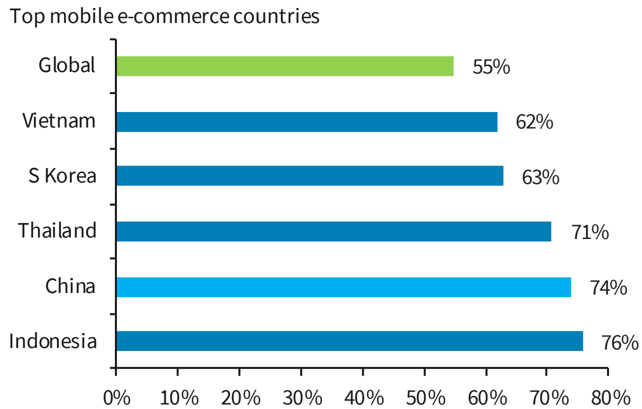
China (and SE Asia) are ahead globally in ride-hail uptake (% of internet users who use taxi/ride-hail apps at least once a month)



Source: We Are Social, Hootsuite

FIGURE 38

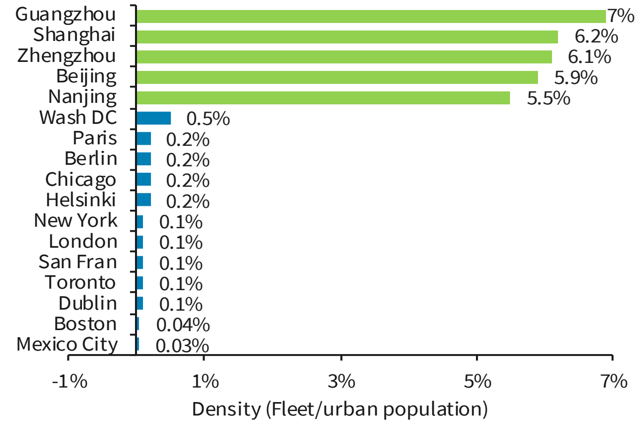
And Chinese households use a higher % of e-ecommerce than the rest of the world



Source: Roland Berger (based on 2014 data)

FIGURE 39

In China, dockless bikeshare is already extremely popular



Source: Country statistics

Autonomy still in the future but China will not be left behind

The strength and funding capabilities of Chinese technology companies such as the BATs (Baidu, Alibaba and Tencent), each of which invested heavily in future mobility start-ups should help place China at the forefront of autonomous developments. And we believe the advancement will depend on the government's willingness to see disruption to existing mobility modes and ensure regulation does not stifle autonomous innovation. But it is also worth remembering that the complex traffic environment in China. Aggressive driving behaviour[3] and poor road conditions in many regions mean the technology solutions required for autonomous driving in the region need to overcome just as many challenges as they do in more developed markets. Traffic signage in China is not yet fully standardised, and Chinese drivers do no always follow the same rules of the road as in other regions, which makes optimising AV decision algorithms hard and may lengthen adoption horizons.

Does China tech have an advantage on the autonomous stack?

As yet it is unclear how the Chinese technology 'stack' required for autonomous vehicles will differ from that used in the rest of the world Economies of scale on the hardware side will be helpful but some of the government's restrictions on the 'made in China' necessity of the technology stack may leave foreign companies at a disadvantage, particularly regarding location-based services and China's data cloud. But, while foreign players may be excluded from some parts of the autonomous stack, early indications from experts that we met in China signalled that Chinese technology players could be many months/years behind international companies in terms of building the capabilities required for delivering the full stack required for AV system integration. But the major internet players are investing heavily to close this gap.

In terms of AVs (autonomous cars), Baidu was cited as furthest ahead in developing robotaxi prototypes by the experts we met in China. Baidu's focus is believed to be on highways and newly developed suburban areas, not dense urban areas with cyclists, carts and pedestrians. Baidu logged 140k km of testing in Beijing in 2018, about 90% of all test miles driven by 8 companies in that city. In 2019, Baidu is rolling out ~100 Apollo robotaxis in Changsha, and has obtained 45 autonomous testing licences. Geely is partnered with Zenuity, although relatively few resources may be on the ground in China. NIO is working on Level 4 for ~2022, but exclusively for use in personally owned cars as a must-have tech feature.

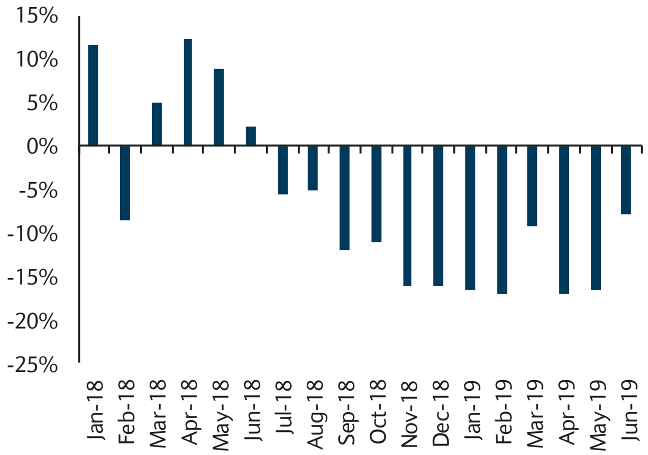
[3] McKinsey, January 2019, "How China will help fuel the revolution in autonomous vehicles"

IMPLICATIONS FOR CHINA AUTO MARKET OUTLOOK

Challenges for Q3

FIGURE 40

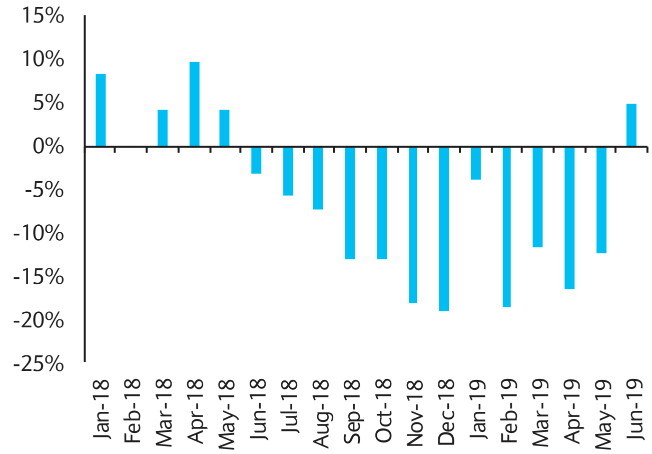
Monthly passenger car wholesale volumes yoy%



Source: CPCA

FIGURE 41

Monthly passenger car retail volumes yoy%



Source: CPCA

Following our recent field trip to China we do not expect a recovery in Chinese vehicle sales and production levels in the near term, especially in the normally slow months of July and August. While trade war fears may be easing a little following the de-escalation between President Trump and Xi Jinping as outlined above, we still expect several factors to exert downward pressure on volumes:

CHINA 6 DISTORTION

We believe the accelerated change to China 6 regulation across key cities and provinces (constituting around 65% of the market) will continue to represent a significant challenge to the industry in the coming months. It has already forced a dramatic inventory clearing effort of China 5 vehicles pre 1st July, with discounts as high as 45% (see June's wholesale retail sales gap on a weekly basis in Figure 25). Indeed we believe that even players without large quantities of China 5 vehicle inventory to clear have been forced to hike incentive levels over recent weeks given the competitive environment. Going forward we see several problematic dynamics emerging:

1) Some lower-end domestic players will be left entirely without compliant vehicles to sell in the provinces and cities where China 6 was implemented on July 1st as their line-up consists virtually entirely of China 5 cars.

