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## Autos &amp; Shared Mobility | North America

## Global Auto Monitor

## What Others Are Reading - Our Most Read Reports

[NORTH AMERICA] **TLA: China EV Price Cuts: Supply/Demand Still Out of Balance? (Aug 17)** Tesla China effectively cut price on Model Y by 4%, raising

questions around excess EV supply relative to slowing demand despite government stimulus. As legacy OEMs recast their China EV strategies with local EV partners, we wonder whether these moves are too little, too late?

[NORTH AMERICA] **Ford: Ford/Changan Form New JV: Gives Ford a Shot at EV Relevance in China (Aug 14)** While largely expected, the Ford/Changan NEV JV may help stem its 74pct sales decline in China since 2016. Could it also help Ford's EV strategy abroad?

[EUROPE] **European Trucks: Forecast upgrade – Earnings momentum continues (Aug 21)** We update our forecasts and price targets following OEM outperformance YTD and our latest work on the cycle. OEMs exceeded expectations again in 2Q23, and we see some of this strength in global truck demand continuing into year end.

[EUROPE] **STLA: Updating Estimates – Lifting PT to €20 (Aug 15)** Updating forecasts for the very strong 1H23 results, we now see Stellantis trading on 3.5x FY24e P/E. We expect the shares to remain sensitive to UAW news flow, but at these valuations we think the stock is already priced for a partial normalisation in margins. Stay Overweight PT €20.

[EUROPE] **Big Auto Data – the end of easy (Aug 15)** Global unit sales continue to improve YoY but this doesn't necessarily translate into better fundamentals for global auto stocks. US new car CPI has turned negative and higher unit volumes imply some downshift in model mix. The market continues to a good job of fading peak earnings.

[CHINA] **At First, a Trickle...: How China EVs Will Reshape Autos (Aug 15)** China-made EVs are infiltrating developed markets, rivaling global peers with superior affordability, variety and quality. By 2030, we expect them to have a 30% EV share outside China. Here we discuss what could drive the next round of global autos shake-up.

[CHINA] **China EV - Price cuts not over (Aug 15)** Investors we talked to are becoming more cautious on China EVs after a solid run in the past 3 months, with Tesla's further price cuts of particular concern. However, exports and global collaborations remained bright spots.

[CHINA] **Thoughts on sector correction (Aug 14)** Overall auto/EV sector corrected 5-10% today as investors' concerns over a new round of price cuts re-emerged. While the market previously expected the price truce to last for longer, Tesla's price cut today dashed any such hopes. Who will be next?

[S.KOREA] **Presentation: S. Korea Autos, EV Batteries and Energy & Materials (Aug 16)**

MORGAN STANLEY &amp; CO. LLC

Adam Jonas, CFA

Equity Analyst

Adam.Jonas@morganstanley.com

+1 212 761-1726

MORGAN STANLEY MUFG SECURITIES CO., LTD.+

Shinji Kakiuchi

Equity Analyst

Shinji.Kakiuchi@morganstanleymufg.com

+81 3 6836-5416

MORGAN STANLEY &amp; CO. INTERNATIONAL PLC+

Ross A MacDonald, CFA

Equity Analyst

Ross.MacDonald@morganstanley.com

+44 20 7425-0240

MORGAN STANLEY ASIA LIMITED+

Tim Hsiao

Equity Analyst

Tim.Hsiao@morganstanley.com

+852 2848-1982

MORGAN STANLEY &amp; CO. INTERNATIONAL PLC, SEOUL BRANCH+

Young Suk Shin

Equity Analyst

Young.Shin@morganstanley.com

+82 2 399-4994

MORGAN STANLEY ASIA LIMITED+

Shelley Wang, CFA

Equity Analyst

Shelley.Wang@morganstanley.com

+852 3963-0047

Joey Xu, CFA

Equity Analyst

Joey.Xu@morganstanley.com

+852 3963-0337

MORGAN STANLEY INDIA COMPANY PRIVATE LIMITED+

Sushrut Ghalsashi, CFA

Research Associate

Sushrut.Ghalsashi@morganstanley.com

+91 22 6118-1073

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**Global picks:** RACE, Michelin, Zhongsheng, Denso, Mando, and MSIL are our preferred stocks from each major region.

**Our global industry views:** Our view on India auto is Attractive. We have In-Line views on the North America, Europe, China, Japan, and South Korea industries.

**Exhibit 1:** What Changed This Past Week?

Company	Rating	Price Target
STLA	OW	€ 18.00 → € 20.00
IVECO	EW	€ 7.50 → € 8.00
Traton	EW	€ 20.00 → € 22.00
Volvo	EW	SKr 210.00 → SKr 228.00
Daimler Truck Holding	OW	€ 41.00 → € 43.00
Anhui Jianghuai	UW → EW	Rmb 12.00 → Rmb 11.60
Wencan Group	UW	Rmb 42.00 → Rmb 37.00
Hesai Group	OW	Rmb 26.50 → Rmb 15.50

