Microchip Technology

Light Dec Guide As Expected On Weak Demand Environment/Customer Inventory Adjustments; Solid ~ \$4 of Earnings Power At Trough

MCHP reported in-line Sep-Qtr results reflecting the expected business slowdown, which the team began to see in early-June. The weakness has broaden out to different end markets (except aerospace & defense) and geographies and with China demand still weak. Moreover, average lead-times continue to come down and are now under 13 weeks (vs prior expectation under 13 weeks by the end of the year) and the team expects average leadtimes to be under 8 weeks by the end of the year. As a result of the weaker demand environment, macro uncertainty, and lower lead-times, this is driving lower bookings and continued order pushouts / cancellations (although we believe cancellation/push out activity has stabilized so far this quarter). Accordingly, the team provided a soft Dec-Qtr outlook (down 17.5% Q/Q, at the mid-point) that was below consensus expectations (down 7% Q/Q) and signaled for a Q/Q decline for the Mar-Qtr. Overall the weaker outlook is directionally in-line with management's prior expectation (anticipated a magnified seasonal decline for the Dec-Qtr) and the magnitude of decline is not entirely surprising in light of the revenue guide downs from other broad-based semiconductors peers (e.g. ADI, TXN). Despite a softer revenue outlook, the team expressed confidence in sustaining 40%+ OPM on a trailing 12-month basis through this downcycle and should buffer earnings power. We do anticipate that the Mar-Qtr should mark the bottom for Microchip with peak-to-trough quarterly revenue decline of ~24%. Pricing power remains strong in this current down cycle, which is helping to limit the decline in revenues. Distribution inventory days were up 6 days Q/Q to 35 days and at the mid end of its historical range of 27-47 days due to weaker channel sell-through activity. On continued solid FCF generation, the team increased its dividend by 7% Q/Q in the Sep-Qtr and continued to repurchase shares (\$340M in the Sep-Qtr and targeted \$115M in the Dec-Qtr). The team continued to increase its % of FCF return (increase 5 ppt every quarter) and expects to return 100% FCF return in the next few quarters. We decrease our forward estimates, and decrease our PT to \$95 (from \$110). We reiterate our OW rating on the stock.

• In-line Sep-Q results reflecting expected business slowdown. Revenues of \$2.25B (down 1.5% Q/Q and up 9% Y/Y) were largely in-line with consensus. MCU revenues grew 8.5% Y/Y to \$1280M and analog revenues grew 9% Y/Y to \$623M. Gross margin was 68.1%, slightly below consensus. OPM for the quarter was 48.1% on solid operating leverage. EPS of \$1.61 was in-line with consensus. On a Q/Q basis Asia was down, Europe was about flattish, and Americas was slightly up. Near-term macro headwinds and declining leadtimes drove lower bookings and increasing order pushouts/cancellations - although we believe the activity level around pushouts/cancellations has stabilized so far this quarter.

Overweight

MCHP, MCHP US Price (02 Nov 23):\$73.60

▼ Price Target (Dec-24):\$95.00 Prior (Dec-24):\$110.00

Semiconductors & Semiconductor Capital Equipment / IT Hardware

Harlan Sur AC

(1-415) 315-6700 harlan.sur@jpmorgan.com **Bloomberg** JPMA SUR <GO>

Peter K Peng

(1-415) 315-8327 peter.k.peng@jpmchase.com J.P. Morgan Securities LLC

Key Changes (FYE Mar)		
	Prev	Cur
Adj. EPS - 24E (\$)	5.83	5.37
Adi FPS - 25F (\$)	5 83	4 83

Quarterly Forecasts (FYE Mar) Adj. EPS (\$) 2023A 2024E 2025E Q1 1.37 1.64A 1.08 Q2 1.62A 1 46 Q3 1 26 1 56 1.13 0.97 1.26 4.83

Style Exposure

Quant	Current	Hist %Rank (1=Top)										
Factors	%Rank	6M	1Y	3Y	5Y							
Value	46	45	44	53	22							
Growth	64	51	59	76	73							
Momentum	57	38	34	72	84							
Quality	10	35	42	40	42							
Low Vol	26	31	29	55	30							
ESGQ	26	18	22	90	83							

Sources for: Style Exposure - J.P. Morgan Quantitative and Derivatives Strategy; all other tables are company data and J.P. Morgan estimates.

See page 10 for analyst certification and important disclosures.

J.P. Morgan does and seeks to do business with companies 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.





Company Data	
Shares O/S (mn)	549
52-week range (\$)	94.30-58.61
Market cap (\$ mn)	40,421.12
Exchange rate	1.00
Free float(%)	97.9%
3M - Avg daily vol (mn)	4.51
3M - Avg daily val (\$ mn)	356.6
Volatility (90 Day)	33
Index	S&P 500
BBG BUY HOLD SELL	17 9 0

Key Metrics (FYE Mar)			
\$ in millions	FY23A	FY24E	FY25E
Financial Estimates			
Revenue	8,439	8,132	7,645
Adj. EBIT	3,960	3,633	3,296
Adj. EBITDA	4,959	4,609	4,272
Adj. net income	3,353	2,943	2,624
Adj. EPS	6.02	5.37	4.83
BBG EPS	6.02	6.09	6.10
Cashflow from operations	3,621	3,727	2,837
FCFF	3,319	3,608	2,736
Margins and Growth			
Revenue growth	23.7%	(3.6%)	(6.0%)
EBIT margin	46.9%	44.7%	43.1%
EBIT growth	33.5%	(8.2%)	(9.3%)
EBITDA margin	58.8%	56.7%	55.9%
EBITDA growth	20.4%	(7.0%)	(7.3%)
Net margin	39.7%	36.2%	34.3%
Adj. EPS growth	30.4%	(10.8%)	(10.0%)
Ratios			
Adj. tax rate	10.9%	14.2%	14.3%
Interest cover	24.0	21.2	17.5
Net debt/Equity	0.4	0.0	NM
Net debt/EBITDA	0.6	0.0	NM
ROE	54.0%	37.9%	28.8%
Valuation	0.40/	2.22/	2 22/
FCFF yield	8.1%	8.9%	6.8%
Dividend yield	1.5%	2.5%	3.5%
EV/Revenue	5.1	5.0	-
EV/EBITDA	8.7	8.8	-
Adj. P/E	12.2	13.7	15.2

Summary Investment Thesis and Valuation

Investment Thesis

We are Overweight MCHP based on the following:

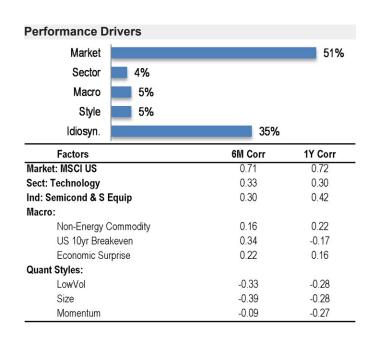
Post the merger with Microsemi, Microchip has gained significant share/scale while broadening its product portfolio. We believe the combined entity stands to gain additional share in a fragmented market, especially in growth areas such as automotive, industrial, and IoT.

We believe the merger synergy and accretion targets laid out by the management team could be conservative in light of a merger schedule that closed ahead of expectations and the company's history of delivering additional upside in prior acquisitions.

We expect the company to drive additional revenue synergies from complementary sales of analog products, which has proven to be an effective strategy in the past. We believe Microchip's strength in distribution and customer support will help capture this opportunity.

Valuation

Our Dec-24 PT of \$95 assumes that MCHP trades at a semi peer group multiple of 16-20x, applied to FY25 exit run-rate earnings power of ~\$5.00.



Source: J.P. Morgan Quantitative and Derivatives Strategy for Performance Drivers; company data, Bloomberg Finance L.P. and J.P. Morgan estimates for all other tables. Note: Price history may not be complete or exact.



