

October 25, 2023

Rating:

OUTPERFORM

Price:

NT\$48.30

12-Month Price Target:

NT\$57.00

Analysts

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Company Information - Hardware

Yield	7.45%
Market Cap (M)	TWD606,938
Enterprise Value (M)	TWD489,237
Shares Outst (M)	12,503.1

Revenue (B)		in TWD	
FYE Dec	2023E	2024E	2025E
Q1 Mar	54.2A	53.0E	64.9E
Previous		60.1E	
Q2 Jun	56.3A	58.0E	72.1E
Previous		65.0E	
Q3 Sep	57.1A	63.0E	79.4E
Previous	55.9E	74.4E	
Q4 Dec	55.0E	68.9E	88.7E
Previous	62.1E	80.4E	
Year*	222.6E	242.8E	305.1E
Previous	228.5E	280.0E	

Gross Margin		in TWD	
FYE Dec	2023E	2024E	2025E
Q1 Mar	35.5%A	28.5%E	30.0%E
Previous		32.5%E	
Q2 Jun	36.0%A	30.0%E	33.0%E
Previous		34.0%E	
Q3 Sep	35.9%A	31.5%E	36.0%E
Previous	33.5%E	37.0%E	
Q4 Dec	31.0%E	33.0%E	39.5%E
Previous	35.0%E	37.5%E	
Year*	34.6%E	30.9%E	35.0%E
Previous	35.0%E	35.5%E	

EPS		in TWD	
FYE Dec	2023E	2024E	2025E
Q1 Mar	1.31A	0.66E	0.93E
Previous		0.94E	
Q2 Jun	1.27A	0.79E	1.21E
Previous		1.10E	
Q3 Sep	1.29A	0.96E	1.54E
Previous	0.91E	1.45E	
Q4 Dec	0.76E	1.12E	1.96E
Previous	1.12E	1.63E	
Year*	4.63E	3.53E	5.64E
Previous	4.61E	5.11E	
P/E	10.4x	13.7x	8.6x

Pricing data provided by Thomson Reuters.

*Numbers may not add up due to rounding.

United Microelectronics (2303)

CQ3'23 Earnings Review

UMC healthily exceeded prior CQ3 expectations, helped by favorable shifts in exchange rates. However, even with our expectations around guidance having been tempered in light of continued difficult end markets, we hadn't been anticipating UMC would forecast as significant a decline as the 5% dip in shipments they guided to.

Two factors appear to be playing a role in the anticipated decline in sales in CQ4:

- An expected decline in UMC's auto sales is continuing into CQ4, and
- The market for 8" wafers remains more competitive as overall demand trends remain muted.

And new 12" production (supported by LTAs) and stronger trends in mainstream node demand aren't enough to offset these two points of pressure on revenues.

Net, we see a few bifurcating patterns emerging that will influence UMC's forward trajectory:

- 12" mainstream nodes should remain a point of strength with new constraints on Chinese fab's ability to source advanced equipment likely to support a better ongoing dynamic in this market. In turn, we see UMC's commentary around its focus on the continued ramp of 22nm/28nm nodes and 12" specialty technologies as aligning the company with this reality.
- 8" wafers appear to be seeing additional competitive pressure; we believe 8" pricing has been declining in recent quarters, and we don't see this dynamic reversing in the near-term given plenty of capacity and softer overall demand.

Net, while we are adjusting forward numbers lower, we continue to believe that our intermediate term outlook (e.g., margins in the mid-30s and a return to average utilization rates of 80%+) remains reasonable particularly with new production supported by LTAs and an eventual lift in general semi/foundry demand (tied to a macroeconomic recovery) likely to be further buoyed by technology trends (AI, EVs and ADAS, IOT, AR/VR) driving greater semi content across devices. As such, we are retaining our OUTPERFORM rating while our PT remains unchanged at NT\$57.

Derivatives

GFS - Neutral - We see GFS as better able to sustain pricing given a greater proportion of sales comes from 12" and specialty technologies, with GFS's fab locality also providing a further point of differentiation that appears to be insulating its business/pricing.

TSEM/Vanguard - Mixed to Negative - While TSEM's specialty parts could provide some insulation from broader dynamics, TSEM is more exposed to 8" wafers and older nodes vis a vis UMC (or GFS), while VIS is focussed on 8" production.

Semis/Hardware - Mixed - Better apparent dynamics in Comms and PCs are promising, even if UMC shipments declined Q/Q.

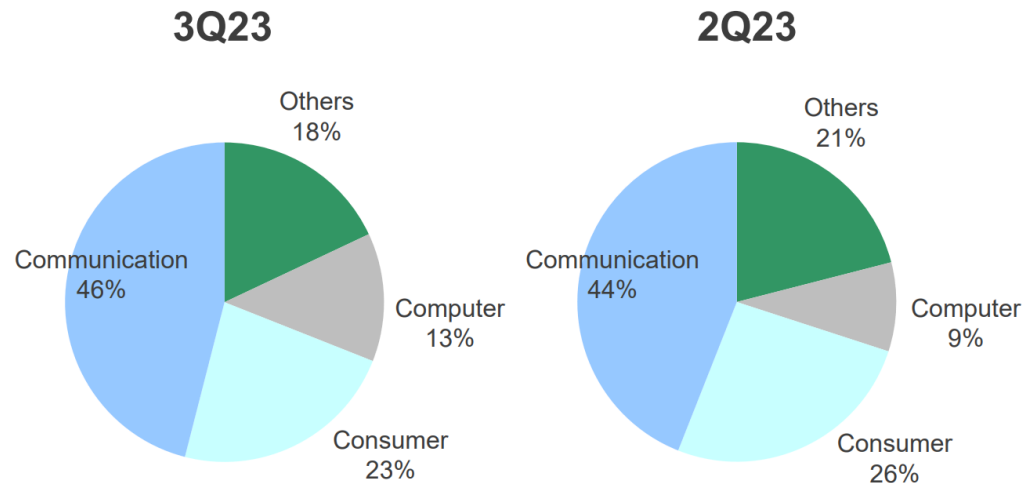
Valuation: We reiterate our OUTPERFORM rating while maintaining our NT\$57 PT. We base our PT on a multiple of ~8X PE (net cash) now applied to our FY2025 EPS estimate.