Source: Morgan Stanley Research estimates

# Global Auto Sales Summary

Exhibit2: Global Auto Sales Summary

Country	LIGHT VEHICLE SALES FORECASTS								GROWTH %								CAGR '22-'25E
	2018	2019	2020	2021	2022	2023e	2024e	2025e	2018	2019	2020	2021	2022	2023e	2024e	2025e	
<b>Asia</b>																	
China	23.7	21.4	20.1	21.5	23.7	23.6	22.9	23.4	-4.2%	-9.5%	-6.1%	6.6%	10.2%	0.0%	-3.2%	2.2%	-0.4%
Japan	5.2	5.1	4.5	4.3	4.9	4.9	5.0	5.2	1.0%	-1.5%	-12.7%	-3.1%	13.7%	0.2%	0.8%	5.0%	2.0%
South Korea	1.6	1.5	1.6	1.4	1.4	1.4	1.5	1.5	5.0%	-2.0%	4.4%	-10.4%	-4.5%	5.0%	2.0%	2.0%	3.0%
India	3.4	3.0	2.4	3.1	3.8	4.2	4.5	4.9	5.1%	-12.7%	-17.9%	26.7%	23.0%	9.6%	7.9%	10.0%	9.2%
Indonesia	1.1	0.9	0.5	0.8	0.9	0.9	0.9	0.9	4.9%	-9.8%	-47.8%	65.9%	6.2%	2.3%	1.7%	1.7%	1.9%
Australia	1.1	1.0	0.9	1.0	1.1	1.0	1.0	1.1	-3.2%	-7.7%	-13.9%	15.7%	3.8%	-8.5%	4.1%	2.3%	-0.9%
Thailand	1.0	1.0	0.8	0.7	0.8	0.8	0.9	0.9	19.9%	-3.1%	-21.3%	-5.3%	11.8%	2.5%	3.4%	1.8%	2.6%
Rest of Asia	2.5	2.7	2.2	1.5	1.7	1.8	1.8	1.9	14.1%	7.9%	-19.4%	-29.5%	12.5%	3.9%	0.4%	5.1%	3.1%
Total Asia	39.6	36.8	33.0	34.5	38.3	38.7	38.4	39.8	-0.7%	-7.1%	-10.2%	4.4%	11.0%	1.2%	-0.7%	3.6%	1%
<b>North America</b>																	
US	17.3	17.1	14.6	15.1	14.3	15.0	16.0	16.2	-0.2%	-1.3%	-14.5%	3.4%	-5.1%	4.9%	6.7%	1.0%	4.2%
Canada	2.0	1.9	1.6	1.7	1.7	1.7	1.8	1.8	-2.2%	-3.2%	-18.8%	6.4%	2.6%	-0.7%	5.1%	4.1%	2.8%
Mexico	1.4	1.3	0.9	1.0	1.1	1.1	1.1	1.2	-7.3%	-7.2%	-28.1%	6.4%	8.0%	-0.8%	4.7%	3.0%	2.2%
Total NAFTA	20.7	20.3	17.1	17.7	17.1	17.8	18.9	19.2	-0.9%	-1.9%	-15.8%	3.9%	-3.7%	4.0%	6.4%	1.4%	3.9%
<b>South America</b>																	
Brazil	2.5	2.7	2.0	2.0	2.0	2.2	2.2	2.3	13.7%	7.7%	-26.7%	0.9%	0.0%	10.0%	3.0%	3.0%	5.3%
Argentina	0.6	0.4	0.3	0.4	0.4	0.4	0.4	0.4	-17.4%	-27.1%	-27.2%	9.4%	0.0%	5.0%	5.0%	0.0%	3.3%
Rest of South America	1.2	1.0	0.7	1.1	1.1	1.1	1.1	1.2	10.2%	-18.4%	-30.9%	53.2%	5.0%	0.0%	3.0%	3.0%	2.0%
Total South America	4.3	4.1	3.0	3.4	3.4	3.7	3.8	3.9	7.0%	-4.7%	-27.8%	14.0%	1.6%	6.3%	3.2%	2.7%	4.0%
<b>Eastern Europe</b>																	
Russia	1.9	1.9	1.6	1.7	0.6	0.6	0.7	0.8	12.4%	-3.7%	-12.5%	4.7%	-66.3%	-2.4%	19.4%	18.3%	11.3%
Turkey	0.8	0.6	0.9	0.7	0.9	0.9	0.9	0.9	-20.5%	-24.4%	63.4%	-21.3%	21.6%	0.0%	0.0%	0.0%	0.0%
Romania	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	5.4%	38.4%	-21.9%	-2.9%	0.6%	6.5%	5.8%	3.0%	5.1%
Poland	0.6	0.7	0.5	0.5	0.5	0.5	0.5	0.7	3.3%	10.9%	-22.1%	5.9%	-11.2%	5.0%	5.3%	25.5%	11.5%
Other E Europe	0.6	0.7	0.6	1.0	0.7	0.7	0.7	0.8	-4.0%	13.2%	-21.3%	67.4%	-29.1%	5.5%	4.6%	3.1%	4.4%
Total E. Europe	4.1	4.0	3.8	4.1	2.8	2.8	3.0	3.3	0.4%	-1.4%	-5.2%	7.6%	-32.1%	2.1%	6.3%	9.5%	5.9%
<b>Western Europe</b>																	
France	2.5	2.7	2.0	2.1	1.9	2.0	2.2	2.3	1.1%	4.8%	-23.9%	1.0%	-8.6%	7.8%	7.9%	4.3%	6.6%
Germany	4.0	4.2	3.4	3.1	2.9	3.2	3.3	3.4	1.1%	4.6%	-17.8%	-10.0%	-5.5%	8.9%	4.1%	4.2%	5.7%
Italy	2.2	2.1	1.5	1.6	1.4	1.6	1.7	1.7	-0.2%	-2.4%	-27.3%	6.0%	-11.8%	8.6%	5.9%	4.0%	6.1%
Spain	1.5	1.5	1.0	1.0	0.9	1.0	1.1	1.2	2.3%	0.5%	-31.5%	0.1%	-6.6%	10.0%	6.9%	5.1%	7.3%
UK	2.9	2.7	1.9	2.0	1.9	2.0	2.1	2.2	-0.5%	-6.9%	-28.2%	3.7%	-7.0%	4.3%	5.7%	6.5%	5.5%
Other	3.6	3.6	2.8	2.9	2.6	3.0	3.1	3.2	0.8%	-0.9%	-20.5%	0.9%	-7.5%	12.3%	5.8%	2.5%	6.8%
Total W. Europe	16.7	16.7	12.8	12.7	11.7	12.7	13.5	14.0	0.7%	0.2%	-23.5%	-1.0%	-7.6%	8.8%	5.8%	4.2%	6.3%
Total Europe (incl Russia & Turkey)	20.7	20.7	16.6	16.7	14.5	15.6	16.5	17.3	0.6%	-0.1%	-19.9%	1.0%	-13.6%	7.5%	5.9%	5.2%	6.2%
<b>Rest of World</b>	4.8	4.5	4.1	4.3	4.3	4.3	4.3	4.4	-0.1%	-6.5%	-9.3%	5.0%	0.0%	0.0%	0.0%	1.6%	0.5%
RoW (vs US specific countries)	18.0	17.3	13.7	14.7	15.0	15.3	15.7	16.2									
<b>Global PC Total</b>	81.7	78.1	66.9	69.0	69.9	72.1	73.8	76.4	-0.7%	-4.5%	-14.3%	3.2%	1.3%	3.1%	2.3%	3.5%	3.0%
<b>Global LCV Total</b>	8.1	8.0	6.6	7.8	7.6	7.9	8.2	8.3	3.5%	-1.3%	-17.4%	18.5%	-2.7%	4.1%	3.7%	1.5%	3.1%
<b>Global LV Total</b>	89.8	86.1	73.5	76.8	77.6	80.0	82.0	84.7	-0.4%	-4.2%	-14.6%	4.6%	0.9%	3.2%	2.4%	3.3%	3.0%
<b>ICE sales</b>	88.4	84.4	71.2	71.5	69.6	70.3	69.6	69.6	-1.0%	-4.5%	-15.6%	0.4%	-2.7%	1.1%	-1.0%	0.0%	0.0%
<b>EV sales</b>	1.4	1.6	2.3	5.4	8.0	9.7	12.3	15.1	72.0%	17.2%	37.6%	136.5%	49.1%	21.2%	27.4%	22.2%	23.6%

Source: Morgan Stanley Research estimates, IHS Autolinsight



# Global Auto Stock Rankings

**Exhibit 3:** North America Coverage Rankings

North America			2023e EPS		
			MS	Cons	
1	Ferrari	OW	€ 6.40	€ 7.09	(9.7%)
2	Harley-Davidson	OW	4.59	4.60	(0.2%)
3	Ford Motor	OW	2.12	2.09	1.5%
4	General Motors	OW	7.78	7.68	1.3%
5	American Axle	OW	0.47	0.37	24.7%
6	Magna International	OW	5.40	5.30	1.9%
7	BorgWarner Inc.	OW	3.81	3.85	(1.2%)
8	Avis Budget	OW	37.57	36.94	1.7%
9	FREYR Battery	OW	-1.39	-1.08	NM
10	CarMax	OW	3.03	3.02	0.6%
11	Rivian	OW	-5.65	-5.19	NM
12	Tesla	EW	3.26	3.44	(5.2%)
13	Hertz	EW	1.93	2.38	(18.6%)
14	Lear	EW	11.77	11.82	(0.5%)
15	Visteon	EW	6.14	6.74	(9.0%)
16	APTIV	EW	4.78	4.71	1.6%
17	Mobileye Global	EW	0.70	0.70	0.0%
18	Carvana	UW	-3.79	-3.70	NM
19	Adient	UW	2.17	2.16	0.6%
20	AutoNation	UW	22.76	22.87	(0.5%)
21	Penske Automotive Group	UW	16.79	16.55	1.5%
22	Group 1 Automotive	UW	46.08	44.25	4.1%
23	Lithia Motors	UW	36.92	38.26	(3.5%)
24	Asbury Automotive	UW	33.94	33.50	1.3%
25	Sonic Automotive	UW	6.62	6.67	(0.7%)
26	Lucid	UW	-1.21	-1.49	NM
27	Li-Cycle	UW	-0.93	-0.87	NM
28	QuantumScape	UW	-0.89	-0.82	NM
29	Fisker	UW	-0.96	-0.84	NM

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit 5:** Europe Coverage Rankings

Europe			2023e EPS		
			MS	Cons	
1	Michelin	OW	3.15	3.15	0.2%
2	Daimler Truck Holding	OW	4.45	4.37	1.8%
3	Pirelli	OW	0.56	0.51	10.9%
4	Aramis Autos	EW	-0.25	-0.35	NM
5	Volkswagen	EW	31.93	31.93	0.0%
6	Mercedes-Benz	EW	13.38	13.05	2.5%
7	Autoliv	EW	6.93	6.71	3.3%
8	BMW	EW	17.14	17.39	(1.4%)
9	Volvo	EW	24.88	25.26	(1.5%)

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit 4:** Japan Coverage Rankings