- Soft Dec-Q guide reflecting continued broad-based weakness and customer inventory adjustments; expects Q/Q decline for the Mar-Qtr. Dec-Qtr revenue guide was \$1.86B (down 17.5% Q/Q and down 14% Y/Y) at the midpoint, well-below consensus of \$2.11B driven by the broadening of end market weakness, customer inventory adjustments, and lower lead-times/visibility. The team expects headwinds to persist into the Mar-Qtr and has signaled for Q/Q decline. Non-GAAP gross margin was guided to 64.5% at the midpoint, below street expectations. EPS guidance of \$1.13 was below consensus.
- Channel distribution inventory remains healthy at the mid end of historical range- but signals that channel sell-through in Sept-Qtr was lower than expected. Distribution inventory days were up 6 days Q/Q to 35 days (versus historical range of 27-47 days) on weaker sell-through activity. The company's inventory exiting the Sep quarter was at 167 days, flat Q/Q, and above the company's long-term target of 130-150 days.
- Strong shareholder returns continued quarterly dividend increases and share repurchases. Microchip increased its dividend by 7% Q/Q in the Sep-Qtr. In addition, the company continued to repurchase shares (\$340M in the Sep-Qtr and targets \$115M in the Dec-Qtr). The team continue to increase its current pace of % of FCF return (increase 5 ppt every quarter) and expects to start returning 100% of the quarterly FCF in the next 5 quarters.
- Decreasing our forward estimates and our price target reiterate OW rating on MCHP. We are decreasing our forward estimates and decreasing our PT to \$95 (from \$110), which assumes that MCHP trades at a semi peer group multiple of 16-20x, applied to FY25 exit run-rate earnings power of ~\$5.00.



Table 1: Microchip F2Q24 (Sep-Q) Earnings and F3Q24 (Dec-Q) Outlook Summary \$ in millions

		F2Q24 (F3Q24E (Dec-Q)				
	Actual	JPM Est.	Diff	Consensus	Guidance	Consensus	
Non-GAAP Revenue (\$M)	\$2,254.3	\$2,266.0	(\$11.7)	\$2,264.0	\$1,859.5	\$2,112.0	
Q/Q Change	-1.5%	-1.0%	-1%	-1.1%	-17.5%	-7%	
Gross Margin (Non-GAAP)	68.1%	68.4%	-0.3%	68.4%	64.5%	67.5%	
Op Margin	48.1%	48.1%	0.0%	48.1%	41.5%	45.6%	
Non-GAAP Net Income (\$M)	\$889.3	\$893.3	-\$4.0	\$891.6	\$617.6	\$784.4	
Non-GAAP EPS	\$1.62	\$1.62	\$0.00	\$1.62	\$1.13	\$1.44	

Source: Company reports, Bloomberg Finance L.P., and J.P. Morgan estimates

Table 2: Microchip F2Q24 (Sep-Q) Business Segment Results

\$ in millions

	F2Q24	F1Q23	Growth	% of Revenue
Microcontrollers	\$1,280.1	\$1,301.7	-1.7%	56.8%
Analog, mixed signal	\$623.0	\$633.6	-1.7%	27.6%
Other	\$351.2	\$353.3	-0.6%	15.6%

Source: Company reports

Balance Sheet and Cash Flow

For the Sep-Q, Microchip generated cash flow from operations of \$616M and ended the quarter with cash and total investments (long and short-term) of \$256M, down from \$271M in F1Q24. Capital expenditures were \$74 million in F2Q24. Inventory days of 167 were flat Q/Q in F1Q24, above the company's long-term target of 130-150 days. Inventory at distributors was 35 days, up 6 days from the Jun-Q. Microchip increased its debt by \$46M Q/Q in the Sep quarter.



Appendix I: Comp and Group Valuation

Table 3: Semiconductor Comp and Group Valuation

						_	_						ensus		ensus	Cons			ensus
	JPM	Market	11/2/23		AAP EPS	P.	-	Reve			P/S		AAP EPS		iles	P.	_	P.	
	Rating	Сар	<u>Price</u>	C23E	C24E	C23E	C24E	C23E	C24E	C23E	C24E	C23E	C24E	C23E	C24E	C23E	C24E	C23E	C24E
	, Lead Cove																		
		mail: harlan.sur@	ipmchase.cor	m •															
PC Semico INTC	onductors UW	\$159.433	\$37.70	\$0.96	\$1.90	39.3	19.8	\$53.923	\$61,641	3.0	2.6	\$0.95	\$1.87	\$53,939	\$61,605	39.6	20.2	3.0	2.6
NVDA	OW	\$1,087,215	\$435.06	\$10.49	\$14.95	41.5	29.1	\$53,923	\$72,981	20.3	14.9	\$9.92	\$1.07 \$16.94	\$50,580	\$80,286	43.8	25.7	21.5	13.5
AMD	N	\$175,655	\$107.83	\$2.84	\$4.20	38.0	25.7	\$22,861	\$27,005	7.7	6.5	\$2.67	\$3.84	\$22,704	\$26,722	40.5	28.1	7.7	6.6
	IN	\$175,055	φ107.03	φ2.04	φ4.20	30.0	23.1	ψ22,00 I	φ21,000	1.1	0.5	φ2.07	φ3.04	φ22,70 4	φ20,122	40.5	20.1	1.1	0.0
Memory MU	OW	\$77.132	\$70.44	N/A	N/A	N/A	N/A	\$15.856	\$21,931	4.9	3.5	(\$5.10)	\$1.00	\$16,188	\$24,474	(13.8)	70.1	4.8	3.2
WDC	NR	\$13.618	\$42.16	N/A	N/A	N/A	N/A	\$11.033	\$13,456	1.2	1.0	(\$6.25)	\$1.12	\$11,195	\$14,113	(6.7)	37.7	1.2	1.0
_		Datacenter Semi						***,***	*,			(+)	*****	****	*,	()			
MRVL	OW	\$42,098	\$48.90	\$1.53	\$2.32	32.0	21.1	\$5,525	\$6,419	7.6	6.6	\$1.53	\$2.26	\$5,513	\$6,401	32.1	21.6	7.6	6.6
AVGO	NR	\$372,045	\$871.30	\$43.02	\$49.57	20.3	17.6	\$36,183	\$40,519	10.3	9.2	\$42.65	\$46.69	\$36,123	\$39,215	20.4	18.7	10.3	9.5
Mobile Dev																			
SWKS	N	\$14,365	\$89.50	\$8.20	\$9.70	10.9	9.2	\$4,739	\$5,174	3.0	2.8	\$8.24	\$9.32	\$4,733	\$5,061	10.9	9.6	3.0	2.8
QRVO	UW	\$8,427	\$85.48	\$3.98	\$6.97	21.5	12.3	\$3,284	\$4,000	2.6	2.1	\$4.64	\$6.97	\$3,389	\$3,991	18.4	12.3	2.5	2.1
	crocontrolle	rs \$134.936	\$147.31	\$7.04	\$6.58	20.9	22.4	\$17.542	\$17.781	7.7	7.6	\$7.14	\$6.70	\$17.550	\$17.732	20.6	22.0	7.7	7.6
TXN ADI	OW OW	\$134,936	\$147.31	\$7.04	\$6.56 \$8.95	20.9 17.9	18.4	\$17,542	\$17,781	7.7	7.6	\$9.54	\$8.55	\$17,550	\$17,732 \$11,182	17.2	19.2	6.9	7.4
NXPI	N	\$62,746 \$46,405	\$104.34	\$9.19 \$13.85	\$6.95 \$15.00	12.8	11.8	\$11,739	\$11,496	3.5	3.3	\$9.54 \$13.92	\$6.55 \$14.84	\$13,244	\$11,162	12.8	12.0	3.5	3.3
MCHP	OW	\$40,405	\$77.59	\$6.25	\$5.49	11.8	13.4	\$8,827	\$8,261	4.6	4.9	\$6.34	\$5.83	\$8,888	\$8,528	11.6	12.6	4.5	3.3 4.7
-		Standard Compor		ψ0.23	ψυτυ	11.0	10.4	ψ0,021	ψ0,201	4.0	4.5	ψ0.54	ψ0.00	ψ0,000	ψ0,320	11.0	12.0	4.5	7.7
ON	N	\$30.030	\$66.63	\$5.11	\$4.92	13.0	13.5	\$8,235	\$8,243	3.6	3.6	\$5.11	\$4.78	\$8.238	\$8.108	13.0	14.0	3.6	3.7
MTSI	N	\$5,195	\$72.75	\$2.45	\$3.10	29.7	23.5	\$622	\$709	8.4	7.3	\$2.48	\$2.95	\$623	\$699	29.3	24.7	8.3	7.4
Foundries		40,100	ψ1 Z.1 O	Ψ2.40	ψ0.10	20.1	20.0	Ψ022	ψισσ	0.4	1.0	Ψ2.40	Ψ2.50	Ψ020	ψοσσ	20.0	24.7	0.0	77
GFS	OW	\$28.011	\$50.38	\$2.07	\$2.50	24.3	20.2	\$7,399	\$7.855	3.8	3.6	\$2.04	\$2.52	\$7.422	\$8.188	24.8	20.0	3.8	3.4
	uctor Capital		ψ00.00	Ψ2.01	Ψ2.00	24.0	20.2	ψ1,000	ψ1,000	0.0	0.0	Ψ2.04	Ψ2.02	ψ1,722	ψ0,100	24.0	20.0	0.0	0.4
AMAT	OW	\$116.764	\$138.51	\$7.73	\$8.72	17.9	15.9	\$25.895	\$27,610	4.5	4.2	\$7.79	\$7.88	\$26,064	\$26,424	17.8	17.6	4.5	4.4
LRCX	OW	\$83,000	\$623.28	\$26.82	\$29.81	23.2	20.9	\$14,259	\$15,558	5.8	5.3	\$26.77	\$29.95	\$14.261	\$15,786	23.3	20.8	5.8	5.3
KLAC	OW	\$67,090	\$489.34	\$22.48	\$25.82	21.8	19.0	\$9,635	\$10,340	7.0	6.5	\$22.51	\$24.40	\$9,642	\$10,128	21.7	20.1	7.0	6.6
Chip Desig	n Automatic	on Software																	
ARM	OW	\$54,332	\$52.82	\$0.81	\$1.12	65.6	47.1	\$2,831	\$3,281	19.2	16.6	\$0.91	\$1.12	\$2,889	\$3,334	57.8	47.4	18.8	16.3
CDNS	N	\$66,603	\$244.48	\$5.10	\$5.97	47.9	40.9	\$4,080	\$4,560	16.3	14.6	\$5.11	\$5.88	\$4,086	\$4,578	47.9	41.6	16.3	14.5
SNPS	OW	\$74,164	\$478.64	\$11.37	\$13.29	42.1	36.0	\$6,000	\$6,763	12.4	11.0	\$11.37	\$13.02	\$5,970	\$6,698	42.1	36.8	12.4	11.1
Large Cap	Semi Avera	ge	•			24.5	18.9		,	7.4	6.6					25.0	19.0	7.6	6.4
	Cap Semi Av					21.4	16.4			4.9	4.4					20.3	17.0	4.8	4.4
	p Average (e	ex-outliers)				21.2	16.9			5.4	5.1					20.9	17.2	5.4	5.1
SOX Index			3,369	124	171	27.1	19.7			5.3	4.8					27.1	19.7	5.3	4.8
S&P500			4,318	217	243	19.9	17.8			2.4	2.3					19.9	17.8	2.4	2.3