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UMC CQ3 Review

For CQ3'23, UMC reported EPS of NT\$1.29, revenues of NT\$ 56,296M, GMs of 35.9%, and OMs of 26.8%.

Figure 1: UMC Revenue by Application



Source: UMC Presentation

- **Sales** - Revenues increased 1% Q/Q and GMs decreased 12bps sequentially to 35.9% (from 36.0% in CQ2). Higher sales were driven by improved product mix and a more favorable exchange rate due to the strengthening of the USD against the TWD. ASPs (in USD) remained firm, growing slightly Q/Q.
- **Mix** - From a process node perspective, 22/28nm accounted for 32% of revenues (vs. 29% in CQ2) while a mix shift towards specialty technologies (which are more concentrated on newer 12" products) also contributed to better ASPs (specialty technologies were 59% of revenues in CQ2).
- **End market demand** - UMC saw strength in computing products (particularly in LCD controller, WiFi, codec and touch IC controllers), and in the communications end market (driven by RF front end and networking ICs). Computer and Communication application related revenues increased 46% and 6% Q/Q, respectively, while Consumer and Other (including Industrial) application related revenues declined 10% and 13% Q/Q, respectively. In CQ2 Industrial related revenues decreased ~5% Q/Q. While UMC did not break out Auto related revenues (17% of total sales in CQ1), management did note that 65nm Q/Q growth was largely related to automotive IC demand.
- **Units** – Shipments declined 2% Q/Q in CQ3 (vs. increasing 1% Q/Q in CQ2); as such, UMC's utilization rate was 67% (vs. ~71% in CQ2).
- **Opex** – R&D expenses declined 2% Q/Q while total opex was flat Q/Q with the metrics equaling NT\$3,255M and NT\$5,722M, respectively (in the prior quarter R&D increased 20% Q/Q while opex was down 1% Q/Q to NT\$3,317M and NT\$5,718M, respectively). CQ3 OMs declined 101 bps Q/Q to 26.8% (from 27.8% in CQ2).
- **Inventories** – DIOs increased by 4 days to 89 days in CQ3 (vs. 85 days in CQ2).

UMC CQ4'23 and Beyond Outlook

CQ4

- Management guided CQ4'23 wafer shipments to decline by roughly 5% Q/Q. ASPs in USD are expected to hold flat. Utilization is projected to fall to the low-60% range due to the expected decline in shipments combined with a slight increase in capacity. Management guided for GMs to decline to the low-30% range driven by the decline in utilization rates (from 35.9% in CQ3).
- While UMC expects PC and Smartphone demand to have stabilized (with rush orders in these areas helping CQ3 dynamics), management expects volumes will be hindered by some combination of: an expected decline in auto orders; customers maintaining a cautious stance; and we believe an apparent less robust and more competitive market for 8" parts.
- UMC expects 22/28nm technology revenues should remain resilient, helped by new capacity coming on-line backed by LTAs.
- On the ASP side, UMC added that it may need to adjust pricing for certain market segments to align with the currently challenging market dynamics in the 8" market landscape; it has been able to retain its pricing position in its 12" business.
- UMC expectations around pricing do not factor in shifts in currency, a result that should benefit ASPs (and presumably related metrics) with UMC noting that every percentage point decline in NTD equates to a boost of 40 bps for GMs.
- The buildout of UMC's Taiwan P6 facility is expected to increase capacity by 2% Q/Q.

Full Year 2023

- Management's capex outlook remains at ~\$3B, unchanged from the prior quarter (90% related to its 12 inch expansion) this implies a ~15% Y/Y from US\$2.6B in 2022.

Full Year 2024/2025

- Management anticipates the production ramp of its 12A Phase 6 fab with additional revenue contributions at the 22nm/28nm node (32% of revenues in CQ3).
- UMC plans on ramping derivative/specialty products at 22nm.
- Production at the P3 Singapore fab is still expected to commence in Q2'25, given customer LTA commitments. However, UMC indicated the velocity of the ramp of production is likely to be slower than previously thought.
- UMC talked to its work on 12nm FinFET, with an expectation this node could be ready for production in Q1'25.

Price Target and Estimates

We are maintaining our OUTPERFORM rating, and target price of NT\$57 that we continue to base on a target multiple of ~8X (net cash) applied to our new 2025E EPS.

Our new 4Q23E estimates are for EPS of NT\$ 0.76, revenues of NT\$ 54,995M, GMs of 31.0%, and OMIs of 20.1% (vs. our previous 4Q23E estimates of NT\$ 1.12, NT\$ 62,088M, 35.0%, and 26.2%; and previous consensus estimates of NT\$ 1.02, NT\$ 56,715M, 34.5%, and 24.7%).

Our new 2023E estimates are for EPS of NT\$ 4.63, revenues of NT\$ 222,570M, GMs of 34.6%, and OMs of 25.4% (vs. our previous 2023E estimates of NT\$ 4.61, NT\$ 228,461M, 35.0%, and 26.1%; and previous consensus estimates of NT\$ 4.58, NT\$ 222,985M, 35.2%, and 25.4%).

Our new 2024E estimates are for EPS of NT\$ 3.53, revenues of NT\$ 242,795M, GMs of 30.9%, and OMs of 21.2% (vs. our previous 2024E estimates of NT\$ 5.11, NT\$ 279,977M, 35.5%, and 26.5%; and previous consensus estimates of NT\$ 4.67, NT\$ 253,035M, 35.1%, and 25.7%).

We are introducing our new 2025E estimates for EPS of NT\$ 5.64, revenues of NT\$ 305,051M, GMs of 35.0%, and OMs of 26.9%.

