

## Hesai

# Eyes on strong ADAS shipment growth, overseas order confirmation; PO USD9.6

Reiterate Rating: BUY | PO: 9.60 USD | Price: 6.29 USD

## Share price has corrected to an attractive level

Hesai's share price has corrected over 40% since Nov 2023, given 1) concern over Cruise robotaxi accident which might impact the LiDAR units it source from Hesai in 2024, 2) media articles claiming Hesai's Lidars pose national security, cybersecurity, and privacy risks to the US – which Hesai said were false claims in Nov 2023 (see more [Hesai: 3Q23 GPM surprises on upside; solid SOP pipeline into 2024; new PO USD16.14 November 2023](#)). Despite the headwind on newsflow, we see the company's shipment, order confirmation and growth is very on track of guidance and our expectation. We believe its share price has come down to an attractive level as of now (0.9x 2024E EV/sales).

## 2023/24 growth on track

Hesai announced preliminary 4Q23 and 2023 revenue and LiDAR shipment: It expects 4Q23 sales to surpass the higher end of the prior guidance range (RMB535-555mn), vs. RMB409mn in 4Q22. It expects 2023 total LiDAR shipment to surpass the prior guidance of 220k units, compared with 80k units shipments in 2022. Among 2023 total LiDAR shipment, Hesai expects ADAS LiDAR shipment to exceed its target of 200k units. Looking into 2024, the company maintains its guidance of 500k units LiDAR shipment, up 120%+ YoY.

## Overseas orders in progress – catalyst for coming 2+ years

Hesai is deeply engaged in nine RFI/RFQ (request for information/quote) discussions with six leading global OEMs from North America and Europe. Of these, Hesai has confirmed orders from one OEM in Jan 2024. Currently, it has secured ADAS design wins with 15 leading OEMs and Tier-1 suppliers, covering over 50 models, and the company is confident on significant order wins in the coming 2+ years. We maintain our shipment/revenue estimates unchanged, while lowering 2024-25E GPM by 1.9/3.9ppt considering more competition and pricing pressure ahead. Net-net, we expect it would still turn profitable in 2025 and we revise down our 2025E earnings by 63%. Our new PO of USD9.6 (USD16.0 previously) is based on the average of DCF valuation and EV/sales valuation (see page 5 for more details).

Estimates (Dec) (CNY)	2021A	2022A	2023E	2024E	2025E
Net Income (Adjusted - mn)	(2,456)	(747)	(442)	(206)	110
EPS	(23.39)	(6.47)	(3.52)	(1.64)	0.872
EPS Change (YoY)	NM	72.3%	45.6%	53.4%	NM
Dividend / Share	0	0	0	0	0
Free Cash Flow / Share	(4.68)	(8.03)	(7.15)	(14.99)	(3.68)
<b>Valuation (Dec)</b>					
P/E	NM	NM	NM	NM	51.76x
EV / EBITDA*	NM	NM	NM	NM	18.74x
Free Cash Flow Yield*	-8.67%	-16.35%	-15.83%	-33.20%	-8.16%

\* For full definitions of *IQmethod*<sup>SM</sup> measures, see page 9.

01 February 2024

### Equity

#### Key Changes

(CNY)	Previous	Current
Price Obj.	US\$16.00	US\$9.60
2024E EPS	-1.13	-1.64
2025E EPS	2.37	0.87
2024E EBITDA (m)	-124.3	-188.6
2025E EBITDA (m)	385.1	180.9

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### Stock Data

Price	6.29 USD
Price Objective	9.60 USD
Date Established	31-Jan-2024
Investment Opinion	C-1-9
52-Week Range	6.18 USD-30.36 USD
Mrkt Val / Shares Out (mn)	790 USD / 125.7
Average Daily Value (mn)	3.02 USD
Free Float	7.9%
BofA Ticker / Exchange	HSAI / NAS
Bloomberg / Reuters	HSAI US / HSAIOQ
ROE (2023E)	-95.0%
Net Dbt to Eqty (Dec-2022A)	-64.77%

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**Refer to important disclosures on page 10 to 12. Analyst Certification on page 7. Price Objective Basis/Risk on page 7.**

