

## Toyota Motor (7203)

# Profits a remarkable level in 2Q, astonishingly could go even higher

Reiterate Rating: BUY | PO: 3,300 JPY | Price: 2,712 JPY

## Potential for even higher profits from FY3/25

In earnings reported during 1 November afternoon trading, 1H OP topped our  $\pm 2.27$ tn estimate to reach  $\pm 2.56$ tn (2.2x YoY), with 2Q OP of  $\pm 1.44$ tn and OPM of 12.6%. Toyota raised full-year guidance from  $\pm 3.0$ tn to  $\pm 4.5$ tn ( $\pm 6.5$ % YoY,  $\pm 14.1$ /\$ assumption), above consensus for  $\pm 4.16$ tn. We lift our OP estimate from  $\pm 4.5$ 7tn to  $\pm 4.6$ 7tn for FY3/24, and from  $\pm 4.90$ tn to  $\pm 5.14$ tn for FY3/25. We raise our price objective from  $\pm 3.200$  to  $\pm 3.300$ , reiterating our Buy rating.

At the briefing, the company pointed to potential FY3/25 profit boosters including (A) improvement in mix and (B) reduction in COGs through its own efforts, along with (C) lower materials costs as an external factor. In regard to (A), we see Toyota as a rare name that can simultaneously satisfy fuel consumption standards and improve its mix driven by expansion in sales of in-demand HEVs and PHEVs. In the long term this offers prospects for bigger profits from maintenance related business (value chain). We appreciate market concerns over macro risk but find it remarkable that Toyota has the potential to drive profits even higher.

## 2Q strength; brisk US/Euro demand, decent China showing

We see 2Q as a demonstration of Toyota's true strength without one-offs (¥145/\$). Full-year assumptions were kept at initial levels for sales volume and production overall. With brisk demand outside China and the ASEAN region and production on song, the company said 1H was topside full-year plans. By region, US and European sales were on the strong side and the company secured a degree of profit in China on the contribution from high-end models. On financial strategy, Toyota spoke of increasing shareholder returns with cuts in cross-shareholdings and asset rejigging. The company announced share buybacks of ¥100bn.

Estimates (¥)	3/22A	3/23A	3/24E	3/25E	3/26E
	US GAAP	US GAAP	US GAAP	US GAAP	Other GAAP
EPS	205.23	179.47	310.25	334.37	346.95
EPS Change (YoY)	27.7%	-12.6%	72.9%	7.8%	3.8%
Dividend / Share	52	60	93	100	104
BPS	1,889.9	2,074.8	2,282.6	2,500.0	2,727.1
Valuation					
P/E	13.2x	15.1x	8.7x	8.1x	7.8x
Dividend Yield*	1.9%	2.2%	3.4%	3.7%	3.8%
P/B	1.4x	1.3x	1.2x	1.1x	1.0x
EV/ EBITDA*	12.8x	12.9x	9.1x	8.4x	8.2x
Free Cash Flow Yield*	0.6%	-1.0%	3.0%	3.1%	2.2%
* For full definitions of <i>iO</i> method <sup>SM</sup> measures, see page 8					

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

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

Timestamp: 01 November 2023 07:54AM EDT

#### 01 November 2023

### Equity

Key Changes		
(¥)	Previous	Current
Price Obj.	3,200	3,300
2024E Rev (m)	43,648,000	43,282,000
2024E EPS	286.79	310.25
2025E EPS	312.52	334.37
2026E EPS	322.97	346.95
2024E EBITDA (m)	6,697,000	6,795,000
2025E EBITDA (m)	7,071,000	7,319,000
2026E EBITDA (m)	7,269,000	7,541,000
2024E DPS	86	93

Kei Nihonyanagi >> Research Analyst BofAS Japan kei.nihonyanagi@bofa.com

**Kentaro Hosoda** >> Research Analyst BofAS Japan kentaro.hosoda@bofa.com

#### Stock Data

Price (Common / ADR)	2,712 JPY / 175.18 USD
Price Objective	3,300 JPY / 213.16 USD
Date Established	1-Nov-2023/ 1-Nov-2023
Investment Opinion	B-1-7 / A-1-7
52-Week Range	1,764-2,912 JPY
Market Value (mn)	38,944,320 JPY
Market Value (\$mn)	257,152 USD
Shares Outstanding (mn)	14,360.0
Average Daily Value (\$mn)	500.1 USD
Free Float	49.9%
BofA Ticker / Exchange	TOYOF / TYO
BofA Ticker / Exchange	TM / NYS
Bloomberg / Reuters	7203 JP / 7203.T
ROE (2024E)	14.2%
Net Dbt to Eqty (Mar-2023A)	74.7%