2) Those OEMs with vehicles that do not meet the required emissions standard will have to invest significantly in order to upgrade models to China 6. Some estimates highlight that this could cost 1,200 yuan ($175) a vehicle[4]; smaller Chinese players will struggle to absorb these costs, and it will be hard to pass these costs on to customers.

3) Price distortion may well continue, notably in those regions that have not yet implemented China 6. These regions will likely see an influx of China 5 vehicles. Indeed, since the re-sell value of a China 5 vehicle is already considerably lower than that of a China 6 vehicle, whilst at the same time speculation has emerged that the government

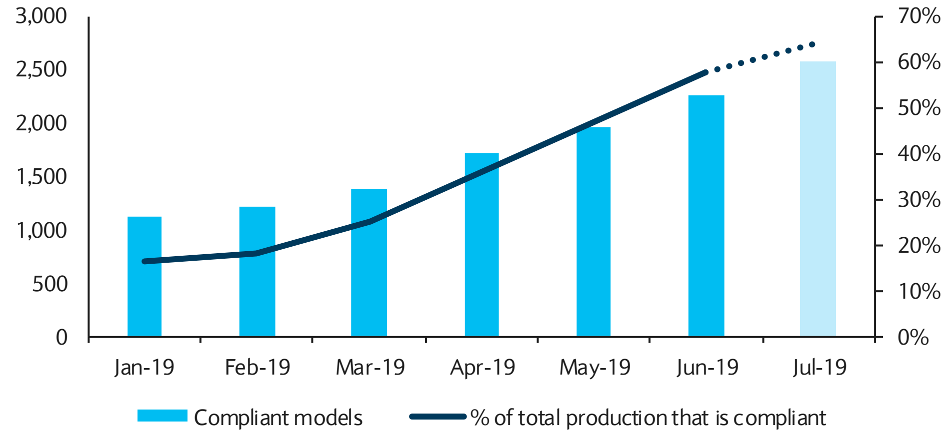
[4] https://asia.nikkei.com/Business/Business-trends/China-s-new-emissions-rules-take-scalpel-to-bloated-auto-industry

may outright ban all China 5 vehicles in the future, it seems likely that generous incentivisation will occur. Ongoing pricing distortion within ~35% of the Chinese market (roughly equivalent to the size of Germany, UK and France auto sales combined) would undoubtedly be damaging.

While it is hard to quantify precisely the effect this will have on sales volumes in the coming weeks, we note that currently only around two-thirds of models produced are compliant.

FIGURE 42

Production of China 6 compliant vehicles analysis



Source: VECC, Barclays Research

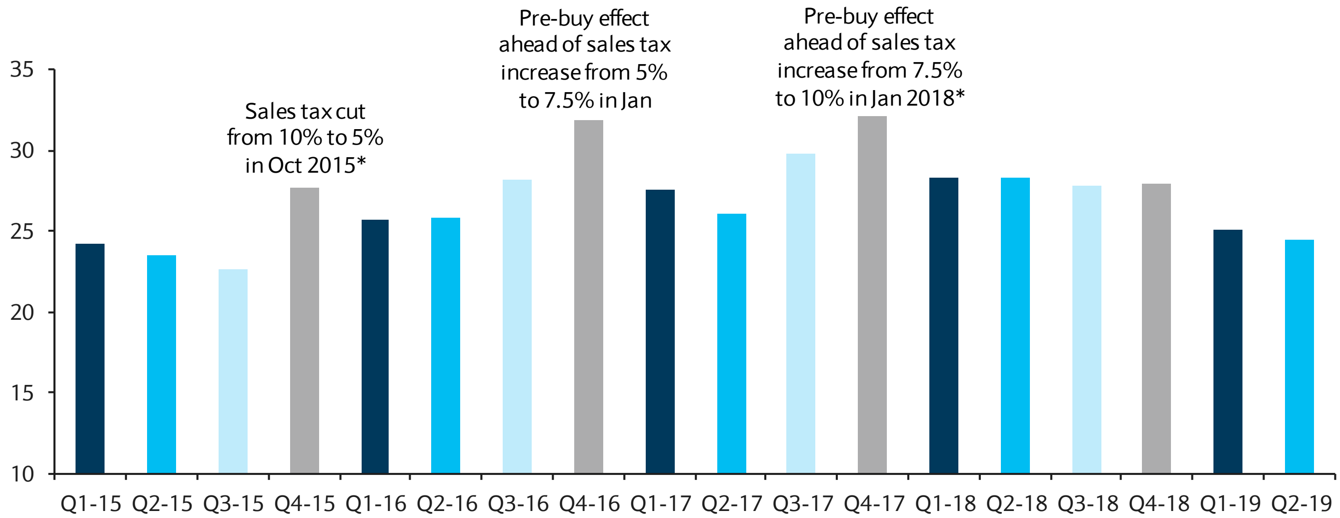
So far we have struggled to establish precisely what proportion of production volume is compliant. We heard estimates of 50% and 60% on the ground earlier in the month. Our own analysis leads us to believe that, as of last week, we are at a compliant production proportion of 64%, but it is hard to deduce the likely impact on sales, given possible regional reallocation of stock and market share shifts. In any case, we believe China 6 is clearly likely to favour the stronger players with the right technology already available, which may even take market share from those with a lack of compliant product. Weaker players may be driven out of the market altogether.

Payback time

Even though the second half of 2018 saw a sharp contraction in sales, this came on a base level inflated by past pre-buy dynamics from sales tax changes (as we highlighted in our note *Crunch time for China*). As a result, the 'weak year ago base dynamic' will be much less powerful than appears to be the case at first glance. In the words of one local auto executive we spoke to, "it's payback time!".

FIGURE 43

Quarterly SAAR (m)



Note: *On cars with engines of 1.6l or less

Source: Barclays Research, CAAM

Real estate cannibalisation

As discussed above, we suspect that real estate inflation is putting pressure on car demand. Real estate price inflation from early 2018 has left many consumers with less disposable income to devote to car purchases. In particular, many young prospective grooms feel family pressure from their future in-laws to buy an apartment before marriage – which often means deferring a car purchase. This phenomenon is being particularly felt in the lower-tier cities. While this may ease as the real estate market softens, we suspect that for now elevated property pricing and mortgage rates will continue to weigh on demand (see Figure 5 and Figure 6).

FY 2019E sales contraction of 7.1%, production drops 7.8%

Our latest production and sales forecasts for China are listed in Figure 44 below. We note that we are still below the most recent IHS forecasts.

FIGURE 44

Barclays China production and sales forecasts

Production

yoy	BE	IHS
Q3-19	-5.3%	-3.8%
Q4-19	+2.6%	+3.4%
FY-19	-7.8%	-6.7%

Sales

yoy	BE	IHS
Q3-19	-5.3%	-
Q4-19	-1.9%	-
FY-19	-7.1%	-6.1%

Source: Barclays Research, IHS

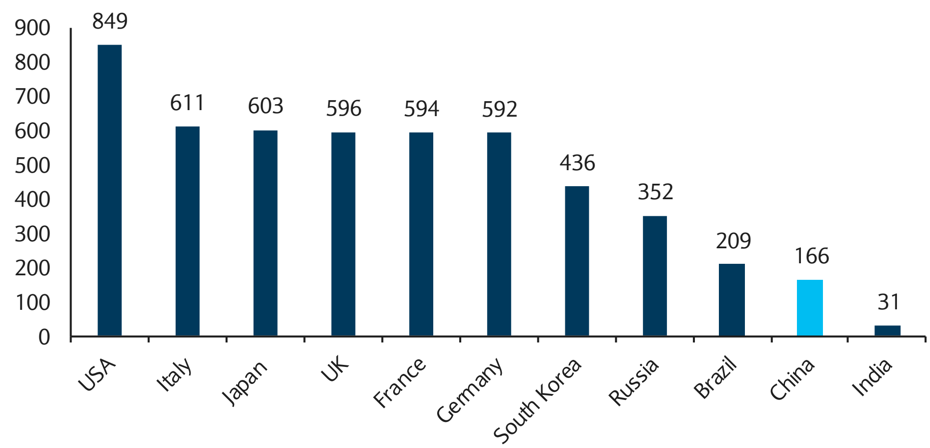
Longer-term opportunities

Over time, of course, these negative dynamics are likely to ease, and as regards the mid and long term all players to whom we spoke remain optimistic about the market's growth.

