

UMC



Initiation: Trailing edge to take the lead

Key Points

- Sustainable demand recovery, higher utilisation rates, & price hikes for trailing edge foundry should lead to strong GPM/EPS momentum.
- Other drivers include: fab-lite partnership with Intel at 12nm (and beyond), TFLN photonics, memory, and advanced packaging.
- We initiate coverage with an Outperform rating and NT\$258 TP. We see upside risk to 2H26-2028 consensus estimates.

Utilisation, ASP, sales growth, margins on the rise: UMC is a semiconductor foundry focused on mature nodes (through 28/22nm). We believe we are still in the early stages of an up-cycle and that 2026 is an inflection point for mature node foundries driven by: 1) an inventory correction in 2025, 2) increasing demand (e.g., growing power content for AI-related capex), 3) bifurcation of China and ex-China semiconductor markets, and 4) major foundries phasing out 8-inch and legacy nodes. UMC is set to benefit with accelerating revenue, higher utilisation rates, and higher ASPs, which should all lead to higher margins/EPS growth.

New businesses provide additional upside potential: UMC is embarking on new leading-edge/new technology partnerships.

- Intel partnership on 12nm: UMC will contribute foundry services and 12nm process technology expertise to provide customers with US-based manufacturing. We expect this will move beyond 12nm.
- Hyperlight: In 1Q26, UMC signed an agreement for high-volume foundry production of Hyperlight's TFLN chiplet (both 6" and 8").
- UMC may also partner with memory IP suppliers to mass produce/sell NAND-like products.
- UMC notes it will also continue to develop advanced packaging, including 3D, with clients.

Upside to consensus forecasts: We believe the combination of higher utilisation rates, price hikes, and new business will likely spur a round of consensus upgrades on margins. We initiate with an Outperform rating.

Valuation: Our target price of NT\$258 is based on 22x 2028E P/E, a premium to its 13x historical one-year forward average, given our expectation of a longer, sustainable up-cycle (higher growth).

Catalysts: A continuation of increasing utilisation rates in 2H26 and 2027, ASP hikes from 2H26, and high-margin revenue from new businesses.

Investment Thesis and Recommendation

We believe 2026 is a key inflection point for trailing-edge technology at foundries, which will lead to expanding utilisation rates. Some supply is being phased out and new capacity is expensive and non-competitive (benefitting established players). Initiate at Outperform.

Semicons & Semicon Equip Taiwan



Jeffrey Ohlweiler



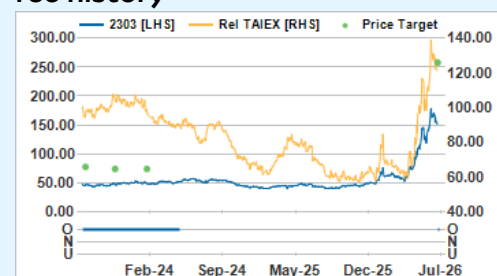
Leo Tsai

2303 TT	Outperform
Price (at 14 Jul 2026)	TWD151.00
12-month target	TWD258.00
12-month TSR (%)	72.7
Volatility Index	High
Market Cap (Local) (m)	1,899,125
Market Cap (USD) (m)	59,029
Free Float (%)	93
30-day avg turnover (USD) (m)	1,001.8

Investment Fundamentals

Year end 31 Dec	2025A	2026E	2027E	2028E
Revenue (m)	237.6	271.5	342.4	428.5
Revenue growth (%)	2.3	14.3	26.1	25.1
EBIT (m)	43.9	62.8	108.6	171.3
EBIT growth (%)	(14.8)	42.8	73.0	57.8
Reported profit (m)	41.7	61.4	92.3	146.5
Adjusted profit (m)	41.7	61.4	92.3	146.5
EPS rep [TWD]	3.3	4.9	7.4	11.7
EPS rep growth (%)	(12.1)	47.2	50.2	58.7
EPS adj [TWD]	3.3	4.9	7.4	11.7
EPS adj growth (%)	(12.1)	47.2	50.2	58.7
Net debt/equity (%)	(9.9)	(23.2)	(30.2)	(37.7)
ROA (%)	7.6	10.2	15.7	21.5
ROE (%)	11.0	15.4	20.6	28.1
PER rep (x)	45.2	30.7	20.4	12.9
PER adj (x)	45.2	30.7	20.4	12.9
EV/EBITDA (x)	17.5	14.2	10.4	7.6
P/BV (x)	5.0	4.5	4.0	3.3
Total div yield (%)	1.9	1.7	1.9	2.9
Quant (rank vs. global sector)	285 / 668			

2303 TT rel TAIEX performance, & rec history



Source: FactSet, Macquarie Research, Jul 2026 (all figures in TWD unless noted, TP in TWD)

Key Risks to Investment Thesis

- A quick trailing-edge foundry upcycle, where utilisation rates peak in 2H26 or early 2027.
- Failure to achieve meaningful revenue in any of its joint venture projects.
- Higher-than-expected costs/inflation that can't be offset by ASP hikes.

Company Description

United Microelectronics Corporation (UMC) is a semiconductor foundry that provides wafer manufacturing services in 8" and 12" Fabs, down to 12nm / FinFET. The firm has the majority of its production in Taiwan, but also fabs in China, Japan, Singapore. The firm focuses on mature nodes and is not engaged in the leading edge EUV manufacturing. The firm has a large number of specialty processes such as high voltage, image sensors, automotive.

UMC (2303 TT) TWD/(m) unless otherwise noted

Income Statement	Dec FY	2025A	2026E	2027E	2028E	Q1/26A	Q2/26E	Balance Sheet	2025A	2026E	2027E	2028E
Revenue		237.6	271.5	342.4	428.5	61.0	66.3	Cash	110.7	168.0	216.5	291.3
Cost of Goods Sold		168.6	181.5	202.6	221.8	43.2	45.2	Receivables	33.7	48.1	61.5	74.8
Gross Profit		68.9	90.1	139.9	206.8	17.8	21.1	Inventories	37.2	40.1	51.2	62.4
EBITDA		103.2	127.4	177.3	243.6	27.3	30.7	Investments	75.9	87.3	87.3	87.3
Depreciation		59.3	64.6	68.7	72.3	16.0	16.2	Fixed Assets	271.4	254.2	258.3	274.6
EBIT		43.9	62.8	108.6	171.3	11.3	14.5	Intangibles	9.5	8.9	8.9	8.9
Net Interest Income		0.7	0.5	1.3	2.2	0.1	0.0	Other Assets	40.6	43.9	50.6	57.3
Associates		2.4	2.8	0.0	0.0	2.8	0.0	Total Assets	579.0	650.5	734.4	856.6
Forex Gains / Losses		(0.6)	0.3	0.0	0.0	0.3	0.0	Payables	47.9	80.2	102.5	124.7
Other Pre-Tax Income		3.2	4.2	0.0	0.9	2.2	2.0	Short Term Debt	27.6	32.2	33.1	35.2
Pre-Tax Profit		49.6	70.5	109.9	174.4	16.6	16.5	Long Term Debt	45.4	38.6	39.7	42.3
Tax Expense		(8.1)	(9.1)	(17.6)	(27.9)	(0.5)	(2.6)	Other Liabilities	78.2	80.0	83.8	87.6
Net Profit		41.5	61.4	92.3	146.5	16.1	13.9	Total Liabilities	199.1	231.0	259.2	289.9
Minority Interests		0.2	0.1	0.0	0.0	0.1	0.0	Shareholders' Funds	358.8	387.6	443.3	534.9
Reported Earnings		41.7	61.4	92.3	146.5	16.2	13.9	Minority Interests	0.1	0.0	0.0	0.0
Adjusted Earnings		41.7	61.4	92.3	146.5	16.2	13.9	Other	21.0	31.8	31.8	31.8
Basic Shares Outstanding		12.5	12.5	12.5	12.5	12.5	12.5	Total S/H Equity	379.9	419.5	475.2	566.8
Diluted Shares Outstanding		12.5	12.5	12.5	12.5	12.5	12.5	Total Liab & S/H Funds	579.0	650.5	734.4	856.6
EPS (rep) [TWD]		3.3	4.9	7.4	11.7	1.3	1.1	Net Debt / Equity (%)	(9.9)	(23.2)	(30.2)	(37.7)
EPS (adj) [TWD]		3.3	4.9	7.4	11.7	1.3	1.1	Interest Cover (x)	NM	NM	NM	NM
Total DPS [TWD]		2.9	2.6	2.9	4.4	0.0	0.0	ROE (%)	11.0	15.4	20.6	28.1
								ROA (%)	7.6	10.2	15.7	21.5
								ROIC (%)	10.6	16.0	28.3	43.4
Ratio		2025A	2026E	2027E	2028E			Cash Flow Analysis	2025A	2026E	2027E	2028E
Revenue Growth (%)		2.3	14.3	26.1	25.1	-	-					
EBITDA Growth (%)		3.4	23.4	39.2	37.4	-	-					
EBIT Growth (%)		(14.8)	42.8	73.0	57.8	-	-					
EPS Growth (adj) (%)		(12.1)	47.2	50.2	58.7	-	-					
Gross Profit Margin (%)		29.0	33.2	40.8	48.2	-	-					
EBITDA Margin (%)		43.4	46.9	51.8	56.8	-	-					
EBIT Margin (%)		18.5	23.1	31.7	40.0	-	-					
Net Profit Margin (%)		17.6	22.6	27.0	34.2	-	-					
Payout Ratio (%)		85.8	52.9	39.6	37.5	-	-					
PE (rep) (x)		45.2	30.7	20.4	12.9	-	-					
PE (adj) (x)		45.2	30.7	20.4	12.9	-	-					
EV/EBITDA (x)		17.5	14.2	10.4	7.6	-	-					
EV/EBIT (x)		39.8	28.2	17.0	10.8	-	-					
Price/Book (x)		5.0	4.5	4.0	3.3	-	-					
Total Div Yield (%)		1.9	1.7	1.9	2.9	-	-					