## **iQ**profile <sup>™</sup> Toyota Motor (7203)

Key Income Statement Data	3/22A	3/23A	3/24E	3/25E	3/26E
(¥ Billions)	US GAAP	US GAAP	US GAAP	US GAAP	Other GAAP
Sales	31,379.5	37,154.3	43,282.0	43,545.0	43,968.0
% Change	15.3%	18.4%	16.5%	0.6%	1.0%
Gross Profit	5,971.7	6,313.0	8,624.5	9,287.5	9,583.1
EBITDA	4,817.6	4,764.9	6,795.0	7,319.0	7,541.0
Operating Profit	2,995.7	2,725.0	4,670.0	5,143.0	5,313.0
% Change	36.3%	-9.0%	71.4%	10.1%	3.3%
Net Interest & Other Income	507.0	378.8	383.0	386.3	386.3
Pretax Income	3,990.5	3,668.7	5,691.1	6,269.5	6,469.2
% Change	36.1%	-8.1%	55.1%	10.2%	3.2%
Net Income	2,850.1	2,451.3	4,196.9	4,498.1	4,641.3
Key Cash Flow Statement Data					
Net Income from Cont Operations (GAAP)	2,850.1	2,451.3	4,196.9	4,498.1	4,641.3
Depreciation & Amortization	1,821.9	2,039.9	2,125.0	2,176.0	2,228.0
Change in Working Capital	22.1	236.6	40.6	79.3	(356.0)
Capital Expenditure	(3,484.2)	(3,357.6)	(3,775.0)	(3,851.0)	(3,928.0)
Free Cash Flow*	238.5	(402.5)	1,164.7	1,209.6	838.6
Share Issue / (Repurchase)	(404.7)	(431.1)	(200.0)	(200.0)	(200.0)
Cost of Dividends Paid	(761.6)	(813.0)	(1,258.1)	(1,345.2)	(1,391.2)
Key Balance Sheet Data					
Cash & Equivalents	6,113.7	7,517.0	6,487.6	8,662.5	10,480.8
Trade Receivables	10,324.2	11,865.9	11,704.7	11,472.4	11,586.2
Other Current Assets	7,284.5	7,076.9	7,252.5	7,097.1	7,166.1
Property, Plant & Equipment	12,326.6	12,634.0	13,237.0	13,852.0	14,480.0
Other Non-Current Assets	31,639.8	35,209.4	35,374.3	35,540.9	35,709.1
Total Assets	67,688.8	74,303.2	74,056.2	76,624.8	79,422.1
Short-Term Debt	11,187.8	12,305.6	9,721.3	9,721.3	9,721.3
Other Current Liabilities	10,654.3	11,654.1	11,381.2	11,118.4	10,984.4
Long-Term Debt	15,308.5	17,074.6	17,074.6	17,074.6	17,074.6
Other Non-Current Liabilities	3,383.3	4,004.6	4,004.6	4,004.6	4,004.6
Total Liabilities	40,534.0	45,039.0	42,181.7	41,918.9	41,784.9
Total Equity	27,154.8	29,264.2	31,874.4	34,705.9	37,637.2
Total Equity & Liabilities	67,688.8	74,303.2	74,056.2	76,624.8	79,422.1
Key Metrics					
iQmethod <sup>™</sup> – Business Performance*					
Return On Capital Employed	4.4%	3.5%	6.1%	6.4%	6.3%
Return On Equity	11.5%	9.0%	14.2%	13.9%	13.2%
Operating Margin	9.5%	7.3%	10.8%	11.8%	12.1%
iQmethod <sup>SM</sup> – Quality of Earnings*	3.5 70	7.570	10.070	11.070	12.170
Cash Realization Ratio	1.3x	1.2x	1.2x	1.1x	1.0x
Asset Replacement Ratio	1.9x	1.6x	1.8x	1.8x	1.8x
Tax Rate (Reported)	28.0%	32.0%	25.0%	27.0%	27.0%
Net Debt-to-Equity Ratio	75.1%	74.7%	63.7%	52.2%	43.3%
	68.1x				
Interest Cover	ha iy	21.8x	65.7x	75.9x	78.4x

<sup>\*</sup> For full definitions of *IQmethod* ™ measures, see page 8. Other GAAP denotes Japanese Accounting Standards.

