

NIO

4Q23 GPM miss; second brand contribution starting 4Q24; new PO US\$6.5

Reiterate Rating: NEUTRAL | PO: 6.50 USD | Price: 5.33 USD

4Q23 miss on lower GPM and higher OPEX

NIO reported 4Q23 results and hosted a conference call: 4Q23 revenue came in at RMB17bn, up 7% YoY but down 10% QoQ. Vehicle gross margin was 11.9%, up 5.1ppt YoY / 0.9ppt QoQ, with BOM cost improvement. Gross margin was 7.5%, up 3.6ppt YoY but down 0.5ppt QoQ. QoQ margin contraction is mainly due to provision of power solutions from expanded power network in other revenue. OPEX came in higher than our expectation due to the increase in personnel costs in R&D and sales functions and sales and marketing activities. As a result, loss from operation was RMB6.6bn, more than our forecast of RMB4.5bn. Net loss attributable to ordinary shareholders was RMB5.6bn versus our forecast of RMB4.3bn. The non-GAAP net loss was RMB4.9bn versus our forecast of RMB3.6bn. Cash outflow was around RMB4bn in 4Q23.

Second brand ALPS to debut in 2Q24, deliver in 4Q24

NIO will launch the 2024 versions of its existing models in March. While the GPM could be negatively impacted during the old and new products transition, it maintains its GPM target of 15-18% in 2024 post the model upgrade and transition. NIO still targets monthly delivery returning to 20k in 2024 with the support from model upgrades. NIO will launch its second brand in 2Q24, first product under ALPS in 3Q24, and targets mass delivery in 4Q24. ALPS will focus on family users and be a more volume-driven brand. The first model will benchmark TSLA's Model Y. The second model under ALPS will be a big SUV for family use.

Cut volume sales/margins; new PO US\$6.50

NIO revealed 1Q24 delivery guidance of 31-33k units, suggesting 12.8-14.8k units delivering in March. 1Q24 revenue is expected to be in the range of RMB10.5-11.1bn, suggesting a 1.7% decline to 3.8% growth YoY. We cut our 2024/25E volume forecasts by 4%/5% and lower our GPM estimates by 2.7ppt/0.3ppt, respectively. We lift our 2024-25E net loss forecasts by 21%/9%. We reiterate our Neutral rating, as we expect its volume growth in 2024 to be offset by slower margin expansion; it will spend more on marketing and sales networks to facilitate launching its second and third brands. As a result of our forecast revisions, we lower our PO to USD6.50/ADS (HKD50) from USD7.50/ADS (HKD58); see details inside.

Estimates (Dec) (CNY)	2021A	2022A	2023E	2024E	2025E
Net Income (Adjusted - mn)	-10,572	-14,559	-21,147	-17,925	-9,103
EPS	-6.33	-8.58	-11.87	-8.63	-4.38
EPS Change (YoY)	-77.4%	-35.5%	-38.3%	27.2%	49.2%
Dividend / Share	0	0	0	0	0
Free Cash Flow / Share	(1.26)	(6.39)	(12.84)	(14.57)	6.40
Common EPS (CNY)	-6.33	-8.58	-11.87	-8.63	-4.38
Common Dividend / Share (CNY)	0	0	0	0	0
Valuation (Dec)					
Free Cash Flow Yield*	-3.24%	-16.64%	-35.14%	-46.46%	20.39%

* For full definitions of *IQmethod*SM measures, see page 8.

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Refer to important disclosures on page 9 to 12. Analyst Certification on page 6. Price Objective Basis/Risk on page 6.

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Timestamp: 05 March 2024 12:28PM EST

06 March 2024

Equity

Key Changes

(CNY)	Previous	Current
Price Obj.	US\$7.5	US\$6.5

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Stock Data

Price (ADR / HK / SP)	5.33 USD / 42.50 HKD / 5.44 USD
Price Objective	6.50 USD / 50.00 HKD / 6.50 USD
Date Established	5-Mar-2024 / 5-Mar-2024 / 5-Mar-2024
Investment Opinion	C-2-9 / C-2-9 / C-2-9
52-Week Range	5.25 USD-16.18 USD
Market Value (mn)	9,047 USD
Shares Outstanding (mn)	1,697.3 / 1,697.3 / 1,697.3
Average Daily Value (mn)	300.83 USD
Free Float	15.6%
BofA Ticker / Exchange	NIO / NYS
BofA Ticker / Exchange	NIOIF / HKG
BofA Ticker / Exchange	XLTFW / SES
Bloomberg / Reuters	NIO US / NIO.N
ROE (2023E)	-85.6%
Net Dbt to Eqty (Dec-2022A)	-94.2%