Despite a relatively young fleet, status-conscious Chinese consumers are keen to own the latest technology. This typically leads them to replace their vehicles after 5-6 years (9-11 years in Europe and the US) – i.e. long before a vehicle's mileage would make this necessary. Moreover, ownership rates remain relatively low, with some regions particularly under-penetrated (below 100 vehicles per thousand people in tier 3-5 cities).

FIGURE 45

Light vehicles per 1,000 people (2018)

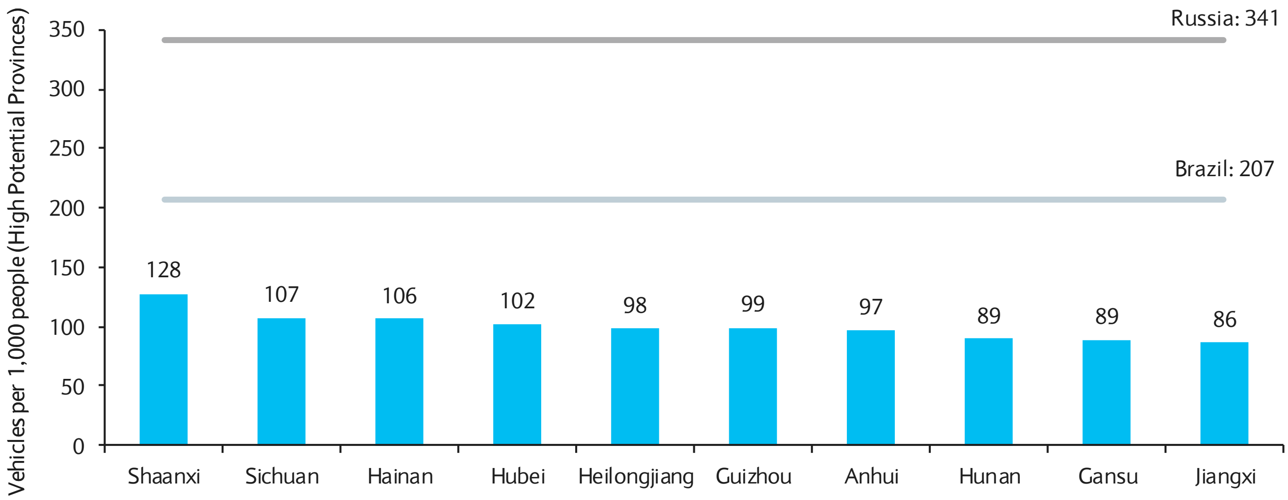


Source: IHS, Barclays Research

In our report '*China: a sleeping dragon?*' we identified 10 'hot' provinces with significant untapped vehicle demand. While some provinces in China are clearly over-saturated with cars, we see opportunities in these 10 regions where income statistics are most supportive, but car density is still low. In these provinces the total population tallies to ~450m people and the 2017 car parc was 47m vehicles, implying an average penetration rate of only 100 vehicles per 1,000 inhabitants (Chinese average 166 in 2018). The disposable income CAGR in these provinces over the last five years, however, is supportive of much higher levels of penetration. While we are aware that there are other provinces in China where potential growth is much more limited or even saturated, we derive comfort from the longer-term opportunities in these 10 'hot' provinces. If they were to each reach Brazil's average penetration rate of 207/1000 people over the next 5 years, there could be 5m additional cars on the road, implying a CAGR of 3.6%. If the vehicle penetration rate were to rise to a level equivalent to Russia's (341/1000 people), there would be 11m additional cars on the road (equivalent to a CAGR of 7.5%).

FIGURE 46

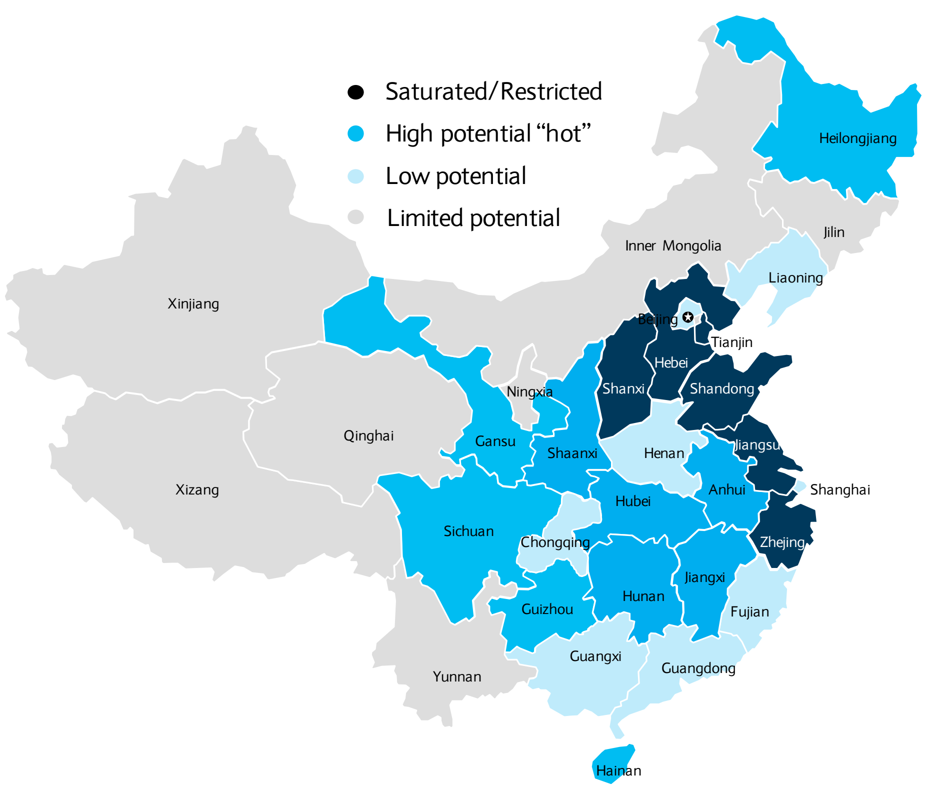
Vehicle penetration in top 10 high potential 'hot' provinces