Japan			2023e EPS		
			MS	Cons	
1	Denso	OW	613.07	706.97	(13.3%)
2	NHK Spring	OW	109.93	136.57	(19.5%)
3	NOK	OW	140.52	172.62	(18.6%)
4	Mitsubishi Motors	OW	85.72	91.44	(6.3%)
5	Musashi Seimitsu	OW	136.22	204.94	(33.5%)
6	Suzuki Motor	OW	531.39	561.30	(5.3%)
7	Yokohama Rubber	OW	352.84	358.98	(1.7%)
8	Toyota Motor	EW	246.36	263.39	(6.5%)
9	Unipres	EW	114.67	93.73	22.3%
10	Mazda Motor	EW	280.55	267.11	5.0%
11	Toyota Industries	EW	634.50	738.43	(14.1%)
12	Toyoda Gosei	EW	239.41	297.23	(19.5%)
13	Toyo Tire & Rubber	EW	233.93	297.45	(21.4%)
14	Bridgestone	EW	527.86	538.86	(2.0%)
15	Stanley Electric	EW	164.79	229.72	(28.3%)
16	Honda Motor	EW	547.52	599.58	(8.7%)
17	EXEDY	EW	202.32	243.85	(17.0%)
18	Koito Mfg.	EW	164.71	182.70	(9.8%)
19	Nissan Motor	EW	83.89	102.51	(18.2%)
20	Aisin Seiki	UW	389.58	577.74	(32.6%)
21	Nifco	UW	230.01	289.72	(20.6%)
22	Toyota Boshoku	UW	222.06	283.76	(21.7%)
23	Sumitomo Rubber	UW	90.78	98.85	(8.2%)
24	Subaru Corp	UW	341.94	343.00	(0.3%)

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit 6:** China Coverage Rankings

China			2023e EPS		
			MS	Cons	
1	Guangzhou Auto	OW	0.69	0.86	(20.3%)
2	Great Wall	OW	0.62	0.73	(14.6%)
3	Yongda Auto	OW	0.57	0.62	(9.1%)
4	Mint Group	OW	1.88	1.81	3.8%
5	Nexteer Automotive	OW	0.06	0.05	20.0%
6	Dongfeng	EW	1.11	1.01	10.6%
7	BYD	EW	7.45	9.73	(23.4%)
8	Baoxin Auto	UW	0.13	0.15	(15.4%)
9	Zhengtong Auto	UW	0.08	0.08	0.0%
10	BAIC Motor	UW	0.34	0.50	(32.5%)

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit7:** India Coverage Rankings

India		2023e EPS		
		MS	Cons	
1	Maruti Suzuki	OW	365.67	431.26 (15.2%)
2	Bharat Forge	OW	25.38	26.73 (5.1%)
3	Ashok Leyland	OW	8.29	9.66 (14.2%)
4	Mahindra & Mahindra	OW	84.92	85.31 (0.5%)
5	Tata Motors	OW	39.48	45.13 (12.5%)
6	Exide Industries	OW	12.08	14.95 (19.2%)
7	Bajaj Auto	OW	240.25	278.23 (13.7%)
8	Apollo Tyres	EW	26.05	26.06 (0.0%)
9	Eicher Motors Ltd.	EW	106.53	101.83 4.6%
10	TVS Motor	EW	39.86	52.47 (24.0%)
11	Hero MotoCorp	UW	179.33	200.61 (10.6%)
12	Balkrishna Industries	UW	75.31	75.20 0.1%
13	Amara Raja	UW	43.44	48.50 (10.4%)

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit 9:** S.Korea Coverage Rankings

S.Korea		2023e EPS		
		MS	Cons	
1	Mando Corp	OW	4204.74	4719.34 (10.9%)
2	S&T Motiv	OW	7700.40	7236.43 6.4%
3	Kia Motors	OW	21964.60	22402.38 (2.0%)
4	Hyundai MOBIS	EW	31010.45	36278.51 (14.5%)
5	Hyundai Motor	EW	55437.60	46574.47 19.0%
6	Hankook Tire	UW	4071.20	5345.35 (23.8%)
7	Hanon Systems	UW	392.49	515.05 (23.8%)

Source: Refinitiv, Morgan Stanley Research estimates

**Exhibit8:** Taiwan Coverage Rankings

Taiwan		2023e EPS		
		MS	Cons	
1	Macauto Industrial	OW	9.78	9.38 4.3%
2	Hota Industrial	OW	3.32	2.98 11.4%
3	Global PMX	EW	10.93	7.93 37.8%
4	Hu Lane Associates	EW	9.89	8.97 10.3%
5	Cheng Shin Rubber	UW	2.23	2.16 3.6%