Source: Company reports, Bloomberg Finance L.P., and J.P. Morgan estimates. Prices as of market close 11/02/2023.



Appendix II: Financial Tables

Table 4: Microchip Income Statement

\$ in millions, except per share data

	Jun-21	Sep-21	Dec-21	Mar-22		Jun-22	Sep-22	Dec-22	Mar-23		Jun-23	Sep-23	Dec-23	Mar-24		Jun-24	Sep-24	Dec-24	Mar-25	
FY end: Mar (in \$ mm)	1Q22	2Q22	3Q22	4Q22	FY22E	1Q23	2Q23	3Q23	4Q23	FY23	1Q24	2Q24	3Q24E	4Q24E	FY24E	1Q25E	2Q25E	3Q25E	4Q25E	FY25E
Total Revenue (non-GAAP)	1569.4	1649.8	1757.5	1844.2	6,820.9	1963.6	2073.2	2169.2	2232.7	8,438.7	2288.6	2254.3	1859.5	1729.3	8,131.7	1815.8	1942.9	1942.9	1942.9	7,644.5
% Change Y/Y	19.8%	26.0%	30.0%	25.7%	25.4%	25.1%	25.7%	23.4%	21.1%	23.7%	16.6%	8.7%	-14.3%	-22.5%	-3.6%	-20.7%	-13.8%	4.5%	12.4%	-6.0%
% Change Q/Q	7.0%	5.1%	6.5%	4.9%		6.5%	5.6%	4.6%	2.9%		2.5%	-1.5%	-17.5%	-7.0%		5.0%	7.0%	0.0%	0.0%	
Cost of Goods Sold	561.8	581.5	604.2	623.8	2,371.3	653.7	675.3	698.4	713.4	2,740.8	730.2	726.9	667.6	646.8	2,771.4	657.3	683.9	670.3	662.5	2,674.1
Gross Profit (non-GAAP)	1016.4	1077.4	1161.7	1228.4	4,483.9	1317.6	1404.4	1477.7	1525.4	5,725.1	1565.2	1534.8	1199.6	1090.3	5,389.9	1166.2	1266.7	1280.3	1288.1	5,001.3
Gross Margin (non-GAAP)	64.8%	65.3%	66.1%	66.6%	65.7%	67.1%	67.7%	68.1%	68.3%	67.8%	68.4%	68.1%	64.5%	63.0%	66.3%	64.2%	65.2%	65.9%	66.3%	65.4%
R&D	238.4	246.2	245.4	259.1	989.1	269.0	268.6	282.4	298.3	1118.3	298.5	292.6	286.7	283.9	1161.7	288.1	292.5	292.5	295.4	1168.4
% Total Revenue	15.2%	14.9%	14.0%	14.0%	14.5%	13.7%	13.0%	13.0%	13.4%	13.3%	13.0%	13.0%	15.4%	16.4%	14.3%	15.9%	15.1%	15.1%	15.2%	15.3%
SG&A	174.3	179.9	177.5	187.2	718.9	188.9	202.4	202.9	203.5	797.7	203.6	196.6	186.7	168.0	754.9	170.5	172.2	172.2	174.0	688.9
% Total Revenue	11.1%	10.9%	10.1%	10.2%	10.5%	9.6%	9.8%	9.4%	9.1%	9.5%	8.9%	8.7%	10.0%	9.7%	9.3%	9.4%	8.9%	8.9%	9.0%	9.0%
Amortization and Special Charges	226.1	225.9	215.4	224.6	892.0	150.7	171.8	173.9	169.5	665.9	153.2	153.2	153.2	153.2	612.8	153.2	153.2	153.2	153.2	612.8
% Total Revenue	14.4%	13.7%	12.3%	12.2%	13.1%	7.7%	8.3%	8.0%	7.6%	7.9%	6.7%	6.8%	8.2%	8.9%	7.5%	8.4%	7.9%	7.9%	7.9%	8.0%
OpEx (GAAP)	638.8	652.0	638.3	670.9	2,600.0	608.6	642.8	659.2	671.3	2,581.9	655.3	642.4	626.6	605.1	2,529.4	611.9	617.9	617.9	622.5	2,470.2
% Total Revenue	40.7%	39.5%	36.3%	36.4%	38.1%	31.0%	31.0%	30.4%	30.1%	30.6%	28.6%	28.5%	33.7%	35.0%	31.1%	33.7%	31.8%	31.8%	32.0%	32.3%
OpEx (non-GAAP)	361.3	376.7	377.2	403.5	1,518.7	422.7	433.0	447.9	461.7	1,765.3	464.8	450.1	427.7	413.9	1,756.5	420.7	426.7	426.7	431.3	1,705.4
% Total Revenue	23.0%	22.8%	21.5%	21.9%	22.3%	21.5%	20.9%	20.6%	20.7%	20.9%	20.3%	20.0%	23.0%	23.9%	21.6%	23.2%	22.0%	22.0%	22.2%	22.3%
Operating Income	368.8	416.3	515.0	549.5	1849.6	701.3	755.1	811.6	848.0	3116.0	903.1	885.0	565.3	477.5	2830.9	546.6	641.1	654.7	657.8	2500.3
Operating Margin	23.5%	25.2%	29.3%	29.8%	27.1%	35.7%	36.4%	37.4%	38.0%	36.9%	39.5%	39.3%	30.4%	27.6%	34.8%	30.1%	33.0%	33.7%	33.9%	32.7%
Operating Income (non-GAAP)	655.1	700.7	784.5	824.9	2965.2	894.9	971.4	1029.8	1063.7	3959.8	1100.4	1084.7	771.9	676.4	3633.4	745.5	840.0	853.6	856.7	3295.9
Operating Margin (non-GAAP)	41.7%	42.5%	44.6%	44.7%	43.5%	45.6%	46.9%	47.5%	47.6%	46.9%	48.1%	48.1%	41.5%	39.1%	44.7%	41.1%	43.2%	43.9%	44.1%	43.1%
Loss on equity method investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0					0.0
Interest/Other Expenses, net	(71.8)	(151.5)	(73.5)	(70.3)	(367.1)	(54.7)	(56.0)	(49.4)	(46.2)	(206.3)	(54.8)	(51.4)	(52.0)	(59.0)	(217.2)	(61.0)	(61.0)	(61.0)	(61.0)	(244.0)
Interest/Other Expenses (non-GAAP)	(60.6)	(56.2)	(53.7)	(50.1)	(220.6)	(48.4)	(53.9)	(49.4)	(46.2)	(197.9)	(45.7)	(48.3)	(52.0)	(59.0)	(205.0)	(61.0)	(61.0)	(61.0)	(61.0)	(244.0)
Pretax Income	297.0	264.8	441.5	479.2	1482.5	646.6	699.1	762.2	801.8	2909.7	848.3	833.6	513.3	418.5	2613.7	485.6	580.1	593.7	596.8	2256.3
% Total Revenue	18.9%	16.1%	25.1%	26.0%	21.7%	32.9%	33.7%	35.1%	35.9%	34.5%	37.1%	37.0%	27.6%	24.2%	32.1%	26.7%	29.9%	30.6%	30.7%	29.5%
Income Tax (Benefit)	44.2	22.8	88.7	41.3	197.0	139.4	152.9	181.9	197.8	672.0	181.9	167.0	121.1	102.6	572.7	119.1	142.2	145.6	146.3	553.2
Income Tax (non-GAAP)	35.7	38.9	49.1	10.2	133.9	79.3	103.1	116.7	109.7	408.8	149.4	147.1	102.7	86.6	485.7	96.0	109.2	111.1	111.6	427.9
% Pretax Income (Tax Rate, non-GAAP	6.0%	6.0%	6.7%	1.3%	4.9%	9.4%	11.2%	11.9%	10.8%	10.9%	14.2%	14.2%	14.3%	14.0%	14.2%	14.0%	14.0%	14.0%	14.0%	14.0%
Diluted Common Shares (non-GAAP)	565.2	565.9	567.3	565.1	565.9	561.5	558.3	555.4	553.9	557.3	551.4	549.2	546.5	545.5	548.2	544.5	543.5	542.5	541.5	543.0
Net Income (non-GAAP)	558.8	605.6	681.7	764.6	2,610.7	767.2	814.4	863.7	907.8	3,353.1	905.3	889.3	617.3	530.8	2,942.7	588.5	669.8	681.5	684.2	2,624.0
EPS (non-GAAP, ex Amort ex Op)	\$ 0.99	\$ 1.07	\$ 1.20	\$ 1.35	\$ 4.61	\$ 1.37	\$ 1.46	\$ 1.56	\$ 1.64	\$ 6.02	\$ 1.64	\$ 1.62	\$ 1.13	\$ 0.97	\$ 5.36	\$ 1.08	\$ 1.23	\$ 1.26	\$ 1.26	\$ 4.83
% Change Y/Y	26.8%	37.3%	48.4%	46.1%	40.0%	38.2%	36.3%	29.4%	21.1%	30.5%	20.2%	11.0%	-27.4%	-40.6%	-10.9%	-34.2%	-23.9%	11.2%	29.8%	-9.9%
% Change Q/Q	6.8%	8.2%	12.3%	12.6%		1.0%	6.8%	6.6%	5.4%		0.2%	-1.4%	-30.2%	-13.8%		11.1%	14.0%	1.9%	0.6%	