## **Company Sector**

Autos/Car Manufacturers

#### **Company Description**

One of the world's largest automakers. Contends with global leaders VW Group and GM in sales volume. Following 2008 financial crisis, has struggled with quality issues in the US and production cutbacks due to Japan's earthquake, but regained top global market share in 2012. US market is its traditional earnings driver, but recently starting to tap into emerging markets such as ASEAN and India. Highest domestic production rates of Japan's big three (Toyota, Nissan, Honda). Established in 1937.

#### **Investment Rationale**

We rate Toyota Buy. We have high confidence in near-term earnings as the company has been able to minimize the impact of semiconductor shortages. We expect it to continue to post record-high profits from FY3/22 onwards. In the long term, amid calls for initiatives to promote decarbonization, we see Toyota as one of the rare companies that can contribute to decarbonization without relying solely on BEVs by utilizing its abundant technological capabilities.

Key Changes		
(US\$)	Previous	Current
Price Obj.	213.68	213.16
2024E EPS	18.94	20.49
2025E EPS	20.64	22.08
2026E EPS	21.33	22.91
2024E DPS	5.68	6.14

## **Exhibit 1: Toyota Motor: New vs old BofAe and CoE, valuations**2Q topped high market expectations, FY guidance lifted above consensus

Tovota Motor (7203)

		Sales		OP		Net Profit Be	fore Tax	Net Pr	ofit	EPS	P/E	P/B	ROE
		JPY mn	yoy %	JPY mn	yoy %	JPY mn	yoy %	JPY mn	yoy %	JPY	Х	Х	%
is <u>cal Year</u>													
FY3/23	Actual	37,154,298	+18.4%	2,725,025	-9.0%	3,668,733	-8.1%	2,451,318	-14.0%	179.5	15.1	1.3	9.09
FY3/24	E New	43,282,000	+16.5%	4,670,000	+71.4%	5,691,100	+55.1%	4,196,900	+71.2%	310.2	8.7	1.2	14.29
	E Old	43,648,000	+17.5%	4,572,000	+67.8%	5,485,400	+49.5%	3,879,600	+58.3%	286.8	9.5	1.2	13.29
	IFIS E	42,366,331	+14.0%	4,161,906	+52.7%	5,163,087	+40.7%	3,622,934	+47.8%	259.6	10.4		
	CoE New	43,000,000	+15.7%	4,500,000	+65.1%	5,550,000	+51.3%	3,950,000	+61.1%	292.0	9.3		
	CoE Old	38,000,000	+2.3%	3,000,000	+10.1%	3,690,000	+0.6%	2,580,000	+5.2%	190.2	14.3		
FY3/25	E New	43,545,000	+0.6%	5,143,000	+10.1%	6,269,500	+10.2%	4,498,100	+7.2%	334.4	8.1	1.1	13.99
	E Old	43,545,000	-0.2%	4,895,000	+7.1%	5,942,900	+8.3%	4,204,100	+8.4%	312.5	8.7	1.1	13.29
	IFIS E	44,051,267	+4.0%	4,353,180	+4.6%	5,264,564	+2.0%	3,700,410	+2.1%	268.3	10.1		
FY3/26	E New	43,968,000	+1.0%	5,313,000	+3.3%	6,469,200	+3.2%	4,641,300	+3.2%	347.0	7.8	1.0	13.29
	E Old	43,968,000	+1.0%	5,041,000	+3.0%	6,107,700	+2.8%	4,320,500	+2.8%	323.0	8.4	1.0	12.59
	IFIS E	45,115,477	+2.4%	4,462,192	+2.5%	5,403,275	+2.6%	3,791,479	+2.5%	275.8	9.8		
First Half (Apr	r-Sep)												
FY3/23	Actual	17,709,348	+14.4%	1,141,444	-34.7%	1,834,276	-14.4%	1,171,084	-23.2%				
FY3/24	Actual	21,981,617	+24.1%	2,559,294	+124.2%	3,521,525	+92.0%	2,589,428	+121.1%				
	E Old	21,268,500	+20.1%	2,271,000	+99.0%	2,964,900	+61.6%	2,100,000	+79.3%				
Second Half (0	Oct-Mar)												
FY3/23	Actual	19,444,950	+22.3%	1,583,581	+26.9%	1,834,457	-0.7%	1,280,234	-3.4%				
FY3/24	E New	21,300,383	+9.5%	2,110,706	+33.3%	2,169,575	+18.3%	1,607,472	+25.6%				
	E Old	22,379,500	+15.1%	2,301,000	+45.3%	2,520,500	+37.4%	1,779,600	+39.0%				
First Quarter (													
FY3/23	Actual	8,491,116	+7.0%	578,655	-42.0%	1,021,748	-18.7%	736,820	-17.9%				
FY3/24	Actual	10,546,831	+24.2%	1,120,900	+93.7%	1,720,553	+68.4%	1,311,372	+78.0%				
Second Quart	er (Jul-Sep)					·		· · · · · · · · · · · · · · · · · · ·					
FY3/23	Actual	9,218,232	+22.2%	562,789	-25.0%	812,528	-8.4%	434,264	-30.7%				
FY3/24	Actual	11,434,786	+24.0%	1,438,394	+155.6%	1,800,972	+121.7%	1,278,056	+194.3%				
	E Old	10,721,669	+16.3%	1,150,099	+104.4%	1,244,347	+53.1%	788,628	+81.6%				
Third Quarter	(Oct-Dec)												
FY3/23	Actual	9,754,685	+25.3%	956,652	+22.0%	1,034,998	-5.4%	727,942	-8.1%				
FY3/24	E New	11,101,000	+13.8%	1,310,000	+36.9%	1,576,400	+52.3%	1,115,000	+53.2%				
	E Old	11,101,000	+13.8%	1,260,000	+31.7%	1,497,400	+44.7%	1,058,800	+45.5%				
Fourth Quarte	er (Jan-Mar)									•			
FY3/23	Actual	9,690,265	+19.4%	626,929	+35.2%	799,459	+6.2%	552,292	+3.4%				
	E New	10,199,383	+5.3%	800,706	+27.7%	593,175	-25.8%	492,472	-10.8%				
FY3/24	LINEW	10,133,303	3.5 70										