Source: Refinitiv, Morgan Stanley Research estimates

*Note: Coverage Rankings are as of Aug 21, 2023*

# Global OEM Comps

**Exhibit 10:** Global OEM Comps - RACE, Guangzhou, Toyota Motors and MSIL are preferred stocks

Company	Currency	Price at	MS	Upside to	MS	Market Cap		MS EPS		Consensus EPS		P / E		EV / EBITDA (3)		EV / Sales (3)		P / B	
		21-Aug	Price Target	PT (%)	Rating	LC	US\$	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e
Europe																			
Mercedes-Benz	EUR	67.02	73.50	10%	EW	71.7	78.0	13.38	12.29	13.05	12.82	5.0x	5.5x	2.7x	2.9x	0.5x	0.5x	0.8x	0.7x
Volkswagen	EUR	114.46	154.00	35%	EW	63.1	68.6	31.93	31.42	31.93	31.64	3.6x	3.6x	0.4x	0.4x	0.1x	0.0x	0.3x	0.3x
Daimler Truck Holding	EUR	33.25	43.00	29%	OW	27.4	29.8	4.45	4.32	4.37	4.25	7.5x	7.7x	6.1x	6.3x	0.7x	0.7x	1.2x	1.1x
Renault	EUR	36.66	44.00	20%	OW	10.8	11.8	12.17	12.70	12.38	12.75	3.0x	2.9x	NA	NA	NA	NA	0.3x	0.3x
Stellantis	USD	16.35	22.00	35%	OW	55.9	55.9	5.46	4.90	5.57	5.12	3.0x	3.3x	NA	NA	NA	NA	0.6x	0.5x
BMW	EUR	98.25	100.00	2%	EW	62.3	67.7	17.14	14.55	17.39	16.52	5.7x	6.8x	1.6x	1.6x	0.3x	0.2x	0.7x	0.6x
Europe Weighted Average												4.7x	5.1x	2.2x	2.2x	0.3x	0.3x	0.7x	0.6x
North America																			
Ford Motor	USD	11.96	16.00	34%	OW	47.0	47.0	2.12	1.93	2.09	1.91	5.6x	6.2x	2.0x	1.7x	0.2x	0.2x	1.1x	1.0x
General Motors	USD	33.12	41.00	24%	OW	45.6	45.6	7.78	6.52	7.68	6.77	4.3x	5.1x	1.6x	1.5x	0.2x	0.2x	0.6x	0.5x
North America Weighted Average												5.0x	5.6x	1.8x	1.6x	0.2x	0.2x	0.8x	0.7x
China																			
BYD	HKD	218.60	249.00	14%	EW	694.4	88.7	7.45	9.88	9.73	13.35	29.3x	22.1x	11.7x	8.8x	1.0x	0.8x	4.5x	3.7x
Great Wall	HKD	9.09	13.00	43%	OW	188.8	24.1	0.62	0.98	0.73	0.98	14.6x	9.3x	15.5x	10.8x	1.0x	0.9x	1.1x	1.0x
Weichai Power	HKD	9.50	12.00	26%	EW	105.0	13.4	0.75	0.91	0.89	1.10	12.7x	10.4x	4.0x	3.7x	0.3x	0.3x	1.0x	0.9x
SAIC Motor	CNY	13.97	18.00	29%	OW	163.2	22.4	1.67	1.89	1.39	1.57	8.4x	NA	3.9x	3.0x	0.2x	0.1x	0.6x	0.5x
BAIC Motor	HKD	1.89	1.80	(5%)	UW	4.8	0.6	0.34	0.33	0.50	0.50	5.6x	NA	0.0x	0.3x	0.0x	0.0x	0.2x	0.2x
Zhengzhou Yutong Bus C	CNY	12.67	14.00	10%	EW	28.1	3.8	1.24	NA	0.57	0.83	10.2x	NA	4.6x	NA	0.5x	NA	1.5x	NA
Chongqing Changan	HKD	3.63	5.80	60%	OW	122.2	15.6	0.97	0.59	1.05	1.01	3.8x	6.1x	4.7x	6.8x	0.4x	0.4x	0.5x	0.5x
Jiangling Motors	HKD	6.49	7.20	11%	EW	11.9	1.5	0.53	0.56	NA	NA	12.2x	11.7x	1.1x	0.1x	0.1x	0.0x	0.6x	0.5x
Dongfeng	HKD	2.91	4.10	41%	EW	8.1	1.0	1.11	1.02	1.01	0.99	2.6x	2.8x	0.3x	0.4x	0.0x	0.1x	0.1x	0.1x
Guangzhou	HKD	4.09	8.30	103%	OW	93.3	11.9	1.42	1.56	0.86	0.92	2.9x	2.6x	17.6x	7.4x	0.5x	0.4x	0.3x	0.3x
Anhui Jianghuai	CNY	12.10	11.60	(4%)	EW	26.4	3.6	0.14	0.22	0.08	0.18	84.0x	56.1x	10.5x	9.9x	0.6x	0.5x	1.9x	1.9x
China Weighted Average												20.2x	16.7x	10.2x	7.6x	0.7x	0.6x	2.5x	2.1x
South Korea																			
Hyundai Motor	KRW	186,100.00	230,000.00	24%	EW	45,833.1	34.2	55,437.60	46,280.77	46,574.47	44,508.91	3.4x	4.0x	2.0x	2.1x	0.2x	0.2x	0.4x	0.4x
Kia Motors	KRW	78,100.00	105,000.00	34%	OW	31,399.7	23.5	21,964.60	21,506.88	22,402.38	21,548.34	3.6x	3.6x	2.3x	2.4x	0.3x	0.3x	0.7x	0.6x
South Korea Weighted Average												3.4x	3.9x	2.1x	2.2x	0.3x	0.3x	0.5x	0.5x
Japan																			
Toyota Motor	JPY	2,356.50	2,400.00	2%	EW	38,446.3	264.7	246.36	265.38	263.39	273.29	9.6x	8.9x	5.6x	5.2x	0.7x	0.7x	1.0x	1.0x
Mazda Motor	JPY	1,388.50	1,400.00	1%	EW	877.3	6.0	280.55	313.45	267.11	278.48	4.9x	4.4x	1.3x	0.9x	0.1x	0.1x	0.6x	0.5x
Suzuki Motor	JPY	5,180.00	5,900.00	14%	OW	2,544.1	17.5	531.39	588.96	561.30	602.55	9.7x	8.8x	3.8x	3.4x	0.5x	0.4x	1.1x	1.1x
Mitsubishi Motors	JPY	557.40	610.00	9%	OW	830.7	5.7	85.72	101.93	91.44	95.15	6.5x	5.5x	2.3x	1.7x	0.2x	0.2x	0.9x	0.8x
Subaru Corp	JPY	2,634.00	2,400.00	(9%)	UW	2,026.0	13.9	341.94	371.75	366.42	367.46	7.7x	7.1x	11.1x	9.4x	0.3x	0.3x	0.9x	0.8x
Nissan Motor	JPY	584.70	560.00	(4%)	EW	2,467.9	17.0	83.89	93.23	102.51	106.76	7.0x	6.3x	1.9x	1.4x	0.1x	0.1x	0.4x	0.4x
Honda Motor	JPY	4,420.00	4,400.00	(0%)	EW	8,006.5	55.1	547.52	628.06	599.58	620.03	8.1x	7.0x	2.9x	2.4x	0.2x	0.2x	0.6x	0.6x
Japan Weighted Average												9.1x	8.3x	5.0x	4.6x	0.6x	0.6x	0.9x	0.9x
India (2)																			
Maruti Suzuki	INR	9,435.8	11,164.0	18%	OW	2,850.4	34.3	365.7	410.7	431.3	472.6	25.8x	23.0x	15.3x	13.4x	1.7x	1.5x	4.3x	3.9x
Bajaj Auto	INR	4,609.8	5,063.0	10%	OW	1,304.4	15.7	240.2	285.0	278.2	310.6	19.2x	16.2x	15.2x	12.4x	2.8x	2.4x	4.8x	4.5x
TVS Motor	INR	1,348.3	1,171.0	(13%)	EW	640.5	7.7	39.9	44.8	52.5	59.6	33.8x	30.1x	19.1x	16.9x	2.2x	1.9x	8.5x	7.0x
Hero MotoCorp	INR	2,931.4	2,344.0	(20%)	UW	585.8	7.0	179.3	197.4	200.6	225.8	16.3x	14.8x	9.3x	8.2x	1.2x	1.1x	3.2x	3.0x
Mahindra & Mahindra	INR	1,538.7	1,697.0	10%	OW	1,913.4	23.0	84.9	95.5	85.3	89.5	18.1x	16.1x	12.6x	11.3x	1.8x	1.6x	3.6x	3.0x
Tata Motors	INR	620.7	711.0	15%	OW	2,266.9	27.3	39.5	48.4	53.0	64.5	11.7x	9.6x	4.6x	4.0x	0.7x	0.6x	3.9x	3.0x
Balkrishna Industries	INR	2,382.3	1,765.0	(26%)	UW	460.5	5.5	75.3	96.5	93.9	108.6	31.6x	24.7x	19.7x	15.7x	4.7x	4.2x	5.3x	4.6x
Ashok Leyland	INR	186.9	214.0	14%	OW	548.8	6.6	8.3	9.1	9.7	10.3	22.5x	20.5x	13.0x	12.0x	1.4x	1.3x	5.5x	4.8x
India Weighted Average												20.6x	18.0x	12.5x	10.8x	1.8x	1.5x	4.5x	3.8x
Global Weighted Average												10.6x	9.4x	5.9x	5.1x	0.7x	0.6x	1.5x	1.3x

Source: Refinitiv, Morgan Stanley Research estimates

Notes: 1) For Renault EV calculation, Nissan and Volvo stakes are subtracted at 20% discount to their current market cap. (2) For Indian companies, 2020 and 2021 estimates refer to the fiscal years ending March 2021 and March 2022, respectively. (3) EV/EBITDA excludes the impact from pension and healthcare liabilities with the exception of Ford. Ford is calculated on an EV/EBITDAP and includes pension and healthcare liabilities. Notes: e = Morgan Stanley Research est. O = Overweight; E = Equal-weight; U = Underweight; NC = Not Covered. Valuation multiples are based on MS est. unless a company is restricted or NC, in which case cons. est. are used 4) PTs & Ratings are as Aug 21, 2023

# EV OEMs Comps

Exhibit 11: EV OEM Comps

Company	Currency	Price at 21-Aug	MS Price Target	Upside to PT (%)	MS Rating	Market Cap		Current EV	MS EPS		Consensus EPS		P / E		EV / EBITDA		EV / Sales		P / B	
						LC	USD		LC	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e
North America																				
Tesla	USD	215.49	250.00	16%	EW	684.0	684.0	727.2	2.77	3.24	3.38	4.80	77.7x	66.4x	49.2x	36.4x	7.3x	5.5x	13.7x	11.3x
Lucid	USD	6.18	5.00	(19%)	UW	14.1	14.1	9.8	-1.21	-0.76	-1.49	-1.09	NM	NM	NM	NM	12.5x	4.9x	2.8x	3.7x
Flaker	USD	5.53	4.00	(28%)	UW	1.2	1.2	3.1	-0.96	-0.60	-0.84	-0.40	NM	NM	NM	NM	1.6x	1.1x	12.5x	20.5x
Route	USD	20.78	24.00	15%	OW	19.5	19.5	18.5	-0.65	-3.49	-0.19	-3.97	NM	NM	NM	NM	4.3x	3.4x	2.5x	2.7x
North America Weighted Average													77.7x	66.4x	49.2x	36.4x	7.3x	5.4x	13.1x	10.9x
China																				
NIO Inc.	USD	10.67	18.70	75%	OW	17.6	17.6	263.7	-5.82	-0.29	-1.22	-0.62	NM	NM	NM	78.1x	3.9x	1.9x	6.4x	5.8x
Li Auto Inc.	USD	38.60	53.00	36%	OW	34.9	34.9	224.7	3.35	6.83	0.88	1.57	11.6x	5.7x	45.7x	23.8x	1.9x	1.3x	4.9x	3.9x
BYD Company	HKD	218.60	249.00	14%	EW	694.4	88.7	578.9	7.45	9.88	9.73	13.35	29.3x	22.1x	12.0x	9.0x	1.0x	0.8x	4.5x	3.7x
Xpeng Inc.	USD	14.98	25.40	70%	OW	10.8	10.8	92.6	-8.21	-7.21	-1.06	-0.68	NM	NM	NM	NM	3.2x	1.6x	3.1x	3.9x
China Weighted Average													24.3x	17.5x	21.5x	21.3x	1.7x	1.1x	4.7x	4.0x
Global Weighted Average													69.5x	59.0x	45.0x	33.8x	6.3x	4.7x	11.7x	9.7x