Source: Company data, Macquarie Research Jul 2026

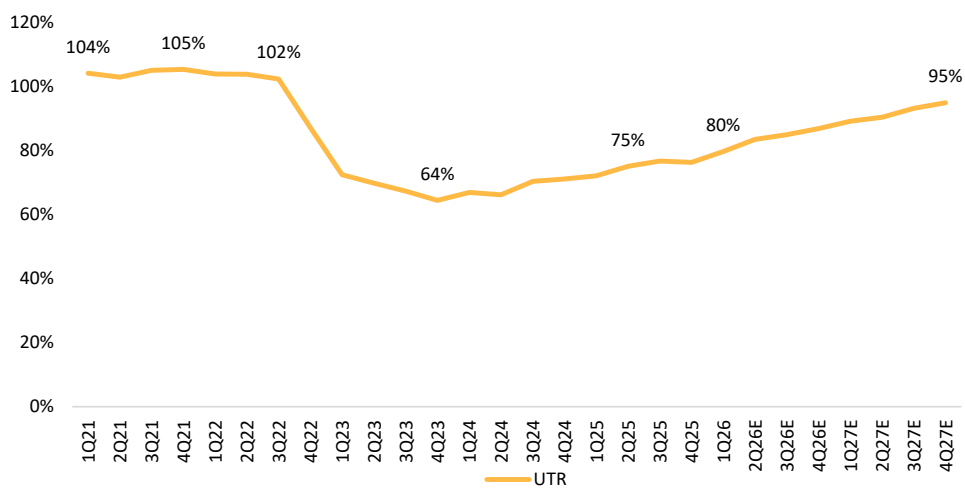
Established trailing-edge foundries in a solid position

Investment Thesis

We believe 2026 is a key inflection point for trailing-edge technology at foundries which will lead to at least a few years of utilisation rate growth, before stabilising at a high rate. Both supply and demand dynamics are driving up utilisation rates (and therefore profitability).

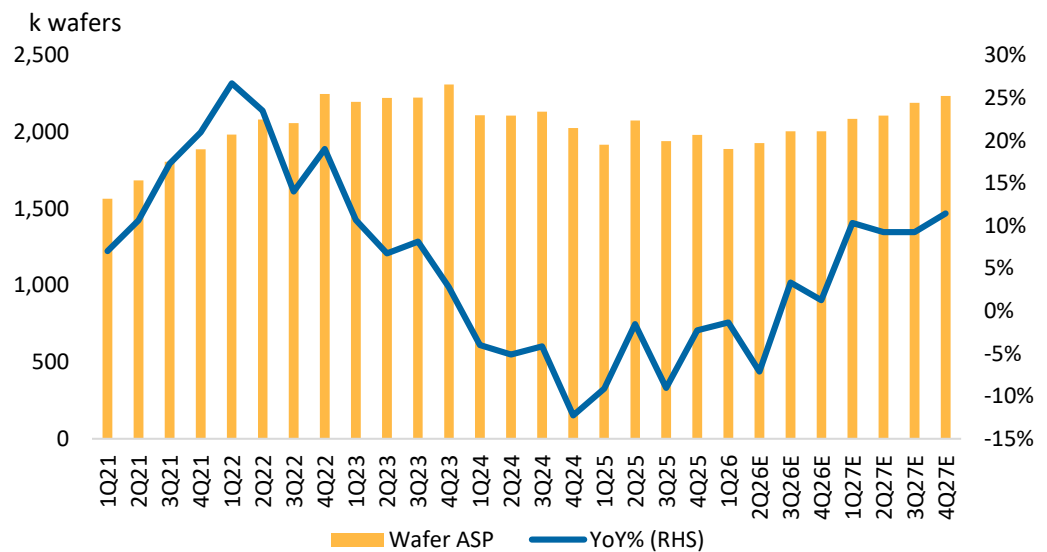
- Demand driven by: 1) an inventory correction in 2025, 2) increasing demand (including growing power content for AI-related capex), 3) the bifurcation of China and ex-China semiconductor markets, and 4) content and unit growth for AI edge devices (shift to higher-end PC/smartphone and emerging growth in robotics and AR).
- Supply driven by: 1) Major players TSMC and Samsung are phasing out 8-inch and trailing-edge to clear more room for leading-edge and advanced packaging, and 2) new capacity is expensive and non-competitive (benefitting established players).

Figure 1 - UMC quarterly UTR



Source: Company data, Macquarie Research, Jul 2026

Utilisation rates bottomed at high-60% in 2023/24, improved to 75% in 2025, and we believe are already at mid-80%. We expect utilisation rates to rise to near full over the next quarters. And, as in prior cycles, as utilisation rates reach high levels (and customers get concerned about acquiring capacity), ASP hikes should come from 2H26 (we expect a low-single-digit hike in 2026, and ~10% in 2027). All of this should help drive revenue growth/margin expansion. We believe this will likely lead to consensus earnings upgrades for 2027/28.

Figure 2 - UMC quarterly wafer ASP (12" equivalent)

Source: Company data, Macquarie Research, Jul 2026

We believe UMC will continue to focus on ROI (consistent with its major strategic shift from 2017), and rely on partnerships to grow into new areas (and more leading-edge nodes).

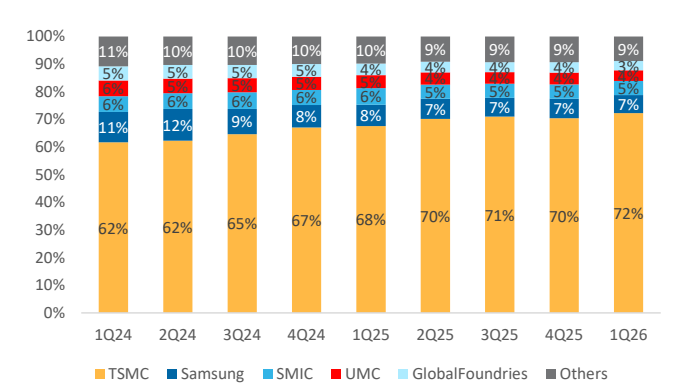
- Intel partnership on 12nm. UMC will contribute foundry services and 12nm process technology expertise to provide customers with US-based manufacturing. We expect this will move beyond 12nm.
- Hyperlight: In 1Q26, UMC signed an agreement for high-volume foundry production of Hyperlight's TFLN chiplet (both 6" and 8").
- UMC may also partner with memory IP suppliers to mass produce/sell NAND-like products.

We initiate coverage of UMC with an Outperform rating. Our target price of NT\$258 is based on 22x 2028E P/E. We believe the high growth outlook over the next three years justifies our target multiple premium. Key risks are the semiconductor cycle, and UMC's ability to execute on its new projects.

Foundry Industry

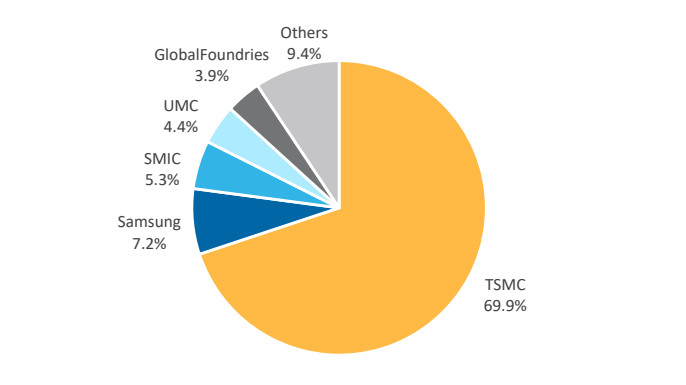
Trailing-edge foundries should slow down market share bleed. Although we continue to expect leading-edge foundries' (specifically TSMC) growth to outpace trailing-edge over the next few years, we believe the steady increase in utilisation rates and ASP hikes at trailing-edge foundries will slow that widening gap and benefit all key players during 2026-28. UMC's key advantages for trailing edge: 1) a lot of its capacity is already fully depreciated, 2) it has good geographic diversity within Asia (Taiwan/China/Japan/Singapore), and 3) it has the ability to migrate customers beyond 22nm (via Intel partnership).

Figure 3 - Quarterly foundry market share



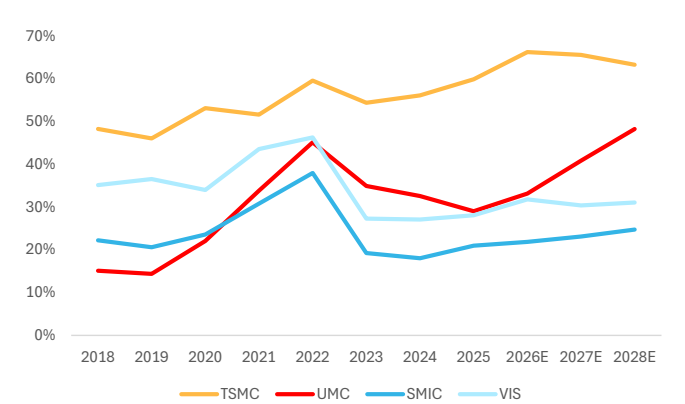
Source: Trendforce, Macquarie Research, Jul 2026

Figure 4 - 2025 Foundry market share



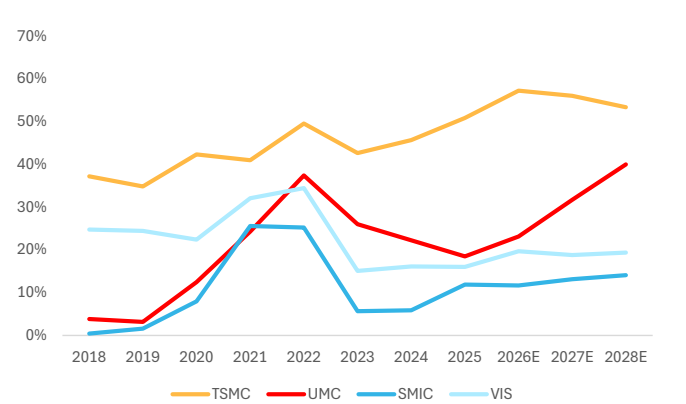
Source: Trendforce, Macquarie Research, Jul 2026

