

## Autos - Greater China (H/A)

**COVID-19: Factoring in negative impact on China auto/EV value chain**

Rating Change

**Cut FY20 PV sales by 4%; FY20 auto sales to decline 9.1%**

A delay in labor return, quarantine period of returned workers, logistics service/auto parts supply disruption, and consumption sentiment all negatively impacted auto production and consumption severely. February auto wholesales in China declined by 82% YoY, and we expect March auto wholesales to decline 40% YoY. Amid production disruption and weak volume sales in 1H20, we cut FY20 PV (passenger vehicle) wholesales volume forecast by 4% and **we expect FY20 auto sales to decline by 9.1% YoY**. We anticipate wholesales volume will turn positive YoY in June 2020.

**EPS revision to factor in GDP and auto sales cut**

We revise 2020E EPS for 21 stocks (-14% on average) to factor in China auto sales and BofA economists' 2020 global GDP growth cut (China: from 5.2% to 4.6%, with 3.2% as the bear case; Global ex China: from 2.2% to 1.6% – see [report](#)). In our scenario analysis (see Page 4), our bull case is based on more supportive policies from the government such as vehicle purchase tax cut, trade-in subsidy, and extension of EV purchase subsidy beyond 2020. Based on our latest earnings forecast, EV supply chain companies have highest growth in 2020, followed by leading dealers due to luxury brands focus and resilient sales of aftermarket service. OEMs and part makers saw more earnings pressure in 2020, in our view.

**Lower EV/EV battery forecast: 9%/22% growth in 2020E**

EV production and demand have also been impacted by COVID-19 severely. We expect 1H20 sales to be weak as it will take time to regain consumers' confidence, given the COVID-19 outbreak in Europe/US should also impact China's exports and economy growth. **We anticipate China EV demand will grow 9% YoY in 2020 to 1.3mn** (1.4mn earlier) as we believe there will be back-end loaded demand in 2020, driven by more supportive government policies. On 9 March, Guangzhou city announced RMB10,000 EV purchase subsidy per car, and we expect more cities to support EV demand. **In terms of EV battery demand, we see 22% growth in 2020 at 77GWh** (earlier 80GWh). We note that battery capacity per EV has been rising as the OEMs want to increase cruise range of EVs to alleviate consumers' range anxiety.

**OEMs' operation resumes gradually**

Most OEMs and auto parts makers have started operation. The utilization of auto OEMs came in at around 30% in late-February, and we expect the entire auto supply chain to reach 100% utilization in April. On the other hand, consumption sentiment has not fully recovered, partially due to slower economy growth outlook for China this year. We upgrade BAIC to Buy and BYD-H to Neutral, while we downgrade GAC-A to U/P. We prefer GAC-H among OEMs as its new model pipeline in 2020 looks stronger than peers.

**Continues next page for update on auto part makers and dealers**

14 March 2020

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### **Auto parts: expect supply chain to fully recover in late-Mar**

Auto parts makers in our coverage universe did not face major short supply of auto parts, which could have impacted the auto OEMs assembly. However, we do not rule out the possibility of some auto parts facing a supply shortage that could impact the assembly of auto. We expect auto part makers to fully recover manufacturing in late-March or early April. We lower our earnings forecasts for CATL, EVE, Huayu, Joyson, Minth and Yunnan Energy, taking into account the impact of COVID-19 outbreak.

### **Auto dealers: moderate inventory and pricing pressure**

According to China Automobile Dealers Association (CADA), as of 9 March, around 81% dealerships have gradually reopened. The foot traffic to dealerships and auto sales remained unexciting in February, but it improved from early March. Our checks suggest that the orders improvement on luxury brands has been faster than mass-market brands. Most auto OEMs have canceled dealers' sales target in Jan and Feb., which is positive to dealers' working capital (less inventory built) and pricing (stable discount). Some auto OEMs such as Volvo and Audi offered special rebates in February to support dealers' cash flow. We cut FY20 earnings for Zhongsheng, Yongda and China Grand to reflect the negative impact of lower foot traffic due to COVID-19 outbreak.



# BofA's latest industry forecast

**Table 1: Vehicle growth forecast**

Forecast Volume	2017A	2018A	2019A	2020E	2021E	2022E
<b>Total Passenger Vehicle Volume</b>	<b>24,718,321</b>	<b>23,709,782</b>	<b>21,444,180</b>	<b>19,483,915</b>	<b>20,659,542</b>	<b>21,057,751</b>
Sedan	11,848,001	11,527,840	10,307,645	9,359,342	9,883,465	10,081,134
SUV	10,252,739	9,994,726	9,353,313	8,509,159	9,070,764	9,261,250
MPV	2,070,589	1,734,637	1,383,684	1,252,234	1,323,611	1,330,229
Crossover	546,992	452,579	399,538	363,180	381,702	385,138
Passenger ICEV	24,166,337	22,656,782	20,419,291	18,382,331	19,105,541	19,098,164
Passenger EV (PEV)	551,984	1,053,000	1,024,889	1,101,584	1,554,001	1,959,587
<b>Total Commercial Vehicle Volume</b>	<b>4,160,583</b>	<b>4,370,795</b>	<b>4,324,497</b>	<b>4,252,084</b>	<b>4,443,428</b>	<b>4,487,862</b>
Commercial ICEV	3,944,508	4,168,795	4,145,386	4,046,794	4,231,775	4,270,183
Commercial EV (CEV)	216,075	202,000	179,111	205,290	211,653	217,679
<b>Total EV Volume</b>	<b>768,059</b>	<b>1,255,000</b>	<b>1,204,000</b>	<b>1,306,873</b>	<b>1,765,653</b>	<b>2,177,266</b>
PEV	551,984	1,053,000	1,024,889	1,101,584	1,554,001	1,959,587
CEV	216,075	202,000	179,111	205,290	211,653	217,679
BEV	646,339	984,000	972,000	1,039,533	1,391,628	1,700,078
PHEV	121,720	271,000	232,000	267,340	374,026	477,189
<b>Total Vehicle Volume</b>	<b>28,878,904</b>	<b>28,080,577</b>	<b>25,768,677</b>	<b>23,735,999</b>	<b>25,102,970</b>	<b>25,545,613</b>
PEV as % of total PV (penetration)	2.2%	4.4%	4.8%	5.7%	7.5%	9.3%
<b>YoY</b>	<b>2017A</b>	<b>2018A</b>	<b>2019A</b>	<b>2020E</b>	<b>2021E</b>	<b>2022E</b>
<b>Total Passenger Vehicle Volume</b>	<b>1.8%</b>	<b>-4.1%</b>	<b>-9.6%</b>	<b>-9.1%</b>	<b>6.0%</b>	<b>1.9%</b>
Sedan	-2.4%	-2.7%	-10.6%	-9.2%	5.6%	2.0%
SUV	14.7%	-2.5%	-6.4%	-9.0%	6.6%	2.1%
MPV	-17.0%	-16.2%	-20.2%	-9.5%	5.7%	0.5%
Crossover	-24.5%	-17.3%	-11.7%	-9.1%	5.1%	0.9%
Passenger ICEV	0.8%	-6.2%	-9.9%	-10.0%	3.9%	0.0%
Passenger EV (PEV)	67.8%	90.8%	-2.7%	7.5%	41.1%	26.1%
<b>Total Commercial Vehicle Volume</b>	<b>14.1%</b>	<b>5.1%</b>	<b>-1.1%</b>	<b>-1.7%</b>	<b>4.5%</b>	<b>1.0%</b>
Commercial ICEV	13.6%	5.7%	-0.6%	-2.4%	4.6%	0.9%
Commercial EV (CEV)	24.7%	-6.5%	-11.3%	14.6%	3.1%	2.8%
<b>Total EV Volume</b>	<b>53.0%</b>	<b>63.4%</b>	<b>-4.1%</b>	<b>8.5%</b>	<b>35.1%</b>	<b>23.3%</b>
PEV	67.8%	90.8%	-2.7%	7.5%	41.1%	26.1%
CEV	24.7%	-6.5%	-11.3%	14.6%	3.1%	2.8%
BEV	59.4%	52.2%	-1.2%	6.9%	33.9%	22.2%
PHEV	26.0%	122.6%	-14.4%	15.2%	39.9%	27.6%
<b>Total Vehicle Volume</b>	<b>3.4%</b>	<b>-2.8%</b>	<b>-8.2%</b>	<b>-7.9%</b>	<b>5.8%</b>	<b>1.8%</b>

Source: BofA Global Research estimates, CAAM

**Table 2: Vehicle forecast new vs. old**

Volume changes (New vs Old)	2020E	2021E	2022E
<b>Total Passenger Vehicle Volume</b>	-4.3%	-1.3%	-1.0%
Sedan	-3.9%	-2.0%	-1.4%
SUV	-4.9%	-0.7%	-0.7%
MPV	-3.3%	-0.4%	-0.4%
Crossover	-3.7%	0.7%	0.7%
Passenger ICEV	-4.1%	-1.2%	-0.9%
Passenger EV (PEV)	-7.7%	-2.1%	-2.2%
<b>Total Commercial Vehicle Volume</b>	0.0%	2.3%	2.3%
Commercial ICEV	0.3%	2.7%	2.7%
Commercial EV (CEV)	-5.2%	-5.2%	-5.2%
<b>Total EV Volume</b>	-7.3%	-2.4%	-2.5%
PEV	-7.7%	-2.1%	-2.2%
CEV	-5.2%	-5.2%	-5.2%
BEV	-4.2%	1.9%	2.0%
PHEV	-17.7%	-15.7%	-15.9%
<b>Total Vehicle Volume</b>	-3.6%	-0.7%	-0.4%

Source: BofA Global Research estimates

**Table 3: EV battery growth forecast**

Battery demand (Mwh)	2017A	2018A	2019A	2020E	2021E	2022E
<b>PEV</b>	14,439	33,721	42,540	53,679	84,023	109,420
PHEV	1,669	3,660	2,631	3,202	4,875	6,528
BEV	12,770	30,061	39,909	50,477	79,147	102,892
<b>CEV</b>	19,182	22,653	20,710	23,212	25,076	26,152
Bus	13,002	16,507	15,105	17,046	18,448	19,491
PHEV Bus	639	272	259	678	729	765
BEV Bus	12,363	16,235	14,846	16,368	17,719	18,725
Others	6,181	6,146	5,605	6,166	6,628	6,661
<b>Total</b>	33,621	56,374	63,250	76,891	109,099	135,572
<b>YoY</b>	2017A	2018A	2019A	2020E	2021E	2022E
<b>PEV</b>	61.0%	133.5%	26.2%	26.2%	56.5%	30.2%
PHEV	59.5%	119.3%	-28.1%	21.7%	52.3%	33.9%
BEV	61.2%	135.4%	32.8%	26.5%	56.8%	30.0%
<b>CEV</b>	2.0%	18.1%	-8.6%	12.1%	8.0%	4.3%
Bus	-17.3%	27.0%	-8.5%	12.8%	8.2%	5.7%
PHEV Bus	0.0%	-57.4%	-4.8%	162.1%	7.6%	5.0%
BEV Bus	0.0%	31.3%	-8.6%	10.3%	8.3%	5.7%
Others	101.3%	-0.6%	-8.8%	10.0%	7.5%	0.5%
<b>Total</b>	21.1%	67.7%	12.2%	21.6%	41.9%	24.3%

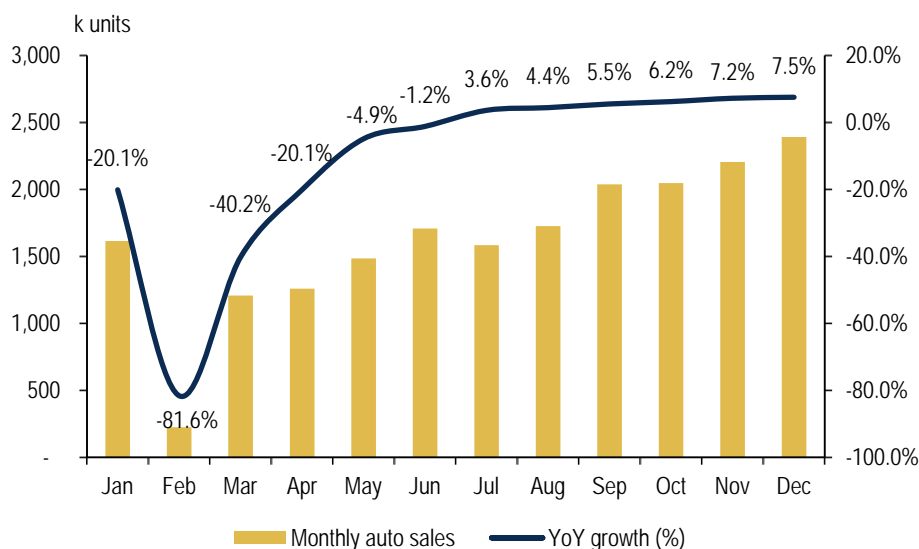
Source: BofA Global Research estimates, RealLi

**Table 4: EV battery forecast new vs. old**

Battery demand changes (New vs Old)	2020E	2021E	2022E
<b>NEV - PV</b>	-5.0%	-0.8%	-0.9%
PHEV	-19.2%	-16.6%	-16.6%
BEV	-4.0%	0.3%	0.3%
<b>NEV - CV</b>	-1.7%	-0.5%	0.3%
Bus	-2.2%	-0.7%	0.4%
PHEV Bus	-55.4%	-54.8%	-54.4%
BEV Bus	2.8%	4.5%	5.6%
Others	0.0%	0.0%	0.0%
<b>Total</b>	-4.0%	-0.8%	-0.6%

Source: BofA Global Research estimates



**Chart 1: BofA's FY20 monthly PV sales growth forecast**

Source: BofA Global Research estimates, CAAM

Based on our economics team's forecast on GDP growth, we also list out the scenario analysis on auto volume sales growth in 2020 as below.

### Base case

The number of newly increased confirmed cases of COVID-19 came down in China, the pace of production resumption picked up in most cities over the past one and a half weeks. However, as virus spreads to more countries more broadly in Europe and the US, more are starting to worry about the potential downside from a global pandemic that could last well beyond the summer. For China, the key concerns will likely shift away from supply-chain dislocation to demand shock. In our base case, we expect annual GDP growth to be 4.6% in 2020 (from 5.2% previously), and 6.5% for 2021. We expect 2020 auto volume sales to decline by 9.1% YoY.

### Scenario analysis: Bear case, global recession

In the more bearish recession case, where the US and Europe will also enter a technical recession in Q2 – Q3, we expect China GDP growth to slow down to 3.2% YoY for this year. The auto demand and consumption sentiment recovery would take time in 2H20. We expect 2020 auto volume sales could decline by 15.3% YoY.

