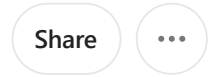


Deep|UMC: UTR Climbing QoQ; Entering Advanced Nodes and SiPho Manufacturing

JUN 18, 2026 · PAID



Over the past two years, mature processes have been squeezed by weak demand for consumer electronics and aggressive capacity expansion in mainland China, leaving capacity utilization and foundry pricing under sustained pressure. However, starting from 2026, mature processes are breaking free from the downturn as demand begins to rebound. In addition to inventory restocking in consumer electronics, robust AI demand, geopolitical factors, and TSMC's gradual phase-out of mature processes are altogether reshaping the supply-demand dynamics of legacy nodes.

On the supply side, the explosion of AI and high-performance computing demand has led TSMC to highly concentrate the vast majority of its CapEx on advanced nodes below 5nm, crowding out new capacity investments in mature processes. The fixed costs of constructing new mature-node fabs remain prohibitively high. Driven by margin considerations, non-Chinese foundries generally lack the incentive to expand mature capacity, thereby constraining overall supply growth.

On the demand side, growth in AI server peripheral chips and power management ICs provides solid support for mature processes. Furthermore, supply chain restructuring driven by geopolitical tensions (the "China-Plus-One" strategy) is accelerating fabless customers' migration of mature-process orders from mainland China to alternative foundry hubs in Taiwan or Singapore.

Optical Communications and Advanced Process Layout

UMC has secured a 12-inch SiPho process technology license from imec, extending its existing 8-inch SiPho mass-production experience into 12-inch wafers to establish a mass-producible PIC platform. This technology offers low-latency, high-bandwidth, and low-power solutions tailored for data centers. UMC's current optical communication client portfolio includes Coherent, Celestial AI, Hyperlight, and

Sifotonics. Optical communication revenue is projected to account for 5% to 10% of total revenue by 2027.

Regarding the 12nm FinFET platform, UMC is collaborating with Intel on development and manufacturing at Intel's Arizona site. This partnership allows UMC to extend its technological capabilities from mature processes into 12nm advanced nodes without bearing enormous wafer fab capex. This node will target applications in IoT, Wi-Fi connectivity, and high-speed interfaces, enabling UMC to break free from pure mature-process price wars. Currently, cooperation is progressing smoothly; the joint venture is expected to deliver PDKs and related IPs to customers in 2026, commence tape-outs in 2027, and initiate commercial mass production by the end of 2027.

Beyond 12nm, industry channels indicate that UMC is also collaborating with Intel on 3nm. Mirroring the structural setup of the 12nm project, UMC will not need to deploy massive capex. The goal of this collaboration is to develop a process node with performance close to TSMC's 3nm, enabling Intel to offer 3nm foundry services to external clients.

Mature Process Price Hikes

Market demand for mature processes has staged a clear recovery in 2026. Against this backdrop, both UMC and Vanguard have adopted aggressive pricing strategies. UMC has explicitly outlined plans to selectively raise prices in the second half of 2026, with price hikes for specific processes ranging from 8% to 10%. Looking into 2027, UMC has already communicated its price adjustment roadmap to customers, underscoring management's confidence in mid- to long-term mature-process demand.

TSMC Cutting Mature Process Capacity

To fully mobilize resources for 3nm and more advanced nodes, and to expand advanced packaging capacities such as CoWoS, TSMC plans to scale back its mature process capacity gradually. This strategy provides UMC with a distinct order spillover dividend.

In the short term, TSMC has progressively notified customers of capacity reductions, prompting clients to seek partnerships with foundries with stable, proven, mature capabilities; UMC has already secured order wins from several of these customers. In the mid- to long term, transitioning from tape-out to commercial production typically requires approximately 1 year of validation time. Consequently, the tangible revenue contribution to UMC from this order migration is expected to become more pronounced after the second half of 027. UMC's Singapore P3 fab is expected to gradually ramp up capacity in the second half of 2026, while the P4 fab is set to introduce new capacity in 027. These incremental capacities are well-positioned to capture TSMC's mature-process order spillovers.

Financial Forecasts

We now anticipate capacity utilization to tick upward quarter by quarter, reaching 90% in 2H26 and surpassing 90% in Q27. In terms of pricing, we estimate that 3Q26 ASP will rise by approximately 5%, with two separate price hikes projected for next year. We believe that sustained high-capacity utilization, upward ASP adjustments, and UMC's proactive expansion into advanced nodes, SiPho, and TFLN will prompt the market to re-evaluate and focus on UMC's value. We forecast UMC's 2027 and 2028 EPS to reach NT\$9.8 and NT\$12.1, respectively.

UMC					
	2024	2025	2026E	2027E	2028E
Financials (NT\$mn, except EPS and Earnings per ADR)					
Revenues	232,303	237,553	282,348	387,927	438,798
YoY %		2.3%	18.9%	37.4%	13.1%
Gross profit	75,654	68,906	95,200	174,440	209,208
Gross margin %	32.6%	29.0%	33.7%	45.0%	47.7%
Total OPEX	(24,042)	(24,958)	(26,292)	(29,090)	(30,602)
Opex %	10.3%	10.5%	9.3%	7.5%	7.0%
Operating profit	51,613	43,949	68,908	145,351	178,606
Operating margin %	22.2%	18.5%	24.4%	37.5%	40.7%
Net income	47,211	41,716	64,514	122,774	150,707
Net margin %	20.3%	17.6%	22.8%	31.6%	34.3%
EPS (NT\$)	3.79	3.34	5.16	9.83	12.07
YoY %		-11.9%	54.5%	90.5%	22.8%
Earnings per ADR (US\$)	0.59	0.53	0.82	1.55	1.91
Operating data					
Wafer Shipment (ku)	7,754	8,710	10,204	12,622	13,265
YoY %		12.3%	17.2%	23.7%	5.1%
ASP (US\$)	925	870	875	972	1,046
YoY %		-6.0%	0.6%	11.1%	7.6%

Source: Company documents, FUNDA estimates



Recommend FUNDA to your readers

FundaAI provides AI Invest OS, including AI Agents, equity research reports, and research data.
Twitter@FundaAI

Recommend



Discussion about this post