Figure 5 - GPM peers comparison



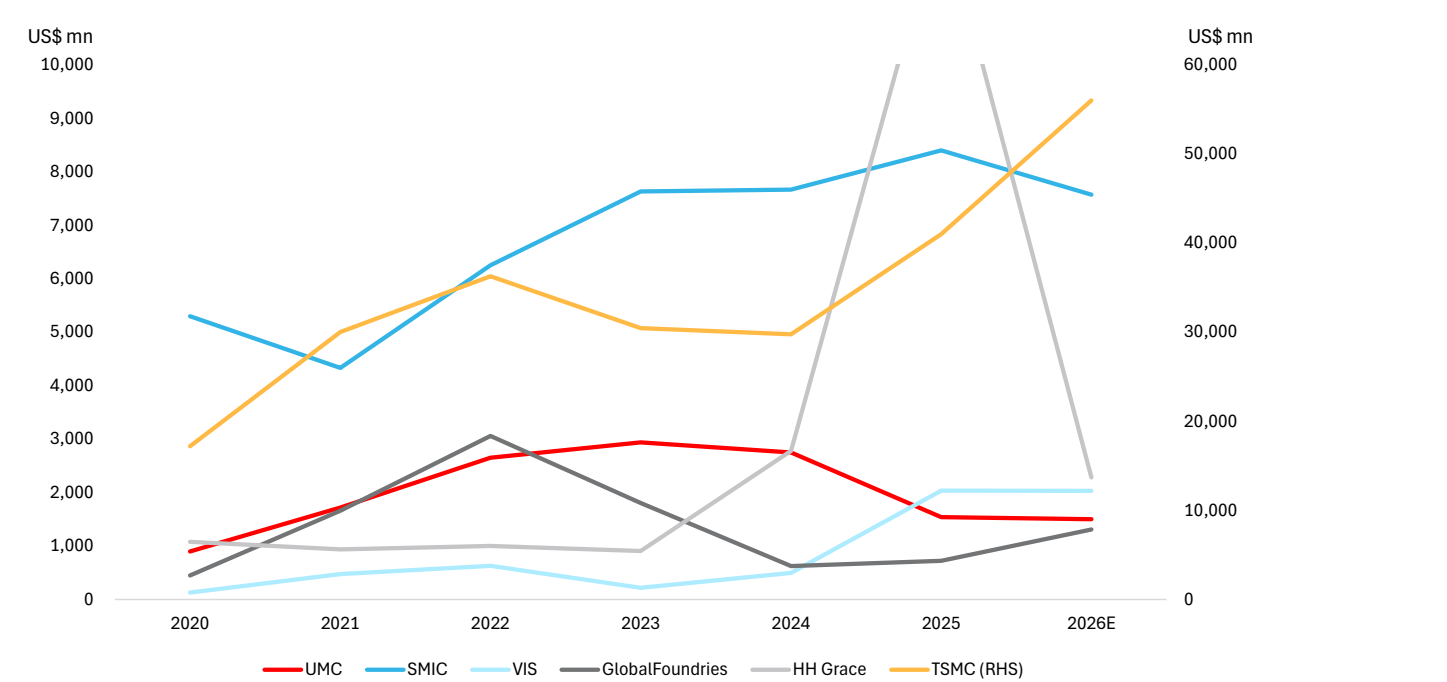
Source: Company data, Bloomberg, Macquarie Research, Jul 2026

Figure 6 - OPM peers comparison



Source: Company data, Bloomberg, Macquarie Research, Jul 2026

Figure 7 - Global foundry players capex trend



Source: Company data, Bloomberg, Macquarie Research, Jul 2026

UMC growth driven by ASP, utilisation rates and new business... not capacity expansion

Operations

Up-cycle in trailing-edge foundry: UMC will continue its strategy to focus on ROI and not aggressive capacity expansion. We expect UMC to rely on partnerships to enter new areas (and more advanced nodes). Product mix should continue to improve (customers migrate to 22nm), and new ventures should start to contribute materially from 2027. GPM should be continued to expand through 2028E on: 1) higher utilisation rate, 2) ASP hikes, 3) product mix, and 4) new project contributions.

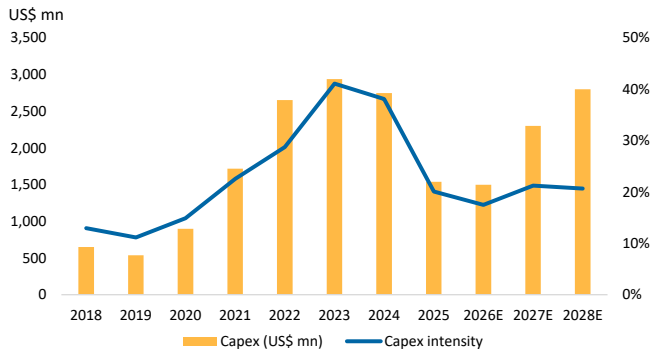
New businesses provide additional upside potential: In lieu of aggressive capex, UMC is entering partnerships to pursue other leading-edge/new technology avenues.

- **Partnership with Intel on 12nm** (announced in 1Q24): UMC will contribute its foundry services and 12nm process technology expertise to provide customers with US-based manufacturing. It enables UMC's existing customers the ability to migrate to 12nm as well as geographically diversify production to the US. For Intel, it enhances their ability to attract new foundry customers. We believe this partnership will move beyond 12nm. The company says it is still on track to deliver PDK and related IP in 2026, with revenue contribution in 2027 (initial application includes DTV, WiFi connectivity and high-speed interface ICs).
- **Hyperlight:** In 1Q26, UMC signed an agreement with Hyperlight for high-volume foundry production of their TFLN (Thin-Film Niobate) chiplet (both 6" and 8"). The TFLN optical products will have extremely high modulation bandwidth with low optical loss, enabling networking speeds of 1.6T and beyond while significantly reducing power consumption and laser requirements compared to traditional silicon photonics.
- UMC may also **partner with memory IP suppliers** to mass produce and sell NAND-like products to boost utilisation rates faster (UMC has not yet commented on this possibility).
- **Advanced packaging:** including 3D integration of RF SOI wafers for front-end modules – UMC notes it will continue to develop with clients.

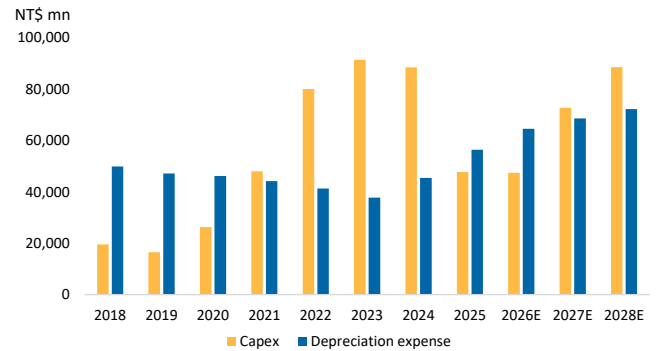
Figure 8 - UMC year-end quarterly capacity by fab (12" eq.)

Fab	Wafer size	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E
WTK	6"	93	81	85	83	83	80	83	83	83
8A	8"	201	190	192	207	207	215	215	215	215
8C & D	8"	206	210	218	237	237	243	243	243	243
8E	8"	113	115	118	131	131	131	131	131	131
8F	8"	122	137	138	145	145	146	146	146	146
8N	8"	230	232	245	254	254	250	250	250	250
8S	8"	93	102	111	114	114	117	117	117	117
12A	12"	261	271	301	346	409	409	409	409	409
12A-1	12"	261	271	301	305	305	305	305	305	305
12A-2	12"	0	0	0	41	104	104	104	104	104
12i	12"	160	164	164	164	172	172	197	262	292
12i-1	12"	160	164	164	164	172	172	172	172	172
12i-2	12"	0	0	0	0	0	0	25	90	120
12X	12"	57	78	80	80	80	95	95	95	95
12M	12"	98	104	110	110	115	119	119	119	119
Total	(12" eq.)	1,028	1,075	1,130	1,204	1,280	1,305	1,331	1,396	1,426

Source: Company data, Macquarie research, Jul 2026

Figure 9 - Capex and Capex intensity

Source: Company data, Macquarie Research, Jul 2026

Figure 10 - Capex and dep. expense trend

Source: Company data, Macquarie Research, Jul 2026

Expecting GPM expansion
2026-28

Financials

During the early stages of the semiconductor up cycle, UMC's revenues (2024/25) grew low-to mid-single-digits YoY, as most of the growth was AI-driven and on leading-edge nodes. However, we believe 2026 is a key inflection point for trailing-edge technology at foundries which will lead to at least a few years of fast-growing (and then stable higher) utilisation rates. Both supply and demand side dynamics are driving up utilisation rates (and therefore profitability).

We forecast revenue to grow 14%/26%/25% in 2026E/27E/28E and for GPM to jump 420/770/740bps on higher utilisation rates, higher ASPs, and better product mix. New businesses should also start to contribute materially from 2027.

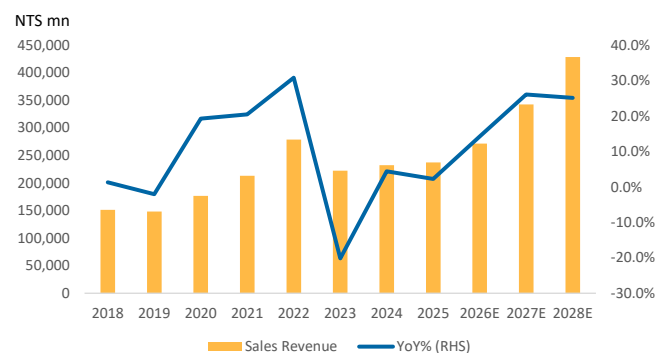
With moderate capex, increasing profitability, we expect cash to grow, and its dividend payout to remain at a 50%+ payout ratio. Non-op gains have also contributed positively – especially into strong Taiwan tech markets (which continue in 2Q26, but also a risk in case of a semiconductor down cycle).

