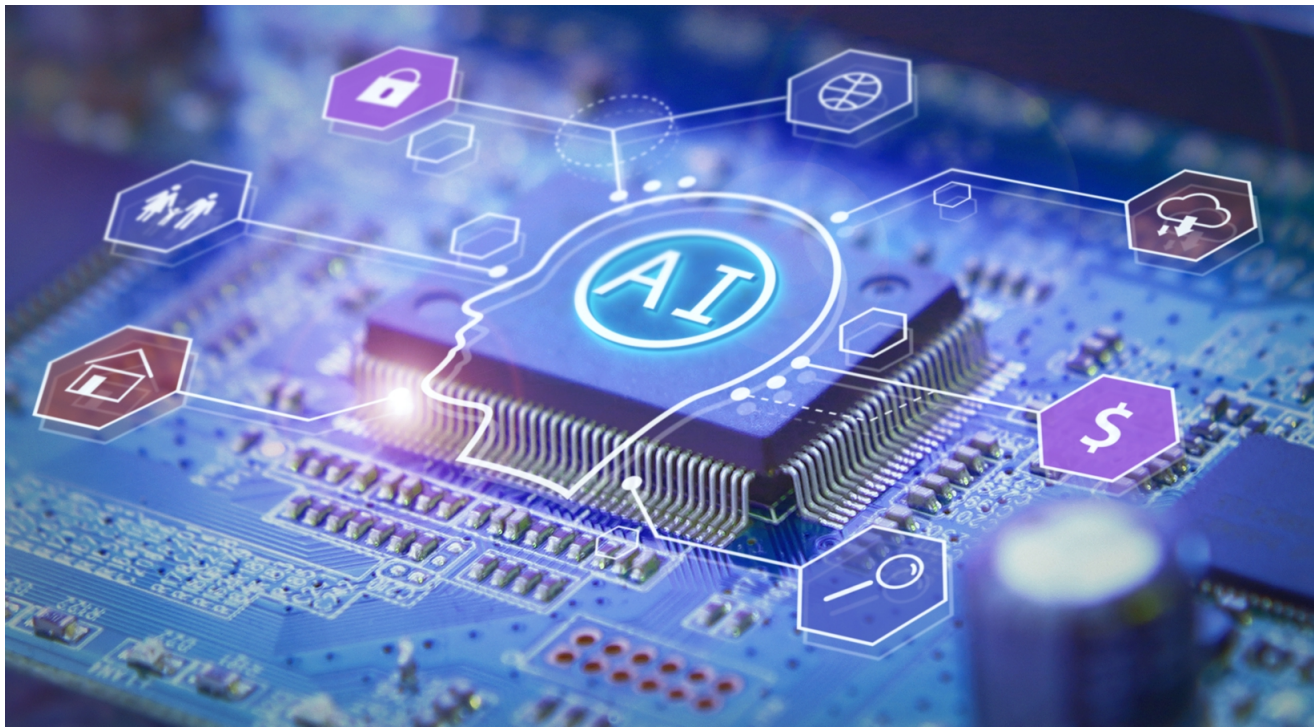


Asia Semiconductors

Robust Cloud AI outlook in 2026 across GPUs and ASICs



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APAC Semiconductors Valuation: Foundry & fabless

Company name	Ticker	Rating	Market cap (US\$m)	Price target (LC)	Share price (LC)	EPS growth (%)		P/E (x)		P/BV (x)		ROE (%)		Dividend yield (%)	
						2026E	2027E	2026E	2027E	2026E	2027E	2026E	2027E	2026E	2027E
Foundry & Memory															
Hua Hong	1347.HK	Neutral	28,529	104	130	321.6	21.8	125	103	4.2	4.0	3.4	4.0	0.0	0.0
Nanya Tech	2408.TW	Buy	30,529	345	311	2,042.1	56.3	7	4	3.3	2.1	63.1	59.8	0.5	5.9
PSMC	6770.TW	Neutral	8,381	60.0	64	n.a.	2.9	11	10	2.5	2.0	26.7	21.6	0.0	0.0
SMIC	0981.HK	Neutral (CBE)	81,136	76	80	119.5	51.8	55	36	3.6	3.2	6.8	9.4	0.0	0.0
TSMC	2330.TW	Buy	1,855,556	3,000	2,255	49.2	32.0	23	17	7.9	5.8	40.1	38.9	1.0	1.2
UMC	2303.TW	Buy	45,535	108	114	36.4	25.4	25	20	3.4	3.2	14.3	16.5	2.1	2.8
Vanguard	5347.TWO	Neutral	9,598	155	162	38.3	13.2	27	24	3.5	3.3	12.9	14.0	2.8	2.8
WIN Semi	3105.TWO	Neutral	7,143	535	531	73.9	63.8	76	47	5.2	4.8	6.9	10.7	0.4	0.7
Average								43.5	32.6	4.2	3.6				
Fabless															
Alchip	3661.TW	Buy	12,633	6,000	4,895	122.6	37.9	32	23	7.8	6.4	27.3	30.7	0.7	0.7
ASMedia	5269.TW	Buy	3,512	1,700	1,480	29.4	21.2	16	13	2.8	2.5	18.5	20.3	3.0	3.8
Aspeed	5274.TWO	Buy	21,327	22,000	17,780	88.4	69.9	91	53	55.9	35.3	75.5	80.9	0.4	0.8
Faraday	3035.TW	Neutral	1,744	179	211	68.9	127.6	45	20	4.0	3.5	9.2	18.9	1.4	0.9
GUC	3443.TW	Buy	21,847	5,500	5,140	74.3	86.2	105	56	40.9	26.8	44.2	57.5	0.3	0.4
MediaTek	2454.TW	Buy	196,449	5,500	3,860	(4.2)	157.7	61	24	15.7	12.0	25.5	57.7	1.4	1.3
Novatek	3034.TW	Neutral	9,374	440	486	8.7	2.0	17	16	4.1	3.9	25.4	24.6	5.8	4.7
Parade	4966.TWO	Neutral	1,992	580	795	(0.5)	36.1	23	17	2.6	2.4	11.7	14.8	2.2	2.2
Realtek	2379.TW	Neutral	9,406	525	578	15.2	3.3	17	17	5.2	4.9	31.1	29.8	4.1	4.7
Silergy	6415.TW	Buy	6,931	700	562	62.3	86.9	54	29	5.4	4.7	10.4	17.4	0.5	0.7
Average								46.0	26.8	14.4	10.2				
Average (ex-Design service/IP)								39.8	24.2	13.1	9.4				

Note: Priced as of 22 May 2026 ; Notes: DPS paid in 2026/2027 are based on 2025/2026 earnings respectively.

Source: Company data, LSEG, UBS

APAC Semiconductors Valuation: Backend & silicon wafers

Company name	Ticker	Rating	Market cap (US\$m)	Price target (LC)	Share price (LC)	EPS growth (%)		P/E (x)		P/BV (x)		ROE (%)		Dividend yield (%)	
						2026E	2027E	2026E	2027E	2026E	2027E	2026E	2027E	2026E	2027E
Semi-backend															
Amkor	AMKR.O	Neutral	16,186	80	66	45.7	25.3	30	24	3.3	3.0	11.6	13.1	0.7	0.8
ASE	3711.TW	Buy	79,179	660	561	86.0	51.1	32	21	6.4	5.4	20.8	27.5	1.1	2.0
ASMPT	0522.HK	Buy	9,718	200	184	106.1	41.2	35	25	4.2	3.8	12.4	16.1	0.8	1.5
Chipbond	6147.TWO	Buy	5,092	230	216	44.5	40.5	40	28	3.3	3.1	8.4	11.3	1.7	1.3
ChipMOS	8150.TW	Buy	1,768	105	79	473.8	36.4	20	15	2.2	2.0	11.3	14.1	1.6	1.6
Chroma ATE	2360.TW	Buy	30,645	2,600	2,270	50.9	30.7	54	42	23.2	18.4	48.2	49.4	0.4	0.9
Gudeng	3680.TWO	Buy	1,731	710	568	26.5	67.6	48	28	4.6	4.3	10.7	15.8	1.2	1.5
GPTC	3131.TWO	Buy	2,614	4,000	2,820	72.6	54.3	36	23	13.4	10.2	41.7	49.6	1.1	1.9
Hon Precision	7769.TW	Buy	44,133	8,800	7,730	46.8	87.0	69	37	20.0	14.9	31.6	46.3	0.7	1.0
KYEC	2449.TW	Buy	11,484	380	296	57.0	69.7	29	17	6.5	5.3	23.5	34.1	2.0	2.2
Powertech	6239.TW	Neutral	6,817	240	283	66.5	20.8	23	19	3.4	3.0	15.5	16.9	3.0	1.6
Average								37.8	25.4	8.2	6.7				
Silicon wafer															
GlobalWafers	6488.TWO	Buy	10,878	800	717	3.9	47.7	42.1	28.5	3.5	3.3	8.5	11.9	0.8	0.9

Note: Priced as of 22 May 2026 ; Notes: DPS paid in 2026/2027 are based on 2025/2026 earnings respectively.

Source: Company data, LSEG, UBS

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Section 1

Summary

Coverage summary

- YTD, the SOX is up 69%; our coverage universe is on average up 63% (TSMC +45%, MediaTek +170%, UMC +131%). In comparison, the Dow is up 5% and TAIEX up 46%.
 - We reiterate our **Buy** on **TSMC**. Fundamentally, we expect N2 foundry demand to reach ~220kwpm by 2028, larger than N3's foundry demand in 3rd year of mass production. Competition is manageable, and TSMC should maintain its >80% market dominance in leading-edge foundry and technology leadership in adv packaging.
 - For the mature foundry segment, we are constructive about improving supply/demand outlook in next 2-3 years, considering more disciplined China competition, TSMC optimizing resource of mature capacity for advanced packaging and demand recovery. We maintain our anti-consensus, positive view for the mature foundry space.
 - We have a Buy rating on **ASE**. With advanced packaging becoming more critical to enable next gen Cloud & Edge AI, we believe ASE should be key beneficiary to significantly increase value add and strengthen margin profile. We are still in early stage of earnings upgrade cycle.
 - Among **Taiwanese fabless** we like **MediaTek** for its structural share gain in a large Google TPU market. For server, we have a Buy rating on **Aspeed** for its accelerating TAM and silicon content expansion.