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Timestamp: 31 January 2024 03:30PM EST

# iQprofile<sup>SM</sup> Hesai

Key Income Statement Data (Dec)	2021A	2022A	2023E	2024E	2025E
(CNY Millions)					
Sales	721	1,203	1,847	3,453	5,351
Gross Profit	382	472	604	1,100	1,661
Sell General & Admin Expense	(306)	(306)	(411)	(573)	(748)
Operating Profit	(265)	(378)	(539)	(320)	14
Net Interest & Other Income	19	77	97	113	105
Associates	NA	NA	NA	NA	NA
Pretax Income	(246)	(301)	(442)	(206)	119
Tax (expense) / Benefit	1	0	0	0	(10)
Net Income (Adjusted)	(2,456)	(747)	(442)	(206)	110
Average Fully Diluted Shares Outstanding	105	116	126	126	126

<b>Key Cash Flow Statement Data</b>					
Net Income	(245)	(301)	(442)	(206)	110
Depreciation & Amortization	28	53	89	131	167
Change in Working Capital	(234)	(540)	(246)	(1,478)	(460)
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	223	92	0	0	0
Cash Flow from Operations	(228)	(696)	(598)	(1,553)	(183)
Capital Expenditure	(263)	(231)	(300)	(330)	(280)
(Acquisition) / Disposal of Investments	(1,699)	1,392	0	0	0
Other Cash Inflow / (Outflow)	(18)	(41)	0	0	0
Cash Flow from Investing	(1,980)	1,120	(300)	(330)	(280)
Shares Issue / (Repurchase)	NA	NA	NA	NA	NA
Cost of Dividends Paid	0	0	0	0	0
Cash Flow from Financing	2,404	15	2,362	800	(1,000)
Free Cash Flow	(492)	(927)	(898)	(1,883)	(463)
Net Debt	(2,792)	(1,841)	(2,305)	(422)	41
Change in Net Debt	1,758	(445)	(464)	1,883	463

<b>Key Balance Sheet Data</b>					
Property, Plant & Equipment	322	505	724	932	1,054
Other Non-Current Assets	137	199	191	182	173
Trade Receivables	86	485	385	1,242	1,280
Cash & Equivalents	2,792	1,859	3,324	2,240	778
Other Current Assets	615	791	1,200	2,183	2,756
Total Assets	3,952	3,839	5,823	6,780	6,039
Long-Term Debt	0	18	18	18	18
Other Non-Current Liabilities	10	24	24	24	24
Short-Term Debt	0	0	1,000	1,800	800
Other Current Liabilities	892	956	1,019	1,382	1,532
Total Liabilities	903	998	2,061	3,224	2,374
Total Equity	3,050	2,842	3,762	3,556	3,666
Total Equity & Liabilities	3,952	3,839	5,823	6,780	6,039

<b>iQmethod<sup>SM</sup> - Bus Performance*</b>					
Return On Capital Employed	-10.0%	-9.7%	-10.5%	-3.6%	2.2%
Return On Equity	NM	NM	-95.0%	-5.6%	3.0%
Operating Margin	-36.8%	-31.4%	-29.2%	-9.3%	0.3%
EBITDA Margin	-33.0%	-27.1%	-24.3%	-5.5%	3.4%

<b>iQmethod<sup>SM</sup> - Quality of Earnings*</b>					
Cash Realization Ratio	NM	NM	NM	NM	-1.7x
Asset Replacement Ratio	9.6x	4.4x	3.4x	2.5x	1.7x
Tax Rate (Reported)	0.5%	0%	0%	NM	8.1%
Net Debt-to-Equity Ratio	-91.5%	-64.8%	-61.3%	-11.9%	1.1%
Interest Cover	NA	NA	NA	NA	NA

## Key Metrics

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 9.

## Company Sector

Auto Parts

## Company Description

Hesai, set up in 2014, is a global leader in LiDAR, which generates high-resolution 3D image. By industries, Hesai's product lines and revenue could be divided into: 1) ADAS - applied in passenger/commercial vehicle, 2) autonomous mobility (robotaxi) - autonomous vehicles that provide passenger/freight mobility service, 3) robotics. Hesai have become a leading supplier in the global LiDAR market, securing 47% share in 2022.