Source: NBS, Barclays Research

FIGURE 47

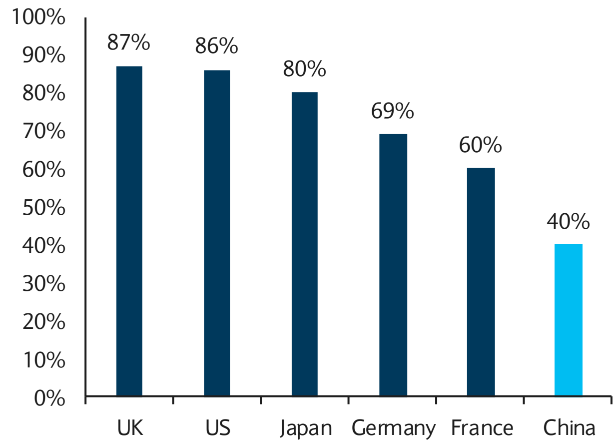
China heat map of 'hot' provinces



Source: Barclays Research, NBS

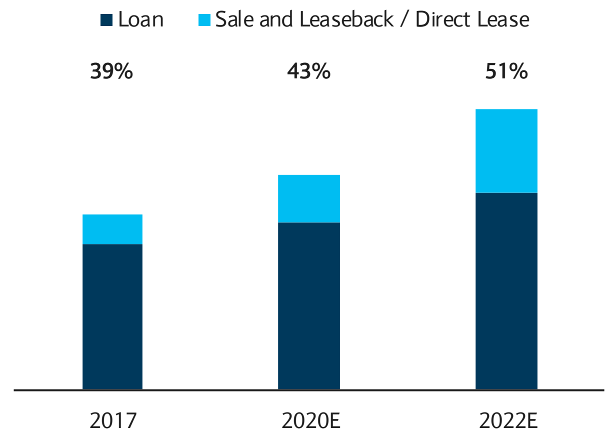
At the same time financial services penetration rates are only at 45%, but should continue to expand rapidly (having increased fourfold since 2007). Generations born since the 1990s are much more relaxed about the concept of buying vehicles on credit.

FIGURE 48
China's 2017 financial services penetration lags that of global peers…



Source: FLA, Deloitte, CAAM, NBS, HIS, Barclays Research

FIGURE 49
…but is forecast to grow



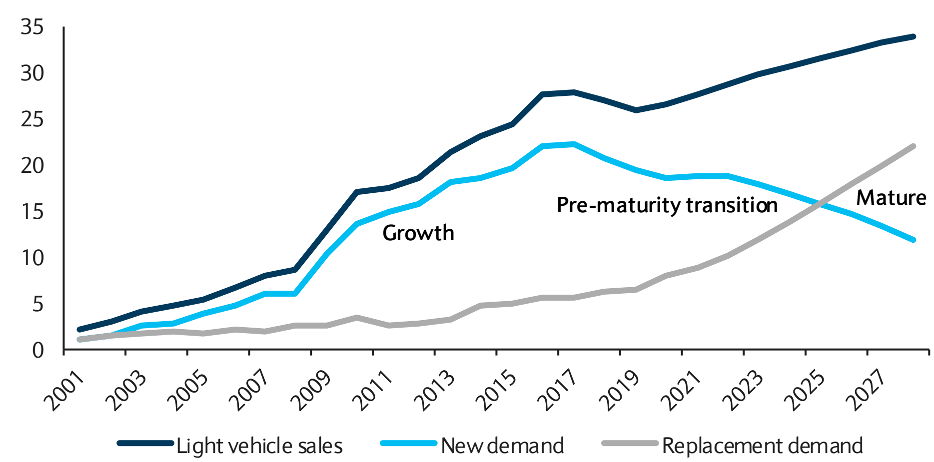
Source: BMW

Structural challenges

Nonetheless, several factors also lead us to see downside risks to China's longer-term growth.

The first is that China is beginning to mature, albeit gradually. As illustrated in Figure 50, growth over the last two decades has been driven by first-time vehicle buyers. As China enters a new and more mature phase, the pace of vehicle replacement becomes an increasingly important driver of sales growth. As a result, demand becomes more sensitive to market dynamics like pricing and incentives, and less sensitive to GDP and income growth.

FIGURE 50
Structural components of China's light vehicle market (m)

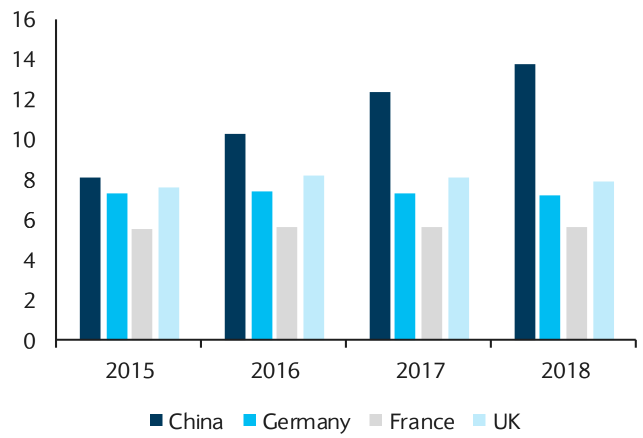


Source: IHS, Barclays Research

The second factor is the increasing base of used vehicles. We understand that at there is still only little appetite for used vehicles among wealthier consumers in tier 1 cities who generally are less keen on anything 'second-hand'. They are often concerned about the validity of registration insurance and inspection documents, the trustworthiness of the previous owner and the fulfilment of any dealer warranty commitments. Indeed, we heard anecdotal evidence of older cars often being passed to relatives rather than being sold. Nonetheless, it seems hard to imagine that a meaningful used vehicle market will not emerge at some stage. And, although it is still limited in size compared to the new car market, it is nonetheless growing rapidly. We believe sooner or later the used car park will start to depress new vehicle demand, particularly in lower-tier cities. Hence low vehicle ownership rates may be less of a new vehicle demand driver than they might appear at first glance.

FIGURE 51

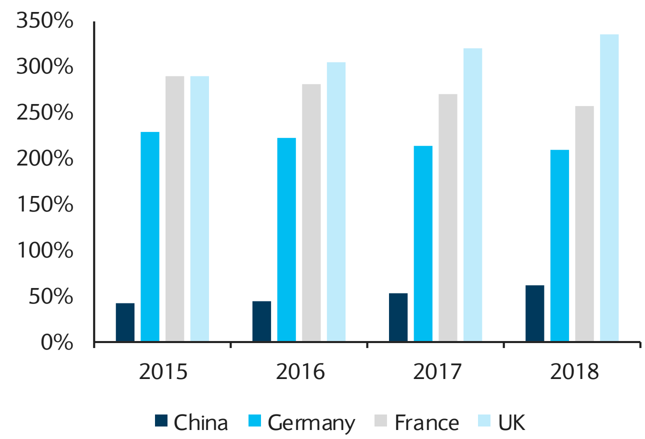
Used car sales (m)



Source: CADA, CPCA, KBA, CCFA, SMMT, Barclays Research

FIGURE 52

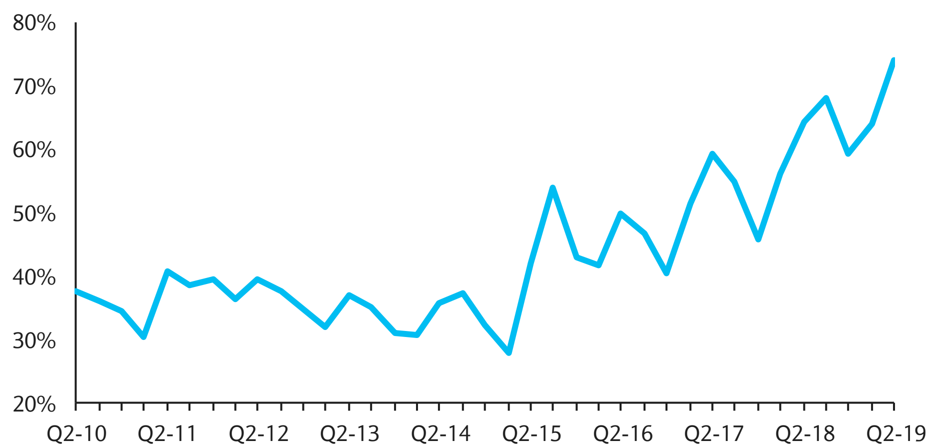
Used car sales as % of new sales



Source: CADA, CPCA, KBA, CCFA, SMMT, Barclays Research

FIGURE 53

Used car sales as % of new car sales



Source: CADA, CPCA, Barclays Research

The third factor is the rapid growth of MaaS (see Figure 35), which could increasingly replace vehicle ownership in dense cities.