**Source:** Company data, IFIS consensus, company and BofA Global Research estimates

BofA GLOBAL RESEARCH



**Exhibit 2: Toyota Motor: Earnings at a glance**Prospective profit boosters from FY3/25: mix improvement on HEV/PHEV sales growth as well as cost cuts

	2023/3	2024/3E	2025/3E	2026/3E	24/3	CoE	202	3/3	2024/3E						
¥ bn, ¥, %					New	Old	1H	2H	1Q	2Q	1H	3QE	4QE	2HE	2H CoE
Sales	37,154	43,282	43,545	43,968	43,000	38,000	17,709	19,445	10,547	11,435	21,982	11,101	10,199		21,018
Cost of sales	30,841	34,658	34,258	34,385			14,894	15,947	8,484	9,065	17,549	8,848	8,260	17,109	
Gross profit	6,313	8,624	9,287	9,583			2,815	3,498	2,063	2,370	4,433	2,253	1,939	4,192	
SG&A expenses	3,588	3,954	4,144	4,270			1,673	1,915	942	932	1,874	943	1,138	2,081	
Operating profit	2,725	4,670	5,143	5,313	4,500	3,000	1,141	1,584	1,121	1,438	2,559	1,310	801	2,111	1,941
Equity method income/loss	643	738	740	770	740	690	305	338	193	185	379	195	165	360	361
Pretax profit	3,669	5,691	6,270	6,469	5,550	3,690	1,834	1,834	1,721	1,801	3,522	1,576	593	2,170	2,028
Corporate tax, etc.	1,176	1,423	1,693	1,747			615	561	394	480	874	441	107	549	
Minority shareholder interest	42	71	79	81			48	-7	16	43	58	20	-7	13	
Net profit	2,451	4,197	4,498	4,641	3,950	2,580	1,171	1,280	1,311	1,278	2,589	1,115	492	1,607	1,361
R&D expenses	1,242	1,242	1,267	1,292	1,240	1,240	621	621	295	314	609	299	334	633	1,240
Depreciation & amortization	1,185	1,244	1,269	1,294	1,260	1,250	574	611	298	303	602	313	330	642	1,250
Сарех	1,606	1,847	1,884	1,922	1,970	1,860	682	924	367	443	809	413	625	1,038	1,860
Sales ratios															
Gross profit	17.0%	19.9%	21.3%	21.8%			15.9%	18.0%	19.6%	20.7%	20.2%	20.3%	19.0%	19.7%	
Operating profit	7.3%	10.8%	11.8%	12.1%	10.5%	7.9%	6.4%	8.1%	10.6%	12.6%	11.6%	11.8%	7.9%	9.9%	9.2%
Net profit	6.6%	9.7%	10.3%	10.6%	9.2%	6.8%	6.6%	6.6%	12.4%	11.2%	11.8%	10.0%	4.8%	7.5%	6.5%
Tax rate	32.0%	25.0%	27.0%	27.0%			33.5%	30.6%	22.9%	26.7%	24.8%	28.0%	18.1%	25.3%	
YoY change															
Sales	+18.4%	+16.5%	+0.6%	+1.0%	+15.7%	+2.3%	+14.4%	+22.3%	+24.2%	+24.0%	+24.1%	+13.8%	+5.3%	+9.5%	+8.1%
Operating profit	-9.0%	+71.4%	+10.1%	+3.3%	+65.1%	+10.1%	-34.7%	+26.9%	+93.7%						+22.6%
Net profit	-14.0%	+71.2%	+7.2%	+3.2%	+61.1%	+5.2%	-23.2%	-3.4%	+78.0%						+6.3%
Forex assumptions	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	10	20	1H	30E	40E	2HE	2H CoE
¥/USD	135.5	143.0	145.0	145.0	141.0	125.0	134.1	136.8	137.5	144.6	141.1	145.0	145.0	145.0	140.0
¥/EUR	140.9	154.2	155.0	155.0	152.0	135.0	138.7	143.1	149.7	157.3	153.5	155.0	155.0	155.0	150.5
OP variance analysis	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	10	20	1H	30E	40E	2HE	2H CoE
Sales impact (including finance biz)		+1,656	+241	-23	+1,655	+1,285	+130	+550	+600	+690	+1,290	+433	-67	+366	+365
Measures to reduce input costs	-1,290	-30	+330	+318	-50	-150	-650	-640	-155	+45	-110	+34	+46	+80	+60
Lower input costs	+255	+374	+320	+318	+360	+360	+115	+140	+75	+130	+205	+79	+90	+169	+155
Impact of raw material prices	-1.545	-405	+10	0	-410	-510	-765	-780	-230	-85	-315	-45	-45	-90	-95
Forex impact	+1.280	+461	+93	0	+305	-875	+565	+715	+115	+145	+260	-157	+358	+201	+45
Changes in fixed costs	-525	-367	-190	-126	-370	-260	-310	-215	-70	-150	-220	+34	-181	-147	-150
Other	-416	+225	0	0	+235	+275	-341	-75	+52	+146	+198	+10	+17	+27	+37
Total	-271	+1.945	+473	+170	+1,775	+275	-606	+335	+542	+876	+1,418	+354	+174	+527	+357
Source Company data Company RefA		/				213	-000	955			, 110				331