BOM: bill of materials
GPM: gross profit margin
k: thousand
OPEX: operating expense
PO: price objective

SUV: sport utility vehicle

iQprofileSM NIO

Key Income Statement Data (Dec)	2021A	2022A	2023E	2024E	2025E
(CNY Millions)					
Sales	36,136	49,269	55,618	61,913	103,394
Gross Profit	6,821	5,144	3,052	4,988	15,015
Sell General & Admin Expense	(6,878)	(10,537)	(12,885)	(12,133)	(13,407)
Operating Profit	(4,496)	(15,640)	(22,655)	(18,667)	(9,515)
Net Interest & Other Income	522	1,259	2,196	711	381
Associates	NA	NA	NA	NA	NA
Pretax Income	(3,975)	(14,382)	(20,459)	(17,957)	(9,135)
Tax (expense) / Benefit	(42)	(55)	(261)	0	0
Net Income (Adjusted)	(10,572)	(14,559)	(21,147)	(17,925)	(9,103)
Average Fully Diluted Shares Outstanding	1,670	1,697	1,782	2,076	2,076

Key Cash Flow Statement Data

Net Income	(3,986)	(14,280)	(20,844)	(17,925)	(9,103)
Depreciation & Amortization	1,721	2,898	982	5,553	6,291
Change in Working Capital	2,803	2,073	7,917	(10,712)	21,281
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	1,428	5,443	60	(172)	(192)
Cash Flow from Operations	1,966	(3,866)	(11,886)	(23,256)	18,277
Capital Expenditure	(4,079)	(6,973)	(11,000)	(7,000)	(5,000)
(Acquisition) / Disposal of Investments	(33,787)	19,034	0	0	0
Other Cash Inflow / (Outflow)	(1,899)	(1,676)	0	0	0
Cash Flow from Investing	(39,765)	10,385	(11,000)	(7,000)	(5,000)
Shares Issue / (Repurchase)	12,822	79	20,580	0	0
Cost of Dividends Paid	0	0	0	0	0
Cash Flow from Financing	18,129	(1,616)	27,281	3,000	4,000
Free Cash Flow	(2,112)	(10,839)	(22,886)	(30,256)	13,277
Net Debt	(38,349)	(26,050)	(32,423)	(2,167)	(15,444)
Change in Net Debt	29,339	(5,655)	2,306	30,256	(13,277)

Key Balance Sheet Data

Property, Plant & Equipment	7,400	15,659	24,847	27,169	25,901
Other Non-Current Assets	11,843	21,456	22,156	22,273	22,411
Trade Receivables	2,798	5,118	4,658	3,824	7,507
Cash & Equivalents	55,386	42,213	55,287	28,031	45,308
Other Current Assets	5,458	11,819	10,435	7,678	17,165
Total Assets	82,884	96,264	117,383	88,975	118,292
Long-Term Debt	9,739	10,886	13,043	14,043	16,043
Other Non-Current Liabilities	5,883	11,879	16,946	16,946	16,946
Short-Term Debt	7,298	5,277	9,821	11,821	13,821
Other Current Liabilities	21,900	40,575	47,977	33,673	68,125
Total Liabilities	44,820	68,617	87,787	76,483	114,935
Total Equity	38,063	27,647	29,596	11,639	2,505
Total Equity & Liabilities	82,884	96,264	117,383	88,123	117,440

iQmethodSM - Bus Performance*

Return On Capital Employed	-6.2%	-22.0%	-29.4%	-25.5%	-15.0%
Return On Equity	-34.2%	-49.7%	-85.6%	-96.8%	-131.3%
Operating Margin	-12.4%	-31.7%	-40.7%	-30.2%	-9.2%
EBITDA Margin	-7.7%	-25.9%	-39.0%	-21.2%	-3.1%

iQmethodSM - Quality of Earnings*

Cash Realization Ratio	NM	NM	NM	NM	NM
Asset Replacement Ratio	2.4x	2.4x	11.2x	1.3x	0.8x
Tax Rate (Reported)	NM	NM	NM	NM	NM
Net Debt-to-Equity Ratio	-100.7%	-94.2%	-109.6%	-18.6%	-616.6%
Interest Cover	-7.1x	-49.9x	NM	-38.3x	-17.1x

Key Metrics

* For full definitions of iQmethodSM measures, see page 8.