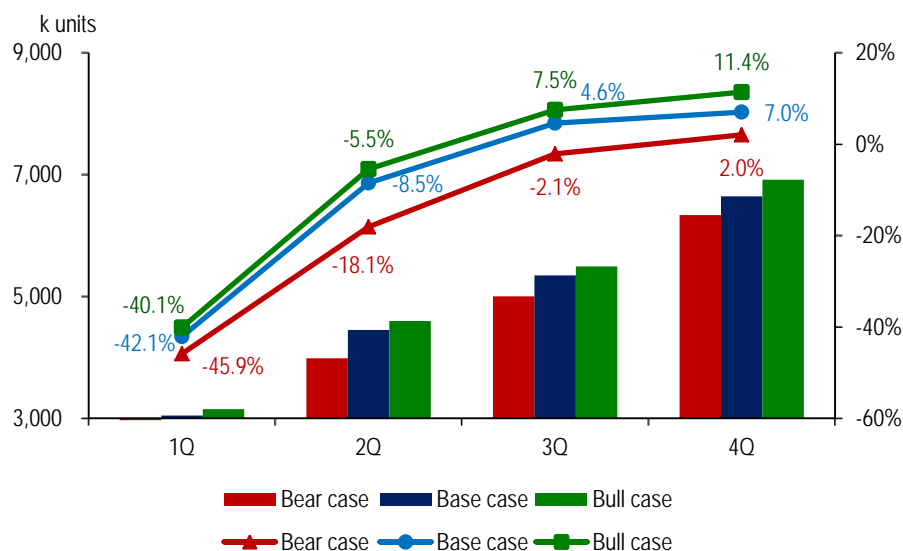
### Scenario analysis: Bull case, stimulus policies

In our bull case scenario, as the consumption sentiment gradually recovers, government will launch stimulus policy in 2H20 to boost auto demand. In this case, we expect 2020 auto volume sales would decline by 6% YoY.

**Table 5: China PV sales forecast by different scenarios**

2020 sales (units)	1Q	2Q	3Q	4Q	FY20
Base case	3,045,627	4,450,193	5,345,375	6,642,721	19,483,915
Bear case	2,847,722	3,984,544	5,002,003	6,335,456	18,169,724
Bull case	3,150,638	4,598,188	5,493,843	6,914,772	20,157,440
2020 sales YoY growth (%)	1Q	2Q	3Q	4Q	FY20
Base case	-42.1%	-8.5%	4.6%	7.0%	-9.1%
Bear case	-45.9%	-18.1%	-2.1%	2.0%	-15.3%
Bull case	-40.1%	-5.5%	7.5%	11.4%	-6.0%

Source: BofA Global Research estimates

**Chart 2: FY20 quarterly PV sales growth forecast under different scenarios**

Source: BofA Global Research estimates, CAAM

**Table 6: BofA's Greater China Auto coverage – volume sales, NI, PO change summary**

Auto OEM	Tickers	Rating		PO		2020 volume			2020 Net income			2020 volume	2020 Net income
		Old	New	Old	New	Old	New	% change	Old	New	% change	YoY (%)	YoY (%)
DFG	489 HK	Buy	Buy	9.4	8.1	3,029,832	2,635,283	-13.0%	13,833	10,039	-27.4%	-10.1%	-27.4%
Geely	175 HK	Buy	Buy	16.2	15.2	1,398,649	1,291,647	-7.7%	8,716	8,378	-3.9%	-5.1%	4.5%
Brilliance	1114 HK	Buy	Buy	9.1	9.0	601,874	579,500	-3.7%	6,980	6,715	-3.8%	6.4%	4.4%
SAIC	600104 CH	Buy	Buy	27.0	27.0	6,346,271	5,759,892	-9.2%	26,674	23,636	-11.4%	-7.2%	-8.8%
BAIC	1958 HK	Neutral	Buy	5.5	4.4	1,459,993	1,374,820	-5.8%	4,715	4,128	-12.4%	-5.0%	-6.3%
GAC-H	2238 HK	Buy	Buy	10.4	10.0	2,272,790	2,070,200	-8.9%	9,409	8,908	-5.3%	0.4%	18.1%
NIO	NIO US	Neutral	Neutral	3.9	3.7	40,081	29,671	-26.0%	-10,307	-10,592	-	44.3%	-
BYD-H	1211 HK	Underperform	Neutral	26.5	45.1	484,984	465,855	-3.9%	1,419	1,706	20.2%	1.0%	5.3%
BYD-A	002594 CH	Underperform	Underperform	22.8	38.8	484,984	465,855	-3.9%	1,419	1,706	20.2%	1.0%	5.3%
GAC-A	601238 CH	Neutral	Underperform	11.4	10.5	2,272,790	2,070,200	-8.9%	9,409	8,908	-5.3%	0.4%	18.1%
Great Wall-H	2333 HK	Underperform	Underperform	5.5	5.1	1,130,176	995,907	-11.9%	4,002	3,828	-4.4%	-6.1%	-14.8%
Great Wall-A	601633 CH	Underperform	Underperform	6.6	6.2	1,130,176	995,907	-11.9%	4,002	3,828	-4.4%	-6.1%	-14.8%
<b>Auto parts</b>				<b>PO</b>		<b>2020 revenue</b>			<b>2020 Net income</b>			<b>2020 revenue</b>	<b>2020 Net income</b>
				Old	New	Old	New	%	Old	New	%	YoY (%)	YoY (%)
Minth	425 HK	Buy	Buy	28.0	25.0	14,509	13,600	-6.3%	2,075	1,851	-10.8%	3.6%	0.9%
Huayu	600741 CH	Neutral	Neutral	26.3	24.0	156,090	142,218	-8.9%	7,533	6,767	-10.2%	-2.0%	-0.1%
Joyson	600699 CH	Underperform	Underperform	12.0	14.3	58,003	56,381	-2.8%	1,019	887	-12.9%	-8.7%	-7.0%
<b>Auto dealers</b>				<b>PO</b>		<b>2020 revenue</b>			<b>2020 Net income</b>			<b>2020 revenue</b>	<b>2020 Net income</b>
				Old	New	Old	New	%	Old	New	%	YoY (%)	YoY (%)
Zhongsheng	881 HK	Buy	Buy	36.1	33.6	147,120	144,358	-1.9%	5,685	5,289	-7.0%	14.9%	18.0%
Yongda	3669 HK	Buy	Buy	11.6	10.1	66,227	64,286	-2.9%	1,886	1,671	-11.4%	5.8%	16.7%
China Grand	600297 CH	Underperform	Underperform	3.7	3.4	173,894	169,762	-2.4%	3,352	3,080	-8.1%	0.6%	3.5%
<b>EV value chain</b>				<b>PO</b>		<b>2020 revenue</b>			<b>2020 Net income</b>			<b>2020 revenue</b>	<b>2020 Net income</b>
				Old	New	Old	New	%	Old	New	%	YoY (%)	YoY (%)
EVE	300014 CH	Buy	Buy	57.0	77.0	9,325	9,240	-0.9%	2,078	2,014	-3.1%	44.1%	32.9%
Yunnan Energy	002812 CH	Buy	Buy	63.0	60.0	4,392	3,966	-9.7%	1,325	1,101	-16.9%	25.5%	29.5%
CATL	300750 CH	Underperform	Underperform	63.0	58.0	54,143	47,446	-12.4%	5,388	4,721	-12.4%	4.2%	8.4%

Source: BofA Global Research estimates



# Earnings revision

## DFG (489 HK)

DFG has around 50% capacities in Hubei Province (namely DF-Nissan, DF-Honda, DF-PSA, Fengshen and commercial vehicle manufacturing). DF-Nissan's plant resumed operation on 10 March and we expect other plants to gradually reopen over this month. Compared with other auto OEMs, DFG's capacity concentration in Hubei/Wuhan is much higher; thus, its production resumption has been slower than peers, and it has higher sales contribution from the area. Therefore, we believe the negative impact from COVID-19 outbreak on DFG will be higher, in terms of volume sales and profitability.

We factor in 2019 volume sales and lower shipment forecast for DF PSA by 32%/23% in 2020/21E, lower DF Nissan's by 16%/10% in 2020-21E and lower DF Honda's by 9%/3% in 2020/21E. Net-net, we cut DFG's 2020/21E sales by 13%/7% to factor in the negative impact from the COVID-19, and we lower 2020/21E earnings by 27%/3%.

Our earnings forecast does not include: (1) DFG's plans to sell 30,700,000 shares (27.75% of current stake in PSA) to reduce its stake in PSA. Currently, it owns 12.2% of PSA, and its stake will become 4.5% of the new PSA-FCA (50:50 merger) after DFG sells the stakes ([report](#)); and (2) DF PSA's potential disposal gain on land disposal to the local government ([report](#)).

**Table 7: DFG – new vs. old estimates**

(RMB mn)	2019F			2020F			2021F		
	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Group volume sales	2,932,012	2,931,953	0.0%	3,029,832	2,635,283	-13.0%	3,164,342	2,937,933	-7.2%
DF Nissan	1,179,529	1,169,913	-0.8%	1,202,552	1,004,751	-16.4%	1,242,399	1,120,723	-9.8%
DF Honda	784,888	800,089	1.9%	828,162	757,234	-8.6%	888,519	866,206	-2.5%
DF PSA	150,796	113,579	-24.7%	150,484	102,836	-31.7%	150,344	116,482	-22.5%
DF Venucia	122,396	117,745	-3.8%	124,641	101,475	-18.6%	127,034	113,216	-10.9%
DF Fengshen	74,378	77,099	3.7%	79,622	55,808	-29.9%	83,021	59,558	-28.3%
DF Renault	24,827	18,607	-25.1%	35,420	31,338	-11.5%	49,322	46,069	-6.6%
Others	595,198	634,921	6.7%	608,950	581,841	-4.5%	623,703	615,680	-1.3%
Revenue	91,755	92,716	1.0%	95,460	87,508	-8.3%	99,180	95,933	-3.3%
Gross Profit	12,846	12,980	1.0%	14,033	10,938	-22.0%	14,877	13,431	-9.7%
Operating Profit	4,129	4,172	1.0%	4,964	3,063	-38.3%	5,455	4,317	-20.9%
Profit/loss of JV/Associate	15,594	15,809	1.4%	16,175	13,034	-19.4%	16,689	15,158	-9.2%
Net Profit before attribute to shareholder	13,122	13,825	5.4%	13,833	10,039	-27.4%	14,591	14,135	-3.1%
Net profit	13,122	13,825	5.4%	13,833	10,039	-27.4%	14,591	14,135	-3.1%
EPS	1.52	1.60	5.4%	1.61	1.17	-27.4%	1.69	1.64	-3.1%
<b>Key ratios (%)</b>									
Volume sales growth	-3.9%	-3.9%		3.3%	-10.1%		4.4%	11.5%	
Sales growth	-12.2%	-11.3%		4.0%	-5.6%		3.9%	9.6%	
EPS growth	1.1%	6.5%		5.4%	-27.4%		5.5%	40.8%	
Gross margin	14.0%	14.0%		14.7%	12.5%		15.0%	14.0%	
Operating margin	4.5%	4.5%		5.2%	3.5%		5.5%	4.5%	
Net margin	14.3%	14.9%		14.5%	11.5%		14.7%	14.7%	
OPEX to sales	9.5%	9.5%		9.5%	9.0%		9.5%	9.5%	

Source: BofA Global Research estimates

## Valuation

We derive our PO of HKD8.1 from a 50/50 average of P/E and DCF methodologies.

DCF methodology: We arrive at a fair value of HKD9.8, assuming 0% FCF perpetuity growth and 9.8% (previously 10.1%) WACC.

P/E methodology: We derive our P/E-based PO of HKD6.4 by applying a target P/E of 5x (unchanged, average PER in the past three years, which covers the upcycle and downcycle) to DFM's 2020E EPS.

**Table 8: DFG - Valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
DCF	9.8		WACC of 9.8%
Methodology 2			
P/E multiple	6.4		5x
Price Objective (rounded)	8.1	43%	

Source: BofA Global Research estimates





## Geely (175 HK)

We lower Geely volume sales and earnings in February (see [Geely: Lower volume sales forecast on COVID-19 impact; cut PO to HK\\$16.2, 27 February 2020](#)), and we now lower Geely volume sales by 8%/7% in 2020/21E as we considerate further impact from economy slow-down in China and weak demand in auto market. We also lower earnings by 4%/9% in 2020-21E respectively. Our new PO is HKD15.2 (from HKD16.2), based on same valuation methodologies and P/E multiple.

**Table 9: Geely – new vs. old**

	2019F			2020F			2021F		
(RMB mn)	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Consolidated sales	97,118	97,118	0.0%	97,447	90,736	-6.9%	102,673	96,116	-6.4%
Total volume sales (units)	1,361,560	1,361,560	0.0%	1,398,649	1,291,647	-7.7%	1,503,675	1,394,317	-7.3%
Geely volume sales (units)	1,233,494	1,233,494	0.0%	1,241,473	1,156,391	-6.9%	1,321,788	1,237,742	-6.4%
Lynk volume sales (units)	128,066	128,066	0.0%	157,176	135,256	-13.9%	181,887	156,575	-13.9%
Gross Profit	17,024	17,024	0.0%	17,914	16,082	-10.2%	18,873	17,667	-6.4%
Operating Profit	8,089	8,089	0.0%	9,144	8,052	-11.9%	9,941	9,305	-6.4%
Net Profit before attribute to shareholder	9,760	9,760	0.0%	10,665	10,233	-4.1%	12,533	11,410	-9.0%
Net profit	8,015	8,015	0.0%	8,716	8,378	-3.9%	10,233	9,344	-8.7%
EPS	0.88	0.88	0.0%	0.95	0.92	-3.9%	1.12	1.02	-8.7%
<b>Key ratios (%)</b>									
Sales growth	-8.9%	-8.9%		0.3%	-6.6%		5.4%	5.9%	
Total volume sales growth (units)	-9.3%	-9.3%		2.7%	-5.1%		7.5%	7.9%	
EPS growth	-35.8%	-35.8%		8.8%	4.5%		17.4%	11.5%	
Gross margin	17.5%	17.5%		18.4%	17.7%		18.4%	18.4%	
Operating margin	8.3%	8.3%		9.4%	8.9%		9.7%	9.7%	
Net margin	10.0%	10.0%		10.9%	11.3%		12.2%	11.9%	
OPEX to sales	9.2%	9.2%		9.0%	8.9%		8.7%	8.7%	

Source: BofA Global Research estimates

**Table 10: Geely – valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
DCF	15.5		WACC of 13.5%
Methodology 2			
P/E multiple	14.8		14x
Price Objective (rounded)	15.2	23%	

Source: BofA Global Research estimates

## Brilliance (1114 HK)

In Feb, we lower our forecast for Brilliance (see [Brilliance Auto: Upgrade to Buy: Focus on 2H20 demand recovery and attractive valuation, 17 February 2020](#)). Now, we lower BBA (Brilliance BMW Automobile) volume sales again by 4%/3% in 2020-21E. We also lower earnings by 4%/3% in 2020-21E. Our new PO is HKD9.0 (from HKD9.1) based on same valuation methodologies.