## Investment Rationale

We have a Buy rating on Hesai. We expect 1) Hesai to post 70% revenue CAGR in 2023-25E, driven by solid new client/project lineup, 2) GPM to sustain at 30-32% in 2023-25, owing to new in-house capacity ramp-up and ASICs design upgrade for further cost down, 3) a visible breakeven timeline.

## Stock Data

Price to Book Value

1.5x

## Lower GPM estimate

Although there is concern about autonomous mobility (or robotaxi) lidar orders, as Cruise could see zero contribution in 2024, management remains confident on its total shipment target for FY24 as it is seeing strong demand in the ADAS side as city NOA is picking up quickly among China OEMs over the past few quarters and will be a key battlefield to differentiate brands and products. We believe the strong demand and orders momentum will continue in the ADAS front. We maintain our shipment/revenue estimates unchanged, while lowering 2024-25E GPM by 1.9/3.9ppt considering more competition and pricing pressure ahead. Net-net, we expect it would still turn profitable in 2025 and we revise down our 2025E earnings by 63%.

### Exhibit 1: Hesai's new vs. old estimates

We lower 2024-25E GPM by 1.9/3.9ppt considering more competition and pricing pressure ahead

	2023F			2024F			2025F		
(RMB mn)	Old	New	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
LiDAR shipment (unit)	220,926	220,926	0.0%	497,880	497,880	0.0%	984,112	984,112	0.0%
Sales	1,847	1,847	0.0%	3,453	3,453	0.0%	5,351	5,351	0.0%
Gross Profit	604	604	0.0%	1,166	1,100	-5.7%	1,867	1,661	-11.0%
Operating profit / Loss from operations	-539	-539	0.0%	-255	-320	25.2%	218	14	-93.7%
Pretax income / Loss before income taxes	-442	-442	0.0%	-142	-206	45.4%	323	119	-63.1%
Net income (loss)	-442	-442	0.0%	-142	-206	45.4%	298	110	-63.2%
<b>Net income (loss) attribute to ordinary shareholder</b>	<b>-442</b>	<b>-442</b>	<b>0.0%</b>	<b>-142</b>	<b>-206</b>	<b>45.4%</b>	<b>298</b>	<b>110</b>	<b>-63.2%</b>
<b>Non-GAAP net income (loss) attributable to ordinary shareholders</b>	<b>-208</b>	<b>-208</b>	<b>0.0%</b>	<b>18</b>	<b>-46</b>	<b>NM</b>	<b>458</b>	<b>270</b>	<b>-41.1%</b>
Net income (loss) per ADS attributable to ordinary shareholders (RMB)	-3.52	-3.52	0.0%	-1.13	-1.64	45.4%	2.37	0.87	-63.2%
<b>Key ratios (%)</b>									
LiDAR shipment growth	174.6%	174.6%		125.4%	125.4%		97.7%	97.7%	
Sales growth	53.5%	53.5%		87.0%	87.0%		55.0%	55.0%	
EPS growth	-45.6%	-45.6%		-67.9%	-53.4%		-309.9%	-153.2%	
Gross margin	32.7%	32.7%		33.8%	31.8%		34.9%	31.0%	
Operating margin	-29.2%	-29.2%		-7.4%	-9.3%		4.1%	0.3%	
Net margin	-23.9%	-23.9%		-4.1%	-6.0%		5.6%	2.0%	
OPEX to sales	61.9%	61.9%		41.2%	41.1%		30.8%	30.8%	

Source: BofA Global Research estimates

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**Exhibit 2: Hesai's P&L summary**