Source: Refinitiv, Morgan Stanley Research estimates Note: PTs & Ratings are as of Aug 21, 2023



# Global Supplier Comps

**Exhibit12:** Global Supplier Comps: AXL, Valeo, Huayu, Denso, Mando and Tata Motors are preferred stocks

Company	Currency	Price at 21-Aug	MS Price Target	Upside to PT (%)	MS Rating	Market Cap		MS EPS		Consensus EPS		P / E		EV / EBITDA		EV / Sales		P / B	
						LC	US\$	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e
Europe																			
Hella KGAA Hueck	EUR	66.00	NC	NA	NC	7.3	8.0	NA	NA	3.80	4.80	17.4x	13.7x	6.8x	6.0x	0.9x	0.9x	2.2x	2.0x
Europe Weighted Average												17.4x	13.7x	6.8x	6.0x	0.9x	0.9x	2.2x	2.0x
North America (1)																			
APTIV	USD	95.88	100.00	4%	EW	27.1	27.1	4.78	5.54	4.71	6.21	20.0x	17.3x	10.0x	8.6x	1.5x	1.3x	2.8x	2.4x
BorgWarner Inc.	USD	39.64	47.00	19%	OW	9.3	9.3	3.81	4.53	3.85	4.43	10.4x	8.8x	5.6x	4.6x	0.8x	0.7x	1.2x	1.1x
Lear	USD	141.97	140.00	(1%)	EW	8.3	8.3	11.77	14.87	11.82	16.37	12.1x	9.5x	5.2x	4.3x	0.4x	0.3x	3.3x	2.9x
Visteon	USD	136.10	145.00	7%	EW	3.8	3.8	6.14	8.10	6.74	9.73	22.2x	16.8x	9.8x	7.9x	0.9x	0.8x	10.2x	7.9x
Magna International	USD	55.64	65.00	17%	OW	15.9	15.9	5.40	6.70	5.30	6.62	10.3x	8.3x	4.3x	3.4x	0.4x	0.3x	1.1x	1.0x
Adient	USD	38.24	38.00	(1%)	UW	3.6	3.6	2.17	3.01	2.16	3.69	17.6x	12.7x	5.6x	5.1x	0.3x	0.3x	NM	NM
Garrett Motion	USD	8.01	NC	NA	NC	2.1	2.1	NA	NA	0.99	1.22	8.1x	6.5x	3.4x	3.2x	0.6x	0.5x	NA	NA
American Axle	USD	7.47	12.00	61%	OW	0.9	0.9	0.47	0.60	0.37	0.80	16.0x	12.4x	4.0x	3.4x	0.5x	0.4x	1.3x	1.2x
North America Weighted Average												15.3x	12.6x	7.1x	6.0x	0.9x	0.8x	2.6x	2.2x
Japan																			
Denso	JPY	9,411	10,000	6%	OW	7,415	51.1	613	714	707	789	15.4x	13.2x	7.6x	6.7x	1.0x	1.0x	1.5x	1.5x
Toyota Industries	JPY	9,868	8,400	(15%)	EW	3,215	22.1	635	683	738	820	15.6x	14.5x	11.4x	10.7x	1.3x	1.2x	0.8x	0.7x
Aisin Seiki	JPY	4,580	3,500	(24%)	UW	1,350	9.3	390	438	578	620	11.8x	10.5x	4.7x	4.3x	0.4x	0.4x	0.7x	0.7x
Koito Mfg.	JPY	2,469	2,500	1%	EW	794	5.5	165	209	183	203	15.0x	11.8x	4.4x	3.7x	0.5x	0.5x	1.2x	1.1x
Stanley Electric	JPY	2,528	2,800	11%	EW	433	3.0	165	234	230	267	15.3x	10.8x	4.5x	3.7x	0.7x	0.7x	0.9x	0.8x
Nifco	JPY	4,040	3,100	(23%)	UW	434	3.0	230	257	290	322	17.6x	15.7x	6.7x	6.0x	1.0x	0.9x	1.6x	1.5x
Toyota Boshoku	JPY	2,601	1,800	(31%)	UW	488	3.4	222	241	284	313	11.7x	10.8x	3.6x	3.2x	0.2x	0.2x	1.1x	1.1x
EXEDY	JPY	2,483	1,900	(23%)	EW	121	0.8	202	236	244	253	12.3x	10.5x	3.3x	3.0x	0.4x	0.3x	0.5x	0.5x
NHK Spring	JPY	1,096	1,250	14%	OW	267	1.8	110	157	137	161	10.0x	7.0x	4.2x	3.3x	0.4x	0.3x	0.7x	0.6x
Toyoda Gosei	JPY	2,971	2,200	(26%)	EW	386	2.7	239	276	297	326	12.4x	10.8x	4.5x	3.8x	0.5x	0.4x	0.8x	0.7x
Musashi Seimitsu	JPY	1,668	2,100	26%	OW	109	0.8	136	182	205	242	12.2x	9.2x	6.0x	5.2x	0.6x	0.5x	1.1x	1.0x
Unipres	JPY	1,142	1,100	(4%)	EW	55	0.4	108	182	154	197	10.6x	6.3x	2.7x	2.1x	0.3x	0.2x	0.4x	0.4x
NOK	JPY	1,899	2,250	18%	OW	329	2.3	141	205	173	225	13.5x	9.3x	4.6x	4.0x	0.5x	0.5x	0.6x	0.6x
Japan Weighted Average												14.7x	12.7x	7.5x	6.7x	0.9x	0.9x	1.2x	1.1x
China																			
Fuyao Glass	HKD	35.50	32.00	(10%)	EW	109.8	14.0	1.87	2.45	2.07	2.39	19.0x	14.5x	10.2x	8.1x	2.7x	2.3x	2.7x	2.4x
Huayu Automotive	HKD	18.44	25.00	36%	OW	58.1	8.0	2.13	2.30	2.10	2.31	8.6x	8.0x	3.5x	2.8x	0.2x	0.2x	1.0x	0.9x
Mint Group Limited	HKD	22.25	28.00	26%	OW	27.8	3.5	1.88	2.35	1.81	2.27	11.8x	9.5x	8.6x	6.4x	1.2x	1.0x	1.2x	1.0x
Changzhou Xingyu	HKD	134.43	172.00	28%	OW	38.4	5.3	3.86	5.30	4.15	5.66	34.8x	25.4x	23.2x	17.2x	3.6x	2.9x	4.1x	3.7x
Nexteer Automotive Group	HKD	4.85	7.50	55%	OW	95.3	12.2	0.06	0.09	0.35	0.54	79.5x	54.8x	3.5x	3.0x	0.4x	0.4x	0.8x	0.8x
China Weighted Average												35.5x	25.6x	8.5x	6.7x	1.6x	1.3x	1.9x	1.7x
South Korea																			
Hyundai MOBIS	KRW	229,500	250,000	9%	EW	21,638	16.2	31,010	31,022	36,279	38,792	7.4x	7.4x	6.6x	5.8x	0.4x	0.3x	0.5x	0.5x
LG Chem	KRW	568,000	770,000	36%	EW	42,664	31.9	27,076	56,557	27,228	52,686	21.0x	10.0x	6.3x	5.0x	0.9x	0.8x	1.2x	1.1x
Hanon Systems	KRW	9,320	7,800	(16%)	UW	4,975	3.7	392	490	515	619	23.7x	19.0x	8.1x	7.3x	0.8x	0.8x	2.1x	2.0x
Mando Corp	KRW	41,500	63,000	52%	OW	1,949	1.5	4,205	4,507	4,719	5,899	9.9x	9.2x	5.6x	5.5x	0.4x	0.4x	0.8x	0.8x
South Korea Weighted Average												16.7x	9.8x	6.5x	5.4x	0.7x	0.7x	1.1x	1.0x
Taiwan																			
Hu Lane Associate Inc.	TWD	146	140	(4%)	EW	15	0.5	9.89	10.83	2.04	2.47	14.8x	13.5x	10.6x	9.2x	2.3x	2.1x	2.5x	2.3x
Cub Elecparts Inc	TWD	133	148	12%	EW	15	0.5	10.93	13.30	1.64	2.43	12.1x	10.0x	6.8x	5.6x	1.7x	1.4x	1.7x	1.6x
Hota Industrial Mfg.	TWD	65	85	32%	OW	18	0.6	3.32	3.84	0.68	0.82	19.5x	16.8x	7.5x	6.7x	2.3x	2.0x	1.4x	1.4x
Taiwan Weighted Average												15.7x	13.6x	8.2x	7.1x	2.1x	1.8x	1.8x	1.7x
India																			
Exide Industries	INR	264	212	(20%)	OW	225	2.7	12.08	14.37	14.95	11.53	21.9x	18.4x	11.8x	10.0x	1.4x	1.2x	1.9x	1.7x
Samvardhana Motherson	INR	96	80	(16%)	EW	648	7.8	4.95	6.16	5.80	11.53	19.3x	15.5x	8.7x	7.5x	0.8x	0.7x	2.7x	2.4x
Amara Raja	INR	628	623	(1%)	UW	107	1.3	47.31	51.94	54.50	55.73	13.3x	12.1x	6.7x	5.7x	0.9x	0.8x	1.8x	1.6x
India Weighted Average												19.2x	15.8x	9.2x	7.9x	0.9x	0.8x	2.4x	2.2x
Global Weighted Average												18.5x	14.2x	7.4x	6.3x	1.0x	0.9x	1.7x	1.5x