**Table 11: Brilliance – new vs old**

(RMB mn)	2019F			2020F			2021F		
	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Brilliance BMW volume sales (units)	544,500	544,500	0.0%	601,874	579,500	-3.7%	667,567	648,865	-2.8%
Net consolidated sales	4,137	4,137	0.0%	3,762	3,762	0.0%	5,655	5,655	0.0%
Gross Profit	455	455	0.0%	433	433	0.0%	679	679	0.0%
Operating Profit	-414	-414	0.0%	-207	-207	0.0%	-140	-140	0.0%
Profit/loss of JV/Associate	37	37	0.0%	40	40	0.0%	44	44	0.0%
Profit/loss of BMW Brilliance	6,653	6,653	0.0%	7,132	6,867	-3.7%	5,469	5,333	-2.5%
Net Profit before attribute to shareholder	6,134	6,134	0.0%	6,759	6,494	-3.9%	7,423	7,204	-3.0%
Net profit	6,431	6,431	0.0%	6,980	6,715	-3.8%	7,572	7,355	-2.9%
EPS	1.27	1.27	0.0%	1.38	1.33	-3.8%	1.50	1.46	-2.9%
<b>Key ratios (%)</b>									
Brilliance BMW volume sales growth	16.8%	16.8%		10.5%	6.4%		10.9%	12.0%	
Sales growth	-5.5%	-5.5%		-9.0%	-9.0%		50.3%	50.3%	
EPS growth	10.5%	10.5%		8.5%	4.4%		8.5%	9.5%	
Gross margin	11.0%	11.0%		11.5%	11.5%		12.0%	12.0%	
Operating margin	-10.0%	-10.0%		-5.5%	-5.5%		-2.5%	-2.5%	
Net margin	148.3%	148.3%		179.6%	172.6%		131.3%	127.4%	
OPEX to sales	21.0%	21.0%		17.0%	17.0%		14.5%	14.5%	

Source: BofA Global Research estimates

**Table 12: Brilliance – valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
SOTP	8.4		
Methodology 2			
DCF	9.5		WACC of 11.9%
Price Objective (rounded)	9.0	47%	

Source: BofA Global Research estimates

**Table 13: Brilliance – SOTP valuation**

	2020 Book value (RMBmn)	2020 Equity income (RMBmn)	Estimated value based on 2020 Book value / earnings	% to total value	Remarks
Mini bus & MPV business	9,864	-	4,932	10.0%	0.5 x P/B, loss making business
Brilliance - BMW	-	6,867	48,070	97.1%	7 x P/E, 0.7x PEG, high growth
<b>Business value total</b>			<b>53,002</b>	<b>107.1%</b>	
Add net cash (less net debt)			(3,510)	-7.1%	Brilliance is in net debt position
<b>Fair value total</b>			<b>49,491</b>		
Share count (mn)			5,045		
Implied value per share (RMB)			9.8		
Implied value per share (HKD)			11.1		
Discount on NAV			25%		
<b>Implied value (HKD)</b>			<b>8.4</b>		

Source: BofA Global Research estimates



## SAIC (600104 CH)

In Feb, we lower SAIC volume sales and earnings (see [SAIC Motor \(A\): Upgrade to Buy on likely volume sales recovery in 2H20 and attractive valuation, 17 February 2020](#)). We lower its 2020-21E volume sales by 9%/8% and lower sales by 8%/7% in 2020-21E respectively. Our earnings are lowered by 11%/6% in 2020-21E. Our PO is remained unchanged at RMB27 mainly as we lift our PE multiple from 9x to 11x, based on 1SD above historical average, as we see SAIC to be the major beneficiary if Shanghai increases the quota of license plate issuance.

**Table 14: SAIC – new vs. old**

(RMB mn)	2019F			2020F			2021F		
	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Group volume sales (units)	6,206,966	6,206,966	0.0%	6,346,271	5,759,892	-9.2%	6,643,396	6,147,271	-7.5%
Consolidated sales	823,733	823,255	-0.1%	856,640	784,912	-8.4%	912,454	851,226	-6.7%
Vehicle	807,180	806,702	-0.1%	837,605	765,876	-8.6%	890,744	829,516	-6.9%
Financial and Others	16,553	16,553	0.0%	19,036	19,036	0.0%	21,710	21,710	0.0%
Gross Profit	116,302	116,519	0.2%	122,146	114,082	-6.6%	132,430	125,766	-5.0%
Vehicle	103,235	103,451	0.2%	106,330	98,266	-7.6%	113,642	106,978	-5.9%
Financial and Others	13,068	13,068	0.0%	15,816	15,816	0.0%	18,788	18,788	0.0%
Operating Profit	28,804	29,072	0.9%	32,522	32,133	-1.2%	37,120	37,008	-0.3%
Investment income	26,581	26,581	0.0%	25,682	21,496	-16.3%	31,229	28,293	-9.4%
Net Profit before attribute to shareholder	38,021	38,261	0.6%	39,544	36,272	-8.3%	47,991	45,800	-4.6%
<b>Net profit</b>	<b>25,685</b>	<b>25,925</b>	<b>0.9%</b>	<b>26,674</b>	<b>23,636</b>	<b>-11.4%</b>	<b>34,399</b>	<b>32,445</b>	<b>-5.7%</b>
Net profit - adj. for one-off gain *	24,191	24,430	1.0%	25,179	22,141	-12.1%	32,904	30,951	-5.9%
EPS	2.20	2.22	0.9%	2.28	2.02	-11.4%	2.94	2.78	-5.7%
EPS - adj. for one-off gain *	2.07	2.09	1.0%	2.16	1.90	-12.1%	2.82	2.65	-5.9%
<b>Key ratios (%)</b>									
Volume sales growth	-12.0%	-12.0%		2.2%	-7.2%		4.7%	6.7%	
Sales growth	-8.7%	-8.7%		4.0%	-4.7%		6.5%	8.4%	
EPS growth	-28.7%	-28.0%		3.8%	-8.8%		29.0%	37.3%	
EPS growth - adj. for one-off gain *	-25.4%	-24.6%		4.1%	-9.4%		30.7%	39.8%	
Gross margin	14.1%	14.2%		14.3%	14.5%		14.5%	14.8%	
Operating margin	3.5%	3.5%		3.8%	4.1%		4.1%	4.3%	
Net margin	4.6%	4.6%		4.6%	4.6%		5.3%	5.4%	
OPEX to sales	10.6%	10.6%		10.5%	10.4%		10.4%	10.4%	

Source: BofA Global Research estimates

**Table 15: SAIC - valuation summary**

Valuation methodology	Implied value (RMB)	Upside/downside	Parameters
Methodology 1			
DCF	31.2		WACC of 9.3%
Methodology 2			
P/E multiple	22.3		11x
Price Objective (rounded)	27.0	23%	

Source: BofA Global Research estimates

## BAIC (1958 HK)

We factor in actual 2019 volume sales for Beijing Benz (BBAC) and Beijing Hyundai (BHMC) and BBAC's 2H19 preliminary earnings that were announced in late-February. As a result, we revise up 2019E earnings by 8%.

We cut BBAC's 2020/2021 sales volume forecast, mainly as we believe demand on luxury brands should be more resilient compared with mass-market brands amid the lackluster consumption sentiment due to the COVID-19 outbreak. We lower BHMC's volume sales by 2%/1% in 2020/21E, outperforming market, thanks to its solid new model pipeline and growing export business. We cut BAIC's own-brand sales volume by 23%/29% in 2020/21E, due to intensified competition in China EV sector. Overall, we cut BAIC's earnings by 12%/2% in 2020/2021, and cut our PO to HKD\$4.4 to factor in the negative impact from the COVID-19 outbreak.

BAIC's share price has fallen 29% since early January and its current valuation (5x 2020E EPS) looks undemanding to us. Based on BAIC's current share price, our new PO implies 38% upside. Thus, we upgrade BAIC to Buy.

**Table 16: BAIC – new vs. old**

	2019F			2020F			2021F		
(RMB\$ mn)	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Volume sales - Beijing Benz	550,940	567,306	3.0%	592,576	571,305	-3.6%	620,703	608,166	-2.0%
Volume sales - Beijing Hyundai	614,022	687,127	11.9%	642,967	630,481	-1.9%	671,145	662,365	-1.3%
Volume sales- Beijing own brand	165,295	165,295	0.0%	195,550	150,034	-23.3%	222,741	158,947	-28.6%
Volume sales- Fujian Benz	27,500	27,500	0.0%	28,900	23,000	-20.4%	31,000	27,500	-11.3%
Total volume sales	1,357,756	1,447,228	6.6%	1,459,993	1,374,820	-5.8%	1,545,589	1,456,979	-5.7%
Revenue	166,760	174,264	4.5%	180,602	172,971	-4.2%	188,821	181,681	-3.8%
Gross Profit	39,655	41,794	5.4%	42,419	39,761	-6.3%	43,625	43,298	-0.8%
Operating Profit	19,144	20,359	6.3%	21,108	17,793	-15.7%	22,099	21,133	-4.4%
Investment income	1,090	1,103	1.2%	1,247	1,107	-11.3%	1,447	1,358	-6.1%
Net Profit before attribute to shareholder	13,724	14,549	6.0%	15,216	12,963	-14.8%	16,189	15,475	-4.4%
Net profit	4,067	4,407	8.4%	4,715	4,128	-12.4%	5,215	5,129	-1.7%
EPS	0.51	0.55	8.4%	0.59	0.52	-12.4%	0.65	0.64	-1.7%
<b>Key ratios (%)</b>									
Sales growth	-7.0%	-0.9%		7.5%	-5.0%		5.9%	6.0%	
EPS growth	9.8%	14.7%		8.3%	-0.7%		4.6%	5.0%	
Gross margin	-8.2%	-0.5%		15.9%	-6.3%		10.6%	24.2%	
Operating margin	23.8%	24.0%		23.5%	23.0%		23.1%	23.8%	
Net margin	11.5%	11.7%		11.7%	10.3%		11.7%	11.6%	
OPEX to sales	8.2%	8.3%		8.4%	7.5%		8.6%	8.5%	

Source: BofA Global Research estimates

## Valuation

We assign a more conservative target P/E multiple of 6x (previously 7x) for both BBAC and BHMC in our SOTP valuation, mainly attributable to (1) BBAC's low volume and earnings growth due to aging vehicle models, and (2) challenges for BHMC in regaining market share in China. For DCF valuation, we lower our perpetual growth rate from 1% to 0% as we believe its own brands will continue to lose market share and post loss in the long term. Our new PO is HKD4.4.

**Table 17: BAIC – valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
SOTP	4.2		
Methodology 2			
DCF	4.6		WACC of 9.8%
Price Objective (rounded)	4.4	38%	

Source: BofA Global Research estimates



**Table 18: BAIC – SOTP valuation**

	2020 Book value (RMB mn)	2020 Equity income (RMB mn)	Estimated value based on 2020 Book value / earnings	% to total value	Remarks
Beijing Benz (BBAC)	-	9,195	55,172	93.8%	6 x P/E, moderate growth in 2018-2020
Beijing Hyundai (BHMC)		28	165	0.3%	6 x P/E, earnings recovery in 2018-19
Beijing Brand	9,695	-	1,939	3.3%	0.2 x P/B, loss making business
BAIC BJEV (600733 CH)			1,535	2.6%	BAIC owns 6.51% stake in BAIC BJEV
Total business value			58,812	100.0%	
<b>Fair value total</b>			<b>58,812</b>		
Share count (mn)			8,015		
<b>Implied value per share (RMB)</b>			<b>7.3</b>		
<b>Implied value per share (HKD)</b>			<b>8.3</b>		
Discount			50%		
<b>Implied value per share (HKD)</b>			<b>4.2</b>		

Source: BofA Global Research estimates

## GAC (2238 HK)

We lowered GAC volume sales and earnings (see [GAC \(H\): Upgrade GAC-H to Buy on solid product pipeline and attractive valuation, 17 February 2020](#)) previously in February. Now, we lower its volume sales again for weaker demand and growth in auto market. We cut its sales by 9%/7% in 2020-21E respectively, while we lower its earnings by 5%/4% in 2020-21E. Our new PO for GAC-H is HKD10 (from HKD10.4) based on average of P/E valuation and DCF. Our new PO for GAC-A is RMB10.5 (from RMB11.4) based on average of P/E valuation and DCF. GAC-A share price has outperformed in the past two month (up 20%) and we downgrade GAC-A from Neutral to Underperform given stretched valuation (17 x 2020E adj. EPS).

**Table 19: GAC – new vs old**

	2019F			2020F			2021F		
(RMB mn)	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Group volume sales (units)	2,062,150	2,062,150	0.0%	2,272,790	2,070,200	-8.9%	2,417,065	2,257,293	-6.6%
GAC Honda	770,874	770,874	0.0%	830,603	757,794	-8.8%	865,075	835,397	-3.4%
GAC Toyota	682,008	682,008	0.0%	760,004	708,089	-6.8%	816,703	762,160	-6.7%
GAC FCA	73,907	73,907	0.0%	71,137	64,622	-9.2%	69,120	68,130	-1.4%
GAC Mitsubishi	133,016	133,016	0.0%	136,473	115,216	-15.6%	142,983	121,554	-15.0%
GAC Motor	384,578	384,578	0.0%	456,482	406,388	-11.0%	504,758	451,626	-10.5%
Revenue	55,953	55,953	0.0%	64,758	59,620	-7.9%	71,738	66,089	-7.9%
Gross Profit	4,691	4,691	0.0%	7,494	7,057	-5.8%	9,206	8,641	-6.1%
Operating Profit	-285	-285	N.M	800	1,010	26.3%	1,632	1,779	9.0%
Investment income (Profit/loss of Associate & JVs)	8,288	8,288	0.0%	9,258	8,561	-7.5%	10,505	9,966	-5.1%
Pre-tax income	7,519	7,519	0.0%	9,473	8,987	-5.1%	11,486	11,089	-3.5%
Net Profit before attribute to shareholder	7,581	7,581	0.0%	9,456	8,953	-5.3%	11,408	10,999	-3.6%
Net profit	7,543	7,543	0.0%	9,409	8,908	-5.3%	11,351	10,944	-3.6%
Net profit - adj. for one-off gain	5,843	5,843	0.0%	7,709	7,208	-6.5%	9,651	9,244	-4.2%
EPS	0.74	0.74	0.0%	0.92	0.87	-5.3%	1.11	1.07	-3.6%
<b>Key ratios (%)</b>									
Sales growth	-22.7%	-22.7%		15.7%	6.6%		10.8%	10.8%	
Volume growth	-4.0%	-4.0%		10.2%	0.4%		6.3%	9.0%	
EPS growth	-30.8%	-30.8%		24.7%	18.1%		20.6%	22.9%	
Gross margin	8.4%	8.4%		11.6%	11.8%		12.8%	13.1%	
Operating margin	-0.5%	-0.5%		1.2%	1.7%		2.3%	2.7%	
Net margin	13.5%	13.5%		14.5%	14.9%		15.8%	16.6%	
OPEX to sales	8.9%	8.9%		10.3%	10.1%		10.6%	10.4%	

Source: BofA Global Research estimates

**Table 20: GAC-H - valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
DCF	11.5		WACC of 12.7%
Methodology 2			
P/E multiple	8.5		11x
Price Objective (rounded)	10.0	24%	

Source: BofA Global Research estimates

**Table 21: GAC-A - valuation summary**

Valuation methodology	Implied value (RMB)	Upside/downside	Parameters
Methodology 1			
DCF	10.5		WACC of 12.7%
Methodology 2			
P/E multiple	10.6		15x
Price Objective (rounded)	10.5	-15%	

Source: BofA Global Research estimates



## NIO (NIO US)

We cut NIO's sales volume by 26%/13% in 2020/2021 respectively, mainly due to (1) intensified competition in premium EV market as Tesla's made-in-China Model 3 started delivery and share-gain in 1Q20; and (2) the negative impact from the COVID-19. We expect NIO's 2020/2021 net loss to be 3%/7% higher than our previous forecast, thanks to NIO's stricter OPEX control and cost-saving measures.