Section 2

Rise of Google's TPUs

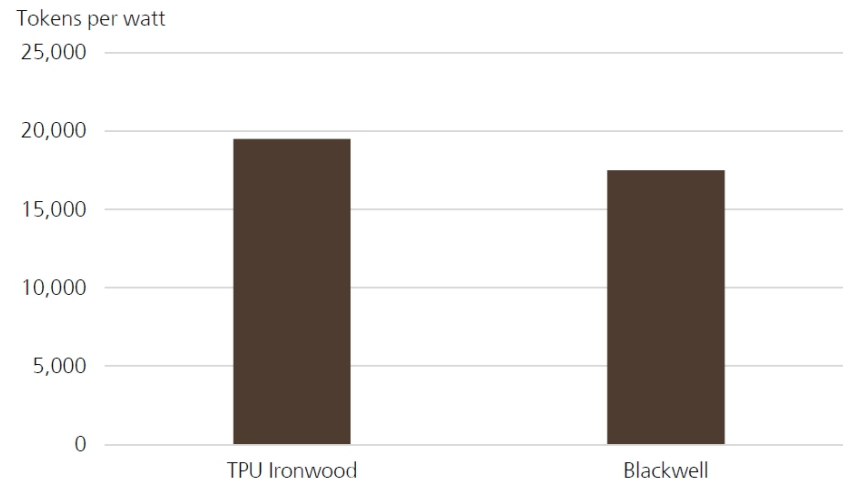
Google adopting 2 TPU tracks, MediaTek gaining design service share

- Broadcom has been Google's sole TPU design service partner for 10 years. However, our analysis suggests the landscape is shifting: Google has been moving more parts of front-end TPU design in-house in recent years.
- Given tight TSMC capacity, we foresee Google ramping both Broadcom v8i and MediaTek v8t projects over H226 to 2027, and maintaining dual tracks for the TPU v9 ramp in 2028.
- While Broadcom remains a key partner, MediaTek should gain share in coming years.
 - We forecast TPU sales of US\$16bn/30.5bn for MediaTek in 2027/28 with upside longer term.
 - Broadcom could ship 89/66% of TPUs in 2026/27E, while MediaTek's share expands from 11% in 2026E to 34% in 2027E.
 - Our cost analysis suggests that on a per TPU die basis, MediaTek's service fee is over 50% less than Broadcom's.

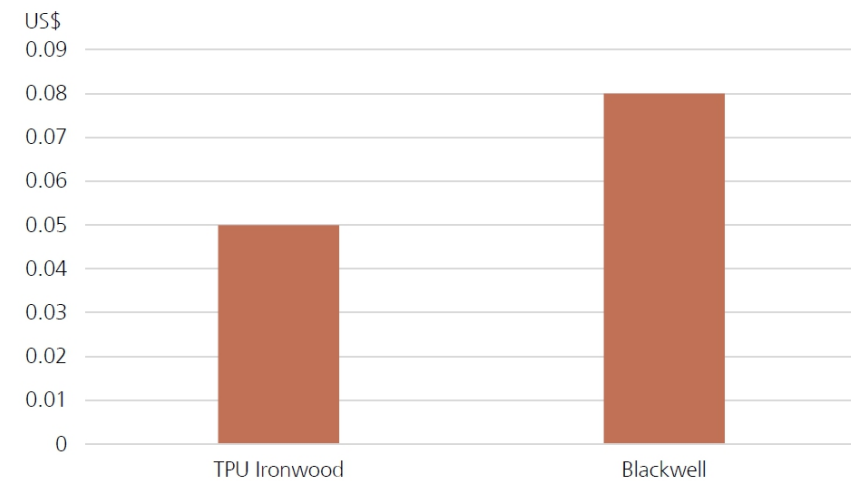
GPU vs TPU win-win in 2026-27. w/ TPU volume from a low base

- There are two key features in TPUs. 1) The **Matrix Multiply Unit (MXU)** in TPU's Tensor Core performs large systolic array compute, which allows data to flow through the chip like a heartbeat, which is significantly more energy efficient than GPUs, which need to constantly move data in and out of memory. 2) The **Sparse Core** introduced in TPU v4 is a dedicated unit that handles the "sparse" lookup and routing required by Mixture of Experts (MoE), lifting compute efficiency.

Analysis of TPUs vs GPUs' performance via tokens-per-watt



TPU Ironwood has lower inferencing cost per token than Blackwell

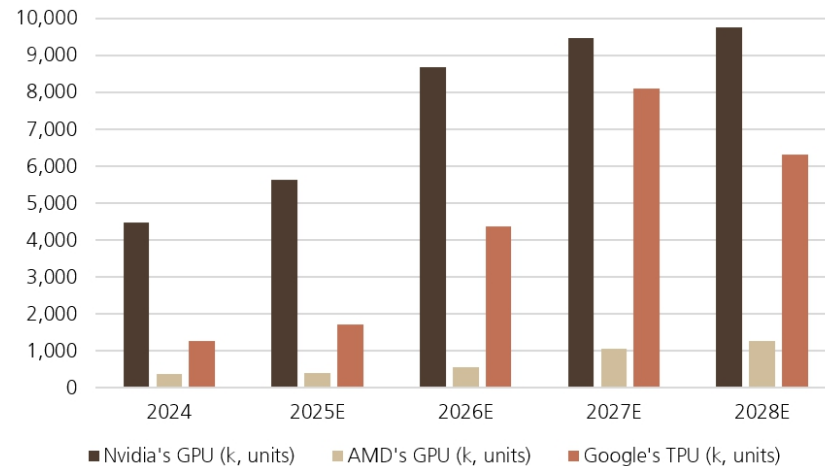


Source: Company data, UBS estimates

TPU demand supported by Google's internal & external demand

1. Google has successfully deployed TPUs for the majority, if not all, of its internal workloads for training and inferencing.
2. Google is a key, major frontier LLM developer, along with OpenAI, Anthropic, and Meta. Development of frontier models generate substantial training demand for its TPUs.
3. Growing **external demand**. From H225, when Google launched TPU v7 Ironwood, several AI developers including Anthropic and Meta have shown growing interest in using TPUs.
4. Google could also lift TPU penetration through its **cloud service**.

UBSe on shipment of Nvidia's GPUs, AMD's GPUs, Google's TPUs , from 2024 to 2028E



Google to ramp both v8i and v8t in 2027 to support TPU demand

- Given the extreme tight capacity at TSMC for N3 and CoWoS, we expect Google to ramp both v8i (Broadcom) and v8t (MediaTek) to meet fast expanding TPU demand from H226 through 2027.
- We estimate total TPU shipments to come to 4.1m units in 2026, with Broadcom shipping 89% of volume and MediaTek shipping 11%. In 2027, we forecast TPU units to grow to 10m units, with Broadcom shipping 66% of volume and MediaTek shipping 34%.

TPU ASIC sales forecast by Broadcom and MediaTek

	2024	2025	2026E	2027E	2028E	2029E
ASIC sales (US\$m)						
Broadcom	7,676	13,204	26,638	59,838	76,838	
Anthropic rack			7,750	22,000	4,000	
MediaTek			2,025	15,975	30,450	36,000
TPU units (k)						
Broadcom						
v5	1,280	440				
v6 (Trillium)		1,160	640			
v7 (Ironwood)		140	2,790	2,670		
v8i			250	4,090	5,690	
v9AX					270	
Total	1,280	1,740	3,680	6,760	5,960	-
MediaTek						
v8t			450	3,550	100	
v9					1,500	1,800
Total			450	3,550	1,600	1,800

ASIC cost comparison of Broadcom and MediaTek for TPU

	TPU 8i	TPU 8t
ASIC partner	Broadcom	MediaTek
ASIC ASP (US\$)	14,000	4,500
# of logic dies	2	1
ASIC ASP per logic die basis (US\$)	7,000	4,500
ASIC gross margin	55%	42%
ASIC service cost Google pays per TPU die	3,850	1,890

Source: Company data, UBS estimates

TPU could shift MediaTek into a true Cloud & Edge AI fabless

- Our scenario analysis estimates MediaTek to potentially ship 3.55m units of TPU v8t 2027, and that translates into US\$16bn of sales, and accounts for 44% of MediaTek's business.

Scenario analysis of MediaTek's TPU opportunity

	2026E	2027E	2028E	2029E	2030E
Google's TPU sales (US\$m)	2,028	16,000	30,450	36,000	40,000
Google's TPU sales (NT\$m)	63,945	504,000	959,175	1,134,000	1,260,000
% of total sales	10%	44%	57%	59%	60%
Gross profits (NT\$m)	26,857	211,680	402,854	476,280	529,200
Gross margin	42%	42%	42%	42%	42%
OPEX (NT\$m)	12,789	27,720	47,959	51,030	56,700
OPEX ratio	20.0%	5.5%	5.0%	4.5%	4.5%
Operating profits (NT\$m)	14,068	183,960	354,895	425,250	472,500
Operating margin	22%	37%	37%	38%	38%
Tax rate	13.4%	14.5%	14.5%	14.5%	14.5%
Net profits (NT\$m)	12,181	157,286	303,435	363,589	403,988
EPS contribution (NT\$)	7.6	98.8	190.5	228.3	253.7
Consolidated EPS (NT\$)	63.4	163.4	259.3	305.4	339.5

Source: Company data, UBS estimates

Major suppliers along the supply chain

Semiconductors	Google	NVIDIA
Foundry + CoWoS	TSMC, ASE	TSMC, ASE
Assembly Outsourcing	ASE, Amkor	ASE, Amkor
Back-end Test	King Yuan (Broadcom, NVIDIA, MediaTek)	King Yuan, ASE (2nd source)
ASIC Design Service	Broadcom through v7/v8AX, Mediatek v8X	N/A
IC Distribution	WT Micro (TPU)	N/A
HBM	ASIC server: Hynix 70% / Samsung 30%	Hynix 60%+, Micron 24%, Samsung 15%
BMC	Google internal, Aspeed (mini-BMC)	Aspeed
Test Platform	Advantest	Advantest FT, Chroma SLT
Probe Card	MPI (CHPT load board)	Technoprobe

Hardware	Google	NVIDIA
ASIC Server	Celestica, Hon Hai	N/A
GPU Server	NVIDIA	NVIDIA
GPU Server Racks	Quanta, Hon Hai from VR	Hon Hai, Quanta, Wistron, SMCI etc.
Switch/Networking	Celestica	Wistron ODM Spectrum, Hon Hai Switch Tray
Substrate	Unimicron, Nanya PCB (late 26)	Ibiden, Unimicron
PCB	Victory, ISU Petasys, Shennan	HDI: Victory, Unimicron. MLB: Wus, TTM, ISU, Avary
CCL	Panasonic, Shengyi, Elite Material	Panasonic, Isola, Shengyi, Elite, Doosan
Heatspreader/Stiffener	GPU lid: Jentech, TPU stiffener: Jentech	Lid/stiffener main: Jentech, legacy: I-Chiun
Liquid Cooling (ASIC)	Boyd, Cooler Master, AVC	N/A
Liquid cooling GPU	Cooler master, Vertiv, AVC	AVC, Auras, Jentech, CoolerMaster
Power Supply Unit	Delta	Delta, Lite-On, Megmeet

Source: Company data, UBS estimates

Section 3

Quantifying per-GW AI server demand for capacity and sales opportunities

Capacity/sales implications for TSMC for every 1GW server investment

- Following multiple gigawatt (GW) server projects being announced by Open AI and several hyperscalers for Cloud AI, we analyze the implications for TSMC in terms of capacity, capex and sales upside.
- As key conclusions, for every 1GW server build-out:
 1. We estimate AI accelerators, CPUs and networking to require ~2-5kwpm of leading-edge (N3 or N2) capacity and ~3-6kwpm of CoWoS capacity.
 2. WFE spending for logic could be US\$1-2bn, including front-end capacity and CoWoS.
 3. The revenue potential for TSMC, as the major foundry for Cloud AI, could be US\$1-2bn, or ~1.0-1.5% sales upside for every incremental 1GW server project.