Company Sector

Autos/Car Manufacturers

Company Description

Started in November 2014, NIO designs, manufactures, and sells premium electric vehicles (EVs) in China. Its vehicles feature vehicles connectivity, autonomous driving and artificial intelligence. Its first mass-production model, ES8, a 7-seater electric SUV, made its debut at the NIO Day event in December 2017. NIO has started to deliver ES8 since June 2018 and to deliver ES6 (5-seater electric SUV) in June 2019. NIO currently has 8 EV models

Investment Rationale

We have a Neutral on NIO, as (1) NIO does not have new models in 1-3Q24, therefore its volume sales growth could be lower than industry, (2) NIO may need to provide price discount on its existing models at a greater extent than cost reduction, and it may spend more on marketing campaign and sales network for new brands, leading to a lower margin. On the positive side, we still like NIO for (1) brighter volume sales outlook in 4Q24-2025 and (2) improving financial position.

Stock Data

Shares / Common	1.00
Price to Book Value	2.5x

Key Changes

(CNY)	Previous	Current
Price Obj.	HK\$58	HK\$50
2023E EPS	-11.15	-11.87
2024E EPS	-7.16	-8.63
2025E EPS	-4.01	-4.38

Battery swap and network expansion

NIO targets to set up 1k new battery swap stations in 2024, and it will start to build its 4th-generation battery swap station after April. The majority of the new swap stations added in 2024 will be part of a shared battery swap network for NIO, the ALPS brand and others (such as Changan). NIO had 148 NIO Houses, 352 NIO Spaces, and 5k sales personnel at end-2023 and will focus on improving store/personnel efficiency rather than expansion. As for second brand separated network, NIO targets 200 point-of-sale (POS) locations in 2024. It expects higher efficiency of ALPS stores and sales personnel.

License agreement with Forseven under CYVN

On February 26, 2024, NIO entered into a technology license agreement with Forseven, a subsidiary of CYVN Holdings L.L.C. NIO will grant a non-exclusive and non-transferrable worldwide license to Forseven to use certain of NIO Technology's existing and future technical information, technical solutions, software and intellectual property rights related to or subsisting in the smart electric vehicle platforms of NIO Technology.

Earnings review and estimate revisions

Exhibit 1: 4Q23 comparison

4Q23 miss on lower GPM and higher OPEX

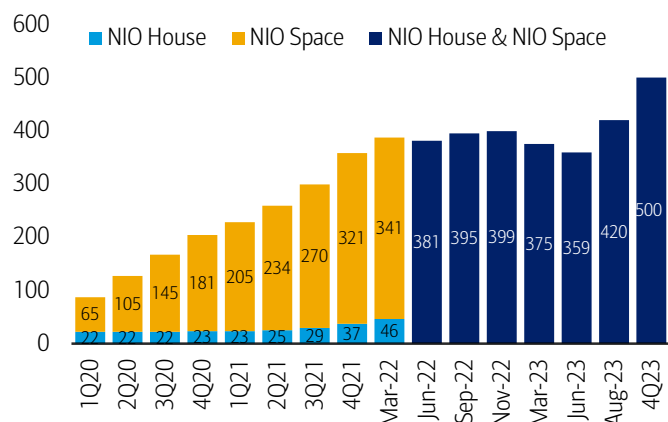
RMB mn	4Q23 (A)	4Q23 (F)	Diff (%)	YoY	QoQ	3Q23	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22
Revenue	17,103	17,165	-0.4%	6.5%	-10.3%	19,067	8,772	10,676	16,064	13,002	10,292	9,911
Cost of goods sold (COGS)	15,824	15,326	3.2%	2.5%	-9.8%	17,543	8,685	10,514	15,442	11,267	8,952	8,464
Gross profit	1,279	1,839	-30.4%	105.7%	-16.0%	1,523	87	162	622	1,735	1,340	1,447
Operating expense	7,905	6,362	24.2%	7.4%	24.1%	6,367	6,161	5,274	7,358	5,605	4,186	3,636
Loss from operations	-6,625	-4,523	N.M.	N.M.	N.M.	-4,844	-6,074	-5,112	-6,736	-3,870	-2,846	-2,189
Adjusted profit (loss) from operations (non-GAAP)	-6,059	-3,823	N.M.	N.M.	N.M.	-4,240	-5,464	-4,522	-6,016	-3,258	-2,355	-1,716
Loss before income tax expense	-5,135	-4,332	N.M.	N.M.	N.M.	-4,555	-6,037	-4,732	-5,769	-4,101	-2,759	-1,752
Net Loss	-5,368	-4,332	N.M.	N.M.	N.M.	-4,557	-6,056	-4,740	-5,786	-4,111	-2,758	-1,783
Net loss attributable to ordinary shareholders	-5,593	-4,324	N.M.	N.M.	N.M.	-4,629	-6,122	-4,804	-5,847	-4,142	-2,745	-1,825
Adjusted net loss attributable to ordinary shareholders (non-GAAP)	-4,948	-3,624	N.M.	N.M.	N.M.	-3,948	-5,437	-4,142	-5,054	-3,459	-2,186	-1,285
Earnings (Loss) per share (RMB) (fully-diluted base)	-3.14	-2.43	N.M.	N.M.	N.M.	-2.60	-3.44	-2.70	-3.44	-2.44	-1.62	-1.08
GM	7.5%	10.7%				8.0%	1.0%	1.5%	3.9%	13.3%	13.0%	14.6%
OPM	-38.7%	-26.4%				-25.4%	-69.2%	-47.9%	-41.9%	-29.8%	-27.6%	-22.1%
NM	-31.4%	-25.2%				-23.9%	-69.0%	-44.4%	-36.0%	-31.6%	-26.8%	-18.0%
OPEX to sales	46.2%	37.1%				33.4%	70.2%	49.4%	45.8%	43.1%	40.7%	36.7%