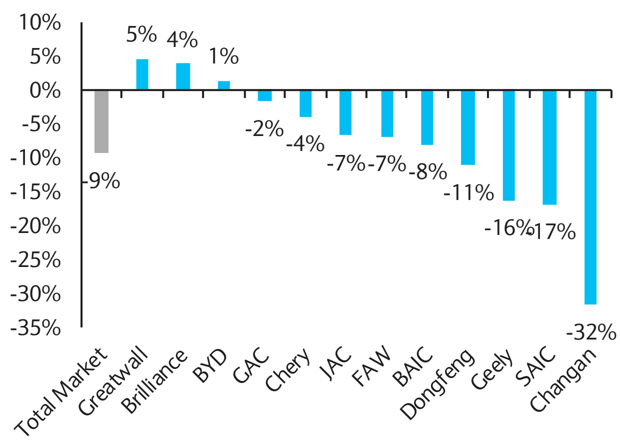
During our recent China field trip we found that the consensus expectation appears to be for longer-term growth of around ~5%. Given the above factors (rising importance of replacement demand, the emergence of a used vehicle segment and the advent of MaaS), we are a little more cautious. Our forecasts are for sales growth of 2.5% in 2020 and 3% in each of 2021 and 2022.

OEMS – HOW TO THRIVE IN CHINA? MAKE LIKE THE PRECIOUS HORSE[5]

Given how challenging the Chinese auto market has proven year to date for virtually all industry players, we think it makes sense to examine what separates the winners from the losers in this difficult environment.

FIGURE 54

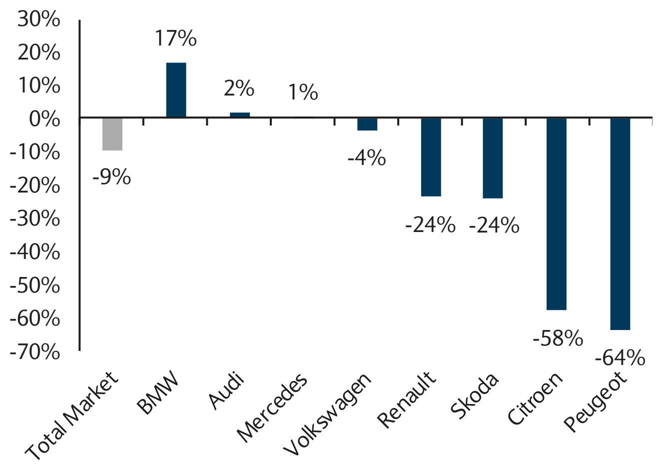
YTD sales performance of Chinese OEMs



Source: Wind, Barclays Research,

FIGURE 55

YTD sales performance of European brands



Source: Company data, Barclays Research

Premium a clear advantage

Investors will be aware that the premium segment in China has outperformed the market ytd. In a market that has dropped -9.4% in H1, Chinese premium sales are up +6.1%.

FIGURE 56

China sales data by brand

yoy	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Q1-19	Q2-19	YTD 19
BMW	+16.6%	+0.5%	+13.1%	+18.4%	+30.6%	+21.8%	+10.7%	+23.4%	+16.9%
Mini	-8.5%	+3.4%	+1.9%	+14.4%	+104.3%	+4.6%	-1.6%	+28.6%	+13.4%
BMW Group	**+15.5%**	**+0.6%**	**+12.5%**	**+18.2%**	**+32.8%**	**+20.9%**	**+10.1%**	**+23.7%**	**+16.8%**
Mercedes	+1.7%	-5.4%	+5.9%	+0.8%	-0.9%	+0.1%	+1.4%	+0.0%	+0.7%
Smart	-44.0%	-48.0%	-56.0%	-34.5%	-45.5%	-44.1%	-49.6%	-41.7%	-45.7%
Daimler	**+0.5%**	**-6.4%**	**+3.8%**	**-0.0%**	**-2.1%**	**-1.1%**	**-0.1%**	**-1.1%**	**-0.6%**
Nissan	-0.8%	-1.8%	+8.2%	-2.9%	-4.8%	-	+2.3%	-	-
Peugeot	-64.9%	-62.5%	-51.2%	-73.9%	-74.3%	-59.5%	-58.7%	-69.7%	-63.7%
Citroen	-58.3%	-33.3%	-63.5%	-56.0%	-62.7%	-58.0%	-56.6%	-59.0%	-57.8%
PSA Group	**-61.7%**	**-51.4%**	**-56.0%**	**-65.7%**	**-69.1%**	**-55.7%**	**-57.4%**	**-63.9%**	**-60.6%**
Renault	**-27.5%**	**-22.0%**	**-14.9%**	**-18.2%**	**-40.5%**	**-18.9%**	**-21.0%**	**-26.0%**	**-23.7%**
Volkswagen	-3.1%	-8.8%	-9.8%	-6.5%	-7.0%	+14.3%	-6.9%	-0.1%	-3.6%
Audi	+5.1%	+1.8%	+2.2%	-11.5%	-7.4%	+22.2%	+3.3%	+0.6%	+1.9%
Skoda	-11.7%	-18.4%	-27.0%	-40.7%	-31.5%	-13.1%	-18.8%	-28.6%	-23.9%
Other	-17.6%	+13.2%	-13.7%	+17.8%	+43.6%	+158.7%	-9.0%	+60.7%	+22.6%
VW Group	**-2.8%**	**-7.4%**	**-9.4%**	**-9.6%**	**-8.3%**	**+15.0%**	**-6.3%**	**-1.4%**	**-3.9%**
Total Market	-3.9%	-18.7%	-11.7%	-16.5%	-12.5%	+4.7%	-10.4%	-8.4%	-9.4%
Premium brands	+7.1%	-1.1%	+6.9%	+2.0%	+6.1%	+13.9%	+4.9%	+7.3%	+6.1%
Premium outperformance	+11.0pts	+17.6pts	+18.6pts	+18.5pts	+18.6pts	+9.2pts	+15.2pts	+15.7pts	+15.5pts

Source: Company data, CPCA, Barclays Research

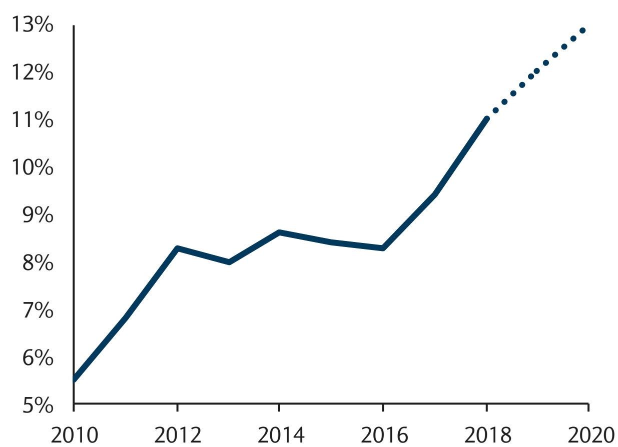
[5] BMW in Chinese means "precious horse"

As is nearly always the case in an economic downturn (not just in China), the higher end of the market is proving more resilient. Moreover, premium demand is much less likely to be distorted by government policies designed to drive auto industry consolidation. The absence or roll-back of stimulus measures is less relevant in the context of higher-priced and larger vehicles, a pull-forward of emissions limits is less problematic if your technologies are at the forefront of industry innovation and the crackdown on P2P financing matters less when your buyers typically use regulated financing channels.