1Q26 earnings and 2Q26/2H26 guidance recap

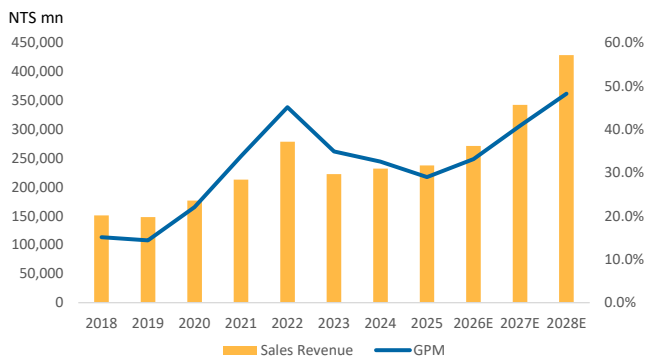
- Revenue +5.5% YoY mainly from shipment increase (shipments up 3% QoQ with utilisation increasing slightly to 79% from 78%). Blended ASP was down slightly QoQ due to better-than-expected 8-inch wafer shipment.
- EPS was up ~60% QoQ due to non-op investment gains (strong stock market performance).
- Expect strong wafer shipment growth across 8/12-inch in 2Q (wafer shipments up high-single digits with utilisation up to low-80%).
- ASP up by low single digits QoQ from product mix improvement (more 22/28nm). GPM expected ~30%.
- 2H revenue to increase high-double digits HoH (higher utilisation rates and ASP hikes from 2H).

Figure 11 - UMC revenue, GM and OPM trend

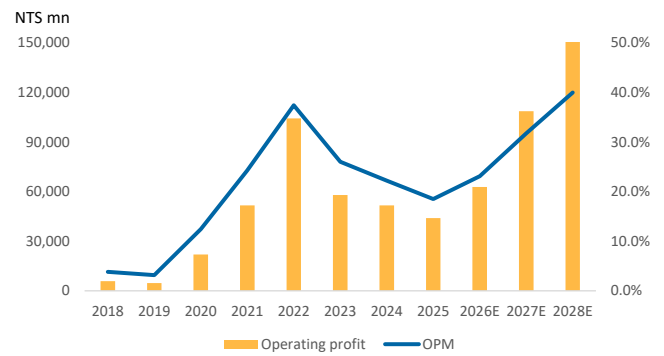
Source: Company data, Macquarie Research, Jul 2026

Figure 12 - Sales revenue growth trend

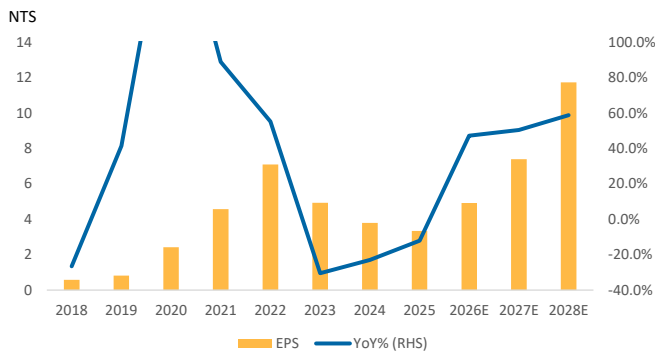
Source: Company data, Macquarie Research, Jul 2026

Figure 13 - UMC sales revenue and GM trend

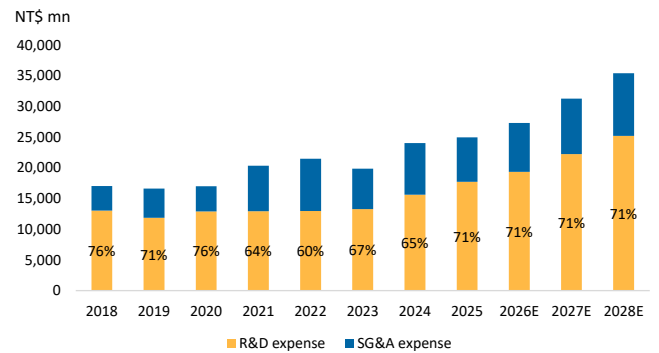
Source: Company data, Macquarie Research, Jul 2026

Figure 14 - UMC operating profit and OPM trend

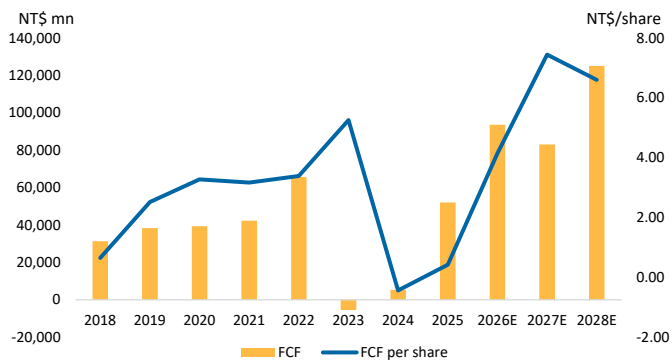
Source: Company data, Macquarie Research, Jul 2026

Figure 15 - UMC EPS growth trend

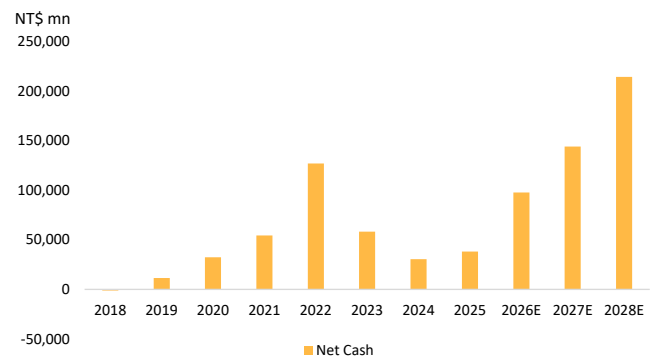
Source: Company data, Macquarie Research, Jul 2026

Figure 16 - R&D expense % in opex

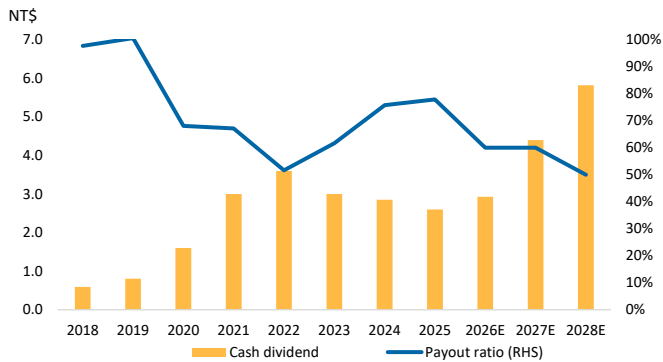
Source: Company data, Macquarie Research, Jul 2026

Figure 17 - FCF and FCF/share

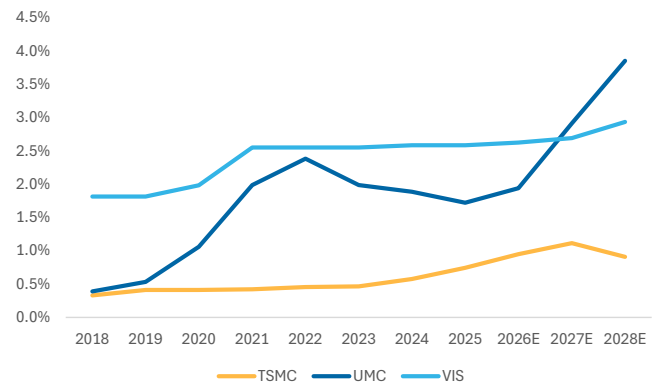
Source: Company data, Macquarie Research, Jul 2026

Figure 18 - Net cash

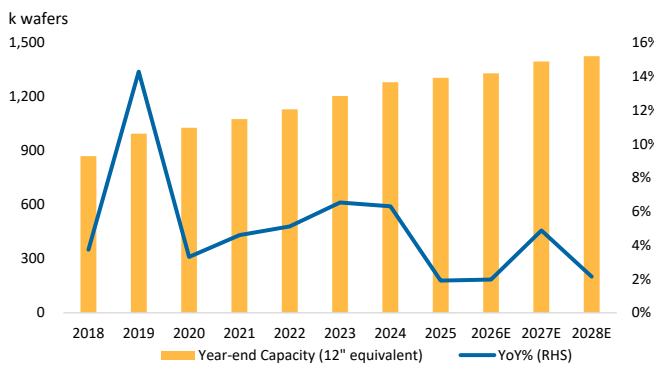
Source: Company data, Macquarie Research, Jul 2026

Figure 19 - Cash dividend and payout ratio

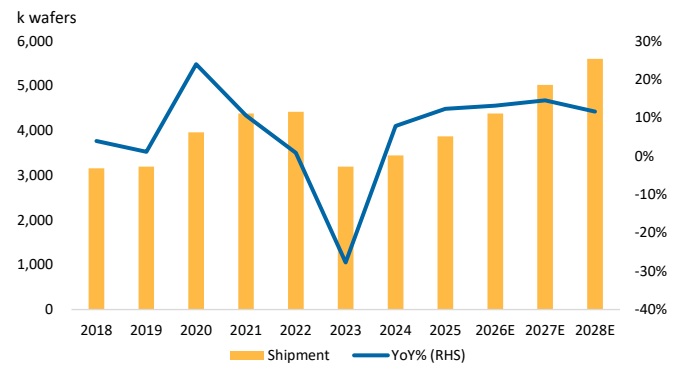
Source: Company data, Macquarie Research, Jul 2026