Source: BofA Global Research estimates, company report

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Exhibit 2: NIO's network expansion

By end-2023, it had 500 POS locations

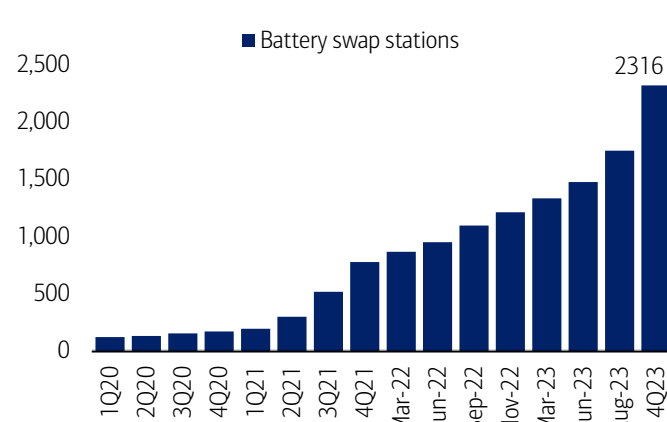


Source: company report

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Exhibit 3: NIO's battery swap station expansion

By end-2023, it ran more than 2.3k battery swap stations



Source: company report

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Exhibit 4: New versus old estimates