Source: Company reports and J.P. Morgan estimates

Table 5: Microchip Balance Sheet

\$ in millions

	Jun-21	Sep-21	Dec-21	Mar-22		Jun-22	Sep-22	Dec-22	Mar-23		Jun-23	Sep-23	Dec-23	Mar-24		Jun-24	Sep-24	Dec-24	Mar-25	
FY end: Mar (in \$ mm)	1Q22	2Q22	3Q22	4Q22	FY22E	1Q23	2Q23	3Q23	4Q23	FY23	1Q24	2Q24	3Q24E	4Q24E	FY24E	1Q25E	2Q25E	3Q25E	4Q25E	FY25E
Total Revenue (non-GAAP)	1569.4	1649.8	1757.5	1844.2	6,820.9	1963.6	2073.2	2169.2	2232.7	8,438.7	2288.6	2254.3	1859.5	1729.3	8,131.7	1815.8	1942.9	1942.9	1942.9	7,644.5
% Change Y/Y	19.8%	26.0%	30.0%	25.7%	25.4%	25.1%	25.7%	23.4%	21.1%	23.7%	16.6%	8.7%	-14.3%	-22.5%	-3.6%	-20.7%	-13.8%	4.5%	12.4%	-6.0%
% Change Q/Q	7.0%	5.1%	6.5%	4.9%		6.5%	5.6%	4.6%	2.9%		2.5%	-1.5%	-17.5%	-7.0%		5.0%	7.0%	0.0%	0.0%	
Cost of Goods Sold	561.8	581.5	604.2	623.8	2,371.3	653.7	675.3	698.4	713.4	2,740.8	730.2	726.9	667.6	646.8	2,771.4	657.3	683.9	670.3	662.5	2,674.1
Gross Profit (non-GAAP)	1016.4	1077.4	1161.7	1228.4	4,483.9	1317.6	1404.4	1477.7	1525.4	5,725.1	1565.2	1534.8	1199.6	1090.3	5,389.9	1166.2	1266.7	1280.3	1288.1	5,001.3
Gross Margin (non-GAAP)	64.8%	65.3%	66.1%	66.6%	65.7%	67.1%	67.7%	68.1%	68.3%	67.8%	68.4%	68.1%	64.5%	63.0%	66.3%	64.2%	65.2%	65.9%	66.3%	65.4%
R&D	238.4	246.2	245.4	259.1	989.1	269.0	268.6	282.4	298.3	1118.3	298.5	292.6	286.7	283.9	1161.7	288.1	292.5	292.5	295.4	1168.4
% Total Revenue	15.2%	14.9%	14.0%	14.0%	14.5%	13.7%	13.0%	13.0%	13.4%	13.3%	13.0%	13.0%	15.4%	16.4%	14.3%	15.9%	15.1%	15.1%	15.2%	15.3%
SG&A	174.3	179.9	177.5	187.2	718.9	188.9	202.4	202.9	203.5	797.7	203.6	196.6	186.7	168.0	754.9	170.5	172.2	172.2	174.0	688.9
% Total Revenue	11.1%	10.9%	10.1%	10.2%	10.5%	9.6%	9.8%	9.4%	9.1%	9.5%	8.9%	8.7%	10.0%	9.7%	9.3%	9.4%	8.9%	8.9%	9.0%	9.0%
Amortization and Special Charges	226.1	225.9	215.4	224.6	892.0	150.7	171.8	173.9	169.5	665.9	153.2	153.2	153.2	153.2	612.8	153.2	153.2	153.2	153.2	612.8
% Total Revenue	14.4%	13.7%	12.3%	12.2%	13.1%	7.7%	8.3%	8.0%	7.6%	7.9%	6.7%	6.8%	8.2%	8.9%	7.5%	8.4%	7.9%	7.9%	7.9%	8.0%
OpEx (GAAP)	638.8	652.0	638.3	670.9	2,600.0	608.6	642.8	659.2	671.3	2,581.9	655.3	642.4	626.6	605.1	2,529.4	611.9	617.9	617.9	622.5	2,470.2
% Total Revenue	40.7%	39.5%	36.3%	36.4%	38.1%	31.0%	31.0%	30,4%	30.1%	30.6%	28.6%	28.5%	33.7%	35.0%	31.1%	33.7%	31.8%	31.8%	32.0%	32.3%
OpEx (non-GAAP)	361.3	376.7	377.2	403.5	1.518.7	422.7	433.0	447.9	461.7	1.765.3	464.8	450.1	427.7	413.9	1.756.5	420.7	426.7	426.7	431.3	1,705.4
% Total Revenue	23.0%	22.8%	21.5%	21.9%	22.3%	21.5%	20.9%	20.6%	20.7%	20.9%	20.3%	20.0%	23.0%	23.9%	21.6%	23.2%	22.0%	22.0%	22.2%	22,3%
Operating Income	368.8	416.3	515.0	549.5	1849.6	701.3	755.1	811.6	848.0	3116.0	903.1	885.0	565.3	477.5	2830.9	546,6	641.1	654.7	657.8	2500.3
Operating Margin	23.5%	25.2%	29.3%	29.8%	27.1%	35.7%	36.4%	37.4%	38.0%	36.9%	39.5%	39.3%	30.4%	27.6%	34.8%	30.1%	33.0%	33.7%	33.9%	32.7%
Operating Income (non-GAAP)	655.1	700.7	784.5	824.9	2965.2	894.9	971.4	1029.8	1063.7	3959.8	1100.4	1084.7	771.9	676.4	3633.4	745.5	840.0	853.6	856.7	3295.9
Operating Margin (non-GAAP)	41.7%	42.5%	44.6%	44.7%	43.5%	45.6%	46.9%	47.5%	47.6%	46.9%	48.1%	48.1%	41.5%	39.1%	44.7%	41.1%	43.2%	43.9%	44.1%	43.1%
Loss on equity method investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0					0.0
Interest/Other Expenses, net	(71.8)	(151.5)	(73.5)	(70.3)	(367.1)	(54.7)	(56.0)	(49.4)	(46.2)	(206.3)	(54.8)	(51.4)	(52.0)	(59.0)	(217.2)	(61.0)	(61.0)	(61.0)	(61.0)	(244.0)
Interest/Other Expenses (non-GAAP)	(60.6)	(56.2)	(53.7)	(50.1)	(220.6)	(48.4)	(53.9)	(49.4)	(46.2)	(197.9)	(45.7)	(48.3)	(52.0)	(59.0)	(205.0)	(61.0)	(61.0)	(61.0)	(61.0)	(244.0)
															, ,					
Pretax Income	297.0	264.8	441.5	479.2	1482.5	646.6	699.1	762.2	801.8	2909.7	848.3	833.6	513.3	418.5	2613.7	485.6	580.1	593.7	596.8	2256.3
% Total Revenue	18.9%	16.1%	25.1%	26.0%	21.7%	32.9%	33.7%	35.1%	35.9%	34.5%	37.1%	37.0%	27.6%	24.2%	32.1%	26.7%	29.9%	30.6%	30.7%	29.5%
Income Tax (Benefit)	44.2	22.8	88.7	41.3	197.0	139.4	152.9	181.9	197.8	672.0	181.9	167.0	121.1	102.6	572.7	119.1	142.2	145.6	146.3	553.2
Income Tax (non-GAAP)	35.7	38.9	49.1	10.2	133.9	79.3	103.1	116.7	109.7	408.8	149.4	147.1	102.7	86.6	485.7	96.0	109.2	111.1	111.6	427.9
% Pretax Income (Tax Rate, non-GAAP	6.0%	6.0%	6.7%	1.3%	4.9%	9.4%	11.2%	11.9%	10.8%	10.9%	14.2%	14.2%	14.3%	14.0%	14.2%	14.0%	14.0%	14.0%	14.0%	14.0%
									,-											
Diluted Common Shares (non-GAAP)	565.2	565.9	567.3	565.1	565.9	561.5	558.3	555.4	553.9	557.3	551.4	549.2	546.5	545.5	548.2	544.5	543.5	542.5	541.5	543.0
Net Income (non-GAAP)	558.8	605.6	681.7	764.6	2,610.7	767.2	814.4	863.7	907.8	3,353.1	905.3	889.3	617.3	530.8	2,942.7	588.5	669.8	681.5	684.2	2,624.0
EPS (non-GAAP, ex Amort ex Op)	\$ 0.99	\$ 1.07	\$ 1.20	\$ 1.35	\$ 4.61	\$ 1.37	\$ 1.46	\$ 1.56	\$ 1.64	\$ 6.02	\$ 1.64	\$ 1.62	\$ 1.13	\$ 0.97	\$ 5.36	\$ 1.08	\$ 1.23	\$ 1.26	\$ 1.26	\$ 4.83
% Change Y/Y	26.8%	37.3%	48.4%	46.1%	40.0%	38.2%	36.3%	29.4%	21.1%	30.5%	20.2%	11.0%	-27.4%	-40.6%	-10.9%	-34.2%	-23.9%	11.2%	29.8%	-9.9%
% Change Q/Q	6.8%	8.2%	12.3%	12.6%		1.0%	6.8%	6.6%	5.4%		0.2%	-1.4%	-30.2%	-13.8%		11.1%	14.0%	1.9%	0.6%	
0 1 1																				