**Table 22: NIO – new vs. old**

	2019F			2020F			2021F		
RMB mn	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Volume sales (units)	20,565	20,565	0.0%	40,081	29,671	-26.0%	54,029	46,777	-13.4%
Consolidated sales	8,225	8,225	0.0%	15,764	11,453	-27.3%	20,597	17,353	-15.8%
Vehicle	7,818	7,818	0.0%	15,183	10,872	-28.4%	19,813	16,568	-16.4%
Service and others	408	408	0.0%	581	581	0.0%	784	784	0.0%
Gross Profit	-1,163	-1,163	0.0%	207	90	-56.7%	1,445	1,216	-15.9%
Vehicle	-671	-671	0.0%	501	384	-23.4%	1,527	1,298	-15.0%
Service and others	-491	-491	0.0%	-294	-294	0.0%	-82	-82	0.0%
Operating Profit	-11,557	-11,557	0.0%	-9,270	-9,554	3.1%	-7,220	-7,816	8.3%
Adjusted Operating profit (non-GAAP)	-11,207	-11,207	0.0%	-8,970	-9,254	3.2%	-6,920	-7,516	8.6%
Pretax income	-11,773	-11,773	0.0%	-10,329	-10,613	2.8%	-8,735	-9,331	6.8%
Net Income before minority interest	-11,782	-11,782	0.0%	-10,339	-10,624	2.8%	-8,726	-9,321	6.8%
Adjusted Net Income (non-GAAP)	-11,417	-11,417	0.0%	-10,007	-10,292	2.8%	-8,394	-8,989	7.1%
Net Income attribute to ordinary shareholders	-11,862	-11,862	0.0%	-10,307	-10,592	2.8%	-8,694	-9,289	6.8%
EPS (RMB)	-11.56	-11.56	0.0%	-10.04	-10.32	2.8%	-8.47	-9.05	6.8%
EPS (USD)	-1.67	-1.67	0.0%	-1.46	-1.50	2.8%	-1.23	-1.31	6.8%
ASP per car (RMB, K)	380	380	0.0%	379	366	-3.3%	367	354	-3.4%
Net profit (loss) per car (RMB, K)	-555	-555	0.0%	-250	-347	38.9%	-155	-192	23.7%
<b>Key ratios (%)</b>									
Sales growth	66.1%	66.1%		91.7%	39.2%		30.7%	51.5%	
EPS growth	N.M.	N.M.		N.M.	N.M.		N.M.	N.M.	
Gross margin	-14.1%	-14.1%		1.3%	0.8%		7.0%	7.0%	
Operating margin	-140.5%	-140.5%		-58.8%	-83.4%		-35.1%	-45.0%	
OPM (non-GAAP)	-136.2%	-136.2%		-56.9%	-80.8%		-33.6%	-43.3%	
Net margin	-143.2%	-143.2%		-65.6%	-92.8%		-42.4%	-53.7%	
NPM (non-GAAP)	-138.8%	-138.8%		-63.5%	-89.9%		-40.8%	-51.8%	
OPEX to sales	126.4%	126.4%		60.1%	84.2%		42.1%	52.1%	

Source: BofA Global Research estimates

## Valuation

We maintain our Neutral rating on NIO with a PO of USD3.7 as our valuation assumptions are largely unchanged. On 5 March, NIO announced USD235mn private placement of one-year convertible notes, at a conversion price of USD3.5 per ADS.

**Table 23: NIO – valuation summary**

Valuation methodology	Implied value (USD)	Upside/downside	Parameters
Methodology 1			
Probability-weighted scenario analysis of EV/Sales	3.7		
Methodology 2			
DCF	3.6		WACC of 9.1%
Price Objective (rounded)	3.7	18%	

Source: BofA Global Research estimates

## BYD (1211 HK)

We factor in BYD's FY19 volume sales, and lower BYD's ICEV volume sales by 2% in 2020E given its FY19 sales are higher than our expectation, helped by successful launch of Song Pro in July 2019.

We raise our EV volume sales forecast by 9% in 2021E to factor in Han's volume sales, which will be launched in 2H20. Han is BYD's first model to be equipped with LFP blade battery technology. BYD has also developed blade battery solution for its other existing models. With the cell-to-pack technology ([report](#)), we believe BYD will have a higher likelihood of penetrating into other OEMs. We lower E-bus and other electric CV volume sales forecast as the sector seems to be hit more by EV purchase subsidy cut.

On the other hand, we raise our sales forecast for consumer electronic business (mainly BYDE) and battery business, as we see BYD should be able to sell more battery to external clients. For financing cost, BYD has received RMB2.3bn government subsidy in 1Q20, which is expected to reduce its interest expense. Net-net, we raise our 2020/21E earnings by 25%/32%, mainly because: 1) using the LFP blade battery will improve BYD's profitability, 2) higher sales from consumer electronic business (mainly BYDE) and battery business, and 3) lower interest expense.

We upgrade BYD-H to Neutral. We see the following positives: 1) launch of blade battery, which could provide higher energy density and also at lower cost, vs. NCM (lithium nickel cobalt manganese) battery; 2) launch of Han model, which uses the blade battery should improve margins and profitability; and 3) earlier listing of IGBT (insulated-gate bipolar transistor) business should help the valuation. On the other hand, we see the stock's valuation fairly reflects the aforementioned positives. Our new PO is HKD45.1 (earlier HKD26.5), based on our latest SOTP valuation.

**Table 24: BYD – new vs. old**

	2019F			2020F			2021F		
(RMB mn)	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Total vehicle volume sales	459,472	461,399	0.4%	484,984	465,855	-3.9%	517,246	526,801	1.8%
ICEV volume sales	212,809	231,893	9.0%	211,240	206,858	-2.1%	214,006	215,566	0.7%
PEV volume sales	223,939	219,353	-2.0%	248,746	249,352	0.2%	275,743	301,107	9.2%
E-bus & CV volume sales	22,725	10,153	-55.3%	24,997	9,645	-61.4%	27,497	10,128	-63.2%
Consolidated sales (RMB mn)	127,060	127,034	0.0%	132,484	148,863	12.4%	137,691	177,565	29.0%
Auto + Skyrail	69,969	64,982	-7.1%	72,298	69,150	-4.4%	74,219	78,497	5.8%
Consumer electronic	47,542	52,503	10.4%	49,682	68,254	37.4%	51,917	85,317	64.3%
Battery & solar	9,549	9,549	0.0%	10,504	11,459	9.1%	11,555	13,751	19.0%
Gross profit	14,297	13,368	-6.5%	13,259	13,924	5.0%	13,913	17,730	27.4%
Operating profit	4,005	3,078	-23.1%	1,600	824	-48.5%	1,108	1,216	9.7%
Investment income (loss)	-284	-283	0.0%	-315	-389	23.5%	-326	-438	34.2%
Profit before tax	2,351	2,453	4.3%	2,201	2,776	26.2%	2,819	3,786	34.3%
Net Profit before minority interest	2,069	2,158	4.3%	1,937	2,443	26.2%	2,481	3,332	34.3%
Net Profit before perpetual loan interest expense	1,650	1,621	-1.8%	1,419	1,706	20.2%	1,894	2,414	27.4%
Net Profit after perpetual loan interest expense	1,405	1,375	-2.1%	1,174	1,461	24.5%	1,649	2,168	31.5%
EPS (RMB)	0.51	0.50	-2.1%	0.43	0.54	24.5%	0.60	0.79	31.5%
<b>Key ratios (%)</b>									
Total vehicle volume sales (YoY)	-11.8%	-11.4%		5.6%	1.0%		6.7%	13.1%	
ICEV volume sales (YoY)	-22.0%	-15.0%		-0.7%	-10.8%		1.3%	4.2%	
PEV volume sales (YoY)	-1.4%	-3.4%		11.1%	13.7%		10.9%	20.8%	
E-bus & CV volume sales (YoY)	10.0%	-50.9%		10.0%	-5.0%		10.0%	5.0%	
Sales growth	4.3%	4.3%		4.3%	17.2%		3.9%	19.3%	
EPS growth	-44.7%	-45.9%		-16.4%	6.2%		40.5%	48.4%	
Gross margin	11.3%	10.5%		10.0%	9.4%		10.1%	10.0%	
Operating margin	3.2%	2.4%		1.2%	0.6%		0.8%	0.7%	
Net margin	1.6%	1.7%		1.5%	1.6%		1.8%	1.9%	
OPEX to sales	8.1%	8.1%		8.8%	8.8%		9.3%	9.3%	

Source: BofA Global Research estimates





BYD is going to spin off its EV battery and IGBT businesses. With the improved product quality, the possibility for BYD to supply battery/IGBT to other auto OEMs is increasing. Management has indicated the IGBT manufacturing business will be listed on the SSE Star Market (Sci-Tech Innovation Board) soon. See our revenue forecasts for BYD's EV battery and IGBT businesses (including sales for internal use) in the tables below.

**Table 25: BYD's EV battery revenue forecast (including internal use)**

EV Volume sales (unit)	2019	2020	2021	2022
BEV	147,185	188,837	245,403	306,236
PHEV	72,168	60,515	55,704	53,809
E-bus & CV	10,153	9,645	10,128	10,634
<b>Total</b>	<b>229,506</b>	<b>258,998</b>	<b>311,234</b>	<b>370,679</b>

Battery demand by BYD (Kwh)	2019	2020	2021	2022
BEV	7,097,814	9,441,873	12,638,258	16,244,299
PHEV	869,428	786,693	745,873	742,114
E-bus & CV	2,844,489	1,591,483	1,754,610	1,934,457
External client	147,654	2,500,000	3,125,000	3,906,250
<b>Total</b>	<b>10,959,385</b>	<b>14,320,048</b>	<b>18,263,741</b>	<b>22,827,121</b>

EV battery revenue (RMBmn)	2019	2020	2021	2022
BEV	7,453	8,970	10,806	12,500
PHEV	913	747	638	571
E-bus & CV	2,987	1,512	1,500	1,489
External client	155	2,375	2,672	3,006
<b>Revenue from EV battery</b>	<b>11,507</b>	<b>13,604</b>	<b>15,615</b>	<b>17,565</b>

Source: BofA Global Research estimates

**Table 26: BYD's IGBT revenue forecast (including internal use)**

EV Volume sales (unit)	2019	2020	2021	2022
BEV	147,185	188,837	245,403	306,236
PHEV	72,168	60,515	55,704	53,809
E-bus & CV	10,153	9,645	10,128	10,634
<b>Total</b>	<b>229,506</b>	<b>258,998</b>	<b>311,234</b>	<b>370,679</b>

Revenue IGBT (RMB mn)	2019	2020	2021	2022
BEV	618	755	893	1,037
PHEV	238	182	152	137
E-bus & CV	72	68	65	63
External client	-	-	55	62
<b>Revenue from IGBT</b>	<b>928</b>	<b>1,004</b>	<b>1,165</b>	<b>1,298</b>

Source: BofA Global Research estimates

Our PO for BYD-H and BYD-A is HKD45.1 and RMB38.8, respectively. We derive our PO from a sum-of-the-parts (SOTP) valuation. We apply 2020 earnings for its traditional businesses (ICEV, consumer electronics related) into our valuation base, while we apply 2021 sales/earnings for the EV-related businesses like battery, IGBT and also other EV components business as rising EV penetration is a long-term trend and sales visibility is higher than that for traditional business. Investors are taking more forward-looking approach in these businesses for the valuation. We also apply 2021 P/S into our valuation for NIO, another EV company in China. Based on our new PO, we upgrade BYD-H to Neutral, but we reiterate Underperform on BYD-A.

**Table 27: BYD – valuation summary**

	PAT or Sales (RMBmn)	Estimated value based on PAT/Sales	Asset value	% to Enterprise Value	Remarks
Auto - ICEV (2020 PAT)	96	959	959	0.9%	10 x P/E, stable growth
EV battery (2021 sales)	16,766	83,831	83,831	79.2%	5 x P/S, high growth
IGBT (2021 sales)	1,165	11,653	11,653	11.0%	10 x P/S, high growth
Other EV components (2021 sales)	35,393	35,393	35,393	33.5%	1 x P/S, stable growth
Consumer electronic - BYDE			18,250	17.2%	Market cap of BYDE (285 HK)
Consumer electronic - non BYDE (2020 PAT)	124	991	991	0.9%	8 x P/E, peer average
Consumer electronics battery (2020 Sales)	11,459	17,189	17,189	16.2%	1.5 x EV/sales, stable growth
Skyrail (2020 PAT)	212	1,270	1,270	1.2%	6 x P/E, peer average
Total business value			169,535		
Net debt		(63,727)	(63,727)	-60.2%	
<b>Fair value total</b>			<b>105,808</b>		
Share count (mn)			2,728		
<b>Implied value per share (RMB)</b>			<b>38.8</b>		
<b>Implied value per share (HKD)</b>			<b>45.1</b>		

Source: BofA Global Research estimates

#### Auto – ICEV business

We continue to assign a 10x P/E (unchanged) target multiple to BYD's 2020E PAT, similar to China peers.

#### Auto – EV business

We previously applied 2x P/S on BYD's EV sales to assess the value of BYD's EV business. Given BYD plans to spin off its EV battery and IGBT businesses, and management has indicated the IGBT manufacturing business will be listed on the SSE Star Market (Sci-Tech Innovation Board) soon, **we now break down the EV business into three parts to better capture the value of each business, namely EV battery, IGBT and other EV components.**

**For the EV battery business,** we apply 5x P/S to its 2021E sales. Our target multiple of 5x P/S is slightly lower than CATL's current P/S (5.5-6x P/S), given (1) BYD will sell battery to other OEMs; thus, its EV battery business should see a re-rating, from 3x (P/S) previously to 5x (P/S), similar to other EV/ battery companies' level (Tesla, Guoxuan, etc); and (2) BYD's technology in terms of product safety and battery density lags that of CATL. Thus, it should trade at a discount to CATL.

**For the IGBT manufacturing business,** we apply 10x P/S to its IGBT 2021E sales. We benchmark StarPower Semiconductor (603290 CH, non-rated) valuation at 20x+ P/S, we believe applying 10x to BYD's IGBT business is not considered too aggressive. StarPower mainly focuses on IGBT specific for industrial application, while BYD focuses on IGBT specific for EV application, and mainly supply to themselves. After spinning off the IGBT business, BYD should have a higher likelihood of supplying to external clients on the back of "import substitution" effect amid US-China trade tension. However, given BYD's IGBT now supplies to its EV assembly, its valuation should be at a discount to StarPower's.