We cut our 2024E delivery estimate by 4% and lift our net loss estimate by 21%

	2023			2024F			2025F		
	Old	Actual	diff. (%)	Old	New	diff. (%)	Old	New	diff. (%)
RMB mn									
Volume (units)	160,038	160,038	0.0%	188,690	181,088	-4.0%	355,618	339,674	-4.5%
Consolidated sales	55,680	55,618	-0.1%	64,897	61,913	-4.6%	111,814	103,394	-7.5%
Vehicle	49,288	49,257	-0.1%	56,834	53,471	-5.9%	101,736	92,842	-8.7%
Service and others	6,392	6,361	-0.5%	8,063	8,442	4.7%	10,078	10,552	4.7%
Gross Profit	3,612	3,052	-15.5%	6,985	4,988	-28.6%	16,557	15,015	-9.3%
Vehicle	5,043	4,670	-7.4%	8,369	6,722	-19.7%	17,565	16,070	-8.5%
Service and others	-1,432	-1,618	13.0%	-1,384	-1,734	25.3%	-1,008	-1,055	4.7%
Profit (loss) from operations	-20,553	-22,655	10.2%	-15,606	-18,667	19.6%	-8,726	-9,515	9.0%
Adjusted profit (loss) from operations (non-GAAP)	-18,050	-20,286	12.4%	-12,806	-16,017	25.1%	-5,656	-6,865	21.4%
Profit (loss) before income tax expense	-19,656	-20,459	4.1%	-14,905	-17,957	20.5%	-8,355	-9,135	9.3%
Net profit (loss)	-19,684	-20,720	5.3%	-14,905	-17,957	20.5%	-8,355	-9,135	9.3%
Net profit (loss) attributable to ordinary shareholders	-19,878	-21,147	6.4%	-14,873	-17,925	20.5%	-8,323	-9,103	9.4%
Adjusted net profit (loss) attributable to ordinary shareholders (non-GAAP)	-17,151	-18,475	7.7%	-12,073	-15,275	26.5%	-5,253	-6,453	22.8%
Earnings (Loss) per share (RMB)	-11.15	-11.87	6.4%	-7.16	-8.63	20.5%	-4.01	-4.38	9.4%
Earnings (Loss) per share (USD)	-1.55	-1.65	6.4%	-1.00	-1.20	20.5%	-0.56	-0.61	9.4%
ASP per car (RMB, K)	308	308	-0.1%	301	295	-2.0%	286	273	-4.5%
Net profit (loss) per car (RMB, K)	-107	-115	7.7%	-64	-84	31.8%	-15	-19	28.6%
Key ratios (%)									
Sales growth	13.0%	12.9%		16.6%	11.3%		72.3%	67.0%	
Earnings (Loss) per share growth	N.M.	N.M.		N.M.	N.M.		N.M.	N.M.	
Gross margin	6.5%	5.5%		10.8%	8.1%		14.8%	14.5%	
Operating margin	-36.9%	-40.7%		-24.0%	-30.2%		-7.8%	-9.2%	
OPM (non-GAAP)	-32.4%	-36.5%		-19.7%	-25.9%		-5.1%	-6.6%	
Net margin	-35.4%	-37.3%		-23.0%	-29.0%		-7.5%	-8.8%	
NPM (non-GAAP)	-30.8%	-33.2%		-18.6%	-24.7%		-4.7%	-6.2%	
OPEX to sales	43.4%	46.2%		34.8%	38.2%		22.6%	23.7%	

Source: BofA Global Research estimates

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Exhibit 5: P&L summary

We expect 1Q24 GPM of 2.6% considering old model destocking promotion

(RMB mn)	1Q23	2Q23	3Q23	4Q23	FY '23	1Q24	2Q24	3Q24	4Q24	FYE '24
Revenue	10,676	8,772	19,067	17,103	55,618	11,017	14,916	15,810	20,169	61,913
Total cost of goods sold	10,514	8,685	17,543	15,824	52,566	10,735	13,811	14,493	17,886	56,925
Gross profit	162	87	1,523	1,279	3,052	282	1,105	1,317	2,284	4,988
SG&A	2,446	2,857	3,609	3,973	12,885	2,203	2,834	3,162	3,933	12,133
R&D	3,076	3,345	3,039	3,972	13,431	2,754	2,983	3,162	3,227	12,127
Operating expenses	5,522	6,201	6,648	7,945	26,316	4,958	5,817	6,324	7,160	24,259
Operating income	-5,359	-6,114	-5,125	-6,666	-23,264	-4,675	-4,713	-5,007	-4,876	-19,272
Pretax income	-4,732	-6,037	-4,555	-5,135	-20,459	-4,228	-4,471	-4,602	-4,656	-17,957
Taxes or tax credit	8	19	2	233	261	0	0	0	0	0
Profit before minority interest	-4,740	-6,056	-4,557	-5,368	-20,720	-4,228	-4,471	-4,602	-4,656	-17,957
Minority interest	-8	-9	-5	146	124	-8	-8	-8	-8	-32
Net profit (loss) attributable to ordinary shareholders	-4,804	-6,122	-4,629	-5,593	-21,147	-4,220	-4,463	-4,594	-4,648	-17,925
Adjusted net profit (loss) attributable to ordinary shareholders (non-GAAP)	-4,142	-5,437	-3,948	-4,948	-18,475	-3,590	-3,813	-3,924	-3,948	-15,275
Earnings (Loss) per share (fully-diluted base)	-2.70	-3.44	-2.60	-3.14	-11.87	-2.03	-2.15	-2.21	-2.24	-8.63
Fully diluted shares (mn)	1,782	1,782	1,782	1,782	1,782	2,076	2,076	2,076	2,076	2,076
Operating Ratios										
Gross margin	1.5%	1.0%	8.0%	7.5%	5.5%	2.6%	7.4%	8.3%	11.3%	8.1%
SG&A/sales	22.9%	32.6%	18.9%	23.2%	23.2%	20.0%	19.0%	20.0%	19.5%	19.6%
R&D/sales	28.8%	38.1%	15.9%	23.2%	24.1%	25.0%	20.0%	20.0%	16.0%	19.6%
Operating margin	-50.2%	-69.7%	-26.9%	-39.0%	-41.8%	-42.4%	-31.6%	-31.7%	-24.2%	-31.1%
Pre-tax margin	-44.3%	-68.8%	-23.9%	-30.0%	-36.8%	-38.4%	-30.0%	-29.1%	-23.1%	-29.0%
Net margin	-44.4%	-69.0%	-23.9%	-31.4%	-37.3%	-38.4%	-30.0%	-29.1%	-23.1%	-29.0%