Figure 2: UMC Multiples

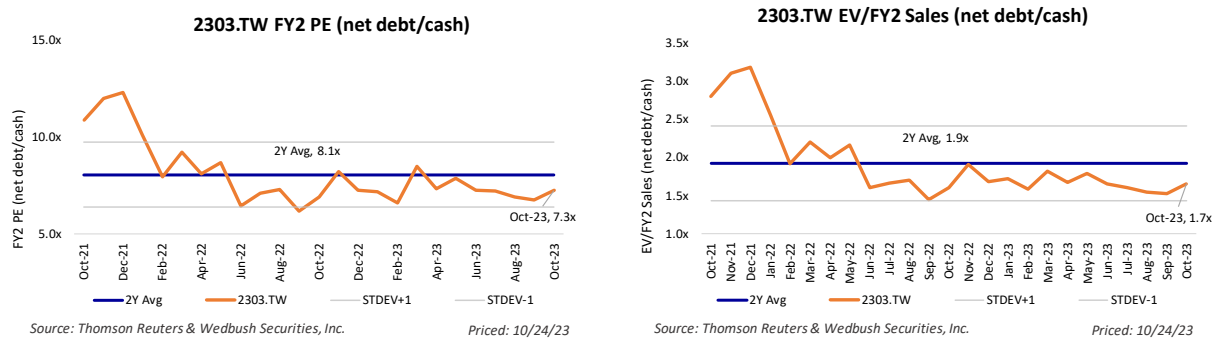


Figure 3: UMC: Updated Wedbush Estimates & Outlook

2303.TW (NTD millions, except per share)													
	Outlook	Wedbush	Previous	Consensus	Wedbush	Previous	Consensus	Wedbush	Previous	Consensus	Wedbush	Consensus	
	Dec-23	4Q23E	4Q23E	%Δ	4Q23E	2023E	2023E	%Δ	2023E	2024E	2024E	%Δ	2024E
EPS - Diluted (NT\$)		NTD 0.76	NTD 1.12	(NTD 0.36)	NTD 1.02	NTD 4.63	NTD 4.61	NTD 0.02	NTD 4.58	NTD 3.53	NTD 5.11	(NTD 1.58)	NTD 4.67
Net Revenue	NT\$54.2B	54,995	62,088	-11%	56,715	222,570	228,461	-3%	222,985	242,795	279,977	-13%	253,035
Gross Margin %	low-30%	31.0%	35.0%	-405bps	34.5%	34.6%	35.0%	-41bps	35.2%	30.9%	35.5%	-457bps	35.1%
Operating Margin %		20.1%	26.2%	-610bps	24.7%	25.4%	26.1%	-72bps	25.4%	21.2%	26.5%	-537bps	25.7%
Capex NTD	24,195	20,000	20,000	0%	19,582	91,140	93,895	-3%	90,854	60,000	60,000	0%	79,979
Capex USD \$B (ann guide)	\$3.0B				\$2.9	\$3.0	\$3.0	-3%		\$1.9	\$1.9	0%	\$1.5
Wafer ship 000s mid-pt	1,699	1,706	1,980	-14%	7,151	7,418	7,418	-4%	7,732	9,167	9,167	-16%	10,115
ASP in USD mid-pt	\$989	\$999	\$1,007	-1%	\$987	\$995	\$995	-1%	\$973	\$981	\$981	-1%	\$935
Wafer shipments %Δ	-5.0%	-4.6%	11.1%	-1,572bps	-28.1%	-25.4%	-269bps	8.1%	23.6%	-1,544bps	30.8%	-4.0%	30.8%
ASP in USD %Δ	flat	1.0%	0.0%	100bps	11.1%	9.9%	117bps	0.9%	-0.8%	172bps	-4.0%	-4.0%	-4.0%
Utilization	low-60%	62.9%	73.0%	-1,010bps	68%	71%	-254bps	68%	80%	-1,256bps	81%	81%	81%

Source: UMC company reports, Thomson Reuters and Wedbush Securities, Inc. estimates

Figure 4: UMC: Results Variance with Estimates and Q/Q & Y/Y Comparison

2303.TW (NTD millions, except per share)									
	Outlook	Wedbush	Consensus	Q/Q	Y/Y				
	Sep-23	3Q23A	3Q23E	Var	3Q23E	Var	2Q23A	%Δ	3Q22A
EPS - Diluted (NT\$)		NTD 1.29	NTD 0.91	NTD 0.38	NTD 1.03	NTD 0.26	NTD 1.27	NTD 0.02	NTD 2.19
Net Revenue	~NT\$55.7B	57,069	55,867	2%	56,060	2%	56,296	1%	75,392
Gross Margin %	down-LSD%	35.9%	33.5%	235bps	34.6%	123bps	36.0%	-12bps	47.3%
Operating Margin %		26.8%	23.7%	313bps	24.8%	204bps	27.8%	-101bps	40.0%
Capex NTD	23,348	17,245	20,000	-14%	19,120	-10%	24,139	-29%	22,466
Capex USD \$B (ann guide)	\$3.0B								
Wafer ship 000s mid-pt	1,767	1,788	1,781	0%			1,831	-2%	2,597
ASP in USD mid-pt	\$1,007	\$989	\$1,007	-2%			\$988	0%	\$915
Wafer shipments %Δ	-3.0%	-2.3%	-2.7%	36bps			1.0%	-335bps	-1.0%
ASP in USD %Δ	+2.0%	3.8%	2.0%	181bps			3.6%	24bps	5.6%
Utilization	mid-60%	67%	67%	24bps			70%	-248bps	102%

Source: UMC company reports, Thomson Reuters and Wedbush Securities, Inc. estimates