Moreover, as discussed above we expect premium demand growth to continue given an ongoing expansion in middle class wealth, consumption upgrade trends, and still low premium penetration rates (see Figure 57 and Figure 58).

FIGURE 57

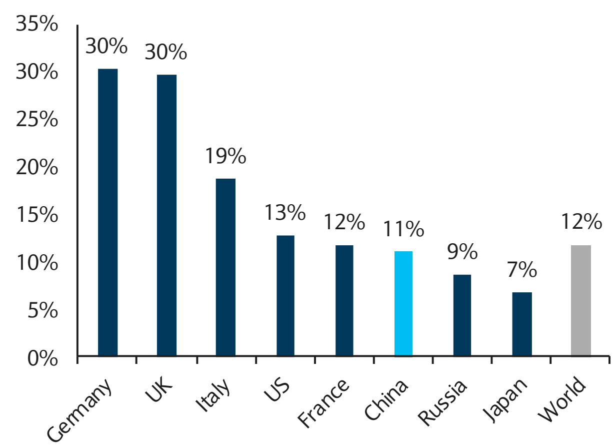
Premium segment as % of sales in China has been growing rapidly…



Source: BMW

FIGURE 58

…but still has a big opportunity to take further market share



Source: HIS, Barclays Research

New product momentum helps, possibly more than elsewhere

In addition to a premium product profile, new product momentum, particularly in the growing SUV segment, is a key differentiator. It is this factor first and foremost that we believe has seen BMW outperform its premium German peers. BMW finds itself at the sweet spot of its product cycle (a fresh X range, particularly the locally produced X3), while Mercedes (GLE, GLS, S, GLC facelift) and Audi (A6L, Q3) are grappling with model changeover dynamics and supply bottlenecks, although we note that these are set to ease in the coming months.

We would also argue that new product momentum is a bigger driver of market outperformance than in other regions, possibly given a greater desire to rapidly trade up to the newest, most innovative product among consumers.

FIGURE 59

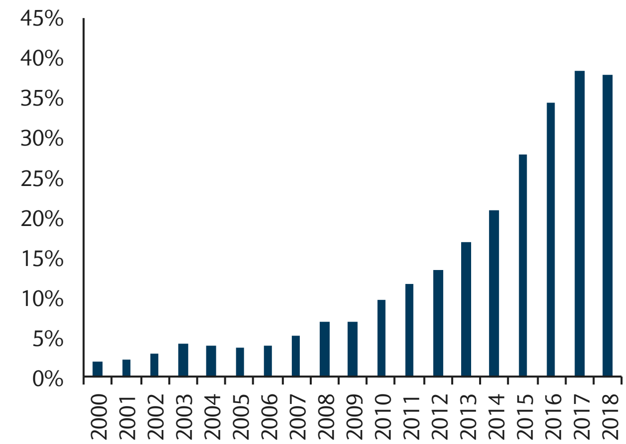
BMW's new product momentum

2018	2019
X2	3 series
X3	7 series
X5	8 series
X7	X3M
	X4M
	BMW i3*
	BMW i8 Roadster
	X1 PHEV LCI
	X5 PHEV

Source: BMW; *refreshed

FIGURE 60

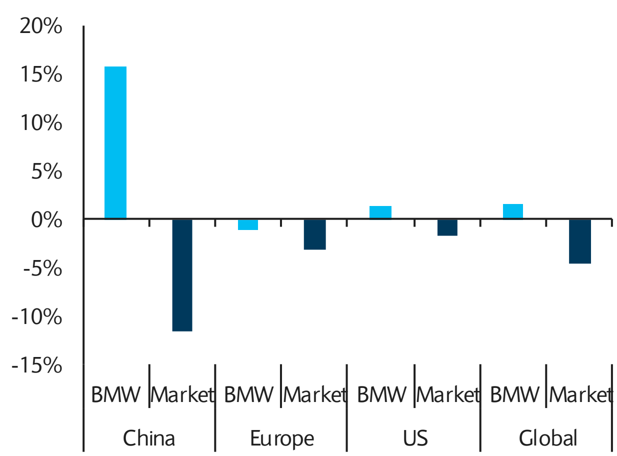
SUVs' growing market share



Source: Barclays Research, IHS

FIGURE 61

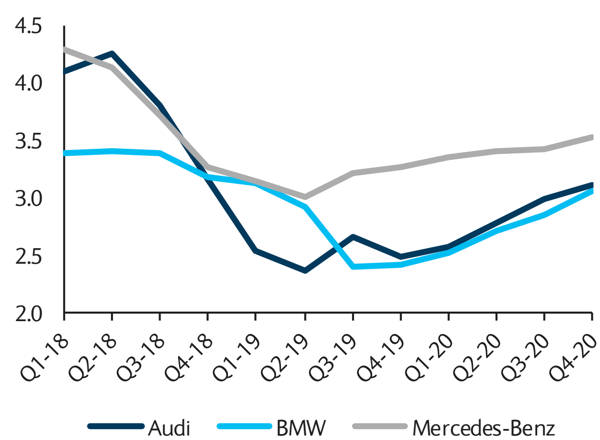
BMW outperformance of market by region LTM



Source: Barclays Research, Company Reports

FIGURE 62

Average age of line up globally



Source: Barclays Research, IHS

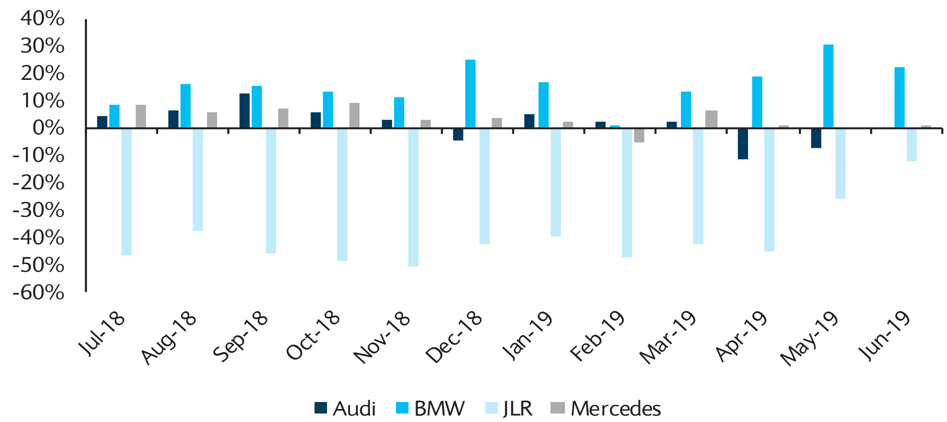
Quality issues are hard to overcome

Interestingly, within the relatively resilient group of premium OEMs JLR has underperformed since 2018[6]. Our discussions with local industry players suggest this is primarily a question of the brand's product quality perception, which has suffered recently. Once lost, Chinese consumers' confidence in the reliability and dependability of a brand can be very hard to regain. To some extent, we think this should serve as a cautionary tale to Tesla, which appears to have reacted less rapidly to its recent battery fires than local player NIO. In this context we also note that BMW has invested heavily in brand management (it claims to be the strongest premium brand in China) and its network (upgraded dealerships).