Source: Refinitiv, Morgan Stanley Research estimates

Notes: (1) EV/EBITDA excludes the impacts from pension and healthcare liabilities with the exception of our North American coverage, which are calculated using EV/EBITDAP and do include pension and healthcare liabilities. (2) North America weighted averages are calculated without Mobileye. e = Morgan Stanley Research est; O = Overweight; E = Equal-weight; U = Underweight; NC = Not Covered. Valuation multiples are based on MS est. unless a company is restricted or NC, in which case cons. est. are used 3) PTs & Ratings are as of Aug 21, 2023



# Global Tire Comps

**Exhibit13:** Global Tire Comps: Michelin, Bridgestone and Mando are our preferred stocks

Company	Currency	Price at 21-Aug	MS Price Target	Upside to PT (%)	MS Rating	Market Cap		MS EPS		Consensus EPS		P / E		EV / EBITDA		EV / Sales		P / B	
						LC	US\$	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e
Europe																			
Continental	EUR	69.08	NC	NA	NC	13.8	15.0	NA	NA	7.64	9.51	9.0x	7.3x	4.1x	3.6x	0.5x	0.4x	1.0x	0.9x
Pirelli & C. SpA	EUR	4.55	5.50	21%	OW	4.5	4.9	0.56	0.62	0.51	0.57	8.1x	7.3x	4.7x	4.8x	1.1x	1.0x	0.8x	0.8x
Michelin	EUR	28.67	35.00	22%	OW	20.5	22.3	3.15	3.26	3.15	3.27	9.1x	8.8x	4.1x	3.8x	0.8x	0.7x	1.1x	1.0x
Europe Weighted Average												9.0x	8.1x	4.2x	3.8x	0.7x	0.7x	1.0x	1.0x
Japan																			
Bridgestone	JPY	5,513	5,700	3%	EW	3,935	27.1	528	569	539	569	10.4x	9.7x	4.3x	3.9x	0.9x	0.8x	1.2x	1.2x
Toyo Tire & Rubber Co	JPY	2,093	1,850	(12%)	EW	323	2.2	234	265	297	297	8.9x	7.9x	4.6x	4.2x	0.7x	0.7x	0.9x	0.9x
Sumitomo Rubber	JPY	1,396	1,100	(21%)	UW	367	2.5	91	138	99	138	15.4x	10.1x	6.4x	5.4x	0.5x	0.5x	0.7x	0.6x
Yokohama Rubber	JPY	2,842	3,400	20%	OW	482	3.3	353	423	359	422	8.1x	6.7x	6.5x	5.5x	0.9x	0.8x	0.7x	0.6x
Japan Weighted Average												10.5x	9.3x	4.6x	4.2x	0.8x	0.8x	1.1x	1.0x
Korea																			
Hankook Tire	KRW	39,400	33,000	(16%)	UW	4,881	3.6	4,071	4,136	5,345	6,276	9.7x	NA	3.2x	2.8x	0.6x	0.5x	0.5x	0.5x
Korea Weighted Average												9.7x	NA	3.2x	2.8x	0.6x	0.5x	0.5x	0.5x
Global Weighted Average												9.9x	8.7x	4.4x	3.9x	0.8x	0.7x	1.1x	1.0x

Source: Refinitiv, Morgan Stanley Research estimates

Notes: 1) e = Morgan Stanley Research est; O = Overweight; E = Equal-weight; U = Underweight; NC = Not Covered. Valuation multiples are based on MS est. unless a company is restricted or NC, in which case cons. est. are used. 2) ++Rating and price target for this company have been removed from consideration in this report because, under applicable law and/or Morgan Stanley policy, Morgan Stanley may be precluded from issuing such information with respect to this company at this time 3) PTs & Ratings are as of Aug 21, 2023

# Global Dealer Comps

**Exhibit14:** Global Dealer Comps: KMX and Zhongsheng are preferred stocks

Company	Currency	Price at 21-Aug	MS Price Target	Upside to PT (%)	MS Rating	Market Cap		Current EV	MS EPS		Consensus EPS		P / E		EV / EBITDA		EV / Sales		P / B	
						LC	US\$		LC	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e	2024e	2023e
North America																				
CarMax	USD	82.49	80.00	(3%)	OW	13.1	13.1	20.4	3.03	3.36	3.02	3.74	27.2x	24.6x	18.7x	15.2x	0.7x	0.6x	3.0x	2.7x
Penske Automotive Group	USD	169.93	107.00	(37%)	UW	11.4	11.4	12.7	16.79	17.68	16.55	15.90	10.1x	9.6x	6.3x	6.2x	0.4x	0.4x	2.4x	2.0x
Lithia Motors	USD	302.07	220.00	(27%)	UW	8.3	8.3	14.0	36.92	36.72	38.26	37.64	8.2x	8.2x	7.5x	7.9x	0.5x	0.5x	1.3x	1.1x
Sonic Automotive	USD	51.79	35.00	(32%)	UW	1.2	1.2	4.4	6.62	7.28	6.67	6.79	7.8x	7.1x	6.0x	5.8x	0.3x	0.3x	2.8x	2.3x
Group 1 Automotive	USD	264.01	200.00	(24%)	UW	3.7	3.7	5.9	46.08	43.96	44.25	40.70	5.7x	6.0x	5.6x	5.3x	0.3x	0.3x	1.3x	1.1x
Carvana	USD	39.21	37.00	(6%)	UW	4.2	4.2	12.9	-2.10	-1.69	-3.70	-2.52	NM	NM	69.0x	42.6x	1.2x	1.2x	15.1x	176.3x
Asbury	USD	221.37	165.00	(25%)	UW	4.6	4.6	7.6	33.94	31.70	33.50	30.98	6.5x	7.0x	6.7x	6.6x	0.5x	0.5x	1.4x	1.1x
AutoNation	USD	157.98	117.00	(26%)	UW	7.0	7.0	10.4	22.76	20.26	22.87	21.30	6.9x	7.8x	5.7x	5.3x	0.4x	0.4x	2.7x	2.0x
North America Weighted Average													13.1x	12.5x	14.3x	11.4x	0.6x	0.5x	3.3x	15.5x
China																				
China Yongda Auto	HKD	3.11	5.10	64%	OW	6.0	0.8	5.4	0.57	0.81	0.62	0.86	5.5x	3.8x	2.7x	2.0x	0.1x	0.1x	0.4x	0.4x
MeiDong	HKD	6.64	14.80	123%	OW	8.9	1.1	8.5	0.49	0.80	0.56	0.88	13.7x	8.3x	4.7x	3.6x	0.3x	0.2x	1.7x	1.5x
Beiqi Foton Motor	CNY	3.42	NC	NA	NC	27.4	3.8	0.0	NA	NA	0.18	0.28	19.4x	12.1x	8.4x	6.0x	0.5x	0.4x	1.8x	1.6x
Baoxin Auto	HKD	0.23	0.27	17%	UW	0.7	0.1	5.1	0.13	0.14			1.8x	1.6x	3.2x	2.9x	0.2x	0.2x	0.1x	0.1x
Zhongsheng Group	HKD	22.15	37.00	67%	OW	53.0	6.8	58.6	2.46	3.03	2.95	3.56	9.0x	7.3x	4.8x	3.9x	0.3x	0.3x	1.1x	1.0x
China Zhengtong Auto	HKD	0.46	0.39	(14%)	UW	1.3	0.2	18.5	0.08	0.23	-0.13	-0.01	5.5x	2.0x	9.6x	7.9x	0.7x	0.7x	2.8x	1.1x
China Weighted Average													12.2x	8.5x	5.8x	4.4x	0.4x	0.3x	1.3x	1.2x
Global Weighted Average													12.9x	11.7x	12.7x	10.0x	0.5x	0.5x	2.9x	12.8x