Income Statement and Other Selected Financials

2303.TW	2023E				2024E				2025E						
(All numbers in NT\$M, Unless Otherwise Stated)	03/31/23	06/30/23	09/30/23	12/31/23	03/31/24	06/30/24	09/30/24	12/31/24	03/31/25	06/30/25	09/30/25	12/31/25	12/31/23	12/31/25	12/31/26
EPS - Diluted (NT\$)	\$1.31	\$1.27	\$1.29	\$0.76	\$0.66	\$0.79	\$0.96	\$1.12	\$0.93	\$1.21	\$1.54	\$1.96	\$4.63	\$3.53	\$5.64
Net Revenue	54,209	56,296	57,069	54,995	52,973	57,950	63,020	68,851	64,891	72,079	79,403	88,678	222,570	242,795	305,051
Gross Margin %	35.5%	36.0%	35.9%	31.0%	28.5%	30.0%	31.5%	33.0%	30.0%	33.0%	36.0%	39.5%	34.6%	30.9%	35.0%
Operating Margin %	26.7%	27.8%	26.8%	20.1%	18.2%	19.9%	22.1%	23.7%	20.9%	24.4%	28.2%	32.1%	25.4%	21.2%	26.9%
OPERATING DATA															
Capacity (000s) Wafer - 8"	2,522	2,626	2,659	2,712	2,766	2,822	2,878	2,965	3,024	3,084	3,146	3,240	10,519	11,431	12,494
Shipments (000s) Wafer - 8"	1,826	1,831	1,788	1,706	1,660	1,834	2,015	2,223	2,117	2,375	2,643	2,981	7,151	7,732	10,115
ASP(NT\$) - Wafer - 8"	29,688	30,746	31,918	32,237	31,915	31,595	31,279	30,967	30,657	30,350	30,047	29,746	31,124	31,401	30,157
Utilization Rate (000s) Wafer - 12"	72.4%	69.7%	67.2%	62.9%	60.0%	65.0%	70.0%	75.0%	70.0%	77.0%	84.0%	92.0%	68.0%	67.6%	81.0%
Net Revenue by Application Y/Y Growth															
Computer	-55%	-56%	-30%												
Communication	-16%	-24%	-23%												
Consumer	-21%	-25%	-36%												
Industrial/Standard	64%	37%	-3%												
		0%													
INCOME STATEMENT	1Q23A	2Q23A	3Q23A	4Q23E	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	2023E	2024E	2025E
Monthly - Net Revenue	54,209	56,296	57,069												
Net Revenue	54,209	56,296	57,069	54,995	52,973	57,950	63,020	68,851	64,891	72,079	79,403	88,678	\$222,570	\$242,795	\$305,051
COGS	(34,985)	(36,044)	(36,608)	(37,974)	(37,876)	(40,565)	(43,168)	(46,130)	(45,424)	(48,293)	(50,818)	(53,650)	(145,611)	(167,740)	(198,185)
Gross Profit	19,224	20,252	20,461	17,021	15,097	17,385	19,851	22,721	19,467	23,786	28,585	35,028	76,959	75,055	106,866
Gross Margin %	35.5%	36.0%	35.9%	31.0%	28.5%	30.0%	31.5%	33.0%	30.0%	33.0%	36.0%	39.5%	34.6%	30.9%	35.0%
R&D	(2,767)	(3,317)	(3,255)	(3,407)	(2,795)	(3,350)	(3,288)	(3,441)	(2,823)	(3,384)	(3,320)	(3,475)	(12,746)	(12,873)	(13,002)
Sales & Marketing	(950)	(716)	(735)	(963)	(960)	(723)	(742)	(972)	(969)	(730)	(750)	(982)	(3,364)	(3,397)	(3,431)
G&A	(2,102)	(1,715)	(1,731)	(2,100)	(2,100)	(2,100)	(2,100)	(2,100)	(2,100)	(2,100)	(2,100)	(2,100)	(7,648)	(8,400)	
Total Operating Expenses	(5,780)	(5,718)	(5,722)	(6,470)	(5,854)	(6,173)	(6,130)	(6,513)	(5,892)	(6,214)	(6,170)	(6,557)	(23,690)	(24,671)	(24,833)
Other Operating Income (Expenses)	1,037	1,141	573	500	400	300	200	100	-	-	-	-	3,251	1,000	-
Operating Income (Loss)	14,481	15,675	15,312	11,051	9,643	11,512	13,921	16,308	13,576	17,572	22,415	28,471	56,520	51,384	82,033
Operating Margin %	26.7%	27.8%	26.8%	20.1%	18.2%	19.9%	22.1%	23.7%	20.9%	24.4%	28.2%	32.1%	25.4%	21.2%	26.9%
Total Non-operating Income (Expense)	4,647	2,810	3,336	-	-	-	-	-	-	-	-	-	10,793	-	-
Pre-tax Income	19,128	18,485	18,648	11,051	9,643	11,512	13,921	16,308	13,576	17,572	22,415	28,471	67,313	51,384	82,033
Income Tax (Provision) Benefit	(2,743)	(2,588)	(2,682)	(1,658)	(1,446)	(1,727)	(2,088)	(2,446)	(2,036)	(2,636)	(3,362)	(4,271)	(9,671)	(7,708)	(12,305)
Tax Rate %	14.3%	14.0%	14.4%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	14.4%	15.0%	15.0%
Net Income	16,385	15,897	15,966	9,394	8,197	9,785	11,833	13,862	11,539	14,936	19,053	24,200	57,642	43,676	69,728
Net Margin %	30.2%	28.2%	28.0%	17.1%	15.5%	16.9%	18.8%	20.1%	17.8%	20.7%	24.0%	27.3%	25.9%	18.0%	22.9%
EPS - Diluted (NT\$)	\$1.31	\$1.27	\$1.29	\$0.76	\$0.66	\$0.79	\$0.96	\$1.12	\$0.93	\$1.21	\$1.54	\$1.96	\$4.63	\$3.53	\$5.64
Avg Shares Out - Diluted	12,349	12,349	12,371	12,371	12,371	12,371	12,371	12,371	12,371	12,371	12,371	12,371	12,360	12,371	12,371
EPS ADR - Diluted (US\$) - Assumes static TWD/USD	\$0.215	\$0.197	\$0.200	\$0.136	\$0.118	\$0.141	\$0.171	\$0.200	\$0.167	\$0.216	\$0.275	\$0.350	\$0.75	\$0.63	\$1.01
BALANCE SHEET	1Q23A	2Q23A	3Q23A	4Q23E	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	2023E	2024E	2025E
#days	90	91	92	92	91	91	92	92	90	91	92	92	365	366	365
ASSETS															
Current Assets															
Cash and Cash Equivalents	\$ 171,834	\$ 163,097	\$ 140,642	\$ 122,611	\$ 128,639	\$ 139,998	\$ 153,542	\$ 170,259	\$ 179,918	\$ 198,433	\$ 226,861	\$ 262,530	122,611	170,259	262,530