Figure 20 - Dividend peers comparison

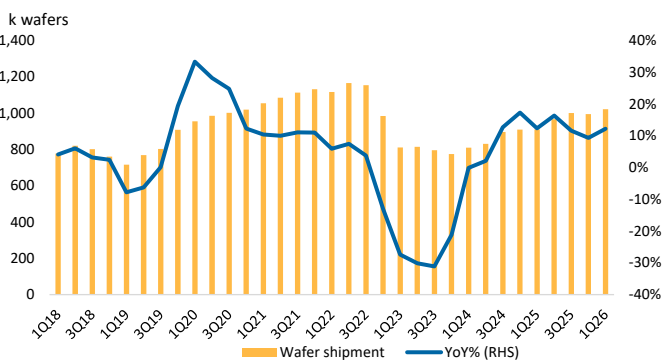
Source: Company data, Bloomberg, Macquarie Research, Jul 2026

Figure 21 - UMC year-end capacity (12" equivalent)

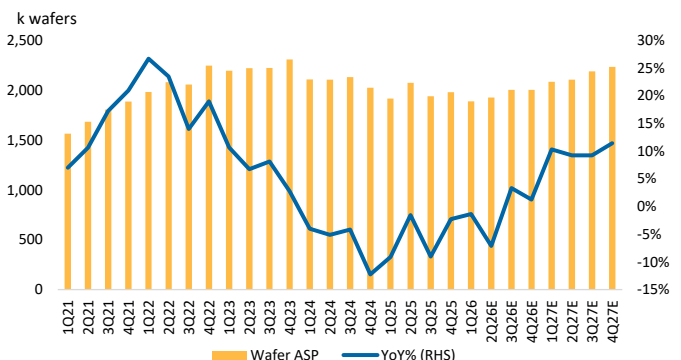
Source: Company data, Macquarie Research, Jul 2026

Figure 22 - UMC annual shipment (12" equivalent)

Source: Company data, Macquarie Research, Jul 2026

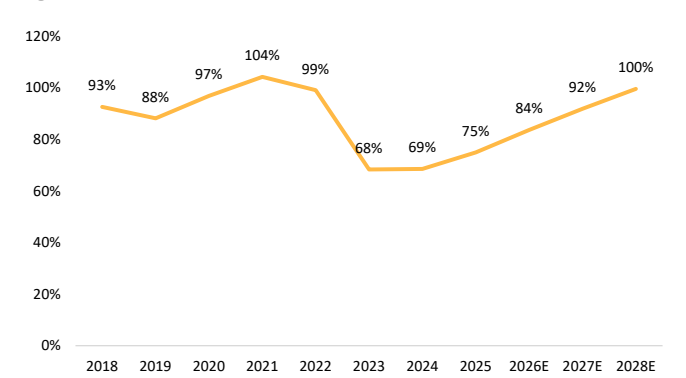
Figure 23 - UMC quarterly shipment (12" equivalent)

Source: Company data, Macquarie Research, Jul 2026

Figure 24 - UMC quarterly wafer ASP (12" equivalent)

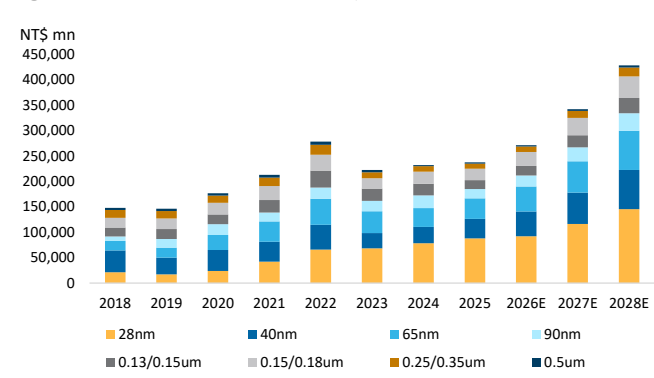
Source: Company data, Macquarie Research, Jul 2026

Figure 25 - UMC annual UTR



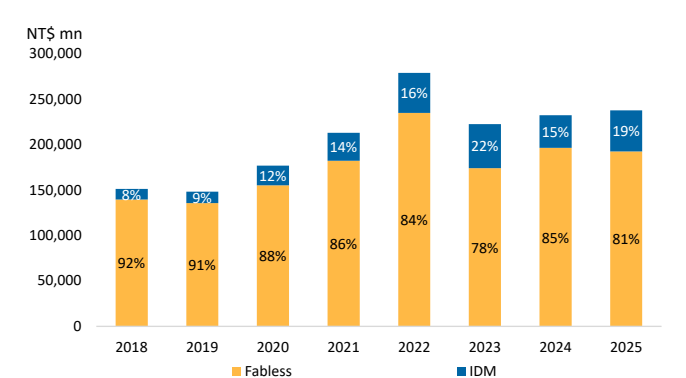
Source: Company data, Macquarie Research, Jul 2026

Figure 26 - UMC revenue by nodes



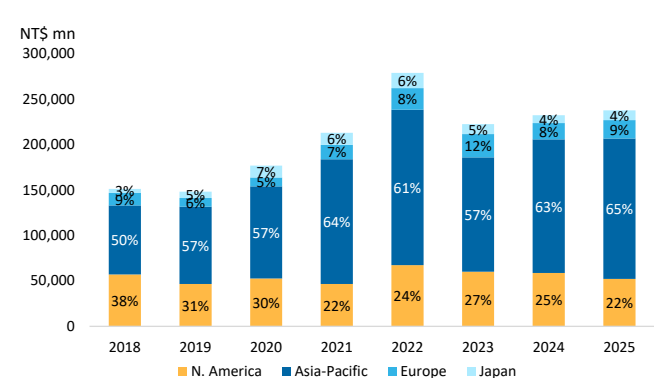
Source: Company data, Macquarie Research, Jul 2026

Figure 27 - UMC revenue by customer types



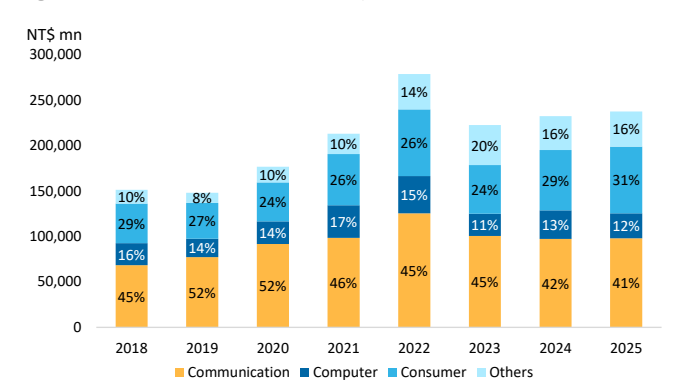
Source: Company data, Macquarie Research, Jul 2026

Figure 28 - UMC revenue by region



Source: Company data, Macquarie Research, Jul 2026

Figure 29 - UMC revenue by applications



Source: Company data, Macquarie Research, Jul 2026

Figure 30 - UMC P&L

(NT\$m)	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26E	3Q26E	4Q26E		2024	2025	2026E	2027E	2028E
Net Sales	57,859	58,758	59,127	61,810	61,038	66,305	71,026	73,157		232,303	237,553	271,527	342,444	428,533
Gross profit	15,447	16,878	17,623	18,958	17,818	21,110	25,029	26,103		75,654	68,906	90,060	139,871	206,755
Op income	9,786	10,820	11,118	12,225	11,276	14,479	17,997	19,007		51,613	43,949	62,760	108,602	171,327
Pretax income	9,347	10,154	14,644	15,503	16,644	16,497	18,218	19,173		56,220	49,648	70,532	109,878	174,403
Net income	7,777	8,903	14,982	10,055	16,171	13,858	15,303	16,106		47,211	41,716	61,438	92,298	146,499
EPS (NT\$)	0.62	0.71	1.20	0.81	1.29	1.11	1.23	1.29		3.80	3.34	4.91	7.39	11.73
Profitability														
Gross Margin	26.7%	28.7%	29.8%	30.7%	29.2%	31.8%	35.2%	35.7%		32.6%	29.0%	33.2%	40.8%	48.2%
Operating Margin	16.9%	18.4%	18.8%	19.8%	18.5%	21.8%	25.3%	26.0%		22.2%	18.5%	23.1%	31.7%	40.0%
Pretax Margin	16.2%	17.3%	24.8%	25.1%	27.3%	24.9%	25.6%	26.2%		24.2%	20.9%	26.0%	32.1%	40.7%
Net Margin	13.4%	15.2%	25.3%	16.3%	26.5%	20.9%	21.5%	22.0%		20.3%	17.6%	22.6%	27.0%	34.2%
Sequential Growth														
Net Sales	-4.2%	1.6%	0.6%	4.5%	-1.2%	8.6%	7.1%	3.0%						
Gross profit	-15.8%	9.3%	4.4%	7.6%	-6.0%	18.5%	18.6%	4.3%						
Op income	-18.2%	10.6%	2.8%	10.0%	-7.8%	28.4%	24.3%	5.6%						
Pretax income	-11.1%	8.6%	44.2%	5.9%	7.4%	-0.9%	10.4%	5.2%						
Net income	-8.5%	14.5%	68.3%	-32.9%	60.8%	-14.3%	10.4%	5.2%						
EPS	-8.8%	14.5%	69.0%	-32.5%	59.3%	-14.0%	10.4%	5.2%						
YoY Growth														
Net Sales	5.9%	3.4%	-2.2%	2.4%	5.5%	12.8%	20.1%	18.4%		4.4%	2.3%	14.3%	26.1%	25.1%
Gross profit	-8.6%	-15.5%	-13.7%	3.4%	15.4%	25.1%	42.0%	37.7%		-2.7%	-8.9%	30.7%	55.3%	47.8%
Op income	-16.1%	-22.1%	-21.1%	2.2%	15.2%	33.8%	61.9%	55.5%		-10.8%	-14.8%	42.8%	73.0%	57.8%
Pretax income	-26.5%	-38.2%	-11.6%	47.4%	78.1%	62.5%	24.4%	23.7%		-20.7%	-11.7%	42.1%	55.8%	58.7%
Net income	-25.6%	-35.4%	3.5%	18.3%	107.9%	55.7%	2.1%	60.2%		-22.6%	-11.6%	47.3%	50.2%	58.7%
EPS	-26.2%	-36.0%	3.4%	19.1%	108.1%	56.3%	2.1%	59.2%		-22.9%	-12.1%	47.1%	50.4%	58.7%