TSMC to gain content within Nvidia's new platforms

- Capacity requirements and sales upside for TSMC may vary across Nvidia, AMD and Broadcom (ASICs), given different computing architecture and design power.
- Our analysis shows that TSMC could gain more absolute content in the next several years within Nvidia's AI GPUs.
- For every 1GW, TSMC's sales upside could rise from US\$1.1bn for Blackwell Ultra/Rubin to US\$1.4-1.9bn for Rubin Ultra/Feynman.
- Higher content may come from a combination of process migration, increasing GPU units per rack and advanced packaging, such as CoWoS, along with a possible transition to panel-level packaging by 2028.

Broadcom/ASICs offer good content, while AMD is lower

- ASICs, given their nature of better efficiency for specific workloads, may generate more chip unit demand per GW vs. GPUs.
- Broadcom's designed TPU v7p for Google may require ~5kwpm of N3 capacity per 1GW vs. Nvidia's 2-4kwpm.
- TSMC may also get greater content as a percentage of rack value, at 10-11% from ASICs vs. 4-6% from GPUs.
- AMD's AI GPU likely requires the least demand for TSMC's capacity per GW, with ~1kwpm N2 capacity for the upcoming MI455, possibly due to the chiplet design.

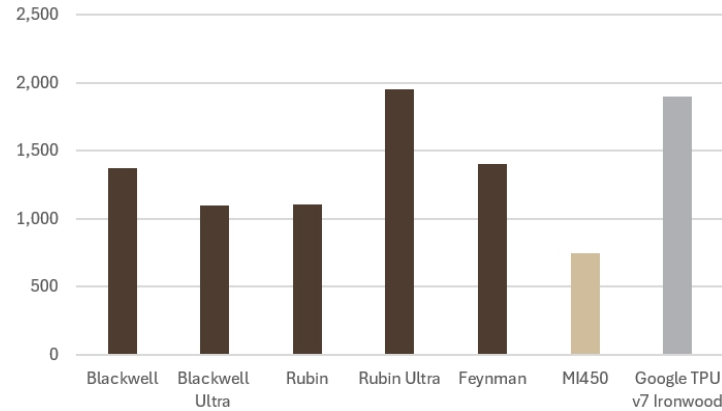
TSMC's sales and WFE spending per GW

	Blackwell	Blackwell Ultra	Nvidia Rubin	Rubin Ultra	Feynman	AMD MI450	Broadcom Google TPU v7 Ironwood
Year of introduction	2024	2025	2026	2027	2028	2026	2026
Process node	N4	N4	N3	N3P	A16	N2	N3
Power for AI Hardware, Net (kW)	870,000	870,000	870,000	870,000	870,000	870,000	870,000
Power per rack (kW)	120	150	225	600	1000	225	90
Dies per rack	144	144	144	576	576	72	128
Number of racks per GW	7,250	5,800	3,867	1,450	870	3,867	9,667
Rack ASP (US\$m)	\$3.3	\$4.2	\$5.7	\$23.8	\$31.0	\$4.5	\$1.8
Customer sales per GW (US\$bn - rack only)	\$23.9	\$24.4	\$21.9	\$34.5	\$26.9	\$17.5	\$17.4
TSMC's revenue opportunity (US\$m)	1,374	1,099	1,102	1,948	1,400	746	1,895
% of TSMC's 2025E sales	1.1%	0.9%	0.9%	1.5%	1.1%	0.6%	1.5%
% of customer sales	5.7%	4.5%	5.0%	5.6%	5.2%	4.3%	10.9%
Revenue per wafer (US\$)							
Front end	18,000	18,000	24,000	26,000	35,000	28,000	24,000
CoWoS	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Foundry capacity requirement (kwpm)	4.4	3.5	2.4	3.6	2.1	1.0	4.9
xPU	2.9	2.3	1.5	2.3	1.4	0.7	3.3
CPU	0.7	0.5	0.4	0.6	0.3	0.1	0.6
Networking	0.9	0.7	0.5	0.7	0.4	0.2	1.0
CoWoS capacity requirement (kwpm)	2.9	2.3	2.9	5.8	3.5	2.9	3.4
Good packages per CoWoS wafer	15.0	15	8	3	3	8	15
WFE spending - logic (US\$m)	1,232	986	970	2,118	1,271	728	1,609
Front end	797	638	535	1,248	749	293	1,094
CoWoS	435	348	435	870	522	435	516
WFE spending per kwpm (US\$m)							
Front end	180	180	225	350	350	300	225
CoWoS	150	150	150	150	150	150	150
xPU							
Watt per xPU die	600	700	900	900	1,500	2,500	550
Number of accelerator dies per GW	1,044,000	835,200	556,800	835,200	501,120	278,400	1,237,333
Wafer capacity consumption (kwpm)	2.9	2.3	1.5	2.3	1.4	0.7	3.3
12" wafer area (mm ²)	70,686	70,686	70,686	70,686	70,686	70,686	70,686
Die size (mm ²)	814	814	814	814	814	960	800
Yield	50%	50%	50%	50%	50%	60%	50%
Usable area	70%	70%	70%	70%	70%	80%	70%
Known good die per wafer	30	30	30	30	30	35	31
CPU							
Number of CPU dies per GW	261,000	208,800	139,200	208,800	125,280	69,600	309,333
Wafer capacity consumption (kwpm)	0.7	0.5	0.4	0.6	0.3	0.1	0.6

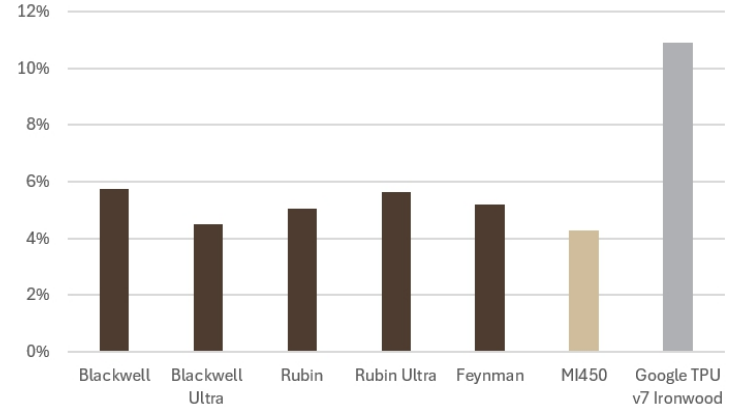
Source: Company data, UBS estimates

TSMC's sales and WFE spending per GW

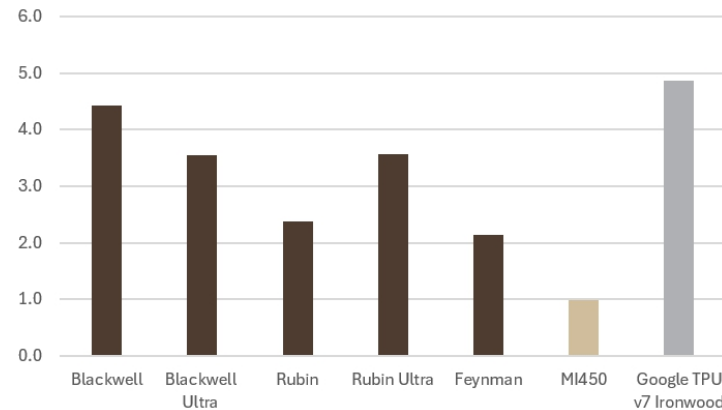
TSMC's revenue opportunity per 1GW (US\$ m)



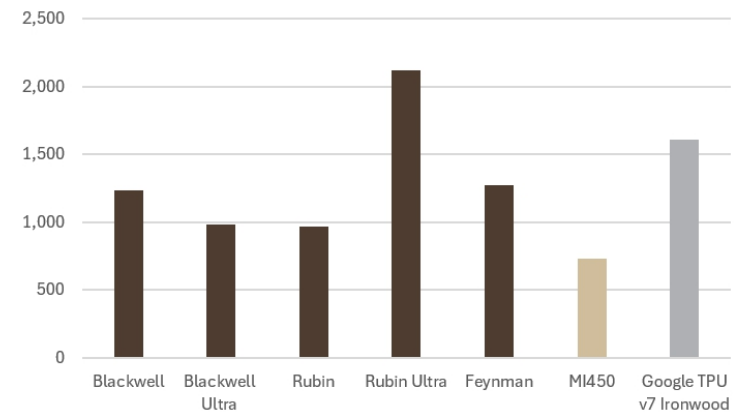
TSMC's sales opportunity as % of rack value



Foundry capacity requirement per 1GW (kwpm)



WFE spending for logic per 1GW (US\$ m)



Source: Company data, UBS estimates

TSMC's sales and WFE spending per GW

OpenAI deals	NVIDIA	AMD	Google	Total OpenAI
Deal Size (GW)	10.0	6.0	10.0	26.0
Racks (k)	38.7	23.2	96.7	158.5
Rack ASP (US\$m)	\$5.7	\$4.5	\$1.8	\$3.1
Customer compute sales (US\$bn)	\$219.2	\$104.9	\$174.0	\$498.1
ODM ASP per GW (US\$m)	\$20.2	\$16.1	\$16.0	\$17.6
ODM Revenue (US\$bn)	\$201.7	\$96.5	\$160.1	\$458.3
ODM Operating Profit (2-4%)	\$6.1	\$2.9	\$4.8	\$13.7
Power Supply Content GW (US\$m)	\$334.5	\$334.5	\$312.6	\$326.1
Power Supply Revenue (US\$bn)	\$3.3	\$2.0	\$3.1	\$8.5
Power Supply Operating Profit (20-25%)	\$0.8	\$0.5	\$0.7	\$1.9
Foundry Revenue per GW (US\$m)	\$1,102	\$745.7	\$1,894.9	\$1,324.8
TSMC Revenue (US\$bn)	\$11.0	\$4.5	\$18.9	\$34.4
TSMC Operating Profit (40-45%)	\$4.7	\$1.9	\$8.1	\$14.6