Source: BofA Global Research estimates, company report

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Valuation

We derive our PO of USD6.50 per ADS (HKD50 per share) from USD7.50 (HKD58 per share), using an average of EV/sales valuation method and discounted cash flow (DCF) valuation method.

DCF-based fair value: We derive a fair value of USD7.0 (from USD8.2 previously) from our DCF calculation, with assumptions of 2% FCF perpetuity growth. For weighted-average cost of capital (WACC), we use a 4.0% risk-free rate, 12% market return and Beta of 1.3 to calculate and derive the discount rate (WACC) of 11%.

EV/sales-based fair value: We derive a fair value of USD5.9 (from USD6.9 previously). We apply a target EV/sales multiple of 1.6x to 2024E sales. The 1.6x target multiple is 1 standard deviation (SD) below historical average one-year forward EV/sales. The lower target multiple mainly reflects (1) China EV industry volume growth deceleration, (2) competition landscape evolution and increasing difficulty to gain share in such dynamics, (3) our expectation that NIO's volume growth will slow in 2024.

Exhibit 6: EV/sales-based fair value

We calculate EV/sales-based fair value of USD5.90

(RMB mn)	
2024E Estimated volume sales (units)	181,088
2024E Estimated sales	61,913
Assumed enterprise value/sales	1.5
Implied enterprise value	92,870
Net cash (net debt) as of 2024	2,167
Equity value (RMB mn)	95,037
Equity value (USD mn)	13,200
Shares count (mn)	2,076
Implied value per share (USD)	6.4
Ownership in NIO China	92.1%
Implied value per share (USD)	5.9
Implied value per share (HKD)	46.0

Source: BofA Global Research estimates

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Exhibit 7: Valuation summary

Our new PO is USD6.50

Valuation methodology	Implied value	Upside/downside potential	Parameters
Methodology 1			
EV/Sales (USD)	5.90		1.6x EV/sales
Methodology 2			
DCF (USD)	7.00		WACC of 11%
Price Objective (rounded) (USD)	6.50	18%	
Price Objective (rounded) (HKD)	50.00	18%	

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Price objective basis & risk

NIO (NIO / NIOIF)

We derive our PO of USD6.50 per ADS (HKD50 per share) using an average of EV/sales valuation method and discounted cash flow (DCF) valuation method.

DCF-based fair value: We derive a fair value of USD7.00 from our DCF calculation, with assumptions of 2% FCF perpetuity growth. For weighted-average cost of capital (WACC), we use a 4.0% risk-free rate, 12% market return and Beta of 1.2 to calculate and derive the discount rate (WACC) of 11%.

EV/sales-based fair value: We derive a fair value of USD5.90. We apply a target EV/sales multiple of 1.6x to 2024E sales. The 1.6x target multiple is 1SD below historical average one-year forward EV/sales. The lower target multiple mainly reflects: (1) China EV industry volume growth deceleration, (2) competition landscape evolution and increasing difficulty to gain share in such dynamics, (3) our expectation NIO's volume growth will slow in 2024.

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

NIO (XLTWF)

We derive our PO of USD6.50 per ADS (HKD50 per share) using an average of EV/sales valuation method and DCF valuation method.

DCF-based fair value: We derive a fair value of USD7.00 from our DCF calculation, with assumptions of 2% FCF perpetuity growth. For WACC, we use a 4.0% risk-free rate, 12% market return and Beta of 1.2 to calculate and derive the discount rate (WACC) of 11%.