Source: Refinitiv, Morgan Stanley Research estimates

Note: 1) e = Morgan Stanley Research est; O = Overweight; E = Equal-weight; U = Underweight; NC = Not Covered. Valuation multiples are based on MS est. unless a company is restricted or NC, in which case cons. est. are used 2) PTs & Ratings are as of Aug 21, 2023

**Exhibit15:** Auto companies under Morgan Stanley coverage not shown in the comps tables are listed below (with current share price):

Company Name	Volvo	China Motor Corp.	Hesai Motor	Porsche	Aviz Budget
Price at Aug 18	223.45	83.80	632.00	48.98	227.44
Currency	SEK	TwD	TwD	EUR	USD

Company Name	Tong Yang Industry	Yulon Motor	Zhongsheng Group	Tesla	Hertz
Price at Aug 18	61.40	74.70	21.70	6.82	17.25
Currency	TwD	TwD	CNY	USD	USD

Source: Refinitiv, Morgan Stanley Research

# Morgan Stanley Global Auto Team

## Morgan Stanley Global Auto Team

### NORTH AMERICA



Adam Jonas, CFA  
+1 212 761-1726  
adam.jonas@morganstanley.com



Evan Silverberg, CFA, CPA  
+1 212 761-4376  
Evan.Silverberg@morganstanley.com



Daniela M. Haigian  
+1 212 761 6071  
Daniela.Haigian@morganstanley.com

### KOREA



Young Suk Shin  
+82 2 399-9907  
young.shin@morganstanley.com

### EUROPE



Ross MacDonald  
+44 20 7425-0240  
Ross.MacDonald@morganstanley.com



Shaqeal A. Kirunda  
+44 20 7425-0736  
Shaqeal.Kirunda@morganstanley.com

### CHINA



Shelley Wang  
+852 3963-0047  
Shelley.Wang@morganstanley.com



Eddy Wang  
+852 2239-7339  
eddy.wang@morganstanley.com

### TAIWAN



Tim Hsiao  
+852 2848-1982  
tim.hsiao@morganstanley.com

### JAPAN



Shinji Kakiuchi  
+81 3 5424-5914  
shinji.kakiuchi@morganstanleymufg.com

### INDIA



Binay Singh  
+852 2239-1901  
binay.singh@morganstanley.com



Sushrut Ghalsashi  
+91 22 6118-1073  
Sushrut.Ghalsashi@morganstanley.com

*Morgan Stanley is acting as financial advisor to Ford Motor Company in connection with its agreement with PT Vale Indonesia Tbk and Zhejiang Huayou Cobalt Co., Ltd., to make a capital investment in PT Kolaka Nickel Indonesia ("KNI") hydrometallurgy (HPAL) project (the "Pomalaa HPAL Project") as announced on March 30, 2023. Ford has agreed to pay fees to Morgan Stanley for its financial services, including transaction fees that are contingent upon the consummation of the transaction. Please refer to the notes at the end of the report.*

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## Global Stock Ratings Distribution

(as of July 31, 2023)

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For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1347	37%	276	43%	20%	609	39%
Equal-weight/Hold	1659	46%	294	46%	18%	717	46%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	604	17%	69	11%	11%	227	15%
Total	3,613		639			1554	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

## Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

## Analyst Industry Views

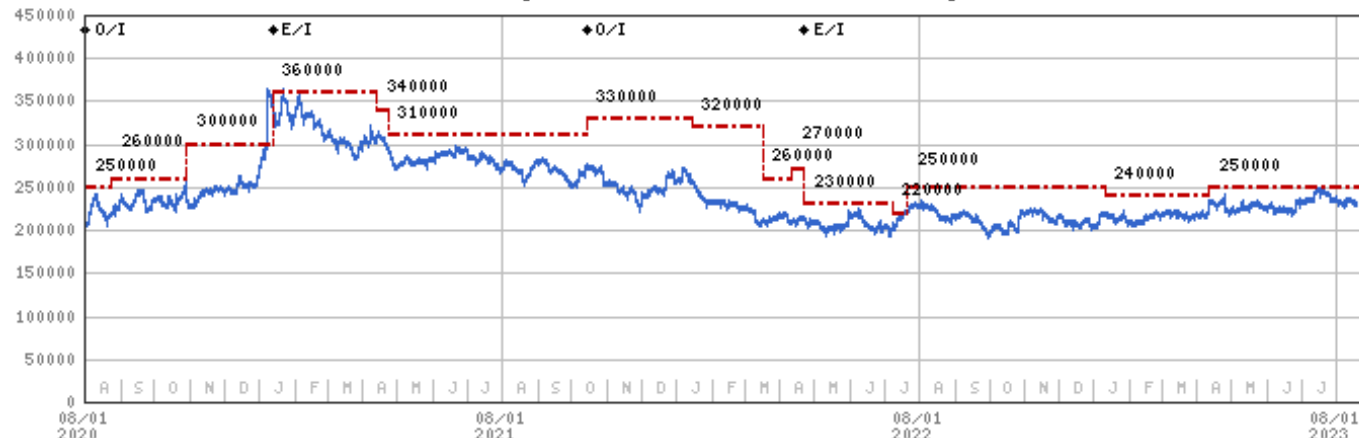
Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below. Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

## Stock Price, Price Target and Rating History (See Rating Definitions)

Hyundai MOBIS (012330.KS) - As of 8/20/23 in KRW  
Industry : S. Korea Autos & Shared Mobility



Stock Rating History: 8/1/18 : E/I; 7/24/19 : O/I; 1/12/21 : E/I; 10/14/21 : O/I; 4/22/22 : E/I

Price Target History: 6/23/18 : 250000; 10/11/18 : 230000; 10/29/18 : 210000; 1/9/19 : 200000; 4/29/19 : 220000; 7/24/19 : 280000;  
3/9/20 : 260000; 4/8/20 : 210000; 4/27/20 : 200000; 7/10/20 : 230000; 7/24/20 : 250000; 8/24/20 : 260000; 10/29/20 : 300000;  
1/12/21 : 360000; 4/13/21 : 340000; 4/23/21 : 310000; 10/14/21 : 330000; 1/14/22 : 320000; 3/17/22 : 260000; 4/11/22 : 270000;  
4/22/22 : 230000; 7/8/22 : 220000; 7/22/22 : 250000; 1/10/23 : 240000; 4/12/23 : 250000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)

Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —

Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View

Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)

Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Hyundai Motor (005380.KS) - As of 8/20/23 in KRW  
Industry : S. Korea Autos & Shared Mobility



Stock Rating History: 8/1/18 : O/I; 10/11/18 : E/I; 7/24/20 : O/I; 1/12/21 : E/I

Price Target History: 6/23/18 : 170000; 10/11/18 : 135000; 10/25/18 : 120000; 4/24/19 : 150000; 10/3/19 : 140000; 1/9/20 : 120000; 1/23/20 : 130000; 3/9/20 : 120000; 4/8/20 : 100000; 4/24/20 : 90000; 7/10/20 : 110000; 7/24/20 : 160000; 8/24/20 : 190000; 9/16/20 : 220000; 10/27/20 : 230000; 1/12/21 : 280000; 3/22/21 : 240000; 4/13/21 : 250000; 7/7/21 : 260000; 9/7/21 : 240000; 1/25/22 : 220000; 3/17/22 : 190000; 4/11/22 : 200000; 4/26/22 : 210000; 7/8/22 : 200000; 7/22/22 : 210000; 9/15/22 : 220000; 10/24/22 : 180000; 1/10/23 : 170000; 1/26/23 : 180000; 4/12/23 : 220000; 4/26/23 : 230000