Source: Company data, UBS estimates

Monitoring AI data centre builds

Project	Capacity	Operator	Partner	Details
Project Matador	1.1 GW (planned)	N/A	Fermi	5,800 acre HyperGrid AI campus near Amarillo, Texas
Colossus 2	3 GW	xAI	Solaris Energy	AI training super-cluster in Memphis, Tennessee
Jupiter	2.3 GW	Oracle	BorderPlex, Stack	major data center build in Doña Ana County, New Mexico
New Carlisle (Rainier)	2.25 GW	AWS	Walbridge	first site for Project Rainier in New Carlisle, Indiana
Hyperion	2.0+ GW	Meta	DPR, Turner and Mortenson	2 GW by 2030 that can eventually scale to 5 GW. AI data center in Richland Parish, Louisiana
Horizon	2.0 GW	Poolside/CoreWeave	N/A	major data center build in West Texas; CoreWeave anchor tenant for first 0.25 GW
Cheyenne	1.8 GW	N/A	Crusoe and Tallgrass	could scale to 10 GW, tenant is unclear but some press reports suggest Oracle for OpenAI
Lordstown	1.5 GW	OpenAI/Oracle	SoftBank/SB Energy	large-scale AI campus in Lordstown, Ohio; the redevelopment of the former GM/Foxconn complex
Milam	1.5 GW	OpenAI/Oracle	SoftBank/SB Energy	major data center build in Milam County, Texas (near Austin)
Port of Victoria	1.5 GW	N/A	Crusoe and Blue Energy	Nuclear-powered data center build in Port of Victoria, Texas; up to 1.5 GW
Frontier	1.4 GW	N/A	Vantage	major data center build near Abilene, in Shackelford, TX, tenant unclear
Stargate 1 (Abilene)	1.2 GW	Oracle	Crusoe and Lancium	Stargate 1, first building is live, material ramp later this calendar year
Lighthouse	1.0 GW	Oracle	Vantage	data center campus in Port Washington, Wisconsin. Midwest location in the 4.5 GW Stargate expansion
Stargate UAE	1.0 GW	Oracle	G42	major data center build in Abu Dhabi. 0.2 GW expected to go live in 2026
Saline Township	1.0 GW	Oracle	Related Digital and Walbridge	major data center build in Saline Township, Michigan; part of Stargate expansion
Prometheus	1.0 GW	Meta	Will-Power	AI data center campus in New Albany, Ohio due online in 2026
EL Paso	1.0 GW	Meta	BorderPlex	AI-focused data center in El Paso, Texas
Fairwater 1	N/A	Microsoft	Walsh, Kiewit	Microsoft AI factory in Mount Pleasant, Wisconsin
Pennsylvania	N/A	AWS	N/A	Amazon investing \$20 billion for two AI campuses in Salem and Falls Townships, PA
Georgia	N/A	AWS	N/A	data center expansion in Atlanta, Georgia. \$11 billion investment
North Carolina	N/A	AWS	N/A	data center expansion in Richmond County, North Carolina. \$10 billion investment

Source: Company press releases, UBS Research US Software & Semi team

Announced AI commitments

Partner	Contract Value	Date Announced	Details
Nvidia	\$375bn est.	Sep-25	Partnership to deploy at least 10 GW of Nvidia GPUs for OpenAI's infrastructure, and Nvidia will invest up to \$100 billion progressively as each GW is deployed. Jensen Huang said in a CNBC interview that this is "additive" to the infrastructure projects that had already been announced, including Stargate. First phase targeted to come online in 2H26.
Oracle	~\$300bn	Jul-25	Cloud commitment to Oracle; a key part of the broader Stargate initiative
Microsoft	\$250bn	Oct-25	OpenAI contracted to purchase an incremental \$250 billion of Azure services with the next chapter of the OpenAI-Microsoft partnership.
Other Stargate Commits	\$200bn	Jan-25	Commitments to other partners as part of Stargate.
Broadcom	\$150bn est.	Oct-25	Agreement with Broadcom to deploy 10 GW worth of custom AI accelerators, OpenAI's first in-house GPU chip. OpenAI will design the chips, which will be developed and deployed in partnership with Broadcom. Deployment will start in 2H26.
AMD	\$105bn est.	Oct-25	Multi-year, multi-generation agreement to deploy 8 GW of AMD GPUs. First 1 GW deployment set to begin in 2H26. As part of the agreement, OpenAI will work with AMD as a core strategic compute partner to drive large-scale deployments and they'll be sharing technical expertise to optimize product roadmaps. AMD also issued OpenAI a warrant for up to 160 million shares of AMD common stock (up to 10% stake), structured to vest as milestones are achieved (GWs deployed).
AWS	\$38bn	Nov-25	Multi-year strategic partnership for \$38 billion, "which will have continued growth over the next 7 years." AWS is building GPU clusters for OpenAI designed for inference and training. OpenAI immediately starts utilizing AWS compute, with all capacity targeted to be deployed before the end of 2026 and the ability to expand further into 2027 and beyond.
CoreWeave	\$22.4bn	Sep-25	Agreement with CoreWeave to "power the training of its most advanced next-gen models." First agreement with CoreWeave was in March 2025 for \$11.9 billion, then it was expanded by \$4 billion in May 2025 before the latest addition of \$6.5 billion in Sept 2025.
Google Cloud	N/A	N/A	OpenAI said in July 2025 that they'll use GCP for ChatGPT workloads in a number of geographies. Google and OpenAI's CEOs have both acknowledged the partnership, but there have been no official press releases or dollar values announced.
Total Commitments	\$1.4tn+		

Source: Company press releases, UBS Research US Software & Semi team

Section 4

Co-packaged optics – lighting the way for AI acceleration

Industry ramping up for CPO tech maturity in three years

- With bandwidth increasing in the past several years, fibre optics has been replacing copper wires for long-reach interconnects in data centres.
- CPO integrates the optical engine close to the switch/xPU, critical to support higher bandwidth, better signal integrity with less power.
- While CPO is emerging for AI servers, traditional optical transceivers could coexist and remain mainstream solutions for the next 3 years.
- **Global implications and stock picks**
 - 1) For semis, CPO development could strengthen TSMC's moat in Cloud AI. ASE could capture significant market share for fibre array units coupling and switch board packaging.
 - 2) CPO migration would have mixed implications for traditional optical suppliers, eg, Lumentum, Innolight and DSP suppliers, eg, Marvell, but pluggable transceivers should keep most of the volume for the next 2-3 years.
 - 3) The adoption of CPO would be positive for ABF substrate makers as optics on substrate increases routing density and thus potential for higher layer count.
 - 4) Server ODMs would have higher added value.
 - 5) The industry is pushing the limits of traditional copper wires for scale up upgrade.

Quantifying the revenue opportunities – optical transceivers

- Our base case forecasts the whole optical transceiver SAM CAGR at 22%, from US\$12bn in 2025E to US \$32bn sales by 2030E, of which CPO solutions could reach 20% to arrive at US\$7bn sales by 2030E.
- In our upside scenario, we assume more Cloud AI development to support optical transceiver market to grow at a faster 30% CAGR in 2025-30E.

Optical transceiver SAM

	2025E	2026E	2027E	2028E	2029E	2030E	25-30E CAGR
Base case							
Market size (US\$bn)	12.0	15.6	19.5	23.4	28.1	32.3	
<i>Growth</i>		30%	25%	20%	20%	15%	22%
o/w pluggable transceivers	12.0	15.6	19.1	22.2	25.3	25.8	
Share in optical transceivers	100%	100%	98%	95%	90%	80%	
o/w CPO	0.0	0.0	0.4	1.2	2.8	6.5	
Share in optical transceivers	0%	0%	2%	5%	10%	20%	
Upside scenario							
Market size (US\$bn)	15.0	20.3	26.7	34.7	44.1	55.2	
<i>Growth</i>		35%	32%	30%	27%	25%	30%
o/w pluggable transceivers	15.0	20.3	26.2	32.3	38.4	41.4	
Share in optical transceivers	100%	100%	98%	93%	87%	75%	
o/w CPO	0.0	0.0	0.5	2.4	5.7	13.8	
Share in optical transceivers	0%	0%	2%	7%	13%	25%	

Source: UBS estimates

Quantifying the revenue opportunities – TSMC

- We forecast a 35% CAGR for silicon photonics industry sales in 2025-30, faster than the overall optical transceiver market's 22% CAGR in the same period. We forecast the silicon photonics industry sales to reach US\$4-6bn in 2028-30. In our upside scenario, we assume a 45% 2025-30E CAGR.

TSMC

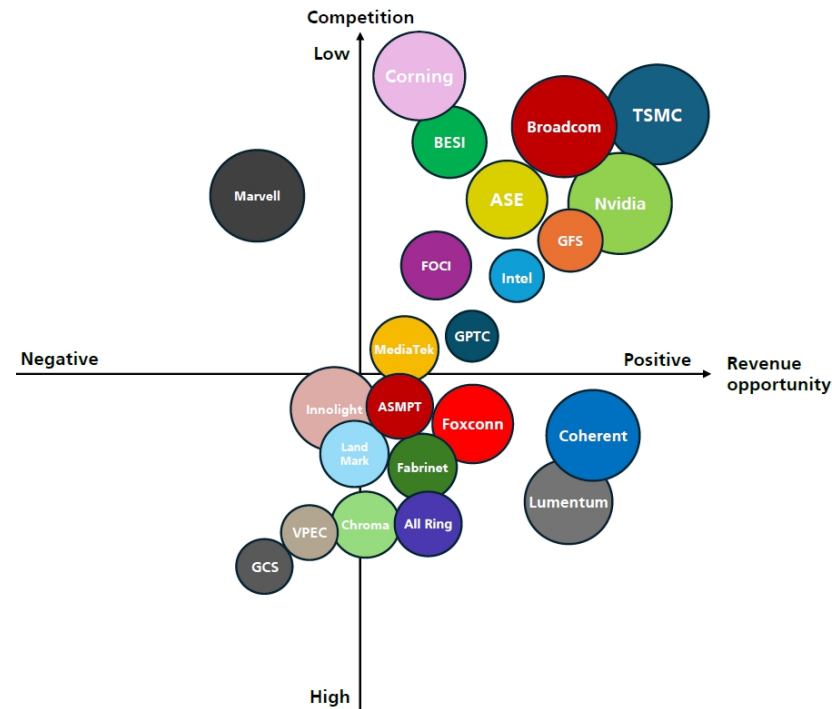
	2025E	2026E	2027E	2028E	2029E	2030E	25-30E CAGR
Base case							
Silicon photonics industry sales (US\$bn)	1.4	2.0	2.8	3.8	4.9	6.1	
<i>Growth</i>		45%	40%	35%	30%	25%	35%
TSMC's silicon photonics sales (US\$B)	0.7	1.0	1.7	2.3	3.4	4.9	
TSMC's market share	50%	50%	60%	60%	70%	80%	
TSMC total sales (US\$bn)	115.9	132.4	155.1	180.9	209.7	241.1	
% sales contribution	0.6%	0.8%	1.1%	1.3%	1.6%	2.0%	
GM assumption	50%	52%	55%	55%	55%	55%	
Upside scenario							
Silicon photonics industry sales (US\$bn)	1.3	2.0	3.0	4.4	6.1	8.5	
<i>Growth</i>		50%	50%	45%	40%	40%	45%
TSMC's silicon photonics sales (US\$bn)	0.7	1.0	1.8	2.8	4.6	7.2	
TSMC's market share	50%	50%	60%	65%	75%	85%	
TSMC total sales (US\$bn)	115.9	132.4	155.1	180.9	209.7	241.1	
% sales contribution	0.6%	0.8%	1.2%	1.6%	2.2%	3.0%	
GM assumption	50%	52%	55%	58%	58%	58%	

Source: UBS estimates

Visualising business opportunities and competition

- As CPO is still in the early stage of development, it might be too early to have accurate revenue forecasts for individual companies. We think it would be useful to illustrate our views on business opportunities for the key companies in the CPO market, with the size of bubbles indicating a ballpark for opportunities and the potential competition.

Value chain analysis when datacentre networking migrates from traditional optical transceiver to CPO



Source: UBS estimates

Why is fibre replacing copper?

- **Higher bandwidth.** Fibre optics can carry much more data than copper as it uses "light" instead of "electricity".
- **Faster data transmission.** Fibre optics transmits data at a speed of around 2/3 the speed of light, way faster than that of copper cable.
- **Longer transmission distance.** With much less signal degradation, fibre optics can transmit data for a longer distance of up to 100km for a single-mode fibre, vs copper's 10m for high speed transmission given its natural limitations.
- **Better reliability.** Compared with copper cable, fibre optics is less susceptible to environmental factors including temperature changes and moisture, and to EMI
- **Good for space efficiency.** Fibre is also thinner, lighter in weight, and sturdier, thus easier to handle than copper.