EV/sales-based fair value: We derive a fair value of USD5.90. We apply a target EV/sales multiple of 1.6x to 2024E sales. The 1.6x target multiple is 1SD below historical average one-year forward EV/sales. The lower target multiple mainly reflects: (1) China EV industry volume growth deceleration, (2) competition landscape evolution and increasing difficulty to gain share in such dynamics, (3) our expectation NIO's volume growth will slow in 2024.

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

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APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Aima Technology	XIHBF	603529 CH	Joey Yang, CFA
	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	Kentaro Hosoda
	EVE	XEVFF	300014 CH	Ming Hsun Lee, CFA

APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Fuyao Glass	XGIF	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	HSAL	HSAL US	Jessie Lo
	HL Mando	XMADF	204320 KS	KJ Hwang
	Honda Motor	HMC	HMC US	Kentaro Hosoda
	Honda Motor	HNDAF	7267 JP	Kentaro Hosoda
	Huayu	XHASF	600741 CH	Jessie Lo
	Hyundai Motor	HYMLF	005380 KS	KJ Hwang
	Joyson	XQMWF	600699 CH	Jessie Lo
	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	Kentaro Hosoda
	Minth	MNTHF	425 HK	Jessie Lo
	Ningbo Tuopu	XNCGF	601689 CH	Joey Yang, CFA
	Nissan Motor	NSANF	7201 JP	Kentaro Hosoda
	Nissan Motor	NSANY	NSANY US	Kentaro Hosoda
	SAMIL (Motherson International)	XMSUF	MOTHERSO IN	Gunjan Prithyani
	Shenzhen Kedali	XWCSF	002850 CH	Jessie Lo
	Shuanghuan Driveline	XZSHF	002472 CH	Jessie Lo
	Sumitomo Rubber Industries	SMTUF	5110 JP	Kentaro Hosoda
	Suzuki Motor	SZKMF	7269 JP	Kentaro Hosoda
	Tata Motors	XTTSF	TTMT IN	Gunjan Prithyani
	Toyo Tire	TOTTF	5105 JP	Kentaro Hosoda
	Toyota Motor	TOYOF	7203 JP	Kentaro Hosoda
	Toyota Motor	TM	TM US	Kentaro Hosoda
	Wencan	XSCDF	603348 CH	Joey Yang, CFA
	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	Kentaro Hosoda
	Ashok Leyland	XDBVF	AL IN	Gunjan Prithyani
	Bridgestone	BRDCF	5108 JP	Kentaro Hosoda
	Bridgestone	BRDCY	BRDCY US	Kentaro Hosoda
	CALB	XCLSF	3931 HK	Ming Hsun Lee, CFA
	Dong Feng	DNFGF	489 HK	Ming Hsun Lee, CFA
	Eicher Motors	XEIMF	EIM IN	Gunjan Prithyani
	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	Kentaro Hosoda
	Subaru Corp	FUJHY	FUJHY US	Kentaro Hosoda
	Toyota Industries Corporation	TYIDF	6201 JP	Kentaro Hosoda
	Toyota Industries Corporation	TYIDY	TYIDY US	Kentaro Hosoda
	TVS Motors	XFKMF	TVSL IN	Gunjan Prithyani
	Yokohama Rubber	YORUF	5101 JP	Kentaro Hosoda
	Yongda	CYYHF	3669 HK	Joey Yang, CFA

APR - Autos Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
UNDERPERFORM	Astra International	PTAIF	ASII J	Paul Dewberry
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	Bharat Forge	XUUVF	BHFC IN	Gunjan Prithyani
	China Grand Auto	XMURF	600297 CH	Joey Yang, CFA
	Desay SV	XGDFF	002920 CH	Jessie Lo
	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
	Mitsubishi Motors	MMTOF	7211 JP	Kentaro Hosoda
	Nextage	NXAGF	3186 JP	Kentaro Hosoda
	Nexteer	NTXVF	1316 HK	Jessie Lo
	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
RVW	Geely	GELYF	175 HK	Ming Hsun Lee, CFA

iQmethodSM Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	$\text{NOPAT} = (\text{EBIT} + \text{Interest Income}) \times (1 - \text{Tax Rate}) + \text{Goodwill Amortization}$	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill
Return On Equity	Net Income	Amortization
Operating Margin	Operating Profit	Shareholders' Equity
Earnings Growth	Expected 5 Year CAGR From Latest Actual	Sales
Free Cash Flow	Cash Flow From Operations – Total Capex	N/A
		N/A
Quality of Earnings	Numerator	Denominator
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt – Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit	Numerator	Denominator
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap = Current Share Price × Current Basic Shares
Enterprise Value / Sales	$\text{EV} = \text{Current Share Price} \times \text{Current Shares} + \text{Minority Equity} + \text{Net Debt} + \text{Other LT Liabilities}$	Sales
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