Lastly, we apply 1x P/S to its other EV components sales in 2021. 1x P/S is considered to be similar to peers' average, since entry barrier is lower compared with EV battery and IGBT.

**Consumer electronics – battery business:** We apply 1.5x for the EV battery business, due to long-term growth outlook (unchanged, higher than Samsung SDI's estimated valuation 0.8x EV/sales as BYD is profit making vs. Samsung SDI's loss-making in 2020).

**Consumer electronics business – handset:** We apply BYD's market cap as the enterprise value and continue to apply H-share listed tech companies' average P/E, 8x (unchanged), for non-BYD's electronics business' PBT.

**SkyRail:** We continue to assign 6x PER (unchanged), similar to China auto sector average.

## GWM (2333 HK)

2019 net income was up 13% vs. our previous assumption, based on GWM's preliminary 2019 volume sales and preliminary sales and net income announcement. GWM's net profit per car in 2019 (based on GWM's preliminary announcement) is higher than our original expectation and we attribute it to GWM's cost control and more profit from auto finance business.

We lower GWM volume sales forecast by 12%/7% in 2020/21E, considering weak consumption sentiment dragged by COVID-19 in 2020, and more competition in mass market in 2021. New model in 2020 includes H2, H4 face-lift version and new H6. Net-net, our 2019-21 earnings estimates are largely unchanged, as we raise our net profit per car assumptions.

Our new PO for GWM-H is HKD5.1, based on the average of P/E valuation and DCF – we keep our P/E valuation unchanged, but we slightly lower our WACC from 12.1% to 11.6%, based on updated Beta from Bloomberg. Our new PO for GWM-A is RMB6.2, based on same assumption changes (mainly WACC) in DCF.

**Table 28: GWM – new vs. old**

	2019F			2020F			2021F		
(RMB mn)	Old	New	dif. (%)	Old	New	dif. (%)	Old	New	dif. (%)
Consolidated sales	96,711	96,455	-0.3%	104,852	94,818	-9.6%	112,832	106,575	-5.5%
Vehicle volume sales	1,074,403	1,060,298	-1.3%	1,130,176	995,907	-11.9%	1,183,807	1,095,962	-7.4%
Haval volume sales (unit)	755,688	769,454	1.8%	784,989	695,418	-11.4%	813,992	776,525	-4.6%
WEY volume sales (unit)	99,915	99,399	-0.5%	102,469	89,906	-12.3%	105,315	91,317	-13.3%
Other volume sales (unit)	218,801	191,445	-12.5%	242,717	210,583	-13.2%	264,500	228,120	-13.8%
Gross Profit	16,304	16,893	3.6%	18,215	16,860	-7.4%	18,846	18,083	-4.1%
Operating Profit	5,451	6,068	11.3%	5,402	5,176	-4.2%	5,420	5,401	-0.4%
Net Profit before attribute to shareholder	4,027	4,526	12.4%	4,042	3,868	-4.3%	3,939	3,970	0.8%
Net profit	3,987	4,493	12.7%	4,002	3,828	-4.4%	3,899	3,930	0.8%
EPS	0.44	0.49	12.7%	0.44	0.42	-4.4%	0.43	0.43	0.8%
Key ratios (%)									
Vehicle volume sales	2.0%	0.7%		5.2%	-6.1%		4.7%	10.0%	
Sales growth	-2.5%	-2.8%		8.4%	-1.7%		7.6%	12.4%	
EPS growth	-23.4%	-13.7%		0.4%	-14.8%		-2.6%	2.7%	
Gross margin	16.9%	17.5%		17.4%	17.8%		16.7%	17.0%	
Operating margin	5.6%	6.3%		5.2%	5.5%		4.8%	5.1%	
Net margin	4.2%	4.7%		3.9%	4.1%		3.5%	3.7%	
OPEX to sales	11.2%	11.2%		12.2%	12.3%		11.9%	11.9%	

Source: BofA Global Research estimates

**Table 29: GWM-H – valuation summary**

Valuation methodology	Implied value (HKD)	Upside/downside	Parameters
Methodology 1			
DCF	6.4		WACC of 11.6%
Methodology 2			
P/E multiple	3.8		8x
Price Objective (rounded)	5.1	5%	

Source: BofA Global Research estimates

**Table 30: GWM-A – valuation summary**

Valuation methodology	Implied value (RMB)	Upside/downside	Parameters
Methodology 1			
DCF	5.6		WACC of 11.6%
Methodology 2			
P/E multiple	6.7		16x
Price Objective (rounded)	6.2	-32%	

Source: BofA Global Research estimates



## EVE (300014 CH)

We expect sales of consumer electronics battery to grow faster in 2020-21E, supported by True Wireless Stereo (TWS) battery business. EVE's TWS battery capacity is 3mn units per month as of 1Q20, and the company plans to increase annual capacity to 200mn units in 1-2 years. EVE supplies TWS battery for Samsung's Galaxy Buds, and is in qualification/certification process with several other global leading TWS earphone brands. Going forward, we expect to see new client addition, given EVE's superior product quality. It targets to sell 60-70mn units TWS battery in 2020.

EVE announced a private placement plan on 9 March, with the fund-raising amount not exceeding RMB2.5bn, and management expects to issue no more than 10% of new shares. According to EVE, the capital will be used for (1) TWS lithium battery project, (2) lithium-manganese dioxide battery application in tire pressure measurement and IoT, (3) NCM prismatic battery research and development, and (4) support working capital.

We cut our 2020E earnings by 3% due to slower growth on lithium primary battery, and EV battery (NCM pouch type). On the other hand, we raise our earnings by 3% in 20201E, mainly because (1) we lift our sales forecast for consumer electronics (on TWS), and (2) LFP EV battery shipment, but lower sales from lithium primary cell.

**Table 31: EVE's P&L– new vs. old**

RMB mn	2019F			2020F			2021F		
	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Revenue	6,936	6,412	-7.6%	9,325	9,240	-0.9%	11,110	11,064	-0.4%
Lithium primary cell	2,004	1,598	-20.3%	2,024	1,690	-16.5%	1,931	1,610	-16.6%
Lithium battery material	4,932	4,814	-2.4%	7,301	7,550	3.4%	9,179	9,454	3.0%
Consumer electronics	946	888	-6.1%	1,294	1,695	31.0%	1,644	2,267	37.9%
EV battery (LFP)	1,735	1,489	-14.2%	1,718	1,952	13.6%	1,758	2,094	19.1%
ESS (LFP)	204	188	-7.9%	288	254	-11.8%	386	341	-11.7%
Power tools & E-bike	1,622	1,824	12.4%	1,957	2,199	12.4%	2,285	2,700	18.2%
EV battery (NCM Pouch type)	425	425	0.0%	2,043	1,449	-29.1%	3,106	2,053	-33.9%
Gross Profit	1,904	1,822	-4.3%	2,449	2,346	-4.2%	2,759	2,779	0.7%
Operating Profit	1,025	1,010	-1.5%	1,288	1,276	-1.0%	1,394	1,477	6.0%
Investment income	875	875	0.0%	1,080	1,080	0.0%	1,300	1,300	0.0%
Pretax income	1,681	1,678	-0.1%	2,165	2,153	-0.6%	2,498	2,581	3.3%
Net Income	1,633	1,633	0.0%	2,100	2,089	-0.6%	2,423	2,504	3.3%
Net Income attribute to shareholder	1,611	1,515	-6.0%	2,078	2,014	-3.1%	2,393	2,474	3.4%
EPS	1.66	1.56	-6.0%	2.14	2.08	-3.1%	2.47	2.55	3.4%
Key ratios (%)									
Sales growth	59.4%	47.4%		34.4%	44.1%		19.1%	19.7%	
EPS growth	149.1%	134.3%		29.0%	32.9%		15.1%	22.9%	
Gross margin	27.4%	28.4%		26.3%	25.4%		24.8%	25.1%	
Operating margin	14.8%	15.8%		13.8%	13.8%		12.5%	13.4%	
Net margin	23.5%	25.5%		22.5%	22.6%		21.8%	22.6%	

Source: BofA Global Research estimates

For valuation, we continue to derive our PO from an average of DCF, P/E and SOTP-based fair values. Our new PO is RMB77 (RMB57 previously).

**Table 32: EVE's valuation summary**

Valuation methodology	Implied value (RMB)	Upside/downside	Parameters
Methodology 1			
DCF	67.0		WACC of 11.7%
Methodology 2			
P/E multiple	74.8		36 x
Methodology 3			
SOTP	87.7		
PO (rounded)	77.0	14.9%	

Source: BofA Global Research estimates

**DCF valuation:** We derive a fair value of RMB67 (RMB61.7 previously), using assumptions of higher (2%) FCF perpetual growth (1.5% previously) and 11.7% WACC (11.6% previously). We also raise our 2021-30E FCF CAGR from 27% to 34% given we see more growth driver like TWS, EV battery, and e-cigarette battery in the long term.

**P/E valuation:** We derive a fair value of RMB74.8 (RMB53.6 previously) from 36x target P/E on 2020E EPS. We raise our target multiple from 25x to 36x, which is 1SD (11x) over its three-year historical average P/E (25x). We believe, given its promising growth on all aspects (EV battery, electronics batteries and TWS), it is justified to apply 1SD over its historical average valuation.

**SOTP valuation:** We derive a fair value of RMB87.7 (RMB56.1 previously). We apply 2020 earnings for its traditional business (lithium primary battery and electronics tools) into our valuation base, while we apply 2021 sales/earnings for the EV battery, and TWS as rising EV and TWS penetration is a long-term trend and sales visibility is higher than traditional business. Investors are taking more forward-looking approach in these businesses when they perform the valuation. We also apply 2021 P/S into our valuation for NIO and BYD, other EV value chain companies in China.

Lithium primary cell: We assign a P/E target multiple of 12x (unchanged) for EVE's lithium primary cell business' 2020E EBIT to derive our estimated value.

Consumer electronics: We assign a P/E target multiple of 12x (unchanged) for EVE's consumer electronics business' 2020E EBIT to derive our estimated value.

TWS: We added TWS sales into our forecast and separate its valuation in SOTP. We believe it will likely penetrate into Apple and supply battery for its TWS products, which implies significant growth potential. We apply 40x P/E over its 2021E EBIT. We benchmark Varta's valuation at nearly 40x 2021E EPS.

EV battery: We raise our target multiple from 1.5x to 5x EV/sales for EVE's battery business, same multiple as BYD's target multiple. We do not consider our target multiple as demanding, given current EV/sales of CATL at 5.5-6.0x over 2020E sales.

Electronics tools: Our target multiple is 1.5x EV/sales (unchanged) over 2020E – not aggressive vs the 2x we use for CATL's valuation.

ESS: We assign EV/sales target multiple of 1.5x over EVE's ESS business 2020E sales to derive our estimated value. We raise our target multiple from 1.0x to 1.5x as we believe its ESS sales will witness solid growth in 2020-21E.

Smoore: EVE holds around 37.55% of Smoore's stake and recognizes its income as investment income. We derive its value by assigning 30x P/E (unchanged) over its 2020E EBIT.

**Table 33: EVE's SOTP valuation**

	2020 EBIT (RMBmn)	2020 Sales (RMBmn)	Estimated value based on 2020 EBIT or Sales	Asset value	% to Enterprise Value	Remarks
Lithium primary cell	651		7,809	7,809	9.1%	12 x P/E, stable growth
Consumer electronics	218		2,611	2,611	3.0%	12 x P/E, solid growth
TWS (2021)	460		18,400	18,400	21.5%	40 x P/E, solid growth
EV battery (LFP+NCM Prismatic+NCM Pouch) (2021)		4,146	20,732	20,732	24.2%	5 x P/S, high growth
Power tools (NCM Cylindrical)		2,199	3,299	3,299	3.9%	1.5 x P/S, high growth
ESS		254	381	381	0.4%	1.5 x P/S, stable growth
Equity income from Smoore (37% owned by EVE)	1,080		32,390	32,390	37.8%	30 x P/E, high growth
Business value total				85,622		
Net cash			(636)	(636)	-0.7%	
<b>Fair value total</b>				<b>84,987</b>		
Share count (mn)				969		
<b>Implied value per share (RMB)</b>				<b>87.7</b>		

Source: BofA Global Research estimates



## Yunnan Energy (002812 CH)

Given the nature of the battery separator industry, Yunnan Energy did not stop production during the Lunar New Year and it continues till date. The company intends to continue production and prepare for demand recovery. Despite a limited impact on Yunnan Energy's production, the entire auto and EV battery supply chain has seen disruption in both domestic and overseas markets and we believe the EV volume sales in 1H20 will see a significant slowdown and indirectly impact Yunnan Energy's shipment. Therefore, we lower our shipment forecast by 13%/13% in 2020/21E. We lower its sales forecast by 10%/10% and lower its earnings by 17%/16% in 2020/21E. On the other hand, we also factor in its preliminary sales and net income for 2019.

Our new PO is RMB60 (from RMB63), mainly as we lower our earnings forecast and roll over our valuation base from 2020E EPS to 2H20-1H20E EPS since we believe it is justified to be more forward-looking as its growth looks more promising in 2H20-2021. Our target P/E multiple is unchanged at 38x. We reiterate our Buy rating on Yunnan Energy as we acknowledge its leading position in China separator market and see it as the key beneficiary of continuously growing EV and EV battery industry in the long term.

**Table 34: Yunnan Energy – new vs. old**

(RMB mn)	2019F			2020F			2021F		
	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Net sales (consolidated basis)	3,054	3,160	3.5%	4,392	3,966	-9.7%	5,571	4,996	-10.3%
Separator shipment (mn sqm)	797	820	2.9%	1,422	1,239	-12.9%	2,028	1,767	-12.9%
Gross Profit	1,351	1,394	3.2%	2,062	1,781	-13.6%	2,659	2,333	-12.3%
Operating Profit (clean EBIT)	995	1,020	2.5%	1,588	1,345	-15.3%	2,052	1,785	-13.0%
Pretax income	1,040	1,062	2.2%	1,643	1,388	-15.6%	2,098	1,803	-14.0%
Net Income	908	932	2.7%	1,442	1,218	-15.6%	1,837	1,580	-14.0%
Net Income attribute to shareholder	<b>819</b>	<b>850</b>	<b>3.8%</b>	<b>1,325</b>	<b>1,101</b>	<b>-16.9%</b>	<b>1,691</b>	<b>1,424</b>	<b>-15.8%</b>
EPS	1.02	1.06	3.8%	1.65	1.37	-16.9%	2.10	1.77	-15.8%
<b>Key ratios (%)</b>									
Sales growth	24.3%	28.6%		43.8%	25.5%		26.8%	26.0%	
Separator shipment growth	70.0%	75.0%		78.6%	51.0%		42.6%	42.6%	
EPS growth	30.4%	35.4%		61.8%	29.5%		27.6%	29.3%	
Gross margin	44.3%	44.1%		47.0%	44.9%		47.7%	46.7%	
Operating margin (clean EBIT)	32.6%	32.3%		36.2%	33.9%		36.8%	35.7%	
Net margin	29.7%	29.5%		32.8%	30.7%		33.0%	31.6%	
OPEX to sales	11.7%	11.8%		10.8%	11.0%		10.9%	11.0%	

Source: BofA Global Research estimates

## CATL (300750 CH)

We factored in CATL 2019 preliminary earnings and also lower CATL EV battery shipment and lower sales 12%/16% in 2020-21E. We also cut our earnings by 12%/15% in 2020-21E respectively. Our new PO is RMB58 (from RMB63) from average of DCF, PE multiple and EV/sales valuation.