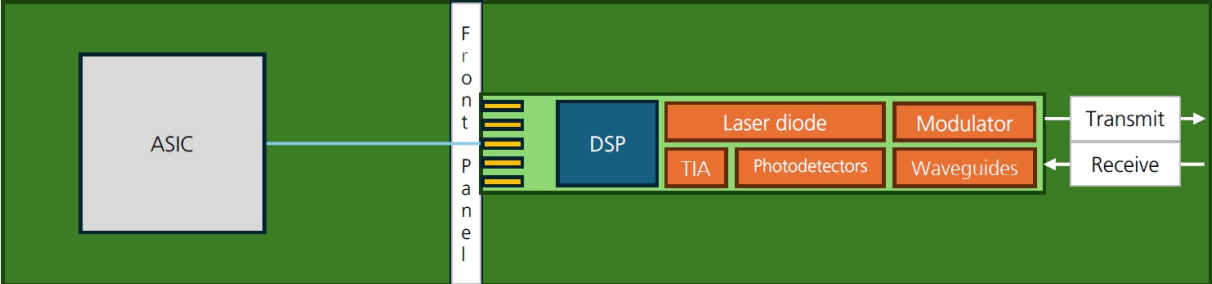
Comparison—fibre optics vs copper cable

	Fiber Optics	Copper
Bandwidth	More suitable for 800G / 1.6T and above especially for longer reach interconnect.	In 800G / 1.6T, the use should be limited to short-reach networking.
Transmission distance	Up to 100km. Single mode fiber could transmit data for longer distance than multi-mode fiber.	In general, <100m. For 800G / 1.6T, the transmission distance could be <10m.
Environmental factor tolerance	Less susceptible to temperature and moisture	Susceptible to temperature and moisture
EMI	Immune	Susceptible to EM interference
Useful life	30-50 years	5 years
Handling	Thinner, lighter, stronger pulling strength	Thicker, heavier, more prone to damage and breakage
Security	Better	Weaker - possibility to be tapped or causing fire when damaged

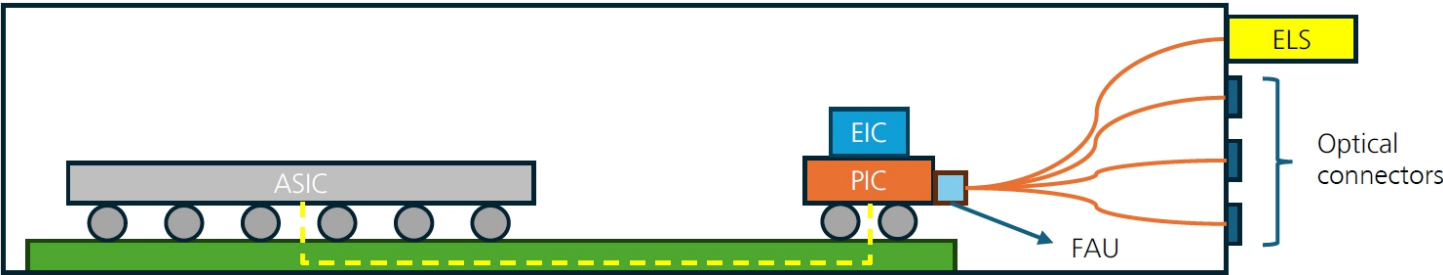
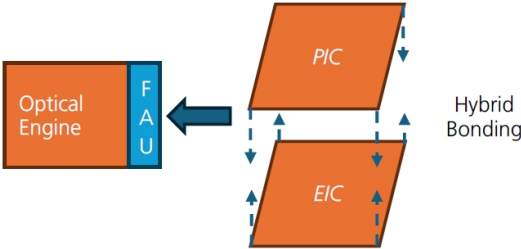
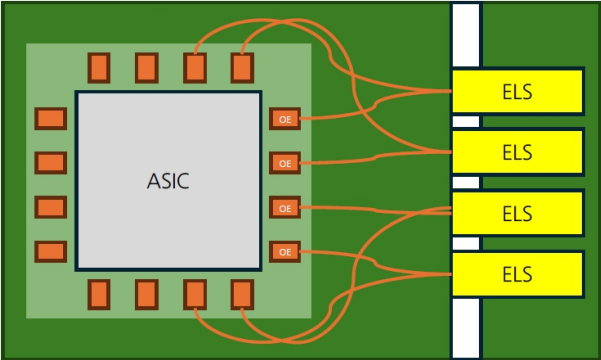
Source: UBS

What is CPO?

Traditional Optical Transceivers



Co-packaged Optics



Source: UBS

When will CPO adoption inflection occur?

1. For **scale out** (interconnect between racks), Nvidia may start to push CPO switch (Spectrum X) from H226E for Rubin racks
2. For **scale up** (interconnect within a rack), Nvidia may adopt a hybrid approach to first upgrade the NVLINK switches to CPO from Kyber architecture (Rubin Ultra, Feynman) while GPU compute trays continue to use copper
3. For the **CPO scale up for GPUs**, the technology may mature for adoption in 2029E, if not earlier.

Supply chain implications for foundry and packaging

- **TSMC** plays a key role in enabling CPO technology through its EIC, PIC and optical engine (OE) stacking manufacturing capability and supply chain integration.
 - Assuming around 50% of Rubin rack shipments from late 2026E to 2027E potentially use CPO for scale out, our analysis suggests a volume of about 3m OEs in 2027E and 0.4-0.5kwpm of SoIC (system on integrated chips) capacity requirements in 2027E.
 - OE demand should meaningfully inflect from H227E to potentially 30-50m units or more in 2028E when Nvidia starts to migrate the scale-up switch to CPO.
- On the **packaging** side, we think ASE/SPIL could support FAU attach and OE attach on substrates; USI could be involved in supporting ASE's CPO packaging and ramping laser modules by itself; final tests could be done at ASE and KYEC.

Supply chain implications for testing and laser source

- **Testing** has been a major challenge for CPO given the complicated design and requirements for optical alignment in each testing insertion.
 - Teradyne could be major tester supplier for CPO across PIC, OE and FT
 - Advantest could supply testers for EIC wafers; Chroma is strongly positioned for CPO testing solution for OE and laser source
 - Hon Precision could supply final test handlers.
 - All Ring may supply the coupling tools related to FAU and OE alignment.
- For **external laser source (ELS)**, we think Nvidia could closely partner with Lumentum and Coherent following its US\$4bn (US\$2bn in each) investment.

CPO value chain: Who are the major players?

- The traditional optical transceivers supply chain is dominated by vertically integrated suppliers such as Coherent, Lumentum, Broadcom, and Chinese module makers such as Innolight and TFC Communications.

Notable traditional optical transceivers suppliers

Traditional Optical Transceivers	Notable Suppliers
Epiwafers	VPEC, LandMark, IQE, Coherent, Lumentum
Fibers	Corning
Optical Chips (LD/PD)	Coherent, Lumentum, Broadcom, GCS, AAOI, HiSilicon
DSPs	Marvell, Airoha
TIA	Airoha, Broadcom, Marvell
Module makers	Cohernet, Lumentum, Broadcom, Innolight, Intel, Cisco, Sumitomo, AAOI, TFC

- The CPO ecosystem should be fairly different from traditional optical industry, as the silicon semiconductor supply chain gains some value from the optical industry.

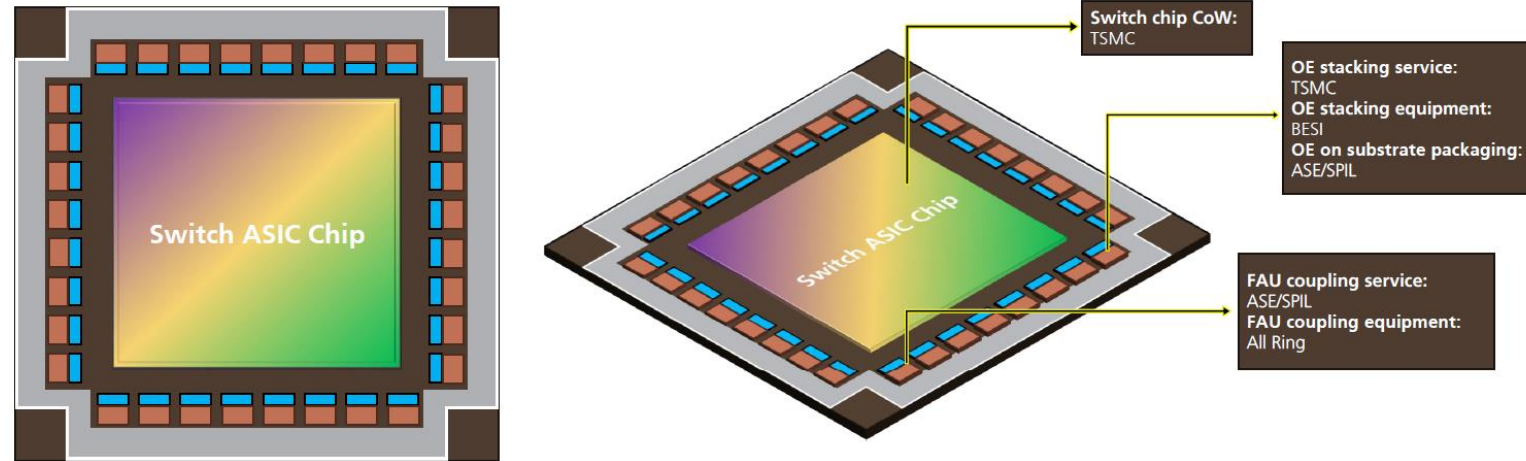
Notable CPO suppliers

CPO Value Chain	Notable Suppliers
Epiwafers	VPEC, LandMark, IQE, Coherent, Lumentum
Fibers/cables	Corning, BizLink
FAUs	FOCI, Browave, TFC Communication, Senko, Sumitomo
Assembly, packaging, and testing	ASE/SPI, FOCI, Amkor, ShunSin, Fabrinet, Foxconn, FIT
ELS lasers	Coherent, Lumentum, Sumitomo, Furukawa, Broadcom, LandMark, GCS
Optical engines	Nvidia, Broadcom, Marvell, Lightmatter, Ayar Labs
Switch ASICs/SerDes IP	Broadcom, Marvell, Nvidia, MediaTek
Transimpedance Amplifier (TIA)	Airoha, Broadcom, Marvell
Chip fabrication	TSMC, GlobalFoundries, Intel, Tower, UMC
Equipment vendors	BESI, ASMPT, K&S, All Ring, GPTC, Chroma, Hon Precision, Teradyne, Advantest, Tokyo Electron

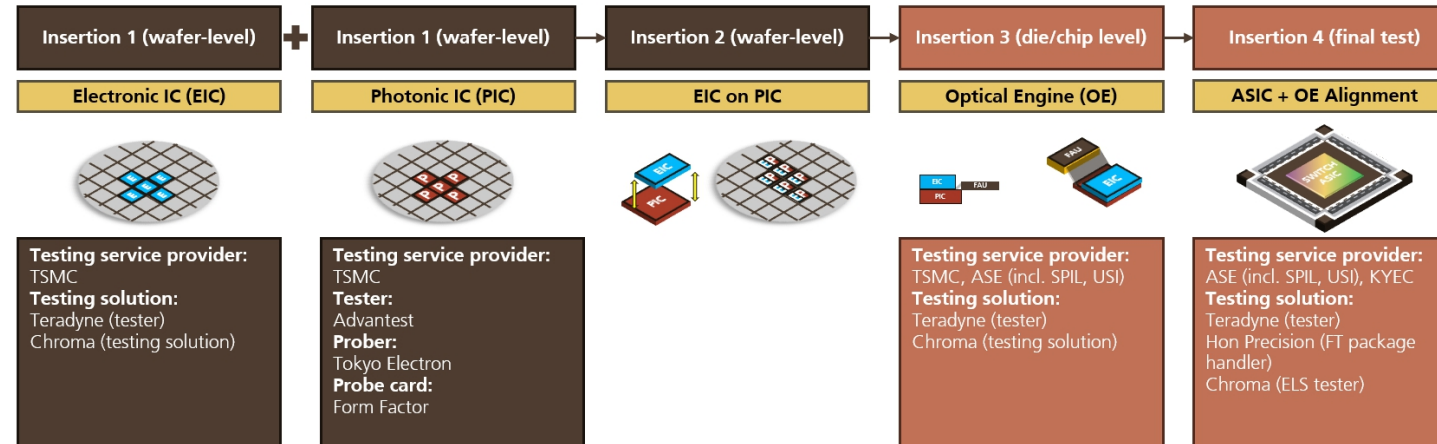
Source: Company data, UBS

CPO value chain: Who are the major players?