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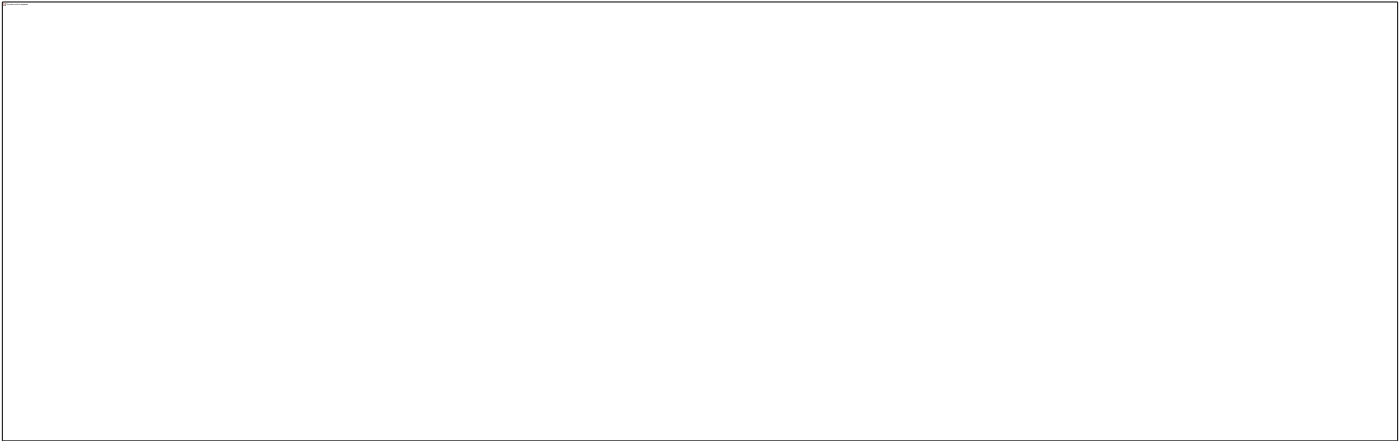
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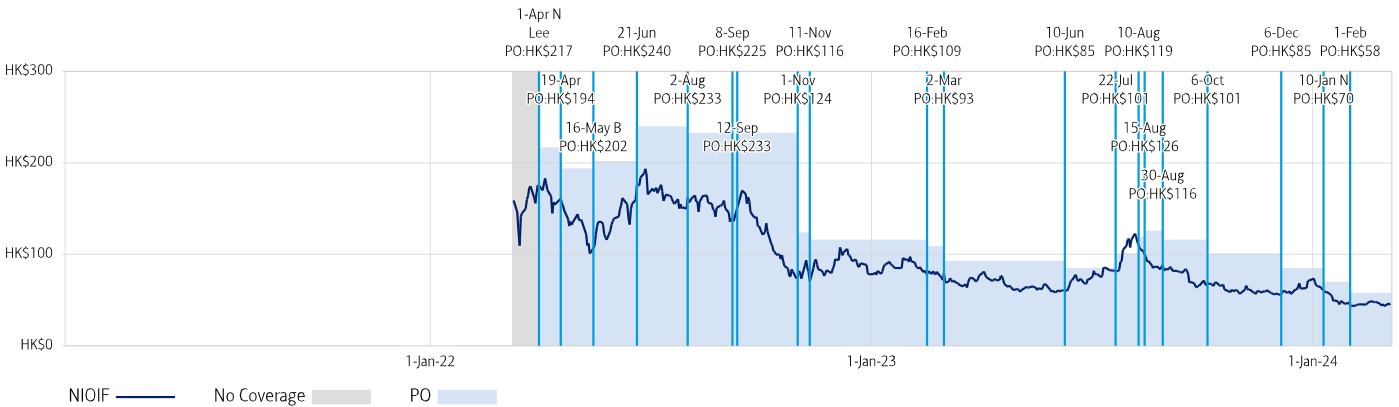
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NIO (NIO) Price Chart



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NIO (NIOIF) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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NIO (XLTWF) Price Chart



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Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	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 ^{R1}	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%

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

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