**Table 35: CATL – new vs old**

RMB mn	2019F			Old	2020F			Old	2021F		
	Old	New	diff. (%)		Old	New	diff. (%)		Old	New	diff. (%)
Revenue	44,819	45,546	1.6%	54,143	47,446	-12.4%		65,517	55,107	-15.9%	
Gross Profit	12,931	13,110	1.4%	15,049	13,167	-12.5%		17,904	15,043	-16.0%	
Operating Profit	4,942	4,962	0.4%	5,931	5,154	-13.1%		7,042	5,910	-16.1%	
Pretax income	5,548	5,525	-0.4%	6,664	5,887	-11.7%		7,849	6,717	-14.4%	
Net Income	4,796	4,733	-1.3%	5,763	5,096	-11.6%		6,793	5,815	-14.4%	
Net Income attribute to shareholder	4,430	4,357	-1.6%	5,388	4,721	-12.4%		6,378	5,400	-15.3%	
EPS	2.01	1.97	-1.6%	2.44	2.14	-12.4%		2.89	2.45	-15.3%	
<b>Key ratios (%)</b>											
Sales growth	51.4%	53.8%		20.8%	4.2%			21.0%	16.1%		
EPS growth	30.0%	27.8%		21.6%	8.4%			18.4%	14.4%		
Gross margin	28.9%	28.8%		27.8%	27.8%			27.3%	27.3%		
Operating margin	11.0%	10.9%		11.0%	10.9%			10.7%	10.7%		
Net margin	10.7%	10.4%		10.6%	10.7%			10.4%	10.6%		

Source: BofA Global Research estimates

**Table 36: CATL – valuation summary**

Valuation methodology	Implied value (RMB)	Upside/downside	Parameters
Methodology 1			
DCF	64		WACC of 11.8%
Methodology 2			
P/E multiple	64		30 x
Methodology 3			
EV/sales multiple	45		2 x
Target price (rounded)	58	-56%	

Source: BofA Global Research estimates





## Minth (425 HK)

We lower Minth's sales growth forecast in China again following our latest China auto sales forecast. We cut China sales by 8%/5% in 2020-21E. Besides, we slash Minth's North America and Europe sales growth by 3%/5% in 2020 respectively given the impact from COVID-19 has started to show globally. Upon the lower utilization given slower demand in auto market, we also cut our gross margin assumption and expect 2020 gross margin should see YoY erosion. Net net, we lower our earnings estimates by 11%/5% in 2020-21E respectively. Our new PO is HKD25 based on 14x PER (unchanged) over 2020E EPS. We maintain Buy on Minth despite we see near term earnings growth slow-down due to the COVID-19. We believe its product quality and also production efficiency will keep its leading position sustained.

**Table 37: Minth – new vs old**

	2019F			2020F			2021F		
(RMB mn)	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Consolidated sales	13,127	13,127	0.0%	14,509	13,600	-6.3%	16,208	15,565	-4.0%
China	7,316	7,316	0.0%	7,765	7,126	-8.2%	8,344	7,945	-4.8%
North America	2,658	2,658	0.0%	2,884	2,790	-3.3%	3,150	3,075	-2.4%
Europe	2,548	2,548	0.0%	3,280	3,102	-5.4%	4,123	3,951	-4.2%
Asia Pacific	606	606	0.0%	581	583	0.2%	591	594	0.4%
Gross Profit	4,308	4,308	0.0%	4,777	4,362	-8.7%	5,484	5,247	-4.3%
Operating Profit	2,427	2,427	0.0%	2,736	2,469	-9.8%	3,202	3,067	-4.2%
Pretax income	2,256	2,256	0.0%	2,536	2,269	-10.5%	2,988	2,854	-4.5%
Net Income before minority	1,895	1,895	0.0%	2,130	1,906	-10.5%	2,510	2,397	-4.5%
Net Income attribute to shareholder	1,835	1,835	0.0%	2,075	1,851	-10.8%	2,453	2,340	-4.6%
EPS	1.59	1.59	0.0%	1.80	1.61	-10.8%	2.13	2.03	-4.6%
<b>Key ratios (%)</b>									
Sales growth	4.6%	4.6%		10.5%	3.6%		11.7%	14.4%	
China	-4.2%	-4.2%		6.1%	-2.6%		7.5%	11.5%	
North America	11.8%	11.8%		8.5%	5.0%		9.2%	10.2%	
Europe	34.8%	34.8%		28.7%	21.7%		25.7%	27.4%	
Asia Pacific	-6.3%	-6.3%		-4.0%	-3.8%		1.7%	1.9%	
EPS growth	9.9%	9.9%		13.1%	0.9%		18.2%	26.4%	
Gross margin	32.8%	32.8%		32.9%	32.1%		33.8%	33.7%	
Operating margin	18.5%	18.5%		18.9%	18.2%		19.8%	19.7%	
Net margin	14.4%	14.4%		14.7%	14.0%		15.5%	15.4%	

Source: BofA Global Research estimates

## Huayu (600741 CH)

We factor in the negative impact of COVID-19 outbreak on Huayu, as almost 80% of its sales are generated from China market and SAIC remains the largest contributor to Huayu at 50-60%. In our view, slower growth in auto market in 1H20 should have an impact on Huayu. On the other hand, we reflect the contribution of 30% stake on Yanfeng Automotive Interior (YFAI), which was acquired by Huayu in early-February 2020. In 2019, YFAI recorded sales of RMB55.3bn and net income of RMB950mn. The deal will not impact its sales but earnings should reflect additional 30% contribution from YFAI. Net-net, we cut our sales forecast by 9%/6% in 2020/21E and lower our earnings by 10% in 2020.

Our new PO is RMB24, based on 11x 2020E EPS (unchanged). We reiterate Neutral rating on Huayu as we see limited earnings growth in the near term, given (1) more than 80% of its revenue comes from China auto market, and we see limited upside for Huayu following nearly a 9% decline in China auto market in 2020E, and (2) a fair valuation at 11x 2020E EPS.

**Table 38: Huayu – new vs. old**

RMB mn	2019F			2020F			2021F		
	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
<b>Sales (consolidated basis)</b>	<b>145,570</b>	<b>145,092</b>	<b>-0.3%</b>	<b>156,090</b>	<b>142,218</b>	<b>-8.9%</b>	<b>164,696</b>	<b>154,568</b>	<b>-6.1%</b>
Interior and exterior parts	95,965	94,654	-1.4%	101,465	93,639	-7.7%	105,368	101,818	-3.4%
Metal forming and dies/molds	9,820	9,916	1.0%	10,441	9,640	-7.7%	11,054	10,416	-5.8%
Functional parts	27,482	27,771	1.0%	31,152	26,864	-13.8%	34,159	29,676	-13.1%
Electronic and electric parts	4,301	4,108	-4.5%	4,686	4,071	-13.1%	5,770	4,799	-16.8%
Heat processing parts	695	695	0.0%	647	611	-5.6%	595	579	-2.8%
Gross Profit	20,962	21,178	1.0%	22,492	20,707	-7.9%	23,964	22,562	-5.9%
Operating Profit	5,052	5,163	2.2%	5,814	4,672	-19.6%	6,533	5,641	-13.7%
Investment income	3,940	3,936	-0.1%	4,040	4,036	-0.1%	4,200	4,196	-0.1%
Pretax income	9,781	9,888	1.1%	10,707	9,562	-10.7%	11,586	10,690	-7.7%
Net Income	8,693	8,789	1.1%	9,560	8,540	-10.7%	10,347	9,549	-7.7%
Net Income attribute to shareholder	6,787	6,774	-0.2%	7,533	6,767	-10.2%	8,219	7,687	-6.5%
EPS	2.15	2.15	-0.2%	2.39	2.15	-10.2%	2.61	2.44	-6.5%
<b>Key ratios (%)</b>									
Sales growth	-7.4%	-7.7%		7.2%	-2.0%		5.5%	8.7%	
Investment income growth	-22.2%	-22.3%		2.5%	2.5%		4.0%	4.0%	
EPS growth	-15.4%	-15.6%		11.0%	-0.1%		9.1%	13.6%	
Gross margin	14.4%	14.6%		14.4%	14.6%		14.6%	14.6%	
Operating margin	3.5%	3.6%		3.7%	3.3%		4.0%	3.6%	
Net margin	6.0%	6.1%		6.1%	6.0%		6.3%	6.2%	
OPEX to sales	10.9%	11.0%		10.7%	11.3%		10.6%	10.9%	

Source: BofA Global Research estimates



## Joyson (600699 CH)

China sales roughly accounted for 25% of Joyson's total sales. As of last week of February, Joyson's utilization came in at 40-70% across different production bases. Passive auto safety plant in Huzhou and Shanghai posted roughly 80%/40% utilization. Joyson's plant utilization has recovered to 90% in the first week of March. We factor in the negative impact of COVID-19 outbreak on its business in China from lower auto sales growth in 1H20, and also consider potential impact from its overseas operations. We cut our sales forecast by 5%/5% for functional parts business and 8%/8% for auto electronics business in 2020/21E. We also lower its operating margin assumption on potential lower utilization and expense on business consolidation. Net-net, we lower our earnings forecast by 13%/2% in 2020/21E.

We lift our target multiple from 15x to 21x in our P/E valuation. Our target multiple is same as its historical past two-years average PER. In our view, the historical average PER is justified given Joyson has penetrated into Tesla China, which has been viewed as an important share-gainer in the long term in China market. Though contribution seems to be limited, we believe its valuation should be higher than peers' average at 13-15x. Our new PO is RMB14.3. We reiterate our Underperform rating on Joyson as we believe its current valuation (36x 2020E EPS) looks stretched given its earnings growth profile.

**Table 39: Joyson – new vs. old**

	2019F			2020F			2021F		
RMB mn	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Consolidated sales	61,761	61,761	0.0%	58,003	56,381	-2.8%	61,931	60,872	-1.7%
Auto safety system	48,685	48,685	0.0%	44,083	43,397	-1.6%	46,926	46,879	-0.1%
Functional parts	3,513	3,513	0.0%	3,583	3,406	-4.9%	3,678	3,502	-4.8%
Auto electronics	9,074	9,074	0.0%	9,842	9,085	-7.7%	10,826	9,994	-7.7%
Gross Profit	10,680	10,680	0.0%	10,307	10,055	-2.4%	11,116	10,962	-1.4%
Operating Profit	2,773	2,773	0.0%	2,993	2,800	-6.5%	3,321	3,272	-1.5%
Pretax income	2,223	2,223	0.0%	2,136	1,942	-9.0%	2,505	2,455	-2.0%
Net Income	1,610	1,610	0.0%	1,539	1,407	-8.6%	1,807	1,777	-1.7%
Net Income attribute to shareholder	954	954	0.0%	1,019	887	-12.9%	1,232	1,202	-2.4%
Net income (adj. for one-off items)	1,086	1,086	0.0%	1,079	947	-12.2%	1,292	1,262	-2.3%
EPS (RMB)	0.73	0.73	0.0%	0.78	0.68	-12.9%	0.95	0.92	-2.4%
<b>Key ratios (%)</b>									
Sales growth	9.9%	9.9%		-6.1%	-8.7%		6.8%	8.0%	
Auto safety system sales growth	13.5%	13.5%		-9.5%	-10.9%		6.4%	8.0%	
Functional parts sales growth	-2.1%	-2.1%		2.0%	-3.0%		2.7%	2.8%	
Auto electronics sales growth	-1.7%	-1.7%		8.5%	0.1%		10.0%	10.0%	
EPS growth	-26.0%	-26.0%		6.8%	-7.0%		20.9%	35.5%	
Net income (adj. for one-off items) growth	19.1%	19.1%		-0.6%	-12.7%		19.8%	33.2%	
Gross margin	17.3%	17.3%		17.8%	17.8%		17.9%	18.0%	
Operating margin	4.5%	4.5%		5.2%	5.0%		5.4%	5.4%	
Net margin	2.6%	2.6%		2.7%	2.5%		2.9%	2.9%	
OPEX to sales	12.8%	12.8%		12.6%	12.9%		12.6%	12.6%	

Source: BofA Global Research estimates

## Zhongsheng (881 HK)

As of first week of March, Zhongsheng has reopened about 98% of total stores. Luxury brand outperformed mass-market brands and demand also recovered faster than mass-market brands. Currently, Zhongsheng's inventory level is around one month, and most OEMs allowed a delay in payment to support dealers' cash flow. We cut sales forecast by 2%/3% and lower EPS by 7%/4% in 2020/2021, to factor in weak new car sales/AM services in 1H20. Our new PO is HKD33.6 (from HKD36.1), based on 13x 2020E EPS.

**Table 40: Zhongsheng – new vs. old**

	2019F			2020F			2021F		
	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
<b>RMB mn</b>									
Consolidated sales	125,679	125,679	0.0%	147,120	144,358	-1.9%	171,641	167,280	-2.5%
New car	108,108	108,108	0.0%	125,896	123,563	-1.9%	146,302	142,545	-2.6%
After-sales and accessories business	17,571	17,571	0.0%	21,224	20,796	-2.0%	25,339	24,735	-2.4%
Other income (commission etc.)	3,131	3,131	0.0%	3,788	3,725	-1.7%	4,582	4,485	-2.1%
Gross Profit	11,428	11,428	0.0%	13,455	13,109	-2.6%	15,910	15,418	-3.1%
Operating Profit	7,710	7,710	0.0%	9,594	9,039	-5.8%	11,825	11,455	-3.1%
Pretax income	6,359	6,359	0.0%	8,049	7,494	-6.9%	10,128	9,759	-3.7%
Net Income	4,547	4,547	0.0%	5,755	5,359	-6.9%	7,242	6,977	-3.7%
Net Income attribute to shareholder	4,482	4,482	0.0%	5,685	5,289	-7.0%	7,167	6,902	-3.7%
EPS	1.97	1.97	0.0%	2.50	2.33	-7.0%	3.15	3.04	-3.7%
<b>Key ratios (%)</b>									
Sales growth	16.7%	16.7%		17.1%	14.9%		16.7%	15.9%	
EPS growth	23.2%	23.2%		26.8%	18.0%		26.1%	30.5%	
Gross margin	9.1%	9.1%		9.1%	9.1%		9.3%	9.2%	
Operating margin	6.1%	6.1%		6.5%	6.3%		6.9%	6.8%	
Net margin	3.6%	3.6%		3.9%	3.7%		4.2%	4.2%	

Source: BofA Global Research estimates



## Yongda (3669 HK)

According to management, excluding the less working days in January due to Lunar New Year holiday, Yongda's January volume sales were better than expectation. Yongda also estimated February new car sales volume will be down 70-80% YoY as BMW restarted its plant in mid-Feb. While BMW offered a longer grace period (nearly double) for its loan to dealers, to support dealers' cash flow: currently, two months grace period (no interest expense) for domestic-made vehicles and four months for imported vehicles. BMW also offered 2% special rebate in advance to support dealers. Yongda's inventory level is less than one month.