Nvidia's CPO packaging layout and notable suppliers



Nvidia's CPO test flow chart and notable suppliers



Source: Company data, UBS

Section 5

Quantifying the multi-year generative AI opportunities

NVIDIA's product refresh to further drive up advanced foundry and packaging demand

NVIDIA's mix shifting to Blackwell (B200/B300) and GB200/300 in 2025. Rubin in H226

NVIDIA Units	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	0	0	0	0	0	0	0	0	0	0	0	0	556,038	602,396	0	0
H100H200H20	661,444	324,324	93,569	60,184	79,187	44,345	14,824	0	0	0	0	0	994,162	3,447,972	1,139,522	138,356
B200B300B30	476,240	372,731	730,727	594,862	562,520	518,711	486,990	182,610	175,675	27,606	12,489	0	0	133,430	2,174,560	1,750,830
GB200GB300 (2 GPUs on each)	132,289	242,033	278,478	497,681	644,015	765,247	689,653	491,747	210,810	82,817	37,468	0	0	106,744	1,150,481	2,590,662
R200R300	0	0	0	0	0	0	119,387	385,222	509,039	475,863	381,590	408,370	0	0	0	504,609
VR200MR300 (2A GPUs on each)	0	0	0	0	0	0	124,521	242,148	450,606	537,623	616,968	464,009	0	0	0	366,669
Rubin CPX	0	0	0	0	0	0	0	384,531	381,383	207,043	149,871	148,653	0	0	0	384,531
L40S	26,458	19,363	0	0	0	0	0	0	0	0	0	0	111,592	298,882	45,820	0
Other GPUs	26,458	9,681	11,139	27,584	13,769	15,771	15,138	17,465	17,567	13,803	12,489	10,618	100,044	149,904	74,862	62,143
Total Units	1,322,889	968,132	1,113,913	1,180,311	1,299,491	1,344,074	1,450,513	1,703,724	1,745,081	1,344,755	1,210,875	1,031,649	1,761,836	4,739,327	4,585,245	5,797,801
Total GPUs (GB200 ~2 GPUs)	1,455,177	1,210,165	1,392,391	1,677,992	1,943,506	2,109,321	2,264,686	2,053,088	2,025,114	1,758,152	1,715,440	1,347,005	1,761,836	4,846,071	5,735,726	8,370,601

NVIDIA ASPs US\$	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,188	\$14,788	\$0	\$0
H100H200H20	\$16,726	\$22,346	\$23,342	\$21,110	\$26,229	\$41,657	\$118,800	\$0	\$0	\$0	\$0	\$0	\$27,900	\$22,325	\$19,100	\$55,093
B200B300B30	\$30,500	\$31,303	\$32,205	\$32,102	\$32,579	\$32,975	\$32,875	\$31,825	\$31,825	\$31,825	\$31,825	\$0	\$0	\$30,500	\$31,649	\$32,700
GB200GB300 (2 GPUs on each)	\$60,000	\$60,800	\$61,920	\$61,888	\$62,604	\$64,373	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$0	\$0	\$60,000	\$61,450	\$64,219
R200	\$0	\$0	\$0	\$0	\$0	\$0	\$50,288	\$50,288	\$48,821	\$50,556	\$52,496	\$54,359	\$0	\$0	\$0	\$50,288
VR200MR300 (2A GPUs on each)	\$0	\$0	\$0	\$0	\$0	\$0	\$90,000	\$90,000	\$93,833	\$126,659	\$133,096	\$183,326	\$0	\$0	\$0	\$90,000
Rubin CPX	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$0	\$0	\$0	\$40,000
L40S	\$8,000	\$8,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,000	\$10,599	\$8,000	\$0
Other GPUs	\$15,775	\$6,050	\$6,050	\$6,050	\$6,655	\$6,655	\$6,655	\$6,655	\$6,655	\$6,655	\$6,655	\$6,655	\$8,366	\$17,818	\$9,487	\$6,655
Average content US\$	\$25,819	\$34,958	\$38,628	\$43,492	\$46,797	\$50,829	\$55,091	\$56,567	\$58,335	\$79,410	\$91,718	\$109,805	\$22,087	\$21,563	\$35,409	\$52,678

NVIDIA Sales US\$m	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,001	\$8,908	\$0	\$0
H100H200H20	\$11,063	\$7,247	\$2,184	\$1,270	\$2,077	\$1,847	\$1,761	\$1,937	\$0	\$0	\$0	\$0	\$27,737	\$76,975	\$21,765	\$7,623
B200B300B30	\$14,525	\$11,667	\$23,533	\$19,096	\$18,326	\$17,104	\$16,010	\$5,812	\$5,591	\$879	\$397	\$0	\$0	\$4,070	\$68,822	\$57,252
GB200GB300 (2 GPUs on each)	\$7,937	\$14,716	\$17,243	\$30,800	\$40,318	\$49,261	\$44,827	\$31,964	\$13,703	\$5,383	\$2,435	\$0	\$0	\$6,405	\$70,697	\$166,370
R200R300	\$0	\$0	\$0	\$0	\$0	\$0	\$6,004	\$19,372	\$24,852	\$24,058	\$20,032	\$22,198	\$0	\$0	\$0	\$25,376
VR200MR300 (2A GPUs on each)	\$0	\$0	\$0	\$0	\$0	\$0	\$11,207	\$21,793	\$42,282	\$68,095	\$82,116	\$85,065	\$0	\$0	\$0	\$33,000
Rubin CPX	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,381	\$15,255	\$8,282	\$5,995	\$5,946	\$0	\$0	\$0	\$15,381
L40S	\$212	\$155	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,339	\$3,168	\$367	\$0
Other GPUs	\$417	\$59	\$67	\$167	\$92	\$105	\$101	\$116	\$117	\$92	\$83	\$71	\$837	\$2,671	\$710	\$414
NVIDIA GPU Sales	\$34,155	\$33,844	\$43,028	\$51,334	\$60,813	\$68,318	\$79,910	\$96,375	\$101,799	\$106,787	\$111,059	\$113,280	\$38,914	\$102,196	\$162,361	\$305,415
UBS NVIDIA model	\$34,155	\$33,844	\$43,028	\$51,334	\$60,813	\$68,318	\$79,910	\$96,375	\$101,799	\$106,787	\$111,059	\$113,280	\$38,914	\$102,196	\$162,361	\$305,415
NVIDIA Networking	\$4,957	\$7,252	\$8,187	\$10,980	\$13,176	\$14,494	\$15,943	\$17,537	\$19,291	\$21,220	\$22,918	\$24,064	\$8,611	\$12,990	\$31,376	\$61,150
NVIDIA Data Center Sales	\$39,112	\$41,096	\$51,215	\$62,314	\$73,989	\$82,811	\$95,853	\$113,912	\$121,090	\$128,007	\$133,977	\$137,344	\$47,525	\$115,186	\$193,737	\$366,565

Published with Q126 TSMC preview Source: Company data, UBS estimates

TSMC's content per system to rise in GB200/RV200 racks

TSMC's content for a GB200 rack is around 5%

TSMC's GB200 Content	GB200	Interposer	CPUs	Connect X7	NV Link Switch	Bluefield 3	Spectrum 52-Port	Aspeed BMC
Tech Node	4nm	65nm	4nm	4nm	4nm	4nm	4nm	28nm
Transistors (bn)	208	N/A	N/A	8	50	22	100	N/A
Density (1mn trans/mm-sq.)	127.8	N/A	N/A	76.1	122.9	122.9	122.9	N/A
Die size (mm-sq)	1628	2832	809	105.1	407	179.1	814	48
Wafer area (mm-sq)	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8
Usable area (Edges/size)	78%	65%	78%	82%	82%	85%	78%	90%
Usable area (mm-sq)	55,347.0	45,945.8	55,135.0	57,962.4	57,609.0	60,351.6	55,347.0	63,546.6
Total die per wafer	34.0	16.2	68.2	551.6	141.5	337.0	68.0	1323.9
Yield %	45%	95%	45%	80%	60%	80%	40%	95%
Good die per wafer	15.3	15.4	30.7	441.2	84.9	269.6	27.2	1257.7
Wafer Price (US\$)	\$17,000	\$10,500	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$3,500
Cost per Die (US\$)	\$1,111	\$681	\$554	\$39	\$200	\$63	\$625	\$2.78
# of Die per GB200 System	72	72	36	72	18	18	2	63
TSMC Content per system	\$80,007	\$49,058	\$19,955	\$2,774	\$3,603	\$1,135	\$1,250	\$175
TSMC content per GB200 System	\$157,958							
TSMC content per GPU	\$2,194							

NVIDIA GB200 ASP	\$3,300,000
TSMC % of Cloud Budget	4.8%

TSMC's VR200 Content	RV200	Interposer	CPUs	Connect X9	NV Link Switch	Bluefield 4	Spectrum 52-Port	Aspeed BMC
Tech Node	3nm	65nm	3nm	4nm	4nm	4nm	4nm	28nm
Transistors (bn)	208	N/A	N/A	8	50	64	100	N/A
Density (1mn trans/mm-sq.)	127.8	N/A	N/A	76.1	122.9	64.8	122.9	N/A
Die size (mm-sq)	1628	3399	809	105.1	407	988.1	814	48
Wafer area (mm-sq)	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8
Usable area (Edges/size)	70%	45%	70%	82%	82%	85%	78%	90%
Usable area (mm-sq)	49,480.1	31,808.6	49,480.1	57,962.4	57,609.0	60,351.6	55,347.0	63,546.6
Total die per wafer	30.4	9.4	61.2	551.6	141.5	61.1	68.0	1323.9
Yield %	50%	95%	50%	80%	60%	50%	40%	95%
Good die per wafer	15.2	8.9	30.6	441.2	84.9	30.5	27.2	1257.7
Wafer Price (US\$)	\$24,000	\$12,000	\$24,000	\$17,000	\$17,000	\$17,000	\$17,000	\$3,500
Cost per Die (US\$)	\$1,579	\$1,350	\$785	\$39	\$200	\$557	\$625	\$2.78
# of Die per VR200 System	72	72	36	72	18	18	2	63
TSMC Content per system	\$113,710	\$97,181	\$28,253	\$2,774	\$3,603	\$10,020	\$1,250	\$175
TSMC content per VR200 System	\$256,966							
TSMC content per GPU	\$3,569							