Source: Company data, Macquarie Research, Jul 2026

Figure 31 - UMC annual balance sheet

NT\$ mn	2021A	2022A	2023A	2024A	2025A	2026E	2027E	2028E
Cash & cash equivalents	132,622	173,819	132,554	105,000	110,660	167,972	216,483	291,325
Receivables	36,048	38,783	32,293	34,995	33,731	48,103	61,499	74,824
Inventories	23,011	31,070	35,713	35,782	37,228	40,086	51,249	62,353
Other current assets	41,592	8,699	16,238	13,900	23,163	24,580	31,277	37,940
Current asset	233,273	252,371	216,797	189,678	204,783	280,741	360,507	466,442
Net fixed assets	107,086	115,618	156,765	234,291	244,429	228,001	232,090	248,372
LT investment	72,547	64,847	74,032	72,487	75,373	86,812	86,812	86,812
Other non-current assets	51,521	100,215	111,593	73,744	54,411	54,994	54,994	54,994
Non-current assets	231,153	280,681	342,390	380,523	374,213	369,807	373,896	390,178
Total assets	464,427	533,052	559,187	570,201	578,996	650,548	734,403	856,620
ST borrowings	39,256	7,587	29,537	19,510	27,597	32,183	33,105	35,244
Payables	43,480	62,879	56,663	45,361	47,936	80,172	102,498	124,706
Other current liabilities	22,718	38,099	12,814	10,389	12,066	13,629	17,425	21,200
Current liabilities	105,454	108,565	99,015	75,260	87,598	125,984	153,027	181,151
LT borrowings	39,830	39,877	45,236	55,533	45,372	38,619	39,726	42,293
Other non-current liabilities	37,941	49,159	55,358	61,222	66,170	66,419	66,419	66,419
Non-current liabilities	77,770	89,036	100,594	116,755	111,542	105,039	106,145	108,712
Total liabilities	183,224	197,601	199,608	192,016	199,141	231,023	259,173	289,863
Share capital	124,832	125,047	125,298	125,607	125,882	125,785	125,785	125,785
Reserves & retained earnings	115,376	202,247	217,053	226,849	232,883	261,844	317,549	409,075
Minority	223	344	341	257	87	36	36	36
Other equity	40,771	7,813	16,886	25,473	21,004	31,861	31,861	31,861
Total shareholder's equity	281,203	335,451	359,579	378,185	379,855	419,525	475,231	566,757
Total liabilities & shareholder's equity	464,427	533,052	559,187	570,201	578,996	650,548	734,403	856,620

Source: Company data, Macquarie research, Jul 2026

Figure 32 - UMC annual cash flow statement

NT\$ mn	2021A	2022A	2023A	2024A	2025A	2026E	2027E	2028E
Operating cash flow	90,352	145,861	86,000	93,872	99,864	141,142	155,823	213,673
Capital expenditure	(48,035)	(80,128)	(91,474)	(88,544)	(47,745)	(47,445)	(72,749)	(88,564)
Other investing cash flow	(14,129)	25,700	(6,313)	2,602	(5,410)	26,024	0	0
Investing cashflow	(62,163)	(54,427)	(97,787)	(85,941)	(53,154)	(21,421)	(72,749)	(88,564)
Dividends paid	(19,871)	(37,445)	(45,015)	(37,586)	(35,784)	(32,477)	(36,592)	(54,973)
Other financing cashflow	32,361	(19,809)	15,929	(1,614)	(3,419)	(29,932)	2,029	4,706
Financing cashflow	12,490	(57,255)	(29,086)	(39,200)	(39,204)	(62,409)	(34,563)	(50,267)
FX exchange	(2,105)	7,018	(392)	3,715	(1,846)	0	0	0
Net change in cash	38,574	41,197	(41,265)	(27,553)	5,660	57,311	48,511	74,842

Source: Company data, Macquarie research, Jul 2026

Valuation

Our target price of NT\$258 is based on 22x 2028E P/E. Its historical average P/E is 15x (trailing) and 13x (forward). We use a higher-than-historical-average multiple due to expectation of a longer, sustainable up-cycle (higher growth), with new projects also likely to expand margins.

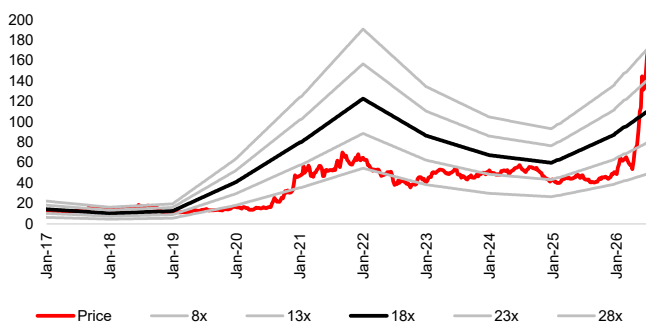
Price to book is also trading above its historical levels. We believe this is reasonable given the value of its capacity (taking into account a lot of its capacity has already been depreciated, and the much higher replacement costs for equipment now).

We also expect the current semiconductor cycle could be abnormally long (started ~mid-2023 and we expect it to last until at least 2029), but also starting from 2026, expect trailing-edge capacity (including 8") to see strong utilisation momentum (2026-27) and the ability to maintain a high utilisation rate (throughout 2028). We have also seen, during times of foundry shortages, that foundry companies can maintain over 100% utilisation rates for several quarters.

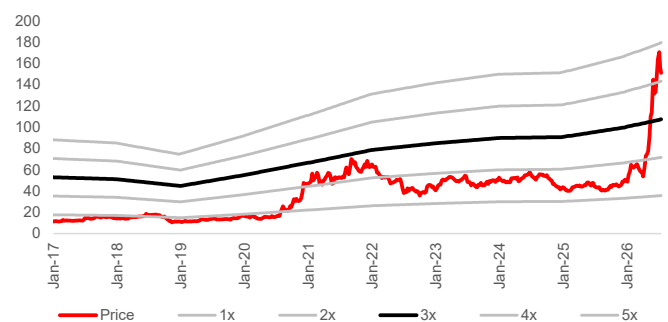
Figure 33 - Macquarie estimates vs. BBG consensus table

	2026E			2027E			2028E		
NT\$mnn	MQe	BBGe	Diff %	MQe	BBGe	Diff %	MQe	BBGe	Diff %
Revenue	271,527	275,627	-1.5%	342,444	348,509	-1.7%	428,533	419,735	2.1%
Gross profit	90,060	83,609	7.7%	139,871	120,187	16.4%	206,755	170,123	21.5%
GM %	33.2%	30.3%		40.8%	34.5%		48.2%	40.5%	
Operating profit	62,760	57,615	8.9%	108,602	98,014	10.8%	171,327	132,900	28.9%
OPM %	23.1%	20.9%		31.7%	28.1%		40.0%	31.7%	
Pretax income	70,532	66,763	5.6%	109,878	102,388	7.3%	174,403	138,302	26.1%
Net income	61,438	57,556	6.7%	92,298	81,769	12.9%	146,499	108,461	35.1%
EPS (NT\$)	4.91	4.63	6.2%	7.39	6.32	16.9%	11.73	9.01	30.2%

Source: Company, Bloomberg, Macquarie Research, Jul 2026

Figure 34 - 12-month forward PE bands

Source: Company data, Macquarie Research, Jul 2026

Figure 35 - 12-month forward PB bands

Source: Company data, Macquarie Research, Jul 2026

Key Risks

- We expect the semiconductor cycle (driven by AI capex) to continue at least through 2028. A earlier peak and down-cycle would negatively impact our forecasts.
- A quick trailing-edge foundry up-cycle, where utilisation rates peak in 2H26 or early 2027 could also impact UMC's ability to maintain high utilisation rates.
- Failure to achieve meaningful revenue in any of its joint venture projects.
- Higher-than-expected costs/inflation that can't be offset by ASP hikes.
- Non-operating income could be at risk in a falling market (has benefitted from the strong markets over the last several quarters).

Key Quant Findings

The quant model currently holds a marginally positive view on United Microelectronics Corp.. The strongest style exposure is Price Momentum, indicating this stock has had strong medium to long term returns which often persist into the future. The weakest style exposure is Profitability, indicating this stock is not efficiently converting investments to earnings; proxied by ratios like ROE or ROA.

Macquarie Alpha Model: Key rankings

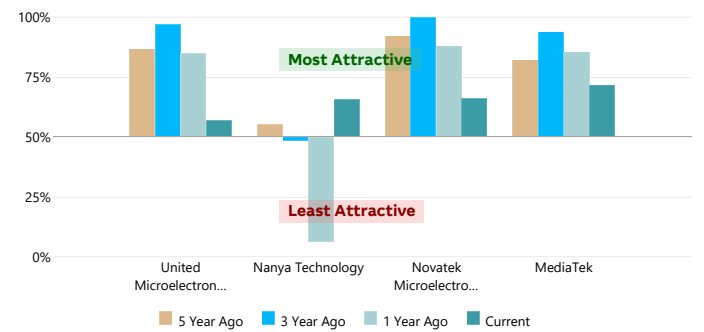
The Macquarie Quant’s flagship Alpha model is a dynamic multi-factor model based on a staple of quant factors such as value, momentum, revisions, quality, and risk.