Accounts Receivable	27,065	30,618	31,105	29,740	28,962	31,683	34,080	37,233	35,871	39,407	42,939	47,955	29,740	37,233	47,955
Inventories	32,679	34,553	36,561	36,884	37,193	39,834	41,929	44,806	45,100	47,422	49,359	52,110	36,884	44,806	52,110
Other Current Assets	10,389	10,765	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972	10,972
Total Current Assets	241,967	239,033	219,280	200,207	205,766	222,486	240,523	263,270	271,862	296,235	330,131	373,567	200,207	263,270	373,567
Non-current Assets															
Funds and Investments	72,087	70,455	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890	70,890
Property, Plant and Equipment	192,185	198,618	212,367	220,156	221,396	222,559	223,649	224,671	225,629	226,527	222,369	218,471	220,156	224,671	218,471
Right-of-use	7,540	7,287	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279	7,279
Other Non-current Assets	35,852	37,803	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455	37,455
Total Non-current Assets	307,664	314,163	327,991	335,780	337,020	338,183	339,273	340,295	341,253	342,151	337,993	334,095	335,780	340,295	334,095
Total Assets	\$ 549,631	\$ 553,196	\$ 547,271	\$ 535,987	\$ 542,786	\$ 560,669	\$ 579,796	\$ 603,565	\$ 613,115	\$ 638,386	\$ 668,124	\$ 707,662	535,987	603,565	707,662
LIABILITIES AND SHAREHOLDERS' EQUITY															
Current Liabilities															
Short-term Loans	-	170	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590	17,590
Accounts Payable	70,346	57,254	53,108	35,085	35,379	37,891	39,884	42,620	42,900	45,109	46,951	49,568	35,085	42,620	49,568
Current Portion of Long-Term Liabilities	9,674	11,422	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484	12,484
Other Long-Term Liabilities	25,866	74,132	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888	8,888
Total Current Liabilities	105,886	142,978	92,070	74,047	74,341	76,853	78,846	81,582	81,862	84,071	85,913	88,530	74,047	81,582	88,530
Non-current Liabilities															
Bonds Payable	20,986	17,988	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977	27,977
Long-term Loans	16,317	18,074	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403	21,403
Lease Liabilities - noncurrent	5,187	5,038	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009	5,009
Other Non-current Liabilities	45,705	42,230	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796	50,796
Total Non-current Liabilities	88,195	83,330	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185	105,185
Total Liabilities	194,081	226,308	197,255	179,232	179,526	182,038	184,031	186,767	187,047	189,256	191,098	193,715	179,232	186,767	193,715
Equity Attributable to Shareholders of the Parent															
Capital	125,047	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031	125,031
Additional Paid-in Capital	12,976	13,656	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423	13,423
Retained Earnings and Other Components of Equity	217,183	187,858	211,223	218,301	224,806	240,178	257,311	278,344	287,614	310,676	338,572	375,493	218,301	278,344	375,493
Treasury Stock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity Attributable to Shareholders of the Parent	355,206	326,545	349,677	356,755	363,260	378,632	395,765	416,798	426,068	449,130	477,026	513,947	356,755	416,798	513,947
Noncontrolling Interests	344	343	339	339	339	339	339	339	339	339	339	339	339	339	339
Total Shareholders' Equity	355,550	326,888	350,016	357,094	363,599	378,971	396,104	417,137	426,407	449,469	477,365	514,286	357,094	417,137	514,286
Total Liabilities & Shareholders' Equity	549,631	553,196	547,271	536,326	543,125	561,008	580,135	603,904	613,454	638,725	668,463	708,001	537,026	603,904	708,001
Net Cash	206,618	197,320	144,562	126,531	132,559	143,918	157,462	174,179	183,838	202,353	230,781	266,450	126,531	174,179	266,450
Net Cash per Share	\$16.73	\$15.98	\$11.69	\$10.23	\$10.72	\$11.63	\$12.73	\$14.08	\$14.86	\$16.36	\$18.66	\$21.54	\$10.23	\$14.08	\$21.54
													-5%		
CASH FLOW (3-Months)	1Q23A	2Q23A	3Q23A	4Q23E	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	2023E	2024E	2025E
Net Cash Generated by Operating Activities	26,964	13,760	19,059	2,529	21,588	26,919	29,104	32,277	25,219	34,075	38,988	46,228	62,312	109,888	144,510
Property, Plant and Equipment	(29,756)	(24,139)	(17,245)	(20,000)	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(15,000)	(10,000)	(10,000)	(91,140)	(60,000)	(50,000)
Net Cash Used in Investing Activities	(29,586)	(23,667)	(17,720)	(20,560)	(15,560)	(15,560)									