As of first week of March, Yongda has re-opened around 95% of total stores, and expected all stores to resume operation by mid-March. Aftermarket business recovered since early March. Yongda maintained new car sales target of 10% YoY in 2020, and it expected ASP to increase, led by Porsche's contribution in 2020. We lower Yongda's sales estimate by 3%/3%, and cut EPS by 11%/4% in 2020/2021 to reflect the negative impact from COVID-19 in 1H20. Our new PO is HKD10.1 (from HKD11.6), based on 10x 2020E EPS.

**Table 41: Yongda – new vs. old**

	2019F			2020F			2021F		
RMB mn	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Revenue	60,771	60,771	0.0%	66,227	64,286	-2.9%	72,218	70,105	-2.9%
New car	51,004	51,004	0.0%	55,201	53,577	-2.9%	59,759	58,005	-2.9%
After-sales services	8,980	8,980	0.0%	10,200	9,899	-3.0%	11,561	11,219	-3.0%
Automobile leasing services	449	449	0.0%	487	472	-3.1%	533	517	-3.1%
Proprietary finance business	546	546	0.0%	548	548	0.0%	576	576	0.0%
Others	-207	-207	0.0%	-209	-209	0.0%	-211	-211	0.0%
Commission income	1,175	1,175	0.0%	1,309	1,269	-3.1%	1,472	1,427	-3.1%
Consolidated revenue	61,946	61,946	0.0%	67,536	65,555	-2.9%	73,690	71,532	-2.9%
Gross Profit	5,753	5,753	0.0%	6,552	6,305	-3.8%	7,299	7,091	-2.9%
Operating Profit	2,735	2,735	0.0%	3,424	3,138	-8.3%	4,005	3,890	-2.9%
Pretax income	2,009	2,009	0.0%	2,608	2,322	-11.0%	3,101	2,986	-3.7%
Net Income	1,507	1,507	0.0%	1,956	1,741	-11.0%	2,326	2,240	-3.7%
Net Income attribute to shareholder	1,432	1,432	0.0%	1,886	1,671	-11.4%	2,256	2,170	-3.8%
EPS	0.78	0.78	0.0%	1.03	0.91	-11.4%	1.23	1.18	-3.8%
Key ratios (%)									
Sales growth	9.9%	9.9%		9.0%	5.8%		9.0%	9.1%	
EPS growth	14.2%	14.2%		31.7%	16.7%		19.6%	29.8%	
Gross margin	9.5%	9.5%		9.9%	9.8%		10.1%	10.1%	
Operating margin	4.5%	4.5%		5.2%	4.9%		5.5%	5.5%	
Net margin	2.5%	2.5%		3.0%	2.7%		3.2%	3.2%	

Source: BofA Global Research estimates

## China Grand Auto

We lower China Grand's sales forecast by 2.4%/1.6% in 2020/21E and lower earnings forecast by 8%/4%, respectively. Our new PO is RMB3.4.

**Table 42: China Grand – new vs. old**

	2019F			2020F			2021F		
RMB mn	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
Net sales (consolidated basis)	168,792	168,792	0.0%	173,894	169,762	-2.4%	180,844	177,883	-1.6%
Gross Profit	16,683	16,683	0.0%	17,241	16,930	-1.8%	17,873	17,601	-1.5%
Operating Profit	8,194	8,194	0.0%	8,808	8,513	-3.4%	9,117	8,984	-1.5%
Pretax income	4,957	4,957	0.0%	5,380	5,085	-5.5%	5,728	5,594	-2.3%
Net Income	3,683	3,683	0.0%	4,047	3,775	-6.7%	4,308	4,154	-3.6%
Net Income attribute to shareholder	2,976	2,976	0.0%	3,352	3,080	-8.1%	3,603	3,449	-4.3%
Net income (adj. for one-off items)	2,635	2,635	0.0%	3,011	2,738	-9.1%	3,262	3,107	-4.7%
EPS	0.36	0.36	0.0%	0.41	0.38	-8.1%	0.44	0.42	-4.3%
<b>Key ratios (%)</b>									
Sales growth	1.6%	1.6%		3.0%	0.6%		4.0%	4.8%	
EPS growth	-8.3%	-8.3%		12.6%	3.5%		7.5%	12.0%	
Gross margin	9.9%	9.9%		9.9%	10.0%		9.9%	9.9%	
Operating margin	4.9%	4.9%		5.1%	5.0%		5.0%	5.1%	
Net margin	2.2%	2.2%		2.3%	2.2%		2.4%	2.3%	
OPEX to sales	5.0%	5.0%		4.8%	5.0%		4.8%	4.8%	

Source: BofA Global Research estimates

## Investment Rationale

### BAIC Motor

We have a Buy rating on BAIC mainly due to mild growth of Beijing Benz Brand and its attractive valuation

### BYD

We have Neutral on BYD-H as we see below positives to drive its growth: 1) launch of blade battery that could provide higher energy density and also lower cost vs. NCM (lithium nickel cobalt manganese) battery, 2) launch of Han model which applied blade battery should generate higher margin and profitability

### Dong Feng

We have a Buy rating on DFM as: as it plans to cut loss on DF PSA on potential plant closure to improve utilization rate, and undemanding valuation

### EVE

We assign a Buy rating. We expect EVE's growth to be supported by: (1) rapidly growing EV battery shipment in 2020E and beyond, (2) robust demand for ETC battery and TWS battery in 2019-20, (3) solid equity income growth from Smoore, and (4) addition of new clients like TTI and Greenworks in the power tool industry.

### Minh

We have a Buy on Minh as we like: 1) solid sales growth driven by Europe sales, where margin is higher, 2) gross margin expansion in 2021, 3) new products launch create incremental growth.

### Yunnan Energy

We expect Yunnan Energy to post 30% earnings growth in 2019-21E thanks to (1) separator as a key important revenue growth driver and aggressive capacity expansion plan to support its growth ahead, (2) certification from overseas clients which drives rising export sales with shipment CAGR of 2019-21E at nearly 95%, (3) superior operation and efficiency management over peers to help maintaining margin from price pressure upon industry headwind.



## Price objective basis & risk

### BAIC Motor (BMCLF)

Our PO of HKD4.4 is derived from average of SOTP and DCF valuation. We apply the average of SOTP and DCF (same as Brilliance) to better capture BAIC's long-term profitability/FCF.

SOTP valuation:

Our SOTP-based valuation is HKD4.2. We apply P/E to BBAC's 2020E earnings, P/E to BHMC's 2020E earnings and P/B to Beijing Brand given it is still loss-making.

We assign same target multiples (6x) for BBAC and BHMC.

We apply P/B for Beijing Brand and assign a conservative multiple (0.2x 2020E book value, as it is long-time loss maker, similar to Brilliance's CV business) to derive the fair value.

Finally, we apply a 50% discount to our net asset value (NAV) to derive our SOTP-based PO, considering BAIC's historical average discount of market cap/NAV.

DCF valuation:

A fair value of HKD4.6 is derived from our DCF calculation, with an assumption of 0% FCF perpetuity growth and 9.8% WACC. As for WACC, we use a 3.5% risk-free rate and 12% market return (same to all of our auto OEMs coverage) to calculate.

Upside risks: Stronger rebound of Beijing Hyundai, more successful model launches and faster turnaround on Beijing Brand.

Downside risks: Weak macro, fierce competition, and dull luxury brand demand.

### Brilliance Auto (BCAUF)

We derive our PO of HK\$9.0 from the average of DCF and SOTP fair values.

DCF: We derive our DCF-based fair value of HK\$9.5 assuming 1% FCF perpetuity growth and 11.9% WACC. As for WACC, we use 3.5% risk-free rate and 12% market return to calculate and derive its discount rate (WACC) of 11.9%.

SOTP: Our SOTP-based fair value is HK\$8.4, given the company has two different businesses: mini bus/MPV (loss-making) and Brilliance BMW (high earnings growth). We apply 7x to our 2020E Brilliance BMW equity income (50% held by Brilliance) to derive its estimated value. Our target multiple is in line with its peers BHMC and BBAC. While the mini bus/MPV business should improve in the long term, we think it will not turn profitable before 2021. We thus assign 0.5x P/B to the business, the same as for Beijing Brand under BAIC as both are not profitable. Finally, we apply 25% discount to our net asset value (NAV) to derive our SOTP-based PO, similar to Brilliance's historical discount of market cap/NAV.

Upside risks: Stronger BMW product cycle and faster turnaround of the CV business.

Downside risks: Weak macro, fierce competition and dull luxury brand demand, Brilliance lowers its stake in BBA and thus its long-term earnings profile is adversely affected.

### BYD (BYDDF)

Our PO for BYD-H is HKD45.1. We derive our PO from a sum-of-the-parts (SOTP) valuation. We apply 2020 P/E, P/S and EV/sales for different businesses, based on peer multiples.

Auto -- ICEV business: We assign a 10x P/E target to BYD's 2020E PAT, similar to China peers.



Auto -- EV battery business, we apply 5x P/S to its 2021E sales. Our target multiple of 5x P/S is slightly lower than CATL's current P/S (5.5-6x P/S).

Auto -- IGBT manufacturing business, we apply 10x P/S to its IGBT 2021E sales. We benchmark StarPower Semiconductor (603290 CH, non-rated) valuation at 20x+ P/S,

Auto -- other EV components, we apply 1x P/S to its sales in 2021. 1x P/S is considered to be similar to peers average.

Consumer electronics -- battery business: We apply 1.5x for the EV battery business, due to long-term growth outlook (higher than Samsung SDI's estimated valuation 0.8x EV/sales as BYD is profit making vs. Samsung SDI's loss-making in 2020).

Consumer electronic business -- handset: We apply BYDE's market cap as the enterprise value and continue to apply H-share listed tech companies' average P/E, 8x (unchanged), for non-BYDE's electronics business' PBT.

SkyRail: We continue to assign 6x PER (unchanged), similar to China auto sector average.

Downside risks: failure to improve operational metrics, as measured by plant utilization, average engine size, NEV competition.

Upside risk: speed up SUV sales, success on more NEV models.

#### **BYD (XYMPF)**

Our PO for BYD-A is RMB38.8. We derive our PO from a sum-of-the-parts (SOTP) valuation. We apply 2020 P/E, P/S and EV/sales for different businesses, based on peer multiples.

Auto -- ICEV business: We assign a 10x P/E target to BYD's 2020E PAT, similar to China peers.

Auto -- EV battery business, we apply 5x P/S to its 2021E sales. Our target multiple of 5x P/S is slightly lower than CATL's current P/S (5.5-6x P/S).

Auto -- IGBT manufacturing business, we apply 10x P/S to its IGBT 2021E sales. We benchmark StarPower Semiconductor (603290 CH, non-rated) valuation at 20x+ P/S,

Auto -- other EV components, we apply 1x P/S to its sales in 2021. 1x P/S is considered to be similar to peers average.

Consumer electronics -- battery business: We apply 1.5x for the EV battery business, due to long-term growth outlook (higher than Samsung SDI's estimated valuation 0.8x EV/sales as BYD is profit making vs. Samsung SDI's loss-making in 2020).

Consumer electronic business -- handset: We apply BYDE's market cap as the enterprise value and continue to apply H-share listed tech companies' average P/E, 8x (unchanged), for non-BYDE's electronics business' PBT.

SkyRail: We continue to assign 6x PER (unchanged), similar to China auto sector average.

Upside risk: speed up SUV sales, success on more NEV models.

#### **CATL (XMOQF)**

We derive our PO of RMB177 from an average of DCF, EV/EBITDA and EV/sales valuation.

DCF valuation: A fair value of RMB188 is derived from our DCF valuation, with an assumption of 2% FCF perpetual growth and 9.9% WACC.





EV/EBITDA valuation: A fair value of RMB185 is derived from 32x target EV/EBITDA over 2021E earnings. Our target multiple of 32x is roughly 2SD over its average of its historical average EV/EBITDA at 22x over 2021E EPS. We apply 2021E EBITDA as our valuation base as we believe EV sales will be negatively impacted by COVID-19 outbreak in 1H20.

EV/sales valuation: A fair value of RMB55 is derived from 2.0x target EV/sales over 2020E sales. Our target multiple of 2x is higher than industry average P/S ratio at 1.8x in 2019 and 1.4x 2020, but in line with Tesla and SDI's 3-year average.

Upside risks: Better-than-expected NEV sales, raw material price, EV battery cost declining faster than expected, partnerships with OEMs/faster share gains.

Downside risks: NEV subsidy goes to zero earlier than expected, raw material price hike, rising US-China tension negatively impact NEV and EV battery shipment, foreign EV battery makers will speed up capacity expansion in China through JVs

### **China Grand Auto (XMURF)**

Our PO is RMB3.4, based on 9x 2020E EPS. We derive P/E multiple of 9x based on its two standard deviations (2.1x) below average P/E (13.5x) over the past two years, mainly as we see its EPS CAGR to be much slower (2019-21E EPS CAGR is 8% vs. 40% EPS CAGR in 2015-17), as it acquired Baoxin in 2016 and its 2017 EPS growth is high, and mass-market brands are expected to post low growth over the next three years due to competition.

Upside risks: better-than-expected auto sales, improved gross profit margin, potential government stimulation of the market.

Downside risks: slower-than-expected auto sales, fierce competition to narrow new cars' margin, slower-than-expected dealership network expansion, narrowing interest spread, slowing loan growth amid credit tightening.

### **Dong Feng (DNFGF)**

Our PO of HKD8.1 is derived from a 50/50 average of P/E and DCF methodologies.

DCF methodology: A fair value of HKD9.8, assuming 0% FCF perpetuity growth and 9.8% WACC.

P/E methodology: We derive our P/E-based PO of HKD6.4 by applying a target P/E of 5x (average PER in the past three years, which covers the up- and down-cycles) to DFM's 2020E EPS.

Downside risks: Worse-than-expected economic cycle and interest rates, no improvement in operational metrics as measured by plant utilization, average engine size, etc, macro-related risks, competition, foreign partner increasing stake in JV.

### **EVE (XEVEF)**

Our PO of RMB77 is derived from DCF, P/E, and SOTP valuation.

DCF: A fair value of RMB67.0 is derived from our DCF valuation, with assumptions of 2% FCF perpetual growth and 11.7% WACC.

P/E: A fair value of RMB74.8 is derived from 36x target P/E on 2020E EPS. The 36x target multiple is 1SD (11x) over its 3- year historical average P/E of 25x.

SOTP: A fair value of RMB87.7 is derived from our SOTP valuation.



**Lithium primary cell:** We assign a P/E target multiple of 12x for EVE's lithium primary cell business' 2020E EBIT to derive our estimated value.

**Consumer electronics:** We assign a P/E target multiple of 12x over EVE's consumer electronics business' 2020E EBIT to derive our estimated value.