**Source:** Company data, Company, BofA Global Research estimates

BofA GLOBAL RESEARCH

## **Exhibit 4: Toyota Motor: Consolidated sales volume and Toyota brand retail sales volume** Sales/production assumptions kept at initial level overall; 1 H slightly ahead of FY plan pace

					1	1	202				2024	•			
Consolidated sales volume ('000s)	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	1Q	2Q	1H	3QE	4QE	2HE	2H CoE
Japan	2,069	2,363	2,259	2,255	2,320	2,320	869	1,200	532	540	1,072	564	727	1,291	1,248
Overseas total	6,753	7,259	7,319	7,358	7,280	7,280	3,290	3,463	1,794	1,878	3,672	1,898	1,688	3,587	3,608
North America	2,407	2,736	2,881	2,923	2,730	2,660	1,245	1,162	682	703	1,385	705	646	1,351	1,345
Europe	1,030	1,065	1,086	1,108	1,150	1,130	479	551	286	271	557	260	248	508	593
Asia	1,751	1,787	1,803	1,829	1,760	1,870	817	934	417	478	895	504	388	892	865
South/Central America	509	514	474	450	480	500	251	258	128_	126	254	138	121	260	226
Oceania	265	299	276	276	310	290	142	123	76	87	163	74	63	136	147
Africa	226	268	239	239	270	270	97	129	59	62	121	68	79	147	149
Middle East	559	582	553	525	580	560	256	303	143	149	292	147	143	290	288
Total (Toyota consolidated)	8,822	9,622	9,578	9,613	9,600	9,600	4,159	4,663	2,326	2,418	4,744	2,463	2,415	4,878	4,856
Consolidated sales volume (YoY change)	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	1Q	2Q	1H	3QE	4QE	2HE	2H CoE
<u>J</u> apan	+8%	+14%	-4%	-0%	+12%	+12%	-8%	+23%	+32%	+16%	+23%	+6%	+9%	+8%	+4%
Overseas total	+7%	+7%	+1%	+1%	+8%	+8%	+5%	+10%	+11%	+12%	+12%	+6%	+1%	+4%	+4%
North America	+1%	+14%	+5%	+1%	+13%	+11%	-3%	+4%	+7%	+15%	+11%	+16%	+16%	+16%	+16%
Europe	+1%	+3%	+2%	+2%	+12%	+10%	-6%	+9%	+15%	+17%	+16%	-6%	-9%	-8%	+8%
Asia	+13%	+2%	+1%	+1%	+1%	+7%	+16%	+12%	+16%	+5%	+10%	+6%	-15%	-4%	-7%
South/Central America	+18%	+1%	-8%	-5%	-6%	-2%	+19%	+17%	+4%	-2%	+1%	-4%	+7%	+1%	-12%
Oceania	-6%	+13%	-8%	0%	+17%	+9%	-4%	-8%	0%	+32%	+15%	+8%	+14%	+11%	+20%
Africa	+3%	+19%	-11%	0%	+19%	+19%	+1%	+5%	+64%	+2%	+25%	+0%	+29%	+14%	+16%
Middle East	+36%	+4%	-5%	-5%	+4%	+0%	+33%	+38%	+10%	+18%	+14%	-6%	-2%	-4%	-5%