	Global	Market (Country)	Sector
	Whole Universe	Taiwan	Semiconductors & Semiconductor Equip.
Macquarie Alpha Model	7570/17995	421/978	285/668
Fundamental (Consensus) *	8395/17995	274/978	331/668

* based on Total Shareholder Return = Consensus Price target / Current Price

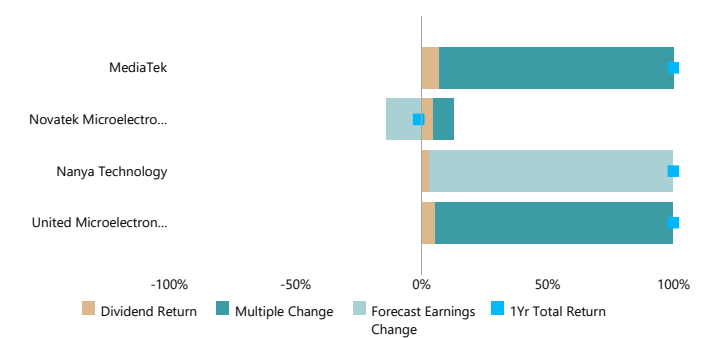
Current and Historical Alpha Model Rank

The chart shows the Macquarie Alpha model market ranking against the company’s peers and over recent history.



Drivers of Stock Return

Breakdown of 1-year total return (local currency) into returns from dividends, changes in forward earnings estimates and the resulting change in earnings multiple.



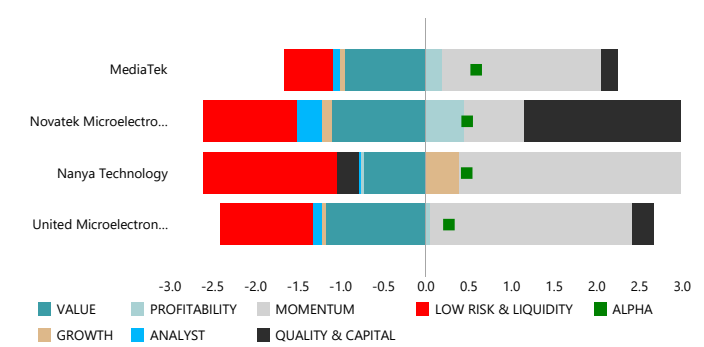
Alpha Model Decomposition

The Macquarie Alpha is decomposed into its sector and market relative factor & styles exposures (a higher/better percentile is coded in green, whilst lower in red).

Factors / Styles	Percentile relative to		Core factors in definition
	sectors (/668)	market (/978)	
ALPHA	57%	57%	Built from the styles below
VALUE	50%	8%	Book, CF, Yield, Earnings Multiples
ANALYST	52%	75%	Revisions (Earnings, Recommendations)
MOMENTUM	84%	95%	Price Momentum
GROWTH	24%	31%	EPS, Sales (Forecast, Historic)
PROFITABILITY	38%	70%	ROE, Margin, Asset Turnover
QUALITY	76%	85%	Accruals, Earn Stability, Cash Conversion
CAPITAL	86%	52%	Investment/Capex, Net share issuance
LIQUIDITY	33%	44%	Size, Turnover, Analyst Coverage
LOW RISK	37%	20%	Beta, Volatility, Earn.Cert, Leverage
TECHNICAL	92%	96%	MACD, RSI, Bollinger, Williams R, etc

Factors driving the Alpha Model vs peers

For the comparable firms this chart shows the key underlying styles and their contribution to the current overall raw Alpha score.



Macquarie Style Returns over last year

Recent performance to Macquarie style factors

Asia Ex JP	Monthly Factor Long-Short Returns for												Last 5 Years (ann)	Last 10 Years (ann)
	Jun - 26	May - 26	Apr - 26	Mar - 26	Feb - 26	Jan - 26	Dec - 25	Nov - 25	Oct - 25	Sep - 25	Aug - 25	Jul - 25		
ALPHA	1%	3%	3%	4%	0%	0%	3%	3%	2%	-3%	-6%	-7%	8%	5%
VALUE	-5%	1%	-7%	6%	0%	-2%	3%	5%	4%	-4%	-4%	-3%	10%	4%
ANALYST	7%	4%	12%	-2%	0%	6%	5%	-2%	3%	4%	1%	-3%	17%	14%
MOMENTUM	15%	17%	19%	-4%	5%	8%	6%	-1%	-2%	0%	-6%	-6%	7%	6%
GROWTH	9%	7%	7%	-4%	-1%	4%	2%	-2%	0%	5%	8%	0%	7%	3%
PROFITABILITY	6%	1%	-4%	3%	0%	-4%	1%	3%	0%	-4%	-2%	-6%	-3%	-2%
QUALITY	-3%	-2%	-4%	2%	-1%	-4%	-1%	1%	-4%	-6%	1%	-3%	-7%	-3%
CAPITAL	-7%	-1%	-12%	2%	-2%	2%	-1%	3%	-3%	-1%	-2%	-1%	-1%	-5%
LIQUIDITY	8%	10%	7%	-1%	3%	1%	2%	-1%	-1%	3%	3%	-2%	0%	4%
LOW RISK	-6%	-8%	-13%	6%	-2%	-8%	-2%	5%	1%	-6%	-11%	-9%	-10%	-9%

Source (all charts): FactSet, Refinitiv, and Macquarie Quant. For more details on the Macquarie Alpha model or for more customised analysis and screens, please contact the Macquarie Global Quantitative Team: maccaperequitiesresearchquantglobal@macquarie.com. Explanation for items on this page can be found at <https://www.macquarieinsights.com/rp/d/r/p/OTUyMzg1>

Analysts

Jeffrey Ohlweiler

+8862 2734 7512

jeffrey.ohlweiler@macquarie.com

Macquarie Capital Limited, Taiwan Securities Branch

Leo Tsai

+8862 2734 7559

leo.tsai@macquarie.com

Macquarie Capital Limited, Taiwan Securities Branch

Important Disclosures

Recommendation definitions	Volatility index definition	Financial definitions
Macquarie – Asia and USA Outperform – expected return >10% Neutral – expected return from -10% to +10% Underperform – expected return <-10% Macquarie – Australia/New Zealand Outperform – expected return >10% Neutral – expected return from 0% to 10% Underperform – expected return <0% During periods of share price volatility, recommendations and target prices may occasionally and temporarily be inconsistent with the above definitions. Recommendations – 12 months 12-month target – Expected share price in 12 months Valuation – The company's estimated fair value share price based on the disclosed valuation methodology Note: Quant recommendations may differ from Fundamental Analyst recommendations	This is calculated from the volatility of historical price movements. Very high – highest risk – Stock should be expected to move up or down 60-100% in a year – investors should be aware this stock is highly speculative. High – stock should be expected to move up or down at least 40-60% in a year – investors should be aware this stock could be speculative. Medium – stock should be expected to move up or down at least 25-40% in a year. Low – stock should be expected to move up or down at least 15-25% in a year. * Applicable to select stocks in Asia/Australia/NZ Note: expected return is reflective of a Medium Volatility stock and should be assumed to adjust proportionately with volatility risk	All "Adjusted" data items have had the following adjustments made: Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests EPS = adjusted net profit / efpowa* ROA = adjusted ebit / average total assets ROA Banks/Insurance = adjusted net profit / average total assets ROE = adjusted net profit / average shareholders funds Gross cashflow = adjusted net profit + depreciation *equivalent fully paid ordinary weighted average number of shares All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions for quarter ending 30 Jun 2026

	AU/NZ	Asia	USA	
Outperform	65.38%	70.02%	64.29%	(for global coverage by Macquarie, 1.91% of stocks followed are investment banking clients)
Neutral	27.62%	16.78%	35.71%	(for global coverage by Macquarie, 0.40% of stocks followed are investment banking clients)
Underperform	6.99%	13.19%	0.00%	(for global coverage by Macquarie, 0.00% of stocks followed are investment banking clients)

Company-Specific Disclosures

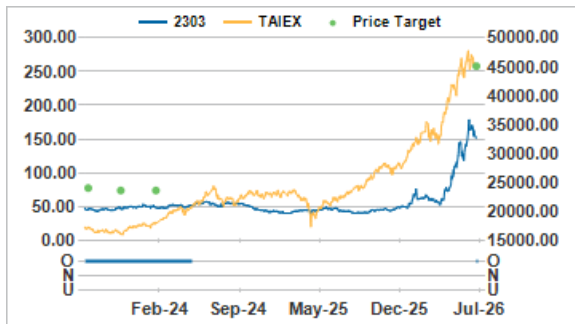
Company Name	Disclosure
UMC (2303 TT) Outperform 12-month target: TWD258.00 - PER Valuation: TWD 258.00 - PER Price: TWD151.00	None

A reference to "Macquarie" is a reference to the entity within the Macquarie Group of companies (comprising Macquarie Group Limited and its worldwide affiliates and subsidiaries) that is relevant to this disclosure. Important disclosure information regarding the subject companies covered in this report is available publicly at www.macquarie.com/research/disclosures. Clients receiving this report can additionally access previous recommendations (from the year prior to publication of this report) issued by this report's author at <https://www.macquarieinsights.com>.

TO THE EXTENT THAT ANY COMPANY MENTIONED IN THIS COMMUNICATION IS A COMPANY LISTED IN THE ANNEX TO EXECUTIVE ORDER 14032 OF JUNE 3, 2021 FROM THE PRESIDENT OF THE UNITED STATES OF AMERICA ("EO14032") OR IN THE OFAC NON-SDN CHINESE MILITARY-INDUSTRIAL COMPLEX COMPANIES LIST AS UPDATED FROM TIME TO TIME AND YOU ARE A "UNITED STATES PERSON" AS DEFINED UNDER EO14032, YOU ARE REMINDED THAT YOU MAY BE PREVENTED BY EO14032 FROM TRADING THE SECURITIES OF SUCH A COMPANY.