Source: Company reports and Wedbush Securities, Inc. estimates

HARDWARE

TICKER	COMPANY NAME	WEDB RATING	PRICES	WEDB TP\$	UP/DNSIDE %	MKT CAP\$B	EV\$B	WEDB EPS EST				WEDB REV EST \$M				WEDB P/E				WEDB EV/SALES			
								2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E
2330	Taiwan Semiconductor Manufacturing Co Ltd	O	\$544.00	\$700.00	29%	14,107.0	13,520.1	\$31.71	\$37.68	\$47.50	-	2,150,920	2,604,200	3,065,490	-	16.4x	13.8x	11.0x	-	6.3x	5.2x	4.4x	-
AMD	Advanced Micro Devices Inc	O	\$101.67	\$155.00	52%	164.3	160.4	\$2.70	\$4.25	\$5.13	-	\$22,609	\$26,916	\$29,637	-	36.8x	23.4x	19.4x	-	7.1x	6.0x	5.4x	-
AXTI	AXT Inc	O	\$2.21	\$6.00	171%	0.1	0.2	(\$0.38)	(\$0.01)	\$0.40	-	\$76	\$106	\$137	-	-6.3x	-240.2x	6.0x	-	1.4x	1.0x	0.8x	-
DBD	Diebold Nixdorf Inc	N	\$18.95	\$20.00	6%	0.7	1.8	\$1.36	\$4.02	-	-	\$3,787	\$3,857	-	-	24.2x	8.2x	-	-	0.7x	0.7x	-	-
GFS	Globalfoundries Inc	O	\$54.39	\$70.00	29%	30.1	30.1	\$2.19	\$3.39	-	-	\$7,501	\$8,766	-	-	24.8x	16.0x	-	-	4.0x	3.4x	-	-
INTC	Intel Corp	N	\$34.59	\$35.00	1%	144.9	173.1	\$0.65	\$1.95	\$2.96	-	\$52,935	\$61,425	\$68,647	-	62.3x	20.8x	13.7x	-	3.2x	2.8x	2.5x	-
MU	Micron Technology Inc	O	\$68.07	\$80.00	18%	74.7	78.5	(\$4.45)	(\$0.86)	\$11.44	-	\$15,540	\$20,886	\$37,891	-	-16.1x	-83.1x	6.2x	-	5.1x	3.8x	2.1x	-
NTAP	NetApp Inc	N	\$73.84	\$75.00	2%	15.4	14.8	\$5.59	\$5.73	\$6.16	-	\$6,362	\$6,145	\$6,385	-	12.7x	12.4x	11.5x	-	2.3x	2.4x	2.3x	-
NVDA	NVIDIA Corp	O	\$436.63	\$600.00	37%	1078.5	1072.2	\$3.33	\$10.62	\$15.04	\$17.14	\$26,974	\$53,580	\$74,195	\$88,950	130.4x	40.9x	28.9x	25.3x	39.7x	20.0x	14.4x	12.0x
PSTG	Pure Storage Inc	O	\$33.97	\$45.00	32%	10.6	9.5	\$1.42	\$1.45	\$1.80	-	\$2,753	\$2,973	\$3,522	-	21.4x	21.0x	16.9x	-	3.4x	3.2x	2.7x	-
SIMO	Silicon Motion Technology Corp	O	\$54.50	\$85.00	56%	1.8	1.6	\$1.94	\$4.37	\$5.30	-	\$606	\$778	\$828	-	24.2x	10.7x	8.9x	-	2.6x	2.0x	1.9x	-
SMCI	Super Micro Computer Inc	N	\$262.62	\$250.00	-5%	13.9	13.7	\$11.82	\$16.08	\$18.61	-	\$7,123	\$10,011	\$12,176	-	22.0x	16.2x	14.0x	-	1.9x	1.4x	1.1x	-
STX	Seagate Technology Holdings PLC	N	\$68.10	\$60.00	-12%	14.2	18.8	\$0.19	\$0.39	\$4.61	-	\$7,359	\$7,024	\$9,128	-	477.0x	232.4x	19.7x	-	2.5x	2.7x	2.1x	-
2303	United Microelectronics Corp	O	\$49.05	\$57.00	16%	613.3	498.6	\$4.63	\$3.53	\$5.64	-	\$222,570	\$242,795	\$305,051	-	8.6x	11.3x	7.1x	-	2.2x	2.1x	1.6x	-
WDC	Western Digital Corp	O	\$42.96	\$60.00	40%	13.9	19.8	(\$1.86)	(\$2.85)	\$10.40	-	\$12,318	\$12,629	\$20,313	-	-31.5x	-20.6x	5.6x	-	1.5x	1.5x	0.9x	-

TICKER	COMPANY NAME	MEAN REC	PRICES	MEAN TP\$	UP/DNSIDE %	MKT CAP\$B	EV\$B	MEAN EPS EST				MEAN REV EST \$M				MEAN P/E				MEAN EV/SALES			
								2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E	2023E	2024E	2025E	2026E
2330	Taiwan Semiconductor Manufacturing Co Ltd	O	\$544.00	\$657.98	21%	14,107.0	13,520.1	\$31.62	\$37.28	\$45.82	\$45.08	\$2,150,107	\$2,603,793	\$3,090,640	\$3,247,000	16.5x	14.0x	11.4x	11.5x	6.3x	5.2x	4.4x	4.2x
AMD	Advanced Micro Devices Inc	O	\$101.67	\$136.90	35%	164.3	160.4	\$2.76	\$4.17	\$5.34	\$6.73	\$22,784	\$27,530	\$32,153	\$35,256	35.9x	23.8x	18.6x	14.8x	7.0x	5.8x	5.0x	4.5x
AXTI	AXT Inc	N	\$2.21	\$4.46	102%	0.1	0.2	(\$0.45)	(\$0.12)	\$0.32	-	\$76	\$99	\$137	-	-5.3x	-20.0x	7.5x	-	1.4x	1.1x	0.8x	-
DBD	Diebold Nixdorf Inc	N	\$18.95	\$22.50	19%	0.7	1.8	\$1.16	\$3.81	-	-	\$3,768	\$3,855	-	-	28.4x	8.7x	-	-	0.7x	0.7x	-	-
GFS	Globalfoundries Inc	O	\$54.39	\$71.64	32%	30.1	30.1	\$2.08	\$2.70	\$3.37	-	\$7,422	\$8,239	\$9,090	-	26.1x	20.1x	16.1x	-	4.0x	3.6x	3.3x	-
INTC	Intel Corp	N	\$34.59	\$35.57	3%	144.9	173.1	\$0.63	\$1.72	\$2.42	\$3.39	\$52,473	\$58,715	\$63,969	\$70,081	64.8x	23.6x	16.8x	11.9x	3.2x	2.9x	2.7x	2.4x
MU	Micron Technology Inc	N	\$68.07	\$78.49	15%	74.7	78.5	(\$4.45)	(\$1.63)	\$5.35	\$7.75	\$15,540	\$20,916	\$30,425	\$33,174	-16.1x	-44.0x	13.4x	9.2x	5.0x	3.8x	2.6x	2.4x
NTAP	NetApp Inc	N	\$73.84	\$80.90	10%	15.4	14.8	\$5.59	\$5.73	\$6.16	\$6.82	\$6,362	\$6,143	\$6,413	\$6,808	12.7x	12.4x	11.5x	10.4x	2.3x	2.4x	2.3x	2.2x
NVDA	NVIDIA Corp	O	\$436.63	\$630.06	44%	1078.5	1072.2	\$3.34	\$10.84	\$17.14	\$20.08	\$26,974	\$54,850	\$82,829	\$97,056	130.0x	40.1x	25.3x	21.6x	39.7x	19.5x	12.9x	11.0x
PSTG	Pure Storage Inc	O	\$33.97	\$44.00	30%	10.6	9.5	\$1.41	\$1.40	\$1.67	\$1.46	\$2,753	\$2,959	\$3,405	\$3,837	21.5x	21.7x	18.2x	20.8x	3.4x	3.2x	2.8x	2.5x
SIMO	Silicon Motion Technology Corp	N	\$54.50	\$76.00	39%	1.8	1.6	\$1.97	\$3.71	\$5.05	-	\$611	\$747	\$871	-	23.9x	12.6x	9.3x	-	2.5x	2.1x	1.8x	-
SMCI	Super Micro Computer Inc	N	\$262.62	\$354.33	35%	13.9	13.7	\$11.81	\$16.97	\$18.58	-	\$7,123	\$10,100	\$11,362	\$13,675	22.0x	15.3x	14.0x	-	1.9x	1.4x	1.2x	1.0x
STX	Seagate Technology Holdings PLC	N	\$68.10	\$64.28	-6%	14.2	18.8	\$0.19	\$0.65	\$4.31	\$5.39	\$7,384	\$6,678	\$8,486	\$8,940	477.0x	140.3x	21.0x	16.8x	2.5x	2.8x	2.2x	2.1x
2303	United Microelectronics Corp	N	\$49.05	\$53.31	9%	613.3	498.6	\$4.58	\$4.67	\$5.26	\$5.00	\$222,985	\$253,035	\$288,904	\$324,375	8.7x	8.5x	7.6x	8.0x	2.2x	2.0x	1.7x	1.5x
WDC	Western Digital Corp	N	\$42.96	\$47.84	11%	13.9	19.8	(\$3.59)	(\$4.07)	\$3.81	\$5.89	\$12,318	\$12,094	\$16,056	\$19,156	-16.3x	-14.4x	15.4x	10.0x	1.5x	1.6x	1.2x	1.0x