We still expect Hesai to breakeven in 2025E

(RMB mn)	1Q22	2Q22	3Q22	4Q22	FY '22	1Q23	2Q23	3Q23	4Q23	FYE '23	1Q24	2Q24	3Q24	4Q24	FYE '24
Revenue	248	211	334	409	1,203	430	440	446	531	1,847	743	797	868	1,045	3,453
Total cost of goods sold	122	112	210	286	731	267	309	309	357	1,243	509	542	591	712	2,353
Gross profit	126	99	124	123	472	163	131	136	174	604	234	255	277	334	1,100
Promotion exp	19	20	24	41	105	35	27	37	40	139	48	52	56	60	216
G&A exp	45	67	41	48	201	50	57	80	85	272	82	88	94	94	357
R&D exp	105	108	164	179	555	208	161	193	186	748	204	221	217	233	876
Other operating income, net	1	3	3	5	11	3	0	7	6	16	5	0	13	12	30
Operating expenses	168	193	226	263	850	291	245	303	304	1,143	330	361	355	374	1,419
Operating profit / Loss from operations	-42	-94	-102	-140	-378	-128	-113	-167	-130	-539	-96	-106	-78	-41	-320
Pretax income / Loss before income taxes	-25	-70	-71	-135	-301	-119	-74	-142	-107	-442	-67	-77	-49	-12	-206
Net income (loss)	-25	-70	-71	-135	-301	-119	-74	-142	-107	-442	-67	-77	-49	-12	-206
Net income (loss) attribute to ordinary shareholder	-62	-266	-284	-136	-747	-119	-74	-142	-107	-442	-67	-77	-49	-12	-206
Non-GAAP net income (loss) attributable to ordinary shareholders	2	-42	-45	-110	-196	2	-41	-102	-67	-208	-27	-37	-9	28	-46
Net income (loss) per ADS attributable to ordinary shareholders (RMB)	-0.53	-2.30	-2.46	-1.17	-6.47	-0.95	-0.59	-1.13	-0.85	-3.52	-0.53	-0.62	-0.39	-0.10	-1.64
Fully diluted shares (mn)	116	116	116	116	116	126	126	126	126	126	126	126	126	126	126
<b>Operating Ratios</b>															
Gross margins	50.9%	46.8%	37.1%	30.0%	39.2%	37.8%	29.8%	30.6%	32.8%	32.7%	31.5%	32.0%	31.9%	31.9%	31.8%
Promotion	7.8%	9.7%	7.1%	10.1%	8.7%	8.2%	6.1%	8.3%	7.5%	7.5%	6.5%	6.5%	6.5%	5.7%	6.3%
SG&A	18.0%	31.9%	12.4%	11.6%	16.7%	11.5%	12.9%	18.1%	16.0%	14.7%	11.0%	11.0%	10.8%	9.0%	10.3%
R&D	42.1%	51.1%	49.0%	43.7%	46.2%	48.5%	36.6%	43.2%	35.0%	40.5%	27.5%	27.8%	25.0%	22.3%	25.4%
Operating margin	-16.8%	-44.7%	-30.6%	-34.2%	-31.4%	-29.8%	-25.8%	-37.5%	-24.5%	-29.2%	-12.9%	-13.3%	-8.9%	-3.9%	-9.3%
Pre-tax margin	-10.1%	-33.0%	-21.2%	-33.1%	-25.0%	-27.7%	-16.9%	-31.8%	-20.1%	-23.9%	-9.0%	-9.7%	-5.7%	-1.2%	-6.0%
Tax rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net margin	-10.1%	-33.0%	-21.2%	-33.1%	-25.0%	-27.7%	-16.9%	-31.8%	-20.1%	-23.9%	-9.0%	-9.7%	-5.7%	-1.2%	-6.0%
<b>YoY %</b>															
Net revenues	146.6%	57.3%	48.7%	56.6%	66.9%	73.0%	108.5%	33.5%	29.7%	53.5%	72.8%	80.9%	94.9%	96.9%	87.0%
Gross profit	102.5%	37.3%	12.2%	-10.4%	23.6%	28.6%	32.6%	10.0%	41.6%	27.9%	43.9%	94.3%	103.5%	91.9%	82.1%
<b>QoQ %</b>															
Net revenues	-4.9%	-15.0%	58.1%	22.6%		5.1%	2.4%	1.2%	19.1%		40.0%	7.2%	9.0%	20.3%	
Gross profit	-7.7%	-21.8%	25.1%	-0.7%		32.4%	-19.4%	3.8%	27.8%		34.6%	8.9%	8.7%	20.5%	

Source: BofA Global Research estimates, company report

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## Valuation new PO USD9.6

Our PO of USD9.6 (USD16.0 previously) is based on the average of DCF valuation and EV/sales valuation.