[6] https://europe.autonews.com/automakers/jaguar-land-rover-hurt-quality-control-issues-china

FIGURE 63

LTM premium brand sales volumes China



Source: Company data, Barclays Research

Chinese consumers want innovative tech, and quickly

As discussed earlier, Chinese consumers are not only tech savvy but also highly demanding when it comes to the speed of innovation. The feedback we have received from industry participants suggests that consumers in China are willing to sacrifice a much greater degree of data privacy than is typically the case elsewhere in the interests of a high level of in-vehicle AI and connectivity. While this certainly offers data monetisation opportunities for OEMs, in the longer term it requires products developed and tailored specifically to local tastes. We were impressed with BMW's willingness to partner with tech players when we met with management in Beijing. As outlined above, BMW has recently signed a MoU with Tencent and states that it is the first premium OEM to integrate intelligent Tmall Genie in January 2019. The company has also signed up with Baidu Apollo since summer 2018 for autonomous driving in the region. We would expect many more partnerships between incumbents and tech players (including the BATs – Baidu, Alibaba and Tencent) in order to ensure vehicles in the Chinese market are geared towards the Chinese consumer's tech focus.

In conclusion, the more premium, the newer your product, and the more responsive you are to China's tech savvy consumers' desire for innovation, the better you will fare. In combination we believe it is these factors that have allowed BMW to outperform not just the market as a whole but also its premium peers over recent months.

Longer term we expect BMW to continue to benefit from all the Chinese market's most supportive dynamics, including expanding household incomes, premiumisation and growing captive financing penetration. Moreover, as a premium player we see BMW as being at less risk from disruption from a budding used car market and the advent of MaaS. We reiterate our OW rating with a €94 price target.

APPENDIX

FIGURE 64

OEMs' China exposure

EURmn unless stated	Group NI			China JV NI "at equity"			China NI (ie imports)			income as % of group			China TOTAL NI exposure%			China volumes			Total volumes			China vol as % of total		
	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19E	FY17	FY18	FY19
BMW	8,589	7,117	5,334	609	656	792	1,547	1,498	1,589	7.1%	9.2%	14.8%	25.1%	30.3%	44.6%	594	640	688	2,464	2,491	2,552	24.1%	25.7%	27.0%
Daimler AG	10,278	7,249	2,730	1,143	1,247	1,334	1,889	1,841	1,865	11.1%	17.2%	48.9%	29.5%	42.6%	117.2%	619	678	701	2,374	2,383	2,370	26.1%	28.4%	29.6%
Volkswagen AG	11,179	11,827	NA	3,282	3,409	NA	2,459	2,347	NA	29.4%	28.8%	NA	51.4%	48.7%	NA	4,020	4,101	NA	10,777	10,900	NA	37.3%	37.6%	NA
Renault	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	72	165	140	3,762	3,884	3,773	1.9%	4.2%	3.7%

Source: Company data, Barclays Research

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In relation to our respective sections we, Dorothee Cresswell, Kristina Church, Jian Chang, Eric Zhu and Yingke Zhou, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

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Daimler AG (DAIGn.DE, 19-Jul-2019, EUR 45.44), Equal Weight/Neutral, A/CD/D/E/J/K/L/M

Renault SA (RENA.PA, 19-Jul-2019, EUR 51.06), Equal Weight/Neutral, CD/D/J/K/L/M

Volkswagen AG-PFD Preferred (VOWG_p.DE, 19-Jul-2019, EUR 151.46), Overweight/Neutral, D/E/J/K/L/M/N

Materially Mentioned Stocks (Ticker, Date, Price)

BMW (BMWG.DE, 19-Jul-2019, EUR 66.57), Overweight/Neutral, A/D/E/J/K/L/M/N

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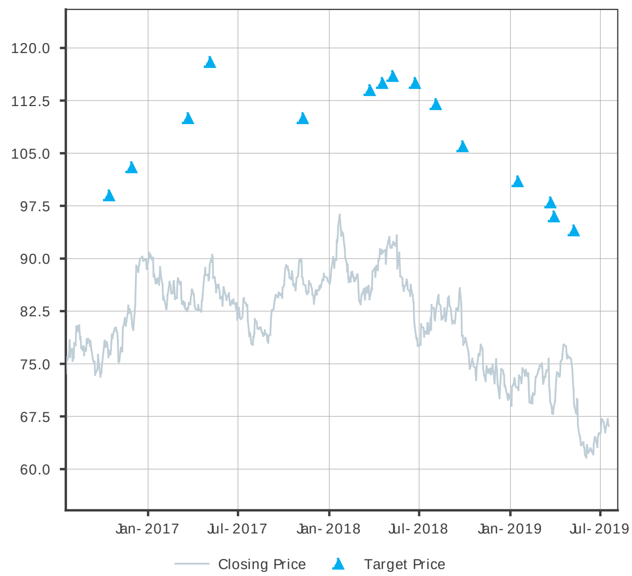
EUR 66.57 (19-Jul-2019)

Stock Rating: **OVERWEIGHT**

Industry View: **NEUTRAL**

Rating and Price Target Chart - EUR (as of 19-Jul-2019)



Source: IDC, Barclays Research

Currency=EUR

Publication Date	Closing Price	Rating	Adjusted Price Target
08-May-2019	71.38		94.00
29-Mar-2019	68.75		96.00
22-Mar-2019	69.60		98.00
15-Jan-2019	71.62		101.00
26-Sep-2018	79.03		106.00
03-Aug-2018	82.34		112.00
22-Jun-2018	80.31		115.00
08-May-2018	91.94		116.00
17-Apr-2018	91.22		115.00
23-Mar-2018	84.18		114.00
08-Nov-2017	87.24		110.00
05-May-2017	89.10		118.00
22-Mar-2017	82.74		110.00
28-Nov-2016	82.06		103.00
14-Oct-2016	76.84		99.00

On 22-Jul-2016, prior to any intra-day change that may have been published, the rating for this security was Overweight, and the adjusted price target was 96.00.

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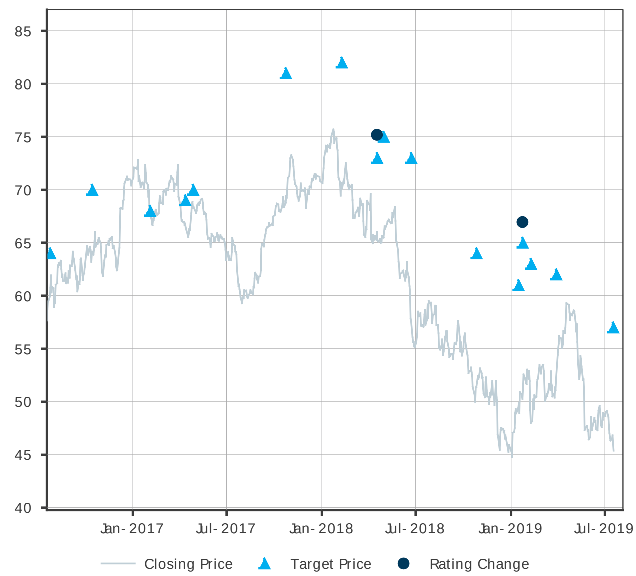
Daimler AG (DAI GY / DAIGn.DE)

EUR 45.44 (19-Jul-2019)

Stock Rating	Industry View
EQUAL WEIGHT	**NEUTRAL**

Rating and Price Target Chart - EUR (as of 19-Jul-2019)



Source: IDC, Barclays Research

Currency=EUR

Publication Date	Closing Price	Rating	Adjusted Price Target
17-Jul-2019	46.13		57.00
29-Mar-2019	52.25		62.00
08-Feb-2019	48.01		63.00
23-Jan-2019	50.28	Equal Weight	65.00
15-Jan-2019	49.44		61.00
26-Oct-2018	51.37		64.00
22-Jun-2018	57.66		73.00
30-Apr-2018	65.50		75.00
17-Apr-2018	66.00	Underweight	73.00
08-Feb-2018	70.33		82.00
23-Oct-2017	68.76		81.00
27-Apr-2017	68.29		70.00
12-Apr-2017	66.82		69.00
03-Feb-2017	67.65		68.00
14-Oct-2016	64.16		70.00
25-Jul-2016	59.95		64.00

On 22-Jul-2016, prior to any intra-day change that may have been published, the rating for this security was Equal Weight, and the adjusted price target was 59.00.