Source: Company reports and J.P. Morgan estimates

Table 6: Microchip Cash Flow Statement

\$ in millions

	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25
FY end: Mar (in \$ mm)	4Q21	1022	2Q22	3Q22	4Q22	1023	2023	3Q23	4Q23	1024	2024	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E
Cash flows from operating activities		_`			_					_			_				
Net Income	116.0	252.8	242.0	352.8	437.9	507.2	546.2	580.3	604.0	666.4	666.6	392.2	315.9	366.5	437.9	448.1	450.5
Income adjustment for Telcom quarter ened March 31, 2000	110.0	232.0	212.0	332.0	437.5	307.2	510.2	500.5	001.0	000.1	000.0	372.2	313.5	500.5	437.5	110.1	150.5
Adjustments																	
Share based Compensation Expense	55.0	56.6	55.7	50.9	47.0	41.2	41.3	44.0	43.9	44.5	45.4	38.0	38.0	38.0	38.0	38.0	38.0
Share based Compensation Expense	33.0	50.0	33.1	30.9	47.0	41.2	41.3	44.0	43.7	44.3	43.4	36.0	36.0	36.0	30.0	36.0	36.0
Convertible Debt Derivatives																	
Amortization of Debt Discount on Convertible Debt	13.6	12.6	11.6	10.7	10.0	1.8	1.8	1.8									
Amortization of Debt Issuance Costs	3.9	3.5	2.9	2.8	2.3	2.3	2.4	2.4									
Losses on Equity Method Investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
Special Charges and Others	79.4	1.2	80.4	10.5	3.1	6.0	0.0	1.9									
Depreciation and amortization	287.8	272.2	277.5	300.6	303.0	259.4	251.8	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0
Amortiztion of purchased technology																	
Deferred income taxes	(56.0)	20.1	(31.3)	17.3	1.8	74.7	56.6	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
Tax benefit from share based compensation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*																	
(Increase) decrease in accounts receivable	(103.9)	(3.0)	15.1	55.5	(142.5)	(72.4)	11.8	(41.8)	(130.3)	(159.7)	(241.2)	398.3	91.6	(60.8)	(89.4)	0.0	0.0
(Increase) decrease in inventories	0.90	(19.2)	(30.6)	(55.2)	(72.80)	(65.0)	(125.2)	(134.6)	(159.5)	(11.5)	5.5	109.1	38.0	(19.3)	(48.7)	24.9	14.2
Increase (decrease) in accounts payable and accrued liabilities	11.0	(0.9)	4.2	70.5	118.9	152.4	(8.1)	81.2	(109.3)	(100.5)	69.4	58.8	41.8	(21.2)	(53.5)	27.4	15.6
Increase(decrease) in deferred income on shipments to disti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in other assets and liabilities	41.5	34.0	(15.8)	37.0	39.0	(67.2)	14.6	444.6	162.6	255.9	(227.6)						
Net cash provided by operating activities	449.2	629.9	611.7	853.4	747.7	840.4	793.2	1,277.9	709.5	993.2	616.2	1,294.5	823.4	601.3	582.4	836.5	816.4
Cash flows from investing activities																	
Sales (purchases) of short term investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
Sales (purchases) of long term investments	0.0	(26.4)	(17.5)	43.9	0.0	(32.3)	(20.5)	52.8									
Purchase of Fab 4																	
Acquisitions	0.0	0.0	0.0		0.0	0.0	0.0										
Proceeds (investments) from sale of assets	(7.8)	0.0	0.0	(79.5)	(28.1)	0.4	0.0	(75.6)									
Capital expenditures	(55.4)	(86.3)	(78.5)	(90.7)	(114.6)	(121.9)	(110.3)	(141.3)	(112.7)	(111.1)	(74.4)	(60.0)	(60.0)	(75.0)	(75.0)	(80.0)	(80.0)
Net cash used in investing activities	(63.2)	(112.7)	(96.0)	(126.3)	(142.7)	(153.8)	(130.8)	(164.1)	(112.7)	(111.1)	(74.4)	(60.0)	(60.0)	(75.0)	(75.0)	(80.0)	(80.0)
C-1 0 6 6 6 1 1 1 1-																	
Cash flows from financing activities																	
Repayment of lines of credit	4,822.3	(1,408.0)	(132.0)	(2,213.5)	1,806.0	(199.0)	(228.0)	(4,740.1)									
Payment of cash dividends	(106.6)	(113.1)	(121.2)	(128.7)	(140.8)	(153.0)	(166.1)	(180.3)	(195.9)	(208.9)	(222.8)	(237.5)	(258.9)	(282.2)	(307.6)	(335.3)	(408.2)
Payments on long-term debt	(2,434.1)	0.0	0.0	(362.8)	362.8	(73.5)	(96.9)	0.0	(153.0)	(413.0)							
Payments on capital lease obligations	0.0	0.0	0.0	(0.6)	(0.2)	0.0	0.0	(0.6)									
Sale/(Repurchase) of common stock	20.1	12.2	21.2	(152.3)	(236.2)	(181.8)	(222.8)	(213.0)	(273.9)	(140.3)	(339.8)	(114.6)	(759.6)	(370.5)	(179.3)	(159.5)	(348.3)
Proceeds from Debt Issuance	(2,721.6)	997.0	(263.6)	2,213.6	(2,374.7)	0.0	0.0	4,021.0									
Others	(56.8)	(7.6)	(44.5)	(22.6)	(18.0)	(19.6)	(20.9)	(16.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash provided by (used in) financing activities	(476.7)	(519.5)	(540.1)	(666.9)	(601.1)	(626.9)	(734.7)	(1,129.7)	(622.8)	(762.2)	(562.6)	(352.1)	(1,018.5)	(652.7)	(486.8)	(494.8)	(756.5
Not (downwar) in such and such austinia	(00.7)	(2.2)	(24.6)	60.2	3.9	50.7	(72.2)	(15.0)	(26.00	110.0	(20 C)	992 4	(255.1)	(126.6	20.4	261.7	(20.0
Net (decrease) increase in cash and cash equivalents	(90.7)	(2.3)	(24.4)	60.2	3.9	59.7	(72.3)	(15.9)	(26.0)	119.9	(20.8)	882.4	(255.1)	(126.4)	20.6	261.7	(20.0
Effect of foreign exchange on cash and cash eq																	
Cash and cash equivalents at beginning of the period	370.7	280.0	277.7	253.3	313.5	317.4	377.1	304.8	288.9	262.9	382.8	362.0	1,244.4	989.3	862.9	883.5	1,145.2
Cash and cash equivalents at end of period	280.0	277.7	253.3	313.5	317.4	377.1	304.8	288.9	262.9	382.8	362.0	1,244.4	989.3	862.9	883.5	1,145.2	1,125.2