Source: Thomson Reuters & Wedbush Securities, Inc. estimates; Priced: 10/24/2023

* All numbers for 2330.TW and 2303.TW in NT\$

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VALUATION

2330	We arrive at our target price by applying a PE multiple of ~14X to our FY2025 EPS estimate (plus net cash).
AMD	We arrive at our target price by applying a PE multiple of ~30X to our FY2025 EPS estimate (plus net cash).
AXTI	We arrive at our target price by applying a PE multiple of ~15X to our FY2025 EPS estimate (plus net cash).
DBD	We arrive at our target price by applying a PE multiple of ~10X to our FY2024 EPS estimate (plus net debt).
GFS	We arrive at our target price by applying a PE multiple of ~20X to our FY2024 EPS estimate (plus net cash).
INTC	We arrive at our target price by applying a multiple of ~13X to our FY2025 (net debt) outlook.
MU	We arrive at our target price by applying a PE multiple of ~7X to our FY2025 (plus net debt) outlook.
NTAP	We arrive at our target price by applying a PE multiple of ~12X to our FY2025 estimates and adding net cash.
NVDA	We arrive at our target price by applying a PE multiple of ~35X to our FY2026 EPS estimate (plus net cash).
PSTG	We arrive at our target price by applying a PE multiple of ~23X to our FY2025 estimates (plus net cash).
SIMO	We arrive at our target price by applying a PE multiple of ~12X to our FY2025 estimates + current net cash + assumed damages at least equal to the prior MXL termination fee.
SMCI	We arrive at our target price by applying a PE multiple of ~13X to our FY2025 EPS (net debt).
STX	We arrive at our target price by applying a PE multiple of ~18X to our FY2025 estimate (plus net debt).
2303	We arrive at our target price based on a multiple of ~8X PE using our FY2025 EPS estimate (net cash).
WDC	We arrive at our target price by applying a PE multiple of ~7X to our FY2025 estimate (plus net debt).

RISKS

2330	Economic deterioration and demand destruction related to the pandemic, changes to US Policy, sovereignty risk to Taiwan, risk to the supply chain, and technology risk.
AMD	AMD misexecutes, customers choose other vendors, competition increases (e.g., pricing, design), TSMC is constrained (production), the economy deteriorates.
AXTI	Demand for AXTI products fall; Tongmei fails to IPO; China/US trade risk; market share loss.
DBD	DBD works through (fails to work through) constrained liquidity needs, satisfies (fails to satisfy) debt service, demand for DBD's products rises (falls).
GFS	Economic deterioration and demand destruction related to the pandemic, changes to government policy, risk to the supply chain, and technology risk.
INTC	Upside risk: INTC executes on stated initiatives, competition misexecutes, tailwinds continue to boost revenues and GM. Downside risk: misexecution, recovery elongates
MU	MU misexecutes, future acquisitions dilute value, Chinese vendors successfully enter NAND or DRAM markets, US/China trade war.
NTAP	Upside risks: Successful product innovation (software), competitor missteps and accelerated TAM growth. Downside risks: Cloud cannibalization, normalized enterprise spend, increasing competition and misexecution.
NVDA	DC weakens; AI driven demand softens; gaming demand softens, misexecution, customers reduce spending, competition gains share, US/China tensions increase.
PSTG	Downside risks: Cloud cannibalization, normalization/decline in enterprise spend, increasing competition and misexecution.
SIMO	MXL could successfully terminate its proposed acquisition of SIMO without compensating SIMO, misexecution.
SMCI	SMCI out executes/innovates (misexecutes/fails to innovate) vs. peers, demand increases (decreases).
STX	Upside risk: STX executes on stated initiatives and particularly HAMR, pricing increases, demand increases. Downside risks: misexecutes, pricing declines, demand decreases, US/China tensions increase.
2303	Economic deterioration and demand destruction related to the pandemic, changes to US Policy, sovereignty risk to Taiwan, risk to the supply chain, and technology risk.
WDC	WDC misexecutes, customers choose other vendors, competition increases (e.g., pricing, design), the economy deteriorates.

Valuation

We arrive at our target price based on a multiple of ~8X PE (net cash) using our FY2025 EPS estimate.

Company Description

UMC is a foundry with several fabs in operation in Taiwan, Singapore, China, and Japan. Its customer base serves end markets that include: networking, telecommunications, internet, multimedia, personal computers, autos, and industrial.

Risks to the Attainment of Our Price Target and Rating:

COVID - 19 - Economic deterioration and demand destruction from the pandemic could be worse than we or UMC are expecting.