Source: Refinitiv, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

Link to Barclays Live for interactive charting

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Valuation Methodology: We derive our price target through a SOTP analysis based on a blend of EV/sales, EV/EBIT and P/E multiples. We value the Mercedes business at a 10% discount to BMW's historical average EV/sales, EV/EBIT and P/E multiples, given Mercedes' inferior electrification strategy. We value the Trucks business at a 10% discount to Volvo's historical average EV/sales, EV/EBIT and P/E multiples, given Volvo's higher brand profile and superior profitability. We apply a 15% conglomerate discount to our overall SOTP, which we think applicable given the groups differentiated divisions but improved focus in recent months on making structural legal changes to prepare for separation.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: The main downside risks to our price target, in our view, are: 1) US and UK tariffs - should tariffs on cars imported into the US or UK be implemented, Daimler might struggle to achieve our forecasts; 2) China demand - should the economic indicators in China worsen further, the premium auto market too could fail to achieve the growth we forecast and we could see downside risk to our current earnings estimates for Daimler; 3) European and US demand - should European and US pricing and sales deteriorate due to unexpected macro economic factors, while risks to the leasing and residual value environment intensify, Daimler may not reach our earnings targets. The main upside risks to our price target are 1) a sharper recovery in global light vehicle demand than we currently forecast; 2) a faster separation and partial listing of the individual divisions than currently envisaged; 3) a more aggressive cost cutting plan than currently implied by management's longer term margin guidance.

IMPORTANT DISCLOSURES CONTINUED

Renault SA (RNO FP / RENA.PA)

EUR 51.06 (19-Jul-2019)

Stock Rating: **EQUAL WEIGHT**

Industry View: **NEUTRAL**

Rating and Price Target Chart - EUR (as of 19-Jul-2019)

Source: IDC, Barclays Research

Currency=EUR

Publication Date	Closing Price	Rating	Adjusted Price Target
17-Jul-2019	52.18		75.00
29-Mar-2019	58.91		80.00
15-Feb-2019	59.63		81.00
15-Jan-2019	55.92		80.00
23-Oct-2018	65.10	Equal Weight	83.00
30-Apr-2018	89.84		107.00
23-Feb-2018	87.79		108.00
25-Oct-2017	83.00		101.00
10-May-2017	85.75	Overweight	110.00
13-Feb-2017	87.50		88.00
14-Oct-2016	75.75		80.00
23-Sep-2016	72.38		81.00
29-Jul-2016	78.25		84.00

On 22-Jul-2016, prior to any intra-day change that may have been published, the rating for this security was Equal Weight, and the adjusted price target was 82.00.

Source: Refinitiv, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

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Valuation Methodology: Our SOTP methodology for Renault includes the following assumptions: 1) We value the core Autos business at 2.0x EV/EBIT 2) We value the Dacia business (as well as Renault branded vehicles produced on the M0 platform), using an EV/EBIT multiple of 4.0x on our 12-month forward estimate. 3) We value Renault's stake in Nissan and other associates using market value. 4) We use 1.0x BV for FIN Co 5) We use net cash balance. And 6) we apply a 25% discount to these associates in our overall SOTP assumption.

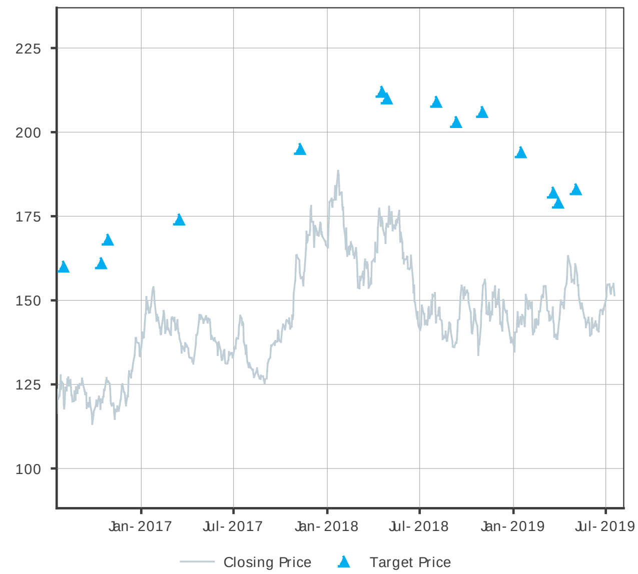
Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: The main downside risks we see to our thesis are: 1) if the consumer demand environment in emerging markets or Europe is weaker than our current estimates; 2) with Nissan and other associates generating a significant proportion of earnings, any significant decline in Nissan's earnings stream would have a major knock-on effect on Renault's own bottom line; 3) if the synergies generated within the alliance structure are lower than expected given recent management turmoil. The main upside risks we see to our thesis are: 1) if consumer demand in Europe and emerging markets is stronger than expected this would benefit Renault earnings; 2) with Nissan and other associates generating a significant proportion of earnings, any significant increase in Nissan's earnings stream would have a major knock-on effect on Renault's own bottom line; 3) if the lopsided Renault Nissan shareholding structure were to be addressed with either Renault divesting part of its stake in Nissan, or Nissan hiking its stake in Renault.

IMPORTANT DISCLOSURES CONTINUED

Volkswagen AG-PFD Preferred (VOW3 GY / VOWG_p.DE)

	Stock Rating	Industry View
EUR 151.46 (19-Jul-2019)	**OVERWEIGHT**	**NEUTRAL**

Rating and Price Target Chart - EUR (as of 19-Jul-2019)



Source: IDC, Barclays Research

Currency=EUR

Publication Date	Closing Price	Rating	Adjusted Price Target
03-May-2019	160.28		183.00
29-Mar-2019	140.32		179.00
19-Mar-2019	147.90		182.00
15-Jan-2019	145.06		194.00
31-Oct-2018	148.76		206.00
10-Sep-2018	137.50		203.00
02-Aug-2018	143.40		209.00
27-Apr-2018	172.72		210.00
17-Apr-2018	174.74		212.00
08-Nov-2017	158.30		195.00
16-Mar-2017	140.25		174.00
27-Oct-2016	125.65		168.00
14-Oct-2016	120.60		161.00
01-Aug-2016	125.15		160.00

On 22-Jul-2016, prior to any intra-day change that may have been published, the rating for this security was Overweight, and the adjusted price target was 155.00.

Source: Refinitiv, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

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Valuation Methodology: To reach our current valuation for Volkswagen prefs, we employ a sum-of-the-parts valuation methodology using a blend of peer multiples for the different brands/businesses and market values for listed holdings and minorities. We then apply a 25% conglomerate holding discount to the preference shares to take into account VW's corporate governance issues. We also assume an additional EUR4bn cash out from Dieselgate.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: The main risks to our price target, in our view, are:1) The fallout surrounding the NOx emissions scandal and possible further regulatory, legal, and recall costs 2) external risks, such as macroeconomic factors, outside the control of the company, leading to an even weaker demand and pricing environment globally than we currently assume that could make our forecasts difficult to achieve, including rising raw materials and volatile FX rates and 3) concerns around corporate governance and management's focus on shareholders.

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