Source: Company reports and J.P. Morgan estimates

Harlan Sur ^{AC} (1-415) 315-6700 harlan.sur@jpmorgan.com



Investment Thesis, Valuation and Risks

Microchip Technology (Overweight; Price Target: \$95.00)

Investment Thesis

We are Overweight MCHP based on the following:

Post the merger with Microsemi, Microchip has gained significant share/scale while broadening its product portfolio. We believe the combined entity stands to gain additional share in a fragmented market, especially in growth areas such as automotive, industrial, and IoT.

We believe the merger synergy and accretion targets laid out by the management team could be conservative in light of a merger schedule that closed ahead of expectations and the company's history of delivering additional upside in prior acquisitions.

We expect the company to drive additional revenue synergies from complementary sales of analog products, which has proven to be an effective strategy in the past. We believe Microchip's strength in distribution and customer support will help capture this opportunity

Valuation

Our Dec-24 PT of \$95 assumes that MCHP trades at a semi peer group multiple of 16-20x, applied to FY25 exit run-rate earnings power of ~\$5.00.

Risks to Rating and Price Target

Post merging with Microsemi, Microchip derives a significant portion of its revenues from microcontrollers. If Microchip loses material market share in microcontrollers to a competitor, this could lead to a decrease in our revenue and EPS estimates, which could cause us to reassess our Overweight rating.

Also, because Microchip's products are representative of the global economy as a whole, any pressure or recession in the world—European, North American, or Asian—economy would negatively affect the company's business.



Microchip Technology: Summary of Financials

morounp rounn	<u> </u>	. ••		 <i>J</i>	••• •						
Income Statement - Annual	FY22A	FY23A	FY24E	FY25E	FY26E			1Q24A	2Q24A	3Q24E	4Q24E
Revenue	6,821	8,439	8,132	7,645		Revenue		2,289A	2,254A	1,860	1,729
COGS	(2,371)	(2,741)	(2,771)	(2,674)		COGS	-	(730)A	(727)A	(668)	(647)
Gross profit	4,450	5,698	5,360	(690)	-	Gross profit		1,558A	1,527A	1,192	1,083
SG&A	(719)	(798)	(755)	(689)		SG&A Adj. EBITDA	-	(204)A 1,344A	(197)A 1,329A	(187)	(168) 920
Adj. EBITDA	4,119	4,959	4,609	4,272	-	50.4		(153)A	(153)A	1,016 (153)	(153)
D&A	(903)	(666)	(613)	(153)			-	1,100A	1,085A	772	676
Adj. EBIT	2,965	3,960 (206)	3,633 (217)	3,296 (244)	-	Adj. EBIT Net Interest		(55)A	(51)A	(52)	(59)
Net Interest	(367) 2,745	3,762	3,428	3,052			-	1,055A	1,036A	720	617
Adj. PBT Tax	(197)	(672)	(573)	(553)	-	Tax		(182)A	(167)A	(121)	(103)
Minority Interest	(197)	(072)	(373)	(333)	-	Minority Interest		(102)/	(101)	(121)	(103)
Adj. Net Income	2,611	3,353	2,943	2,624		Adj. Net Income	-	905A	889A	617	531
Reported EPS	2,011	4.02	3.72	3.14	•	Reported EPS		1.21A	1.21A	0.72	0.58
Adi. EPS	4.61	6.02	5.37	4.83		Adj. EPS		1.64A	1.62A	1.13	0.97
DPS	0.00	1.07	1.86	2.60	_	DPS		0.42A	0.44A	0.48	0.52
Payout ratio	0.0%	26.6%	49.9%	82.9%	-	Payout ratio		34.5%A	36.2%A	66.7%	90.1%
Shares outstanding	566	557	548	543		Shares outstanding		551A	549A	547	546
Balance Sheet & Cash Flow Statement	FY22A	FY23A	FY24E	FY25E	FY26E		FY22A	FY23A	FY24E	FY25E	FY26E
Cash and cash equivalents	319	234	884	1,020	11200	Gross margin	65.2%	67.5%	65.9%	-1150-	-11225
Accounts receivable	1,073	1,305	1,216	1,367	_	EBITDA margin	60.4%	58.8%	56.7%	55.9%	_
Inventories	854	1,325	1,184	1,213	_	EBIT margin	43.5%	46.9%	44.7%	43.1%	_
Other current assets	206	205	233	233	_	Net profit margin	38.3%	39.7%	36.2%	34.3%	_
Current assets	2,453	3,069	3,517	3,832		. •					
PP&E	968	1,178	1,145	1,092	_	ROE	46.5%	54.0%	37.9%	28.8%	_
LT investments	-	-,	-,	-,002	_	ROA	16.0%	20.6%	17.9%	15.7%	-
Other non current assets	12,779	12,123	11,868	11,868	_	ROCE	26.8%	35.8%	31.8%	27.9%	-
Total assets	16,200	16,370	16,530	16,792		SG&A/Sales	10.5%	9.5%	9.3%	9.0%	-
		,	,	,		Net debt/equity	0.7	0.4	0.0	NM	-
Short term borrowings	0	1,398	0	0	-						
Payables	1,399	1,720	1,301	1,333	-	P/E (x)	16.0	12.2	13.7	15.2	-
Other short term liabilities	0	0	0	0	-	P/BV (x)	6.9	6.2	4.3	4.1	-
Current liabilities	1,399	3,119	1,301	1,333	-	EV/EBITDA (x)	10.8	8.7	8.8	-	-
Long-term debt	4,287	1,642	1,015	1,015	-	Dividend Yield	0.0%	1.5%	2.5%	3.5%	-
Other long term liabilities	4,618	5,096	5,187	5,239	-						
Total liabilities	10,305	9,857	7,503	7,586	-	Sales/Assets (x)	0.4	0.5	0.5	0.5	-
Shareholders' equity	5,895	6,514	9,027	9,206	-	Interest cover (x)	11.2	24.0	21.2	17.5	-
Minority interests	0	0	0	0	-	Operating leverage	147.7%	141.4%	226.6%	155.0%	-
Total liabilities & equity	16,200	16,370	16,530	16,792	-		05.40/	00.70/	(0.00()	(0.00()	
BVPS	10.63	11.84	16.93	17.82	-	Revenue y/y Growth	25.4%	23.7%	(3.6%)	(6.0%)	-
y/y Growth	0.3%	11.4%	43.1%	5.3%	-	EBITDA y/y Growth	24.5%	20.4%	(7.0%)	(7.3%)	-
Net debt/(cash)	3,968	2,806	131	(5)	-	Tax rate	4.9%	10.9%	14.2%	14.3%	-
						Adj. Net Income y/y Growth	46.1%	28.4%	(12.2%)	(10.8%) (10.0%)	-
Cash flow from operating activities	2,843	3,621	3,727	2,837	-	EPS y/y Growth	39.8%	30.4%	(10.8%) 73.8%	40.0%	-
o/w Depreciation & amortization	1,153	999	976	976	-	DPS y/y Growth	-	-	13.0%	40.0%	-
o/w Changes in working capital	34	(46)	328	(211)	-						
Cash flow from investing activities	(478)	(561)	(306)	(310)	-						
o/w Capital expenditure	(370)	(486)	(306)	(310)	-						
as % of sales	5.4%	5.8%	3.8%	4.1%	-						
Cash flow from financing activities	(2,328)	(3,621)	(2,300)	(2,391)	-						
o/w Dividends paid	(504)	(695)	(928)	(1,333)	-						
o/w Net debt issued/(repaid)	572	4,021	0	0	-						
Net change in cash	37	(561)	1,122	136	-						
Adj. Free cash flow to firm	2,822	3,319	3,608	2,736	-						
y/y Growth	14.9%	17.6%	8.7%	(24.2%)	-						

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Mar. o/w - out of which



Analyst Certification: The Research Analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple Research Analysts are primarily responsible for this report, the Research Analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the Research Analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the Research Analyst's personal views about any and all of the subject securities or issuers; and (2) no part of any of the Research Analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the Research Analyst(s) in this report. For all Korea-based Research Analysts listed on the front cover, if applicable, they also certify, as per KOFIA requirements, that the Research Analyst's analysis was made in good faith and that the views reflect the Research Analyst's own opinion, without undue influence or intervention.