### Exhibit 3: Hesai valuation summary

Our new PO is USD9.6

Valuation methodology	Implied value (USD)	Upside/downside	Parameters
DCF fair value	12.1		13.2% WACC, 3.5% perpetual growth
EV/sales fair value	7.2		2x 2024 EV/sales
PO	9.6	53%	

Source: BofA Global Research estimates

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**DCF valuation methodology:** The fair value of USD12.1 (USD15.2 previously) is derived from our DCF calculation, with assumptions of 3.5% FCF perpetuity growth (unchanged) and 13.2% WACC (15.3% previously). We slightly revise down the medium-term growth and profitability estimates considering the uncertainties added in from Huawei's entrance in lidar products. On the other hand, most of the assumptions in WACC are unchanged, while the number has come down due to the share-price correction over the past 2-3 months, which leads to capital structure changes. Our WACC of 13.2% consists of 2.7% risk free rate and 12% expected market return. We assigned 3.5% perpetual growth rate to the company (unchanged).

**EV/Sales methodology:** The fair value of USD7.2 (from USD16.8 previously) is derived from our EV/sales valuation. We revised down our EV/sales from 4x to 2x to Hesai's 2024E sales. Lidar or ADAS solution providers' average 2024-25E EV/sales is 4.8x/2.7x, while we notice that the range has polarized, with Mobileye, Luminar, and Robosense trading around 8-10x 2024E EV/sales while Hesai, Innoviz, Ouster, and Cepton at 0.8-2.5x 2024E EV/sales. We believe Hesai deserves a valuation premium considering its leading position in the industry (market share in terms of shipment, order gain), superior margins, faster breakeven timeline, and stronger B/S management. These characteristics set Hesai a solid foundation to survive through the industry shuffling and remain as one of the top suppliers in the segment. However, this is offset by the stock's low liquidity. Therefore, we believe by applying 2x EV/sales, is still showing premium over lower benchmark peers in the lidar industry.

### Exhibit 4: Hesai's DCF based fair value

DCF-based fair value is USD12.1

	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	Beyond
Sales	3,453	5,351	8,027	11,639	16,876	22,783	29,618	37,022	44,427	51,091	54,156	-
Net income	(206)	110	409	739	1,266	1,868	2,518	3,147	3,776	4,445	4,712	-
Depreciation & amortization	131	167	195	227	250	275	295	320	339	363	378	-
Add: Working capital outflow/inflow (-/+)	(1,478)	(460)	(795)	(1,278)	(1,291)	(2,266)	(1,851)	(2,495)	(2,069)	(1,923)	(431)	-
Core business capex	(330)	(280)	(250)	(250)	(230)	(200)	(200)	(200)	(200)	(200)	(200)	-
FCFF	(1,997)	(568)	(556)	(688)	(145)	(478)	589	592	1,661	2,492	4,258	45,505
PV of FCFF	(1,782)	(448)	(387)	(424)	(79)	(230)	250	222	550	730	1,102	11,773
Firm value (RMB mn)	11,277											
Cash	1,294											
Debt - short	(1,800)											
Debt - long	(18)											
Equity value (RMB mn)	10,753											
Shares outstanding (mn shares)	126											
Value per share (USD)	12.1											

Source: BofA Global Research estimates

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**Exhibit 5: Hesai's peer valuation**

Lidar or ADAS solution providers' average 2024E and 2025E EV/sales is 4.7x and 2.6x, respectively

Company	Ticker	Last	Market	ADTV	EV/Sales			P/S			Revenue growth			PER		
		Price	Cap (\$ mn)	(\$mn)	23E	24E	25E	23E	24E	25E	23E	24E	25E	23E	24E	25E
Greater China																
Hesai	HSAI US	6.3	790	4	1.6	0.9	0.6	3.1	1.7	1.1	54%	87%	55%	NA	NA	51.8
Mobileye	MBLY US	26.3	21,161	110	9.7	9.2	6.7	10.2	9.6	7.0	11%	6%	38%	32.4	72.9	30.9
Robosense	2498 HK	43.0	2,470	1	14.2	8.7	5.4	16.1	9.9	6.2	95%	63%	61%	NA	NA	NA
Luminar	LAZR US	2.8	1,121	25	21.1	10.3	4.1	14.9	7.3	2.9	85%	105%	154%	NA	NA	NA
Innoviz	INVZ US	1.7	272	9	10.2	2.4	0.7	15.8	3.7	1.1	186%	330%	232%	NA	NA	NA
Ouster	OUST US	5.4	219	4	1.0	0.8	0.5	2.6	1.9	1.3	102%	39%	48%	NA	NA	NA
Cepton	CPTN US	2.7	43	0	2.9	0.9	0.3	1.7	0.5	0.2	NA	223%	223%	NA	NA	NA
Industry average					8.7	4.7	2.6	9.2	4.9	2.8	89%	122%	116%			