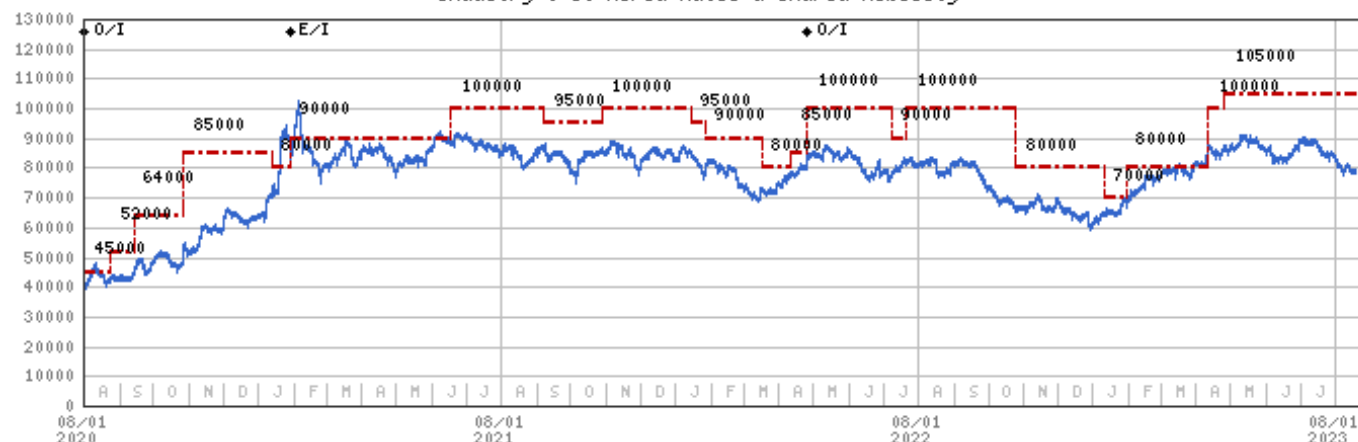
Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)  
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —  
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View  
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)  
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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Kia Corp. (000270.KS) - As of 8/20/23 in KRW  
Industry : S. Korea Autos & Shared Mobility



Stock Rating History: 8/1/18 : E/I; 1/9/20 : U/I; 3/26/20 : E/I; 6/2/20 : O/I; 1/28/21 : E/I; 4/26/22 : O/I

Price Target History: 1/26/18 : 30000; 10/11/18 : 35000; 10/26/18 : 31000; 1/9/19 : 34000; 4/9/19 : 37000; 4/25/19 : 40000; 10/24/19 : 45000; 1/9/20 : 34000; 3/9/20 : 32000; 3/26/20 : 29000; 4/8/20 : 28000; 6/2/20 : 40000; 7/24/20 : 45000; 8/24/20 : 52000; 9/14/20 : 64000; 10/27/20 : 85000; 1/12/21 : 80000; 1/28/21 : 90000; 6/18/21 : 100000; 9/7/21 : 95000; 10/28/21 : 100000; 1/14/22 : 95000; 1/26/22 : 90000; 3/17/22 : 80000; 4/11/22 : 85000; 4/26/22 : 100000; 7/8/22 : 90000; 7/22/22 : 100000; 10/25/22 : 80000; 1/10/23 : 70000; 1/30/23 : 80000; 4/12/23 : 100000; 4/26/23 : 105000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)  
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —  
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View  
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)  
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Korea Electric Power (015760.KS) - As of 8/20/23 in KRW  
Industry : S. Korea Energy & Materials



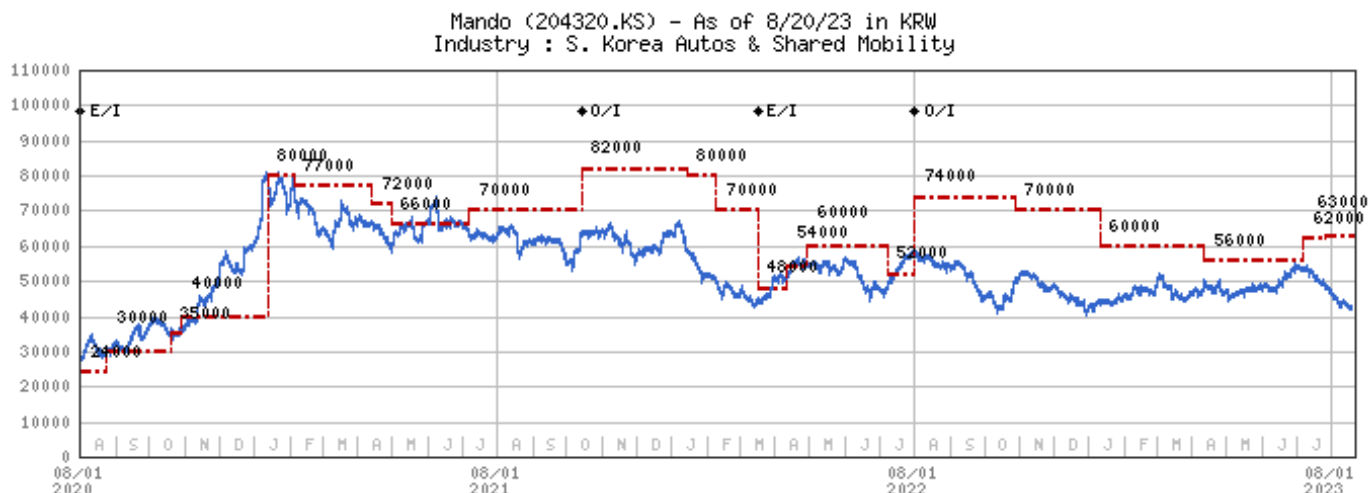
Stock Rating History: 8/1/18 : E/A; 12/7/18 : O/A; 5/14/19 : E/A; 11/5/21 : O/A; 8/12/22 : E/A

Price Target History: 2/13/18 : 34000; 8/13/18 : 33000; 12/7/18 : 39000; 1/4/19 : 45000; 5/14/19 : 30000; 8/15/19 : 28000; 3/2/20 : 24000; 2/20/21 : 26000; 5/14/21 : 25000; 11/5/21 : 33000; 11/12/21 : 32000; 5/13/22 : 29000; 8/12/22 : 22000; 11/14/22 : 20000; 5/15/23 : 22000; 8/11/23 : 21000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)  
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —  
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View  
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)  
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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## INDUSTRY COVERAGE: Autos & Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/18/2023)
<b>Adam Jonas, CFA</b>		
Adient PLC (ADNT.N)	U (03/17/2021)	\$38.24
American Axle & Manufacturing Holdings Inc (AXL.N)	O (02/28/2022)	\$7.47
Aptiv Plc (APTV.N)	E (11/28/2022)	\$95.88
Asbury Automotive Group Inc (ABG.N)	U (05/20/2022)	\$221.37
AutoNation Inc. (AN.N)	U (01/17/2023)	\$157.98
Avis Budget Group Inc (CAR.O)	O (06/20/2023)	\$227.44
BorgWarner Inc. (BWA.N)	O (05/15/2023)	\$39.64
Carmax Inc (KMX.N)	O (07/10/2018)	\$82.49
Carvana Co (CVNA.N)	U (07/26/2023)	\$39.21
Ferrari NV (RACE.N)	O (05/09/2019)	\$305.75
Fisker Inc (FSR.N)	U (01/25/2023)	\$5.53
Ford Motor Company (F.N)	O (10/05/2022)	\$11.96
FREYR Battery SA (FREY.N)	O (06/28/2023)	\$6.55
General Motors Company (GM.N)	O (05/01/2023)	\$33.12
Group 1 Automotive, Inc (GPI.N)	U (05/20/2022)	\$264.01
Harley-Davidson Inc (HOG.N)	O (03/21/2023)	\$33.62
Hertz Global Holdings Inc (HTZ.O)	E (12/06/2021)	\$17.25
Lear Corporation (LEA.N)	E (02/28/2022)	\$141.97
Li-Cycle Holdings Corp. (LICY.N)	U (01/25/2023)	\$4.57
Lithia Motors Inc. (LAD.N)	U (02/09/2021)	\$302.07
Lucid Group Inc (LCID.O)	U (09/13/2021)	\$6.18
Magna International Inc. (MGA.N)	O (10/14/2021)	\$55.64
Mobileye Global Inc (MBLY.O)	E (07/24/2023)	\$35.04
Penske Automotive Group, Inc (PAG.N)	U (11/17/2021)	\$169.93
Quantumscape Corp (QS.N)	U (11/09/2022)	\$6.82
Rivian Automotive, Inc. (RIVN.O)	O (12/05/2021)	\$20.78



Sonic Automotive Inc (SAH.N)	U (11/17/2021)	\$51.79
Tesla Inc (TSLA.O)	E (06/22/2023)	\$215.49
Visteon Corporation (VC.O)	E (06/01/2022)	\$136.10

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