All authors named within this report are Research Analysts who produce independent research unless otherwise specified. In Europe, Sector Specialists (Sales and Trading) may be shown on this report as contacts but are not authors of the report or part of the Research Department.

Important Disclosures

- Market Maker: J.P. Morgan Securities LLC makes a market in the securities of Microchip Technology.
- Market Maker/ Liquidity Provider: J.P. Morgan is a market maker and/or liquidity provider in the financial instruments of/related to Microchip Technology.
- Client: J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients: Microchip Technology.
- Client/Investment Banking: J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as investment banking clients: Microchip Technology.
- Client/Non-Investment Banking, Securities-Related: J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients, and the services provided were non-investment-banking, securities-related: Microchip Technology.
- Client/Non-Securities-Related: J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients, and the services provided were non-securities-related: Microchip Technology.
- Investment Banking Compensation Received: J.P. Morgan has received in the past 12 months compensation for investment banking services from Microchip Technology.
- Potential Investment Banking Compensation: J.P. Morgan expects to receive, or intends to seek, compensation for investment banking services in the next three months from Microchip Technology.
- Non-Investment Banking Compensation Received: J.P. Morgan has received compensation in the past 12 months for products or services other than investment banking from Microchip Technology.
- Debt Position: J.P. Morgan may hold a position in the debt securities of Microchip Technology, if any.

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan—covered companies, and certain non-covered companies, by visiting https://www.jpmm.com/research/disclosures, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request.



Source: Bloomberg Finance L.P. and J.P. Morgan; price data adjusted for stock splits and dividends. Initiated coverage Dec 13, 2002. All share prices are as of market close on the previous business day.

The chart(s) show J.P. Morgan's continuing coverage of the stocks; the current analysts may or may not have covered it over the entire period.



J.P. Morgan ratings or designations: OW = Overweight, N= Neutral, UW = Underweight, NR = Not Rated

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:

J.P. Morgan uses the following rating system: Overweight [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Neutral [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Underweight Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Not Rated (NR): J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia and ex-India) and U.K. small- and mid-cap equity research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying analyst's coverage universe can be found on J.P. Morgan's research website, https://www.jpmorganmarkets.com.

Coverage Universe: Sur, Harlan: Advanced Micro Devices (AMD), Analog Devices (ADI), Applied Materials (AMAT), Arm Holdings Plc (ARM), Broadcom Inc (AVGO), Cadence Design Systems (CDNS), GlobalFoundries (GFS), Intel (INTC), KLA Corporation (KLAC), Lam Research (LRCX), MACOM (MTSI), Marvell Technology Inc (MRVL), Microchip Technology (MCHP), Micron Technology (MU), NVIDIA Corporation (NVDA), NXP Semiconductors (NXPI), ON Semiconductor Corporation (ON), Qorvo (QRVO), Skyworks Solutions (SWKS), Synopsys Inc (SNPS), Texas Instruments (TXN), Western Digital (WDC)

J.P. Morgan Equity Research Ratings Distribution, as of October 07, 2023

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage*	47%	39%	14%
IB clients**	47%	45%	33%
JPMS Equity Research Coverage*	46%	41%	13%
IB clients**	65%	64%	51%

For purposes of FINRA ratings distribution rules only, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at http://www.jpmorganmarkets.com, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com. For material information about the proprietary models used, please see the Summary of Financials in company-specific research reports and the Company Tearsheets, which are available to download on the company pages of our client website, http://www.jpmorganmarkets.com. This report also sets out within it the material underlying assumptions used.

A history of J.P. Morgan investment recommendations disseminated during the preceding 12 months can be accessed on the Research & Commentary page of http://www.jpmorganmarkets.com where you can also search by analyst name, sector or financial instrument.

Analysts' Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

UK MIFID FICC research unbundling exemption: UK clients should refer to UK MIFID Research Unbundling exemption for details of JPMorgan's implementation of the FICC research exemption and guidance on relevant FICC research categorisation.

All research material made available to clients are simultaneously available on our client website, J.P. Morgan Markets, unless specifically permitted by relevant laws. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research material available on a particular stock, please contact your sales representative.

Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research material are Mainland China; Hong Kong SAR (China); Taiwan (China); and Macau SAR (China).

J.P. Morgan Research may, from time to time, write on issuers or securities targeted by economic or financial sanctions imposed or administered by the governmental authorities of the U.S., EU, UK or other relevant jurisdictions (Sanctioned Securities). Nothing in this report is intended to

^{*}Please note that the percentages may not add to 100% because of rounding.
**Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.

North America Equity Research 03 November 2023

Harlan Sur ^{AC} (1-415) 315-6700 harlan.sur@jpmorgan.com



be read or construed as encouraging, facilitating, promoting or otherwise approving investment or dealing in such Sanctioned Securities. Clients should be aware of their own legal and compliance obligations when making investment decisions.

Any digital or crypto assets discussed in this research report are subject to a rapidly changing regulatory landscape. For relevant regulatory advisories on crypto assets, including bitcoin and ether, please see https://www.ipmorgan.com/disclosures/cryptoasset-disclosure.

The author(s) of this research report 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.

Exchange-Traded Funds (ETFs): J.P. Morgan Securities LLC ("JPMS") acts as authorized participant for substantially all U.S.-listed ETFs. To the extent that any ETFs are mentioned in this report, JPMS may earn commissions and transaction-based compensation in connection with the distribution of those ETF shares and may earn fees for performing other trade-related services, such as securities lending to short sellers of the ETF shares. JPMS may also perform services for the ETFs themselves, including acting as a broker or dealer to the ETFs. In addition, affiliates of JPMS may perform services for the ETFs, including trust, custodial, administration, lending, index calculation and/or maintenance and other services.

Options and Futures related research: If the information contained herein regards options- or futures-related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit https://www.theocc.com/components/docs/riskstoc.pdf for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or https://www.finra.org/sites/default/files/Security_Futures_Risk_Disclosure_Statement_2018.pdf for a copy of the Security Futures Risk Disclosure Statement.

Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank offered rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including, but not limited to, the J.P. Morgan Corporate and Investment Bank and its Global Research division.

Legal entity responsible for the production and distribution of research: The legal entity identified below the name of the Reg AC Research Analyst who authored this material is the legal entity responsible for the production of this research. Where multiple Reg AC Research Analysts authored this material with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research. Research Analysts from various J.P. Morgan affiliates may have contributed to the production of this material but may not be licensed to carry out regulated activities in your jurisdiction (and do not hold themselves out as being able to do so). Unless otherwise stated below, this material has been distributed by the legal entity responsible for production. If you have any queries, please contact the relevant Research Analyst in your jurisdiction or the entity in your jurisdiction that has distributed this research material.