Total	+7%	+9%	-0%	+0%	+9%	+9%	+2%	+13%	+16%	+13%	+14%	+6%	+4%	+5%	+4%
Toyota brand retail sales ('000s)	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	1Q	2Q	1H	3QE	4QE	2HE	2H CoE
Japan	1,407	1,655	1,596	1,591		1,650	591	816	384	403	787	386	482	868	
Overseas total	8,203	8,700	8,937	9,034		8,750	4,152	4,051	2,154	2,203	4,357	2,230	2,113	4,343	
North America	2,400	2,682	2,881	2,923		2,550	1,236	1,164	665	666	1,331	691	660	1,351	
USA	2,064	2,282	2,479	2,520		,	1,057	1,006	569	590	1,159	593	530	1,123	
Europe	1,044	1,065	1,086	1,108		1,060	507	537	269	266	535	260	270	530	
Asia	3,276	3,354	3,444	3,527		3,630	1,682	1,593	832	869	1,700	855	798	1,653	
China	1,876	1,838	1,930	1,988		2,140	1,001	875	499	505	1,005	455	379	834	
South/Central America	483	499	474	450		450	241	242	124	123	248	138	113	251	
Oceania	264	291	276	276		280	144	120	70	71	141	74	76	150	
Africa	222	244	239	239		250	99	122	59	64	123	68	53	121	
Middle East	514	565	537	510		530	242	272	134	144	279	143	144	287	
Other regions (adjusted figures)	0	0	0	0		0	0	0	0	0	0	0	0	0	
Total	9,610	10,355	10,533	10,625	10,400	10,400	4,742	4,868	2,538	2,606	5,144	2,616	2,595	5,211	5,256
Toyota brand retail sales (yoy)	2023/3	2024/3E	2025/3E	2026/3E	New	Old	1H	2H	10	20	1H	3QE	40E	2HE	2H CoE
lapan	+1%	+18%	-4%	-0%	11011	+17%	-21%	+26%	+35%	+31%	+33%	+18%	-1%	+6%	ZITCOL
Overseas total	+1%	+6%	+3%	+1%		+7%	+0%	+2%	+5%	+5%	+5%	+5%	+10%	+7%	
North America	-7%	+12%	+7%	+1%		+6%	-15%	+2%	+5%	+10%	+8%	+12%	+20%	+16%	
Europe	+2%	+2%	+2%	+2%		+2%	-8%	+14%	+1%	+11%	+6%	+2%	-4%	-1%	
Asia	+4%	+2%	+3%	+2%		+11%	+14%	-6%	+5%	-3%	+1%	-1%	+10%	+4%	
South/Central America	+19%	+3%	-5%	-5%		-7%	+22%	+15%	+2%	+3%	+3%	+3%	+4%	+4%	
	-4%	+10%	-5%	-3%		+6%	-1%	-7%	-8%	+5%	-2%	+10%	+42%	+24%	
Oceania Africa															
Africa Middle Fact	-1%	+10%	-2%	0%		+13%	-5%	+3%	+23%	+24%	+23%	+10%	-12%	-1%	
Middle East	+19%	+10%	-5%	-5%		+3%	+11%	+28%	+9%	+21%	+15%	+10%	+1%	+5%	
Other regions	- 10/-	- 00/	- 20/	-10/	-00/	- 00/-	-204	. F0/-		.00/-	.00/	.60/-	.00/	.70/-	-00/
Total	+1%	+8%	+2%	+1%	+8%	+8%	-3%	+5%	+8%	+9%	+8%	+6%	+8%	+7%	+8%