Source: BofA Global Research estimates, company report, Bloomberg

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## Price objective basis & risk

### Hesai (HSAI)

Our PO of USD9.6 is based on average from DCF valuation and EV/sales valuation.

#### DCF valuation methodology:

The fair value of USD12.1 is derived from our DCF calculation, with an assumption of 3.5% FCF perpetuity growth and 13.2% WACC. We come up with WACC of 13.2%, consisting of 2.7% risk free rate and 12% expected market return. Lastly, we assigned 3.5% perpetual growth rate to the company, which is reasonable, in our view, given the overall LiDAR penetration in ADAS is still relatively low and CAGR growth could be sustained in longer term.

#### EV/Sales methodology:

The fair value of USD7.2 is derived from our EV/sales valuation, as we assign 2x EV/sales to Hesai's 2024E sales, lower than its peers' average (4x) but higher than some peers who do not have comparable shipment volume, client lineup/order backlog and financials. We believe that Hesai deserves a valuation premium considering its leading position in the industry (market share in terms of shipment, order gain), superior margins, faster breakeven timeline, and stronger B/S management. This characteristic set Hesai a solid foundation to survive through industry shuffling and remain as one of the top suppliers in the segment. However, this is offset by the stock's low liquidity, resulting in a peers' average multiple.

Risk: client concentration, ASP/GPM downside, slower EV/ smart vehicle growth

## Analyst Certification

I, Jessie Lo, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

### APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	Aima Technology	XIHBF	603529 CH	Joey Yang, CFA
	Ashok Leyland	XDBVF	AL IN	Gunjan Prithyani
	Bajaj Auto	XBJBF	BJAUT IN	Gunjan Prithyani
	BYD	BYDDF	1211 HK	Ming Hsun Lee, CFA
	BYD	XYMPF	002594 CH	Ming Hsun Lee, CFA
	BYD	BYDDY	BYDDY US	Ming Hsun Lee, CFA
	CATL	XMOQF	300750 CH	Ming Hsun Lee, CFA
	DENSO	DNZOF	6902 JP	Kei Nihonyanagi
	Desay SV	XGDF	002920 CH	Jessie Lo
	EVE	XEVEF	300014 CH	Ming Hsun Lee, CFA
	Fuyao Glass	XFGIF	600660 CH	Edward Leung, CFA
	Fuyao Glass	FIGIF	3606 HK	Edward Leung, CFA
	Great Wall Motor	GWLLF	2333 HK	Ming Hsun Lee, CFA
	GS Yuasa	GYUAF	6674 JP	Kentaro Hosoda
	Guangzhou Automobile Group	GNZUF	2238 HK	Ming Hsun Lee, CFA
	Hankook Tire	XHTRF	161390 KS	KJ Hwang
	Hero Motocorp	HRHDF	HMCL IN	Gunjan Prithyani
	Hesai	HSAI	HSAI US	Jessie Lo
	HL Mando	XMADF	204320 KS	KJ Hwang
	Honda Motor	HMC	HMC US	Kei Nihonyanagi
	Honda Motor	HNDAF	7267 JP	Kei Nihonyanagi
	Huayu	XHASF	600741 CH	Jessie Lo
	Hyundai Motor	HYMLF	005380 KS	KJ Hwang
	Isuzu Motors	ISUZF	7202 JP	Kei Nihonyanagi



## APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Leapmotor	XZSSF	9863 HK	Ming Hsun Lee, CFA
	Li Auto	LI	LI US	Ming Hsun Lee, CFA
	Li Auto	LAAOF	2015 HK	Ming Hsun Lee, CFA
	Maruti	MUDGF	MSIL IN	Gunjan Prithyani
	Mazda Motor	MZDAF	7261 JP	Kei Nihonyanagi
	Minth	MNTHF	425 HK	Jessie Lo
	Ningbo Tuopu	XNCGF	601689 CH	Joey Yang, CFA
	Nissan Motor	NSANF	7201 JP	Kei Nihonyanagi
	Nissan Motor	NSANY	NSANY US	Kei Nihonyanagi
	PARK24	PKCOF	4666 JP	Kei Nihonyanagi
	SAMIL (Motherson International)	XMSUF	MOTHERSO IN	Gunjan Prithyani
	Shenzhen Kedali	XWCSE	002850 CH	Jessie Lo
	Shuanghuan Driveline	XZSHF	002472 CH	Jessie Lo
	Sumitomo Rubber Industries	SMTUF	5110 JP	Kentaro Hosoda
	Suzuki Motor	SZKMF	7269 JP	Kei Nihonyanagi
	Tata Motors	XTTSF	TTMT IN	Gunjan Prithyani
	Toyo Tire	TOTTF	5105 JP	Kentaro Hosoda
	Toyota Motor	TOYOF	7203 JP	Kei Nihonyanagi
	Toyota Motor	TM	TM US	Kei Nihonyanagi
	Wuxi Lead	XZSRF	300450 CH	Ming Hsun Lee, CFA
	XPeng Inc	XPEV	XPEV US	Ming Hsun Lee, CFA
	XPeng Inc.	XPNGF	9868 HK	Ming Hsun Lee, CFA
	Yadea	YADGF	1585 HK	Joey Yang, CFA
	Yunnan Energy	XLGFF	002812 CH	Jessie Lo
	Zhejiang Sanhua	XZSIF	002050 CH	Jessie Lo
	Zhongsheng Auto	ZHSHF	881 HK	Joey Yang, CFA

## NEUTRAL

	Aisin	ASEKF	7259 JP	Kei Nihonyanagi
	Bridgestone	BRDCF	5108 JP	Kei Nihonyanagi
	Bridgestone	BRDCY	BRDCY US	Kei Nihonyanagi
	CALB	XCLSF	3931 HK	Ming Hsun Lee, CFA
	Dong Feng	DNFGF	489 HK	Ming Hsun Lee, CFA
	Eicher Motors	XEIMF	EIM IN	Gunjan Prithyani
	Hino Motors	HINOF	7205 JP	Kei Nihonyanagi
	Hyundai Mobis	HYPLF	012330 KS	KJ Hwang
	Kia Corp	KIMTF	000270 KS	KJ Hwang
	Mahindra & Mahindra (M&M)	XKQRF	MM IN	Gunjan Prithyani
	MeiDong Auto	CMEIF	1268 HK	Joey Yang, CFA
	Motherson Sumi Wiring	XMWDF	MSUMI IN	Gunjan Prithyani
	NIO	NIO	NIO US	Ming Hsun Lee, CFA
	NIO	NIOIF	9866 HK	Ming Hsun Lee, CFA
	NIO	XLTWF	NIO SP	Ming Hsun Lee, CFA
	Shenzhen Senior	XHYRF	300568 CH	Jessie Lo
	Subaru Corp	FUJHF	7270 JP	Kei Nihonyanagi
	Subaru Corp	FUJHY	FUJHY US	Kei Nihonyanagi
	Toyota Industries Corporation	TYIDF	6201 JP	Kentaro Hosoda
	Toyota Industries Corporation	TYIDY	TYIDY US	Kentaro Hosoda
	TVS Motors	XFKMF	TVSL IN	Gunjan Prithyani
	Wencan	XSCDF	603348 CH	Joey Yang, CFA
	Yokohama Rubber	YORUF	5101 JP	Kentaro Hosoda
	Yongda	CYHYF	3669 HK	Joey Yang, CFA