Legal Entities Disclosures and Country-/Region-Specific Disclosures:

Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission" - ALYC y AN Integral N°51). Australia: J.P. Morgan Securities Australia Limited ("JPMSAL") (ABN 61 003 245 234/AFS Licence No. 238066) is regulated by the Australian Securities and Investments Commission and is a Market, Clearing and Settlement Participant of ASX Limited and CHI-X. This material is issued and distributed in Australia by or on behalf of JPMSAL only to "wholesale clients" (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting https://www.jpmm.com/research/disclosures. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management presentations, etc. Research issued by JPMSAL has been prepared in accordance with J.P. Morgan Australia's Research Independence Policy which can be found at the following link: J.P. Morgan Australia - Research Independence Policy. Brazil: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com. Canada: J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Canadian Investment Regulatory Organization and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P.Morgan Securities Canada Inc. Chile: Inversiones J.P. Morgan Limitada is an unregulated entity incorporated in Chile. China: J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business. Dubai International Financial Centre (DIFC): JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed by JP Morgan Chase Bank, N.A., Dubai Branch to persons regarded as professional clients or market counterparties as defined under the DFSA rules. European Economic Area (EEA): Unless specified to the contrary, research is distributed in the EEA by J.P. Morgan SE ("JPM SE"), which is subject to prudential supervision by the European Central Bank ("ECB") in cooperation with BaFin and Deutsche Bundesbank in Germany. JPM SE is a company headquartered in Frankfurt with registered address at TaunusTurm, Taunustor 1, Frankfurt am Main, 60310, Germany. The material has been distributed in the EEA to persons regarded as professional investors (or equivalent) pursuant to Art. 4 para. 1 no. 10 and Annex II of MiFID II and its respective implementation in their home jurisdictions ("EEA professional investors"). This material must not be acted on or relied on by persons who are not EEA professional investors. Any investment or investment activity to which this material relates is only available to EEA relevant persons



and will be engaged in only with EEA relevant persons. Hong Kong: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. JP Morgan Chase Bank, N.A., Hong Kong Branch (CE Number AAL996) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission, is organized under the laws of the United States with limited liability. Where the distribution of this material is a regulated activity in Hong Kong, the material is distributed in Hong Kong by or through J.P. Morgan Securities (Asia Pacific) Limited and/or J.P. Morgan Broking (Hong Kong) Limited. India: J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai – 400098, is registered with the Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number -INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: http://www.jpmipl.com. JPMorgan Chase Bank, N.A. - Mumbai Branch is licensed by the Reserve Bank of India (RBI) (Licence No. 53/ Licence No. BY.4/94; SEBI - IN/CUS/014/ CDSL : IN-DP-CDSL-444-2008/ IN-DP-NSDL-285-2008/ INBI00000984/ INE231311239) as a Scheduled Commercial Bank in India, which is its primary license allowing it to carry on Banking business in India and other activities, which a Bank branch in India are permitted to undertake. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. Compliance Officer: Spurthi Gadamsetty; spurthi.gadamsetty@jpmchase.com; +912261573225. Grievance Officer: Ramprasadh K, jpmipl.research.feedback@jpmorgan.com; +912261573000.

Investment in securities market are subject to market risks. Read all the related documents carefully before investing. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors.

Indonesia: PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is registered and supervised by the Otoritas Jasa Keuangan (OJK). Korea: J.P. Morgan Securities (Far East) Limited, Seoul Branch, is a member of the Korea Exchange (KRX). JPMorgan Chase Bank, N.A., Seoul Branch, is licensed as a branch office of foreign bank (JPMorgan Chase Bank, N.A.) in Korea. Both entities are regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). For non-macro research material, the material is distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch. Japan: JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. Malaysia: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X), which is a Participating Organization of Bursa Malaysia Berhad and holds a Capital Markets Services License issued by the Securities Commission in Malaysia. Mexico: J.P. Morgan Casa de Bolsa, S.A. de C.V. and J.P. Morgan Grupo Financiero are members of the Mexican Stock Exchange and are authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. New Zealand: This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Markets Conduct Act 2013). JPMSAL is registered as a Financial Service Provider under the Financial Service providers (Registration and Dispute Resolution) Act of 2008. Pakistan: J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. Philippines: J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. Russia: CB J.P. Morgan Bank International LLC is regulated by the Central Bank of Russia. Singapore: This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MCI (P) 030/08/2023 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited, and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore), both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this material in Singapore are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the material. As at the date of this material, JPMSS is a designated market maker for certain structured warrants listed on the Singapore Exchange where the underlying securities may be the securities discussed in this material. Arising from its role as a designated market maker for such structured warrants, JPMSS may conduct hedging activities in respect of such underlying securities and hold or have an interest in such underlying securities as a result. The updated list of structured warrants for which JPMSS acts as designated market maker may be found on the website of the Singapore Exchange Limited: http://www.sgx.com. South Africa: J.P. Morgan Equities South Africa Proprietary Limited and JPMorgan Chase Bank, N.A., Johannesburg Branch are members of the Johannesburg Securities Exchange and are regulated by the Financial Services Board. Taiwan: J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. Material relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material that may give rise to conflicts of interests, unless otherwise disclosed in the "Important Disclosures" in this material. Thailand: This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission, and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. UK: Unless specified to the contrary, research is distributed in the UK by J.P. Morgan Securities plc ("JPMS plc") which is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. JPMS plc is registered in England & Wales No. 2711006, Registered Office 25 Bank Street, London, E14 5JP. This material is directed in the UK only to: (a) persons having professional experience in matters relating to

Harlan Sur AC (1-415) 315-6700 harlan.sur@jpmorgan.com



investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) (Order) 2005 ("the FPO"); (b) persons outlined in article 49 of the FPO (high net worth companies, unincorporated associations or partnerships, the trustees of high value trusts, etc.); or (c) any persons to whom this communication may otherwise lawfully be made; all such persons being referred to as "UK relevant persons". This material must not be acted on or relied on by persons who are not UK relevant persons. Any investment or investment activity to which this material relates is only available to UK relevant persons and will be engaged in only with UK relevant persons. Research issued by JPMS plc has been prepared in accordance with JPMS plc's policy for prevention and avoidance of conflicts of interest related to the production of Research which can be found at the following link: J.P. Morgan EMEA - Research Independence Policy, U.S.: J.P. Morgan Securities LLC ("JPMS") is a member of the NYSE, FINRA, SIPC, and the NFA. JPMorgan Chase Bank, N.A. is a member of the FDIC. Material published by non-U.S. affiliates is distributed in the U.S. by JPMS who accepts responsibility for its content.

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material. There may be certain discrepancies with data and/or limited content in this material as a result of calculations, adjustments, translations to different languages, and/or local regulatory restrictions, as applicable. These discrepancies should not impact the overall investment analysis, views and/or recommendations of the subject company(ies) that may be discussed in the material. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. This material may include views on structured securities, options, futures and other derivatives. These are complex instruments, may involve a high degree of risk and may be appropriate investments only for sophisticated investors who are capable of understanding and assuming the risks involved. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts' views and research, and it may also engage in transactions for its own account or for its clients' accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material. This material is not an advertisement for or marketing of any issuer, its products or services, or its securities in any jurisdiction.

Confidentiality and Security Notice: This transmission may contain information that is privileged, confidential, legally privileged, and/or exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein (including any reliance thereon) is STRICTLY PROHIBITED. Although this transmission and any attachments are believed to be free of any virus or other defect that might affect any computer system into which it is received and opened, it is the responsibility of the recipient to ensure that it is virus free and no responsibility is accepted by JPMorgan Chase & Co., its subsidiaries and affiliates, as applicable, for any loss or damage arising in any way from its use. If you received this transmission in error, please immediately contact the sender and destroy the material in its entirety, whether in electronic or hard copy format. This message is subject to electronic monitoring: https://www.jpmorgan.com/disclosures/email

MSCI: Certain information herein ("Information") is reproduced by permission of MSCI Inc., its affiliates and information providers ("MSCI") ©2023. No reproduction or dissemination of the Information is permitted without an appropriate license. MSCI MAKES NO EXPRESS OR IMPLIED WARRANTIES (INCLUDING MERCHANTABILITY OR FITNESS) AS TO THE INFORMATION AND DISCLAIMS ALL LIABILITY TO THE EXTENT PERMITTED BY LAW. No Information constitutes investment advice, except for any applicable Information from MSCI ESG Research. Subject also to msci.com/disclaimer

"Other Disclosures" last revised October 21, 2023.

Copyright 2023 JPMorgan Chase & Co. All rights reserved. This material or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan. It is strictly prohibited to use or share without prior written consent from J.P. Morgan any research material received from J.P. Morgan or an authorized third-party ("J.P. Morgan Data") in any third-party

Harlan Sur ^{AC} (1-415) 315-6700 harlan.sur@jpmorgan.com

North America Equity Research 03 November 2023



artificial intelligence ("AI") systems or models when such J.P. Morgan Data is accessible by a third-party. It is permissible to use J.P. Morgan Data for internal business purposes only in an AI system or model that protects the confidentiality of J.P. Morgan Data so as to prevent any and all access to or use of such J.P. Morgan Data by any third-party.

Completed 02 Nov 2023 11:49 PM EDT

Disseminated 03 Nov 2023 12:34 AM EDT