**Source:** Company data, Company, BofA Global Research estimates

BofA GLOBAL RESEARCH



## Price objective basis & risk

### Toyota Motor (7203 / TOYOF / TM)

Our 12-month PO for Toyota is ¥3,300 (ADR: \$213.16). We apply a fair-value EV/EBITDA of 4.3x derived from the average EV/EBITDA (ex financing) of 3.9x for FY3/17-19, a decarbonization premium of 15%, 5% for potential action to address share price weakness, and a topline visibility discount of 10% (net +10%), to our 12-month forward EBITDA (ex financing) estimate of ¥6.7tn to calculate fair-value market cap (ex financing). Then we add back financial services shareholders' equity of ¥5.0tn to obtain companywide market cap. Risks are forex swings, a prolonged semiconductor shortage, and an increase in material costs.

## Analyst Certification

I, Kei Nihonyanagi, 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.

## **Special Disclosures**

BofA Securities is currently acting as financial advisor to Daimler Truck Holding AG in connection with the proposed business combination between its subsidiary Mitsubishi Fuso Truck and Bus Corporation and Hino Motors, Ltd., a subsidiary of Toyota Motor Corporation, which was announced on May 30, 2023. The proposed transaction is subject to approval by shareholders of Hino Motors, Ltd. This research report is not intended to (1) provide voting advice, (2) serve as an endorsement of the proposed transaction, or (3) result in the procurement, withholding or revocation of a proxy.

**APR - Autos Coverage Cluster** 

nvestment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
BUY				
	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	XGDFF	002920 CH	Jessie Lo
	Eicher Motors	XEIMF	EIM IN	Gunjan Prithyani
	EVE	XEVEF	300014 CH	Ming Hsun Lee, CFA
	GAC	GNZUF	2238 HK	Ming Hsun Lee, CFA
	Great Wall Motor	GWLLF	2333 HK	Ming Hsun Lee, CFA
	Hankook Tire	XHTRF	161390 KS	KJ Hwang
	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
	Leapmotor	XZSSF	9863 HK	Ming Hsun Lee, CFA
	Li Auto	LI	LIUS	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
	NIO	NIO	NIO US	Ming Hsun Lee, CFA

### **APR - Autos Coverage Cluster**

Investment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
	NIO	NIOIF	9866 HK	Ming Hsun Lee, CFA
	NIO	XLTWF	NIO SP	Ming Hsun Lee, 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	XWCSF	002850 CH	Jessie Lo
		XZSHF	002630 CH 002472 CH	Jessie Lo
	Shuanghuan Driveline			
	Suzuki Motor	SZKMF	7269 JP	Kei Nihonyanagi
	Tata Motors	XTTSF	TTMT IN	Gunjan Prithyani
	Tinci Materials	XCVHF	002709 CH	Miriam Chan, CFA
	Toyo Tire	TOTTF	5105 JP	Kentaro Hosoda
	Toyota Motor	TOYOF	7203 JP	Kei Nihonyanagi
	Toyota Motor	TM	TM US	Kei Nihonyanagi
	TVS Motors	XFKMF	TVSL IN	Gunjan Prithyani
	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	_
			3669 HK	Joey Yang, CFA
	Yongda	CYYHF		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
	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
	Mitsubishi Motors	MMTOF	7211 JP	Kei Nihonyanagi
	Motherson Sumi Wiring	XMWDF	MSUMI IN	Gunjan Prithyani
	Shenzhen Senior	XHYRF	300568 CH	Jessie Lo
	Sona Comstar	XBNXF	SONACOMS IN	Gunjan Prithyani
	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
	Wencan	XSCDF	603348 CH	Joey Yang, CFA
	Yokohama Rubber	YORUF	5101 JP	Kentaro Hosoda
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
	Fuyao Glass	XFGIF	600660 CH	Edward Leung, CFA
	Fuyao Glass	XFUYF	3606 HK	Edward Leung, CFA
	GAC	XGNHF	601238 CH	Ming Hsun Lee, CFA
	Great Wall Motor	XGWMF	601633 CH	Ming Hsun Lee, CFA
	Hero Motocorp	HRHDF	HMCL IN	Gunjan Prithyani
	Hyundai Wia	XWHYF	011210 KS	KJ Hwang
	Joyson	XQMWF	600699 CH	Jessie Lo
	Nexteer	NTXVF	1316 HK	Jessie Lo
	Putailai	XVHGF	603659 CH	Jessie Lo
	SAIC Motor		600104 CH	·
		XZNJF		Ming Hsun Lee, CFA
	Sumitomo Rubber Industries	SMTUF	5110 JP	Kei Nihonyanagi
	Yamaha Motor	YAMHF	7272 JP	Kei Nihonyanagi
RVW				
	Geely	GELYF	175 HK	Ming Hsun Lee, CFA