Source: Company data, UBS estimates

TSMC's content per system in Ampere/Hopper systems

TSMC represented about 4% of the cloud budget for the A/H100 series

TSMC's Hopper HGX Content	H100	A100	Interposer	Connect X7	Bluefield 3	Spectrum X	L40S
Tech Node	4nm	7nm	65nm	4nm	4nm	4nm	5nm
Transistors (bn)	100	54.2	N/A	8	22	100	76.3
Density (1mn trans/mm-sq.)	122.9	65.6	N/A	76.1	122.9	122.9	125.3
Die size (mm-sq)	814.0	826.0	1,450	105.1	179.1	814	609.0
Wafer area (mm-sq)	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8	70,685.8
Usable area (Edges/size)	78%	77%	61%	82%	85%	78%	74%
Usable area (mm-sq)	55,347.0	54,498.8	42,764.9	58,209.8	60,351.6	55,347.0	52,378.2
Total die per wafer	68.0	66.0	29.5	553.9	337.0	68.0	86.0
Yield %	45%	55%	95%	80%	80%	40%	55%
Good die per wafer	30.6	36.3	28.0	443.1	269.6	27.2	47.3
Wafer Price (US\$)	\$15,500	\$10,500	\$11,000	\$15,500	\$15,500	\$15,500	\$15,500
Cost per Die (US\$)	\$507	\$289	\$393	\$35	\$57	\$570	\$328
# of Die per HGX System	8	8	8	4	2	0.19	N/A
TSMC Content per system (US\$)	\$4,053	\$2,315	\$3,141	\$140	\$115	\$107	\$328
TSMC content per HGX System	\$7,555	\$5,817					
TSMC content per GPU	\$944	\$727					
NVIDIA HGX ASP	\$210,000	\$140,000					
TSMC % of Cloud Budget	3.6%	4.2%					

Source: Company data, UBS estimates

NVIDIA ramp to 19%/22% of TSMC's 2025/26E sales

TSMC's Nvidia AI GPU sales about US\$9.3bn in 2025E, should reach US\$18bn in 2026E

NVIDIA Units	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	0	0	0	0	0	0	0	0	0	0	0	0	556,038	602,396	0	0
H100/H200/H20	661,444	324,324	93,569	60,184	79,187	44,345	14,824	0	0	0	0	0	994,162	3,447,972	1,139,522	138,356
B200/B300/B30	476,240	372,731	730,727	594,862	562,520	518,711	486,990	182,610	175,675	27,606	12,489	0	0	133,430	2,174,560	1,750,830
GB200GB300 (2 GPUs on each)	132,289	242,033	278,478	497,681	644,015	765,247	689,653	491,747	210,810	82,817	37,468	0	0	106,744	1,150,481	2,590,662
R200/R300	0	0	0	0	0	0	0	0	509,039	475,863	381,590	408,370	0	0	0	504,609
VR200/R300 (24 GPUs on each)	0	0	0	0	0	0	124,521	242,148	450,606	537,623	616,968	464,009	0	0	0	366,669
Rubin CPX	0	0	0	0	0	0	0	384,531	381,383	207,043	149,871	148,653	0	0	0	384,531
L40S	26,458	19,363	0	0	0	0	0	0	0	0	0	0	111,592	298,882	45,820	0
Other GPUs	26,458	9,681	11,139	27,584	13,769	15,771	15,138	17,465	17,567	13,803	12,489	10,618	100,044	149,904	74,862	62,143
Total Units	1,322,889	968,132	1,113,913	1,180,311	1,299,491	1,344,074	1,450,513	1,703,724	1,745,081	1,344,755	1,210,875	1,031,649	1,761,836	4,739,327	4,585,245	5,797,801
Total GPUs (GB200 ~2 GPUs)	1,455,177	1,210,165	1,392,391	1,677,992	1,943,506	2,109,321	2,264,686	2,053,088	2,025,114	1,758,152	1,715,440	1,347,005	1,761,836	4,846,071	5,735,726	8,370,601

TSMC content per unit (US\$)	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$727	\$0	\$0
H100/H200/H20	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944	\$944
B200/B300	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$2,024	\$0	\$2,024	\$2,024	\$2,024
GB200GB300 (2 GPUs on each)	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$4,388	\$0	\$4,388	\$4,388	\$4,388
R200	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$2,998	\$0	\$0	\$0	\$2,998
VR200 (2 GPUs on each)	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$7,138	\$0	\$0	\$0	\$7,138
Rubin CPX	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$999	\$0	\$0	\$0	\$999
L40S	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$0	\$328	\$328	\$0
Other GPUs	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$328	\$0	\$328	\$328	\$328
Average content US\$	\$1,653	\$2,202	\$2,507	\$2,926	\$3,112	\$3,314	\$3,638	\$3,405	\$3,673	\$4,383	\$4,865	\$4,544	\$802	\$966	\$2,304	\$3,376

TSMC AI GPU Sales US\$m	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
A100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$404	\$438	\$0	\$0
H100/H200/H20	\$625	\$306	\$88	\$57	\$75	\$42	\$14	\$0	\$0	\$0	\$0	\$0	\$939	\$3,256	\$1,076	\$131
B200/B300	\$964	\$754	\$1,479	\$1,204	\$1,138	\$1,050	\$986	\$370	\$356	\$56	\$25	\$0	\$0	\$270	\$4,401	\$3,543
GB200GB300 (2 GPUs on each)	\$580	\$1,062	\$1,222	\$2,184	\$2,826	\$3,358	\$3,026	\$2,158	\$925	\$363	\$164	\$0	\$0	\$468	\$5,048	\$11,367
R200	\$0	\$0	\$0	\$0	\$0	\$0	\$358	\$1,155	\$1,526	\$1,427	\$1,144	\$1,224	\$0	\$0	\$0	\$1,513
VR200 (2 GPUs on each)	\$0	\$0	\$0	\$0	\$0	\$0	\$889	\$1,728	\$3,216	\$3,838	\$4,404	\$3,312	\$0	\$0	\$0	\$2,617
Rubin CPX	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$384	\$381	\$207	\$150	\$148	\$0	\$0	\$0	\$384
L40S	\$9	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37	\$98	\$15	\$0
Other GPUs	\$9	\$3	\$4	\$9	\$5	\$5	\$5	\$6	\$6	\$5	\$4	\$3	\$33	\$49	\$25	\$20
NVIDIA AI/Networking for TSMC	\$2,186	\$2,132	\$2,793	\$3,453	\$4,043	\$4,454	\$5,277	\$5,800	\$6,410	\$5,895	\$5,891	\$4,688	\$1,413	\$4,580	\$10,564	\$19,576
Networking to AI GPUs	\$147	\$129	\$151	\$187	\$222	\$243	\$274	\$265	\$279	\$256	\$256	\$201	\$157	\$449	\$615	\$1,004
NVIDIA AI Sales for TSMC	\$2,039	\$2,003	\$2,642	\$3,266	\$3,822	\$4,211	\$5,004	\$5,535	\$6,131	\$5,639	\$5,636	\$4,488	\$1,256	\$4,130	\$9,949	\$18,571

TSMC's sales from NVIDIA should be around 19% of sales in 2025, and should reach 22% in 2026

TSMC NVIDIA Revenue (US\$m)	Q125	Q225	Q325	Q425	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2023	2024	2025E	2026E
AI GPUs	\$2,039	\$2,003	\$2,642	\$3,266	\$3,822	\$4,211	\$5,004	\$5,535	\$6,131	\$5,639	\$5,636	\$4,488	\$1,256	\$4,130	\$9,949	\$18,571
Advanced Shipments/Inventory Build	\$726	\$688	\$801	\$815	-\$7	\$71	\$42	\$631	\$17,573	\$602	\$919	\$2,364	\$0	\$0	\$3,030	\$737
Networking Sales	\$520	\$761	\$860	\$1,153	\$1,383	\$1,522	\$1,674	\$1,841	\$2,026	\$2,228	\$2,406	\$2,527	\$904	\$1,364	\$3,294	\$6,421
TSMC content % of NVIDIA DC	9.6%	10.2%	10.0%	10.2%	8.5%	8.5%	8.4%	8.3%	25.3%	7.9%	8.1%	8.3%	5.6%	5.4%	10.0%	8.4%
Gaming/Rest of NVIDIA	\$1,337	\$1,525	\$1,564	\$1,570	\$1,564	\$1,663	\$1,795	\$1,730	\$6,752	\$1,769	\$1,972	\$1,879	\$3,215	\$4,134	\$5,994	\$6,752
TSMC sales from NVIDIA	\$4,622	\$4,977	\$5,866	\$6,804	\$6,763	\$7,467	\$8,514	\$9,738	\$32,482	\$10,239	\$10,933	\$11,257	\$5,375	\$9,628	\$22,268	\$32,482
TSMC total revenue	\$25,526	\$30,070	\$33,097	\$33,731	\$35,395	\$37,873	\$42,398	\$43,670	\$159,336	\$43,233	\$48,421	\$55,921	\$69,300	\$90,083	\$122,424	\$159,336
NVIDIA % of TSMC	18.1%	16.6%	17.7%	20.2%	19.1%	19.7%	20.1%	22.3%	20.4%	23.7%	22.6%	20.1%	7.8%	10.7%	18.2%	20.4%

Published with Q126 TSMC preview

Source: Company data, UBS estimates

Analysis of N3 foundry supply & demand

- TSMC's leading edge to be a larger supply bottleneck than CoWoS in 2027E
 1. TSMC's N3 capacity could be a larger bottleneck than CoWoS and run at 100%+ loading in 2026-27E, even with meaningful capacity expansion to 190kwpm by the end of 2027E.
 2. We forecast server accelerators, CPUs and networking to account for 70% of N3 demand in 2027 versus 34% in 2026E.
 3. Our industry analysis shows a robust demand outlook for cloud AI accelerators and server CPUs and that the capacity of TSMC's leading edge and CoWoS packaging will likely remain tight through 2027E.
 4. Agentic AI is rapidly driving increased demand for server CPUs.