Recommendation history

Company name	Date	Recommendation	Target price
UMC (2303 TT)	15-Jul-2026	Outperform	TWD 258.00
	1-Feb-2024	Outperform	TWD 74.00
	26-Oct-2023	Outperform	TWD 74.02
	27-Jul-2023	Outperform	TWD 77.65



Sensitivity analysis:

Clients receiving this report can request access to a model which allows for further in-depth analysis of the assumptions used, and recommendations made, by the author relating to the subject companies covered. Contact <https://www.macquarieinsights.com/contacts> for access requests.

Analyst Certification

We hereby certify that all the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. The views were reached independently, without any attempt of influence from anyone outside of Macquarie's Research business. Any and all opinions expressed have a reasonable basis, which are the result of the exercise of due care and skill. We confirm we (the authors), our team, and our associates do not hold securities in our sector of coverage, except for holdings disclosed to Research Compliance where we have received approval to hold temporarily until we are able to dispose of the holdings, and confirm the presence of disclosure language on this research which relates to this personal holding. To the best of our knowledge, we are not in receipt of, nor have included in this report, information considered to be inside information at the time of publication. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. We acknowledge that the Analysts responsible for preparing this report receive compensation from Macquarie that is based upon various factors including Macquarie Group Ltd.'s overall revenues, a portion of which are generated by Macquarie Group's Investment Banking activities.

General disclaimers:

Other than Macquarie Bank Limited ABN 46 008 583 542 ("MBL"), any Macquarie Group entity noted is not an authorized deposit-taking institution for the purposes of the Banking Act 1959 (Commonwealth of Australia), and that entity's obligations do not represent deposits or other liabilities of MBL. Any investments are subject to investment risk including possible delays in repayment and loss of income and principal invested. MBL does not guarantee or otherwise provide assurance in respect of the obligations of that entity. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. You are permitted to store, display, analyze, modify, reformat, and print the information made available to you in the research only for your own use. You may not resell or reverse engineer this information to calculate or develop any index for disclosure and/or marketing or create any other derivative works or commercial product(s), data or offering(s) without the express written consent of the Macquarie Group. You are not permitted to publish, transmit, or otherwise reproduce this information, in whole or in part, in any format to any third party without the express written consent of the Macquarie Group. This foregoing restriction includes, without limitation, using, extracting, downloading or retrieving this information, in whole or in part, to train or finetune a machine learning or artificial intelligence system, or to provide or reproduce this information, in whole or in part, as a data source, prompt or input to any such system. If you are not the intended recipient you must not use or disclose the information in this research in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements which sets out how we must seek to identify and manage all material conflicts of interest. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account your investment objectives, financial situation or particular needs. Macquarie salespeople, traders and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions which are contrary to the opinions expressed in this research. Macquarie Research produces a variety of research products including, but not limited to, fundamental analysis, macro-economic analysis, quantitative analysis, and trade ideas. Recommendations contained in one type of research product may differ from recommendations contained in other types of research, whether as a result of differing time horizons, methodologies, or otherwise. Before making an investment decision on the basis of this research, you need to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of your particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise. The date and timestamp for above share price and market cap is the closed price of the price date. #CLOSE is the final price at which the security is traded in the relevant exchange on the date indicated. Members of the Macro Strategy team are Sales & Trading personnel who provide desk commentary that is not a product of the Macquarie Research department or subject to FINRA Rule 2241 or any other regulation regarding independence in the provision of equity research.

MSCI disclaimers:

Where this report contains any MSCI sourced information, such information is the exclusive property of MSCI Inc. (MSCI). Without the prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI and the MSCI indexes are services marks of MSCI and its affiliates.

Disclosure of use of artificial intelligence:

Macquarie may utilize various AI tools and/or sources to assist in providing research services, including but not limited to use in fact-finding, data analysis and drafting of research content. However, duly qualified research analysts are ultimately responsible for all content and recommendations contained in Macquarie's research reports.

Country-specific disclaimers:

Australia: In Australia, research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947), a participating organization of the Australian Securities Exchange. Macquarie Securities (Australia) Limited staff involved with the preparation of research have regular interaction with companies they cover. Additionally, Macquarie Group Limited does and seeks to do business with companies covered by Macquarie Research. There are robust information barriers in place to protect the independence of Macquarie Research's product. However, recipients of Macquarie Research should be aware of this potential conflict of interest. **New Zealand:** In New Zealand, research is issued and distributed by Macquarie Securities (NZ) Ltd, a NZX Firm. **United Kingdom and the EEA:** In the United Kingdom and the European

Economic Area, research is distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated by the Financial Conduct Authority (No. 193905). Hong Kong & **Mainland China:** In Hong Kong, research is issued and distributed by Macquarie Capital Limited, which is licensed and regulated by the Securities and Futures Commission. Only non-A share research is distributed into Mainland China by Macquarie Capital Limited. **Japan:** In Japan, research is issued and distributed by Macquarie Capital Securities (Japan) Limited (Tokyo Branch), the Financial Instruments Business Operator, registered with the Financial Services Agency (Registration number: Kanto Financial Bureau (FIBO) No. 231), the member of the Tokyo Stock Exchange, Inc., Osaka Exchange, Inc. and the member of Japan Securities Dealers Association. Its Designated Dispute Resolution Institution is Financial Instruments Mediation Assistance Center ("FINMAC"). **Indonesia:** In Indonesia, research is issued and distributed by PT Macquarie Sekuritas Indonesia, a licensed securities company and regulated by Financial Services Authority (Otoritas Jasa Keuangan) and is a member of the Indonesia Stock Exchange. The securities discussed in this report may not be suitable for all investors. **Malaysia:** In Malaysia, research is issued and distributed by Macquarie Capital Securities (Malaysia) Sdn. Bhd. (Company registration number: 199801007342 (463469-W)) which is a Participating Organisation of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission. Macquarie may be an Issuer of Structured Warrants on securities mentioned in this report. **Taiwan:** In Taiwan, research is issued and distributed by Macquarie Capital Limited, Taiwan Securities Branch, which is licensed and regulated by the Financial Supervisory Commission. No portion of the report may be reproduced or quoted by the press or any other person without authorisation from Macquarie. Nothing in this research shall be construed as a solicitation to buy or sell any security or product. The recipient of this report shall not engage in any activities which may give rise to potential conflicts of interest to the report. Research Associate(s) in this report who are registered as Clerks only assist in the preparation of research and are not engaged in writing the research. Macquarie may be in past one year or now being an Issuer of Structured Warrants on securities mentioned in this report. **Thailand:** In Thailand, research is produced, issued and distributed by Macquarie Securities (Thailand) Ltd. Macquarie Securities (Thailand) Ltd. is a licensed securities company that is authorized by the Ministry of Finance, regulated by the Securities and Exchange Commission of Thailand and is an exchange member of the Stock Exchange of Thailand. The Thai Institute of Directors Association has disclosed the Corporate Governance Report of Thai Listed Companies made pursuant to the policy of the Securities and Exchange Commission of Thailand. Macquarie Securities (Thailand) Ltd does not endorse the result of the Corporate Governance Report of Thai Listed Companies but this Report can be accessed at: <http://www.thai-iod.com/en/publications.asp?type=4>. Macquarie Securities (Thailand) Limited may be an issuer of derivative warrants on the securities mentioned in this report. **South Korea:** In South Korea, unless otherwise stated, research is prepared, issued and distributed by Macquarie Securities Korea Limited, which is regulated by the Financial Supervisory Services. Information on analysts in MSKL is disclosed at <http://dis.kofia.or.kr/websquare/index.jsp?w2xPath=/wq/fundMgr/DISFundMgrAnalystStat.xml&divisionId=MDIS03002001000000&serviceId=SDIS03002001000>. **Singapore:** In Singapore, research is issued and distributed by Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services license holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 34, 36 and 45 of the Financial Advisers Act. All Singapore-based recipients of research produced by Macquarie Capital (USA) Inc. represent and warrant that they are institutional investors as defined in the Securities and Futures Act. Singapore recipients should contact Macquarie Capital Securities (Singapore) Pte Ltd at +65 6601 0888 for matters arising from, or in connection with, this report. **United States:** In the United States, research is issued and distributed by Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA. Macquarie Capital (USA) Inc. accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc.'s affiliate's analysts are not registered as research analysts with FINRA, may not be associated persons of Macquarie Capital (USA) Inc., and therefore may not be subject to FINRA rule restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. Information regarding futures is provided for reference purposes only and is not a solicitation for purchases or sales of futures. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures, or contact your registered representative at 1-888-MAC-STOCK, or write to the Supervisory Analysts, Research Department, Macquarie Capital (USA) Inc, 660 Fifth Ave, 13th Floor, New York, NY 10103. **Canada:** In Canada, research is distributed by Macquarie Capital Markets Canada Ltd., a (i) member of the Investment Industry Regulatory Organization of Canada (IIROC) and the Canadian Investor Protection Fund, and (ii) participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures. IIROC Rule 3400 Disclosures can be obtained by writing to Macquarie Capital Markets Canada Ltd., 181 Bay St. Suite 3100, Toronto, ON M5J2T3. **India:** In India, research is issued and distributed by Macquarie Capital Securities (India) Pvt. Ltd. (CIN: U65920MH1995PTC090696), 92, Level 9, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051, India, which is a SEBI registered Research Analyst having registration no. INH000000545. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Any reference to the securities quoted in example in the report are only for illustration and are not recommendatory. During the past 12 months, Macquarie Group Limited or one of its affiliates may have provided securities services to companies mentioned in this report for which it received compensation for Broking services. Macquarie Group Limited together with its affiliates may have a beneficial interest in the debt securities of the companies mentioned in this report.

Investments in securities market are subject to market risks. Read all the related documents carefully before investing.

© Macquarie Group