#### **APR - Autos Coverage Cluster**

Investment ratingCompanyBof A TickerBloomberg symbolAnalystNextageXIOIF3186 JPKentaro Hosoda

## **Q**method <sup>™</sup> Measures Definitions

<b>Business Performance</b> Return On Capital Employed	<b>Numerator</b> NOPAT = (EBIT + Interest Income) $\times$ (1 - Tax Rate) + Goodwill Amortization	<b>Denominator</b> Total Assets – Current Liabilities +ST Debt + Accumulated Goodwill
Return On Equity Operating Margin Earnings Growth Free Cash Flow	Net Income Operating Profit Expected 5 Year CAGR From Latest Actual Cash Flow From Operations — Total Capex	Amortization Shareholders' Equity Sales N/A N/A
Quality of Earnings Cash Realization Ratio Asset Replacement Ratio Tax Rate Net Debt-To-Equity Ratio Interest Cover	Numerator Cash Flow From Operations Capex Tax Charge Net Debt = Total Debt — Cash & Equivalents EBIT	Denominator Net Income Depreciation Pre-Tax Income Total Equity Interest Expense
Valuation Toolkit Price / Earnings Ratio Price / Book Value Dividend Yield Free Cash Flow Yield Enterprise Value / Sales	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	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
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

\*\*Monthod Shis the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

\*\*Modatabase\*\* is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

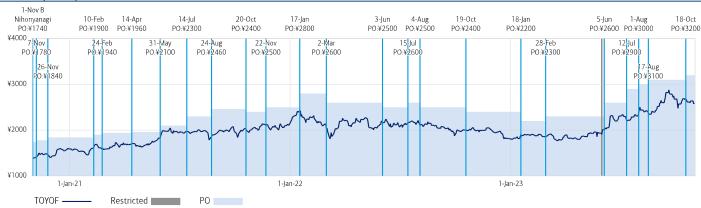
*IQ*profile<sup>≤M</sup>, *IQ*method <sup>≤M</sup> are service marks of Bank of America Corporation. *IQ*database \* is a registered service mark of Bank of America Corporation.



## **Disclosures**

## **Important Disclosures**

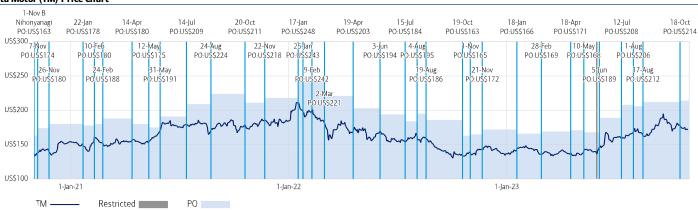
#### Toyota Motor (TOYOF) Price Chart



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

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

#### Toyota Motor (TM) Price Chart



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

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

#### Equity Investment Rating Distribution: Autos Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	64	53.78%	Buy	37	57.81%
Hold	31	26.05%	Hold	16	51.61%
Sell	24	20.17%	Sell	11	45.83%

#### Equity Investment Rating Distribution: Global Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	1869	53.48%	Buy	1046	55.97%
Hold	828	23.69%	Hold	461	55.68%
Sell	798	22.83%	Sell	370	46.37%

RI Issuers that were investment banking dients 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.



FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

## Investment rating Total return expectation (within 12-month period of date of initial rating) Ratings dispersion guidelines for coverage cluster<sup>82</sup>

 Buy
 ≥ 10%
 ≤ 70%

 Neutral
 ≥ 0%
 ≤ 30%

 Underperform
 N/A
 ≥ 20%

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/hower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the Price Charts website, or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report. Toyota Motor.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Toyota Motor.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Toyota Motor.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Toyota Motor.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: Toyota Motor.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Toyota Motor.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Toyota Motor.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Toyota Motor.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: Toyota Motor.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

## **Other Important Disclosures**

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments. Refer to BofA Global Research policies relating to conflicts of interest.

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at <a href="https://www.bofaml.com/BofASEdisclaimer">www.bofaml.com/BofASEdisclaimer</a>; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch (Australia): Merrill Lynch (Hong Kong): Merrill (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (DIFC): Merrilll Lynch (DIFC): Merrill Lynch (DIFC): Merrill Lynch (DIFC): Merri by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários; Merrillos e Valores Mobiliários; Merrillos e Valores Mobil KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has



Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brzzil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does no

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

#### General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

#### Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.



The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