**TWS:** We apply 40x P/E over EVE's 2021E EBIT for TWS business. We benchmark Varta's valuation at nearly 40x 2021E EPS.

**EV battery:** Our target multiple of 5x EV/sales for EVE's battery business is not considered as demanding given current EV/sales of CATL at 5.5-6.0x over 2020E sales.

**Electronics tools:** Our target multiple is 1.5x EV/sales over its 2020E, which does not seem to be aggressive vs. 2x in CATL's valuation.

**ESS:** We assign EV/sales target multiple of 1.5x over EVE's ESS business 2020E sales to derive our estimated value.

**Smoore:** EVE holds around 37.55% of Smoore's stake and recognizes its income as investment income. We derive its value by assigning 30x P/E over its 2020E EBIT.

**Downside risk:** EV purchase subsidy cut, uncertainty in investment income from Smoore

#### **GAC (GNZUF)**

Our PO of HK\$10.0 is derived from an average of P/E and DCF methodologies. We apply these two valuation metrics to our entire covered OEMs companies in greater China.

**DCF methodology:** We derive a fair value of HK\$11.5 by using DCF calculation, with the following assumptions: 1.0% FCF perpetuity growth and 12.7% WACC.

**P/E methodology:** We derive our P/E-based PO of HK\$8.5 by applying a target P/E of 11x (2 standard deviations over three-year average) to GAC-H's 2020E EPS. Our target P/E is not aggressive as the implied PEG is slightly lower than H-share listed peer average PEG (0.9x).

**Upside risks** are stronger than expectation share gain, new model successful launch

**Downside risks** are macro, competition, foreign JV partner to increase stake in JV

#### **GAC (XGNHF)**

Our PO of RMB10.5 is derived from an average of P/E and DCF methodologies. We apply these two valuation metrics to all greater China OEMs under our coverage.

**DCF methodology:** We derive a fair value of RMB10.5 by using DCF calculation, with the following assumptions: 1.0% FCF perpetuity growth and 12.7% WACC.

**P/E methodology:** We derive our P/E-based PO of RMB10.6 by applying 15x GAC-A 2020E EPS (three-year average PER).

**Upside risks** are stronger-than-expected share gain, successful launch of new model.

**Downside risks** are macro, competition, foreign partner increasing stake in JV.

#### **Geely (GELYF)**

Our PO of HK\$15.2 is derived from an average of P/E and DCF methodologies. We see P/E as an appropriate metric as it captures the sustained earnings growth we believe the firm will achieve. DCF is a suitable valuation methodology as it not only reflects the company's sustained earnings growth, but also its cash-flow management capabilities, including working capital and capex.



DCF methodology: A fair value of HK\$15.5 is derived from our DCF calculation, with an assumption of 1% FCF perpetuity growth and 13.5% WACC.

P/E methodology: We derive P/E-based fair value of HK\$14.8, based on 14x 2020E EPS. Our target multiple roughly equates to 1SD higher than historical average. We expect Geely to enter into an upcycle on (1) leading Chinese own brand auto OEMs, which offer a premium valuation among other local OEMs, (2) continuous share gain amid market downturn through its six new models launches in 2019.

Upside risks: (1) stronger industry volume growth, (2) eased price war initiated by peers.  
Downside risks: (1) a delay in the launch of new products, (2) restocking results in higher inventory, and (3) new products execution risk in 2020.

#### **Great Wall Motor (GWLLF)**

Our PO for GWM-H of HK\$5.1 is derived from an average of P/E and DCF methodologies.

DCF methodology: A fair value of HK\$6.4 is derived from our DCF calculation, with an assumption of 1% FCF perpetuity growth and 11.6% WACC.

P/E methodology: We derive our P/E-based valuation of HK\$3.8 by applying a target P/E of 8x (1SD lower than its five-years average PER) to GWM-H's 2020E EPS.

Upside risks: Success of WEY launch and stronger-than-expected margin recovery.  
Downside risks: Weak macro, competition, Haval brand aging, CAFC credit deficit.

#### **Great Wall Motor (XGWMF)**

Our PO for GWM-A of RMB6.2 is derived from an average of P/E and DCF methodologies.

DCF methodology: A fair value of RMB5.6 is derived from our DCF calculation, with an assumption of 1% FCF perpetuity growth and 11.6% WACC.

P/E methodology: We apply 16x (5-years average PER) to GWM-A's 2020E EPS to derive our P/E-based fair value (RMB6.7). We think the multiple is justified given its outperforming industry growth and share gain.

Upside risks: Success of WEY launch and stronger-than-expected margin recovery.  
Downside risks: Weak macro, competition, Haval brand aging, CAFC credit deficit.

#### **Huayu (XHASF)**

Our PO is RMB24, based on 11x 2020E EPS. Our target P/E multiple (11x) is roughly 1SD over its historical average PER. We believe our target PE multiple is not aggressive as it is similar/lower to Chinese auto-parts makers' average. The market has high expectations on EV/ ADAS areas, and is willing to give a higher P/E to those companies supply-related products.

Upside risk: stronger auto demand, faster margin expansion in overseas plants  
Downside risks: Sluggish economic and industry growth, rise in expenses due to consolidation of Shanghai Koito, short-term FX volatility, delay in EV products' launch.

#### **Joyson (XQMWF)**

Our PO of RMB14.3 is based on P/E valuation (21x of 2020E EPS). Our target multiple is same as its historical past two-years average PER. In our view, the historical average PER is justified given Joyson has penetrated into Tesla China, and we believe its valuation should be higher than peers' average at 13-15x.



Upside risks are: faster than expected gross margin recovery of auto safety business, faster share gain in safety business, better expense control.

### **Minth (MINTH)**

Our PO is HKD25 based on 14x 2020E EPS.

We derive our target P/E multiple (14x) based on 1 standard deviation (2x) over Minth's past five-year historical average PER (12x). Our target multiple is also supported by PEG methodology, as it suggests only 1.1x PEG based on its 2019-21E earnings CAGR vs. 1.3x Chinese peers' average PEG over 2019-21E.

Upside risks: stronger growth in lightweight ADAS products, cross-selling in new aluminum products, stronger demand in global auto.

Downside risks: escalation of US-China trade tension, volatile margin in overseas plants, low margin for new business in initial stage, and FX volatility.

### **NIO (NIO)**

Our PO of US\$3.7/ADS is derived from a probability-weighted scenario analysis of EV/Sales and DCF methodologies.

EV/Sales methodology: We derive our EV/Sales-based fair value of US\$3.7 from probability-weighted scenario analysis covering bear case (25% probability), base case (50%), and bull case (25%), and apply target EV/Sales of 1.9x, 2.3x and 2.7x onto different sales forecasts in 2021, respectively. We apply 1.9x EV/Sales, which is roughly at 30% discount to Tesla's past three-year EV/sales, to our bear case assumption sales, 2.7x EV/Sales ratio, which is the same as Tesla's past three-year average EV/sales, in our bull case, and 2.3x EV/sales, the average of the two above, as base case.

DCF methodology: We derive a fair value of US\$3.6 based on our DCF valuation, with an assumption of 1% FCF perpetuity growth and 9.1% WACC.

Upside risks: stronger-than-expected demand driven by more policy support on EV, faster-than-expected share gain, etc.

Downside risks: slower production efficiency improvement, rising competition, pricing pressure associated with falling EV subsidy.

### **SAIC Motor (XZNF)**

We derive our PO of RMB27 from an average of P/E and DCF methodologies. We see P/E as an appropriate metric as it captures the sustained earnings growth we believe the firm will achieve. DCF is a suitable valuation methodology as it not only reflects the company's sustained earnings growth, but also its cash-flow management capabilities, including working capital and capex.

P/E methodology fair value:

We derive our P/E-based value of RMB22.3 by applying a target P/E of 11x to SAIC's 2020E EPS, which is the 1 SD above average of its 5-year historical average. We see SAIC to re-rate as it will be the major beneficiary of government's supportive policy due to its leading position in China

DCF methodology fair value:

A fair value of RMB31.2 is derived from our DCF calculation -- we assume 1% FCF perpetuity growth and 9.3% WACC.



Downside risks: Slowdown in macro and industry growth, intensified pricing competition from peers, slower product launch, less-than-expected improvement in SAIC PV's earnings.

Upside risks: Stronger sales in SAIC VW and SAIC GM, margin expansion on ASP hike.

### **Yongda (CYYHF)**

We derive our PO of HKD10.1 from our target P/E multiple (10x - at the low end of the China industry average P/E of 10-12x) based on 0.5SD above Yongda's past three-year average P/E (8.5x) over its 2020E EPS. We believe our target multiple is appropriate as we see Yongda as one of the dealers having higher growth than the industry average.

Downside risks to our PO: weak macro, price discount and import tax hike.

### **Yunnan Energy (XLGFF)**

We derive our PO of RMB60 by applying 38x P/E over 2020E EPS. Our target multiple of 38x is 1SD above its past 2-year average trading P/E and is justified by PEG at 1.2x vs peers' average at 1.1-1.3x. We are consistent in using P/E valuation methodology for auto parts (Nexteer, Minth, etc) and EV battery & supply chain (CATL) across the board. We believe P/E is a suitable methodology for Yunnan Energy as it mainly focuses on separator business, which contributes over 60% of its total sales and over 80% of its gross profit.

Downside risks: lower growth in EV industry leading to lower-than-expected shipment growth, lower capacity utilization rate dragging gross margin, price drop on subsidy cut, more fierce than expected competition, and technology disruption from solid-state battery.

### **Zhongsheng Auto (XGZHF)**

Our PO of HK\$33.6 is based on 13x 2020E EPS. We derive our target P/E multiple (13x), based on 1SD over Zhongsheng's past five years' average P/E (11.5x). We believe using a five-year average P/E better captures a dealer's upcycle and downcycle as a whole.

Upside risks: better-than-expected auto sales, improved gross profit margin  
Downside risks: slower-than-expected auto sales, fierce competition to narrow new cars' margin, slower-than-expected dealership network expansion, narrowing interest spread, slowing loan growth amid credit tightening.

## **Analyst Certification**

We, Ming Hsun Lee, CFA and Jessie Lo, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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BofA Securities is currently acting as a financial advisor to General Motors Co in connection with its proposed sale of its Thailand manufacturing plant to Great Wall Motor Co Ltd, which was announced on February 16, 2020.



**APR - Autos Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	BAIC Motor	BMCLF	1958 HK	Ming Hsun Lee, CFA
	Brilliance Auto	BCAUF	1114 HK	Ming Hsun Lee, CFA
	Dong Feng	DNFGF	489 HK	Ming Hsun Lee, CFA
	EVE	XEVFF	300014 CH	Ming Hsun Lee, CFA
	GAC	GNZUF	2238 HK	Ming Hsun Lee, CFA
	Geely	GELVF	175 HK	Ming Hsun Lee, CFA
	Hero Motocorp	HRHDF	HMCL IN	Sahil Kedia
	Hyundai Glovis	GLVIF	086280 KS	Chris Yun
	Hyundai Mobis	HYPLF	012330 KS	Chris Yun
	Hyundai Motor Company	HYMLF	005380 KS	Chris Yun
	Isuzu Motors	ISUZF	7202 JP	Kei Nihonyanagi
	Kia Motors Corporation	KIMTF	000270 KS	Chris Yun
	Mahindra & Mahindra	MAHHF	MM IN	Sahil Kedia
	Maruti Suzuki	MUDGF	MSIL IN	Sahil Kedia
	Minth	MNTHF	425 HK	Jessie Lo
	Motherson Sumi	XMSUF	MSS IN	Sahil Kedia
	PARK24	PKCOF	4666 JP	Kei Nihonyanagi
	SAIC Motor	XZNJF	600104 CH	Ming Hsun Lee, CFA
	Suzuki Motor	SZKMF	7269 JP	Kei Nihonyanagi
	Tata Motors	TTM	TTM US	Sahil Kedia
	Tata Motors	XTTSF	TTMT IN	Sahil Kedia
	Toyota Motor	TOYOF	7203 JP	Kei Nihonyanagi
	Toyota Motor	TM	TM US	Kei Nihonyanagi
	Yongda	CYYHF	3669 HK	Ming Hsun Lee, CFA
	Yunnan Energy	XLGFF	002812 CH	Jessie Lo
	Zhongsheng Auto	XGZHF	881 HK	Ming Hsun Lee, CFA
<b>NEUTRAL</b>				
	Aisin Seiki	ASEKF	7259 JP	Kei Nihonyanagi
	Ashok Leyland	XDBVF	AL IN	Sahil Kedia
	Bajaj Auto	XBJBF	BJAUT IN	Sahil Kedia
	BYD	BYDDF	1211 HK	Ming Hsun Lee, CFA
	DENSO	DNZOF	6902 JP	Kei Nihonyanagi
	Eicher Motors	XEICF	EIM IN	Sahil Kedia
	Fuyao Glass	XFGIF	600660 CH	Matty Zhao
	Fuyao Glass	XFUYF	3606 HK	Matty Zhao
	Honda Motor	HMC	HMC US	Kei Nihonyanagi
	Honda Motor	HNDAF	7267 JP	Kei Nihonyanagi
	Huayu	XHASF	600741 CH	Jessie Lo
	Nexteer	NTXVF	1316 HK	Jessie Lo
	NIO	NIO	NIO US	Ming Hsun Lee, CFA
	Subaru Corp	FUJHF	7270 JP	Kei Nihonyanagi
	Subaru Corp	FUJHY	FUJHY US	Kei Nihonyanagi
	Yamaha Motor	YAMHF	7272 JP	Kei Nihonyanagi
<b>UNDERPERFORM</b>				
	Amara Raja	XAMFF	AMRJ IN	Sahil Kedia
	Astra International	PTAIF	ASII IJ	Swati Chopra
	Bharat Forge	XUUVF	BHFC IN	Sahil Kedia
	BYD	XYMPF	002594 CH	Ming Hsun Lee, CFA
	CATL	XMOQF	300750 CH	Ming Hsun Lee, CFA
	China Grand Auto	XMURF	600297 CH	Ming Hsun Lee, CFA
	Exide Industries	XEDRF	EXID IN	Sahil Kedia
	GAC	XGNHF	601238 CH	Ming Hsun Lee, CFA
	Great Wall Motor	GWLLF	2333 HK	Ming Hsun Lee, CFA
	Great Wall Motor	XGWMF	601633 CH	Ming Hsun Lee, CFA
	Hino Motors	HINOF	7205 JP	Kei Nihonyanagi
	Joyson	XQWVF	600699 CH	Jessie Lo
	Mazda Motor	MZDAF	7261 JP	Kei Nihonyanagi
	Mitsubishi Motors	MMTOF	7211 JP	Kei Nihonyanagi
	Nissan Motor	NSANF	7201 JP	Kei Nihonyanagi
	Nissan Motor	NSANY	NSANY US	Kei Nihonyanagi
	TVS Motor	XFKMF	TVSL IN	Sahil Kedia



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Buy	40	43.96%	Buy	27	67.50%
Hold	28	30.77%	Hold	18	64.29%
Sell	23	25.27%	Sell	11	47.83%

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