Political Risk - China has not acknowledged Taiwan's independence. If China takes future action to enforce its claims to Taiwan, it could have negative implications for the country and companies located there.

China Risk - China's desire to manufacture technology internally could eventually weigh on its demand for UMC produced parts (China currently represents about ~13% of UMC's sales). UMC's fabs are largely based in Taiwan (~60%) of capacity with just over 15% of capacity in China.

Exchange Rate Risk - UMC's revenues are largely dollar denominated, whereas its expenses are predominantly in NT\$. As such, appreciation of the NT\$ vs. the USD can adversely impact margins and EPS.

Technological Risk - UMC may be unable to adopt new technology and innovation while maintaining profitability in a highly competitive market.

Industry Risk - The semiconductor industry is inherently cyclical. Overinvestment by foundries could lead to severe cyclical downturns in pricing and margins that will weigh on UMC's financials.

Investment Risk - UMC has significant investments in other technology companies that are heavily weighted towards Taiwanese equities. As such, a downturn in tech/Taiwan stocks could weigh on UMC's reported earnings and balance sheet.

Analyst Certification

I, Matt Bryson, certifies that the views expressed in this report accurately reflect my personal opinion and that I have not and will not, directly or indirectly, receive compensation or other payments in connection with my specific recommendations or views contained in this report.

Mentioned Companies

Company	Rating	Price	Target
United Microelectronics	OUTPERFORM	TWD48.30	TWD57.00
GlobalFoundries Inc.	OUTPERFORM	\$60.13	\$70.00

Investment Rating System:

OUTPERFORM: Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

NEUTRAL: Expect the total return of the stock to perform in-line with the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

UNDERPERFORM: Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe of the next 6-12 months.

The Investment Ratings are based on the expected performance of a stock (based on anticipated total return to price target) relative to the other stocks in the analyst's coverage universe (or the analyst's team coverage).*

Rating distribution (as of October 25, 2023)	Investment Banking Relationships (as of October 25, 2023)
OUTPERFORM: 60.75%	OUTPERFORM: 4.23%
NEUTRAL: 37.38%	NEUTRAL: 1.25%
UNDERPERFORM: 1.87%	UNDERPERFORM: 0.00%

The Distribution of Ratings is required by FINRA rules; however, WS' stock ratings of Outperform, Neutral, and Underperform most closely conform to Buy, Hold, and Sell, respectively. Please note, however, the definitions are not the same as WS' stock ratings are on a relative basis.

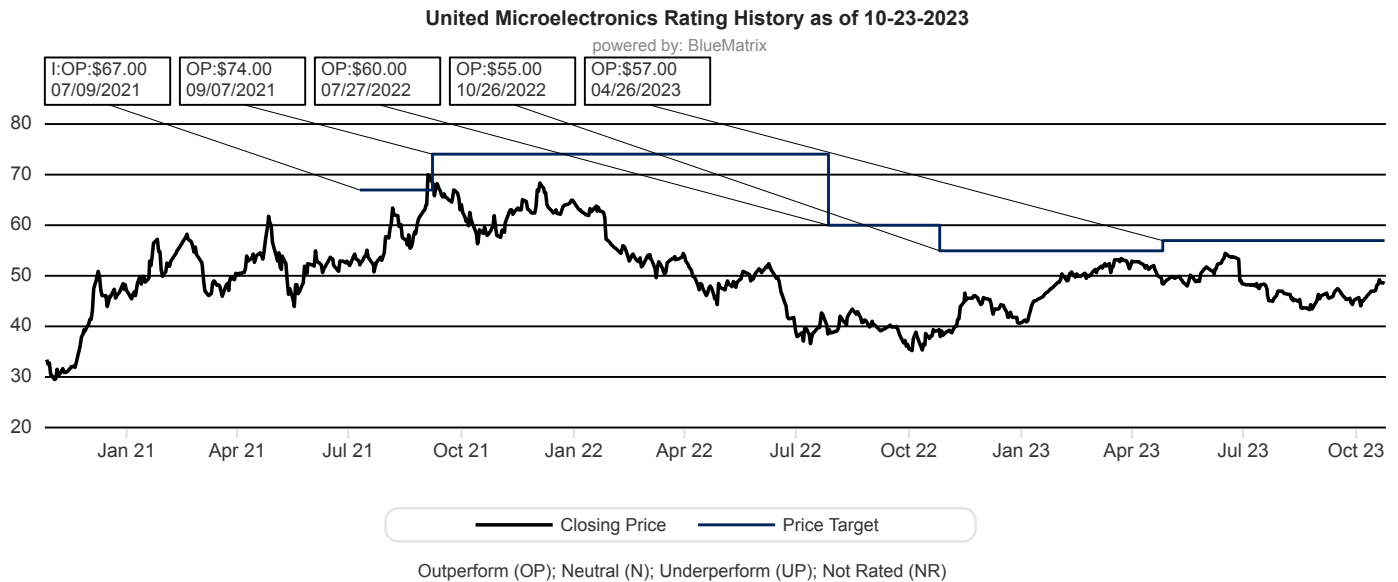
The analysts responsible for preparing research reports do not receive compensation based on specific investment banking activity. The analysts receive compensation that is based upon various factors including WS' total revenues, a portion of which are generated by WS' investment banking activities.

Company Specific Disclosures

This information is subject to change at any time.

1. WS makes a market in the securities of United Microelectronics and GlobalFoundries Inc..

Price Charts



Wedbush disclosure price charts are updated within the first fifteen days of each new calendar quarter per FINRA regulations. Price charts for companies initiated upon in the current quarter, and rating and target price changes occurring in the current quarter, will not be displayed until the following quarter. Additional information on recommended securities is available on request.

Disclosure information regarding historical ratings and price targets is available: [Research Disclosures](#)

*WS changed its rating system from (Strong Buy/ Buy/ Hold/ Sell) to (Outperform/ Neutral/ Underperform) on July 14, 2009.

Applicable disclosure information is also available upon request by contacting the Research Department at (212) 833-1375, by email to leslie.lippai@wedbush.com. You may also submit a written request to the following: Wedbush Securities, Attn: Research Department, 142 W 57th Street, New York, NY 10019.

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Retail Investors

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