## UNDERPERFORM

	Astra International	PTAIF	ASII IJ	Paul Dewberry
	BAIC Motor	BMCLF	1958 HK	Ming Hsun Lee, CFA
	Bharat Forge	XUUVF	BHFC IN	Gunjan Prithyani
	China Grand Auto	XMURF	600297 CH	Joey Yang, CFA
	Escorts Kubota	XSCOF	ESCORTS IN	Gunjan Prithyani
	GAC	XGNHF	601238 CH	Ming Hsun Lee, CFA
	Great Wall Motor	XGWMF	601633 CH	Ming Hsun Lee, CFA
	Hyundai Wia	XWHYF	011210 KS	KJ Hwang
	Joyson	XQWVF	600699 CH	Jessie Lo
	Mitsubishi Motors	MMTOF	7211 JP	Kei Nihonyanagi
	Nextage	NXAGF	3186 JP	Kentaro Hosoda
	Nexteer	NTXVF	1316 HK	Jessie Lo





## APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Putailai	XVHGF	603659 CH	Jessie Lo
	SAIC Motor	XZNF	600104 CH	Ming Hsun Lee, CFA
	Sona Comstar	XBNXF	SONACOMS IN	Gunjan Prithyani
	Tinci Materials	XCVHF	002709 CH	Miriam Chan, CFA
	Yamaha Motor	YAMHF	7272 JP	Kei Nihonyanagi
<b>RVW</b>	Geely	GELYF	175 HK	Ming Hsun Lee, CFA

**iQmethod<sup>SM</sup> Measures Definitions****Business Performance**

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

**Quality of Earnings**

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

**Valuation Toolkit**

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

EV / EBITDA

**Numerator**

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

**Numerator**

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash &amp; Equivalents

EBIT

**Numerator**

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

**Denominator**

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

**Denominator**

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

**Denominator**

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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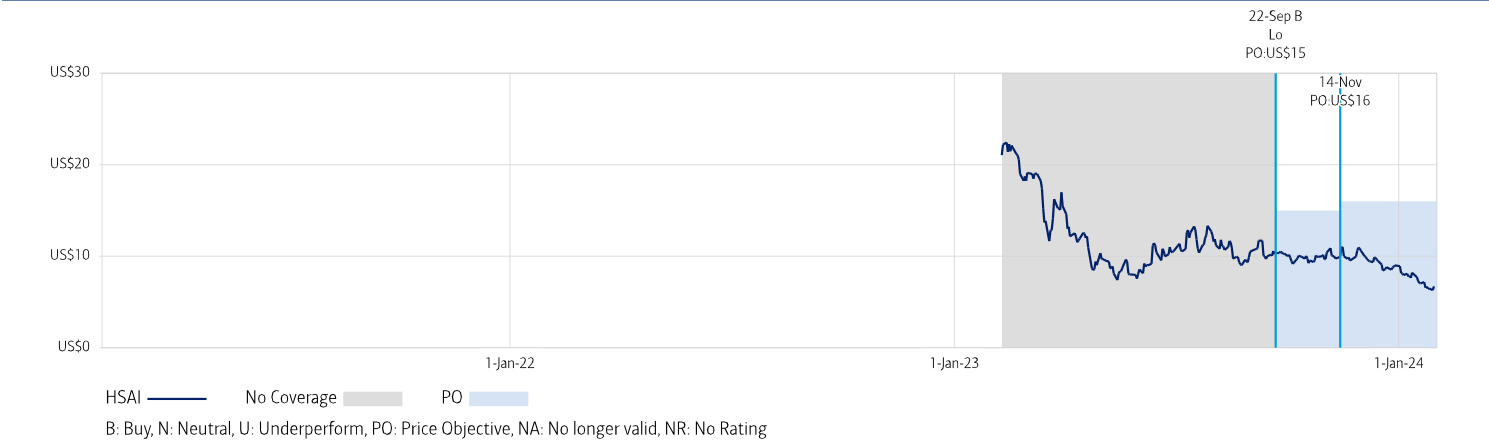
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Hesai (HSAI) Price Chart



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Equity Investment Rating Distribution: Autos Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	67	55.83%	Buy	39	58.21%
Hold	30	25.00%	Hold	15	50.00%
Sell	23	19.17%	Sell	12	52.17%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

<sup>R1</sup> Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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