Source: Company data, UBS estimates

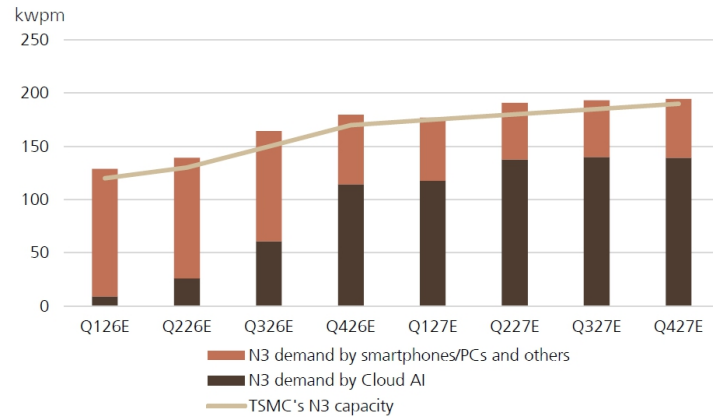
Analysis of N3 foundry supply & demand

Client	Products	Die size (mm2)	N3 capacity requirement (kwpm)									
			Q126E	Q226E	Q326E	Q426E	2026 demand (k)	Q127E	Q227E	Q327E	Q427E	2027 demand (k)
Nvidia	Rubin	1,628	0	4	15	26	137	34	39	32	15	360
	Rubin Ultra	1,628	0	0	0	0	0	0	4	16	36	169
	Vera CPU	800	0	1	5	11	51	11	13	13	12	146
Broadcom	Google - TPU v7 Ironwood	1,400	6	11	16	21	158	14	8	6	0	85
	Google - TPU v8i	1,400	0	0	2	4	18	7	17	25	35	250
	Meta - MTIA v3	1,600	0	0	0	0	2	1	1	2	3	19
	OpenAI	1,600	0	0	0	3	11	3	4	4	1	36
AMD	MI355	840	2	2	1	1	17	1	1	0	0	7
Alchip	Amazon - Trainium 3	1,600	0	4	11	22	110	20	17	10	2	149
Marvell	Amazon - Trainium 2.5	1,600	0	0	0	2	7	0	0	0	0	2
MediaTek	Google - TPU v8t	800	0	0	1	4	15	7	10	9	7	101
Other CPUs / accelerators and products like networking			2	4	10	19	105	20	23	23	28	281
Capacity requirement - Cloud AI (kwpm)			9	26	61	114	631	117	138	140	139	1,604
% of N3 demand			7%	19%	37%	64%	34%	66%	72%	72%	72%	71%
Apple	iPhone's apps processor	110	43	43	39	22	442	13	11	9	10	128
	Mac's processor	165	10	10	8	7	106	7	6	6	6	74
	iPad's M processor for Pro & Air	160	14	12	12	8	135	11	10	8	8	111
	iPad's A17 Pro processor	104	2	2	1	1	15	3	2	2	2	30
Qualcomm	Flagship smartphone SoC	120	17	13	9	3	129	5	5	4	3	51
MediaTek	5G smartphone SoC	120	5	4	3	1	39	2	2	2	1	19
Intel	Outsourced PC CPUs	100	19	19	11	4	161	8	8	8	5	85
Others like Bitcoin, tablet, ARM based PC CPU			10	10	20	20	180	10	10	15	20	165
Capacity requirement - Consumer and other devices (kwpm)			120	113	104	65	1,206	60	53	53	55	663
% of N3 demand			93%	81%	63%	36%	66%	34%	28%	28%	28%	29%
Total N3 demand			129	139	164	180	1,837	177	191	193	194	2,266
TSMC's N3 capacity			120	130	150	170	1,710	175	180	185	190	2,190
Capacity utilisation			107%	107%	110%	106%	107%	101%	106%	104%	102%	103%

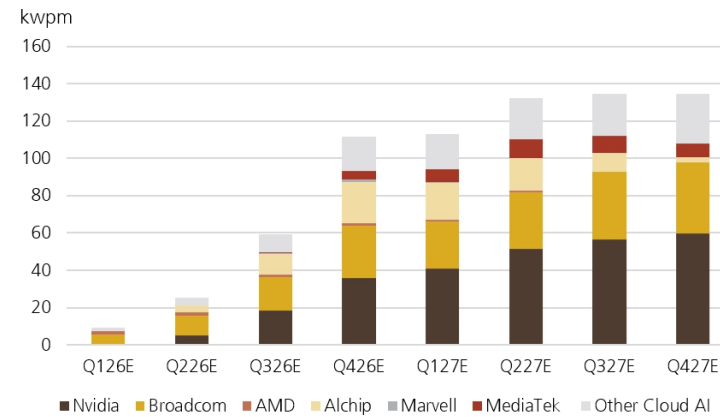
Source: Company data, UBS estimates

Analysis of N3 foundry supply & demand

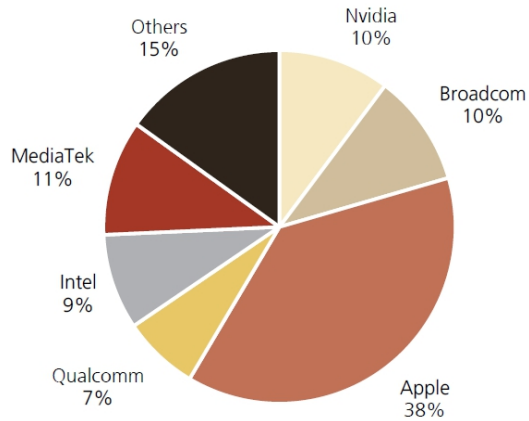
TSMC is accelerating N3 capacity expansions to meet the strong demand from Cloud AI



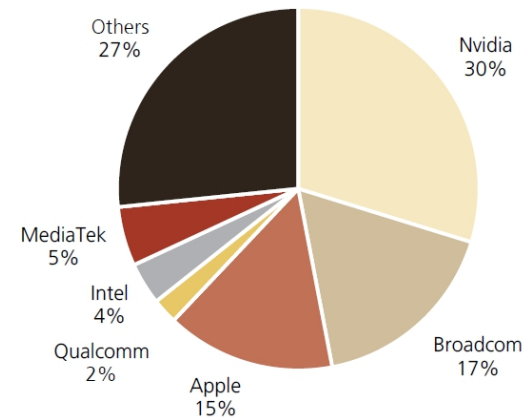
N3 demand from Cloud AI could strongly pick up in H226



N3 capacity share by clients in 2026E



N3 capacity share by clients in 2027E



Source: Company data, UBS estimates

Advanced packaging key in enabling HPC and generative AI

A comparison of technologies—TSMC, Intel and Samsung Foundry

Packaging type	2.5D					3D	
	Chip first (RDL last)		Chip last (RDL first)			Bumped (Microbump)	Bumpless (Copper-to-copper)
Approach							
Interconnect	Organic film (polyamide, polyimide, etc.)	Organic film + Silicon bridge	Silicon interposer	Organic interposer (polyimide, ABF, etc.)	Organic interposer + Silicon bridge	Chip-on-wafer Wafer-on-wafer	Chip-on-wafer Wafer-on-wafer
TSMC	InFO_PoP InFO_B InFO_M InFO_oS (with substrate)	InFO_LSI (with substrate)	CoWoS-S	CoWoS-R	CoWoS-L	SolC-P InFO_3D	SolC-X
Intel	-	-	-	-	Co-EMIB (Foveros + EMIB)	Foveros Foveros Omni	Foveros Direct
Samsung Foundry	iPoP/ FOPLP-PoP	-	I-CubeS	-	I-CubeE H-Cube (with hybrid substrate)	X-Cube (u-Bump)	X-Cube (Hybrid copper bonding)

OSATs' advanced packaging solutions

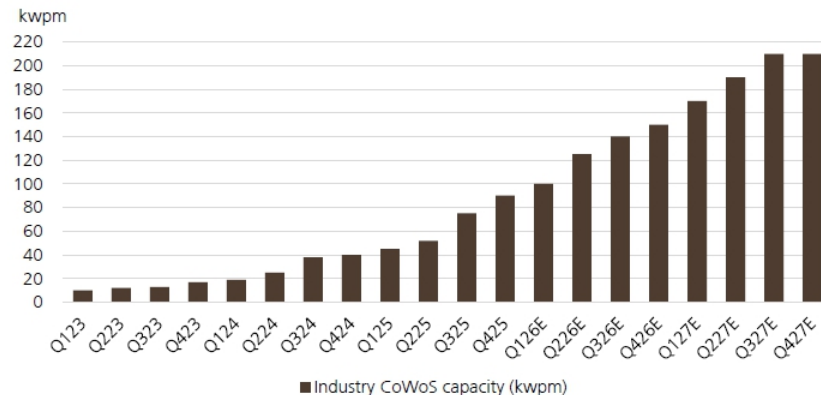
Packaging type	2.5D							3D	
	Chip first (RDL last)				Chip last (RDL first)			Bumped (Microbump)	Bumpless (Copper-to-copper)
Approach									
TSMC's solution	InFO_PoP InFO_B	InFO_M	InFO_oS (with substrate)	InFO_LSI (with substrate)	CoWoS-S	CoWoS-R	CoWoS-L	SolC-P InFO-3D	SolC-X
ASE Group	FOPoP (chip last)		FOCoS-CF		2.5D	FOCoS-CL	FOCoS-B (FOEB)	3D (Developing)	3D (Developing)
Amkor	SWIFT (chip last)				2.5D (CoS / CoW)	Substrate SWIFT (S-SWIFT)	S-Connect (Developing)	SWIFT 3D (Developing)	CoW Hybrid Cu-Cu (Pathfinding)
JCET	eWLB/FO-ECP		eWLB			XDFOI			
Huatian						2.5D (Developing)			
Tongfu	FO on FCBGA					2.5D			

Source: Company data, UBS

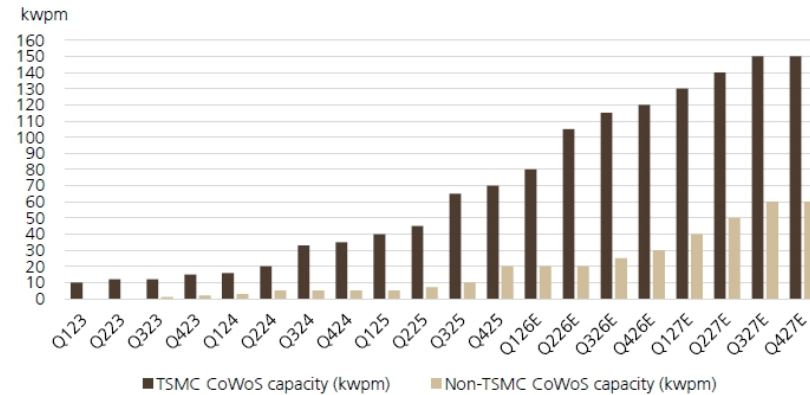
TSMC's CoWoS to remain tight through 2027E

- CoWoS industry capacity should expand from 150kwpm at the end of 2026E to 210kwpm at the end of 2027E, with TSMC/OSATs reaching 150/60kwpm.
- Google TPU CoWoS capacity requirement likely to grow significantly, +123% YoY in 2027E.
- AMD's CoWoS demand could triple in 2027E, driven by a stronger ramp-up of MI450 and the Venice server CPU.
- We raise demand for Nvidia's CoWoS wafers by 11% for 2026E, considering our higher expectations for: 1) Blackwell's build of 6.2m versus 5.5m previously; 2) Vera CPU units of 1.6m, with upside potential. We believe Nvidia's total AI GPU production units could reach 9m in 2026.

UBS estimates on industry CoWoS capacity



TSMC's vs non-TSMC CoWoS capacity

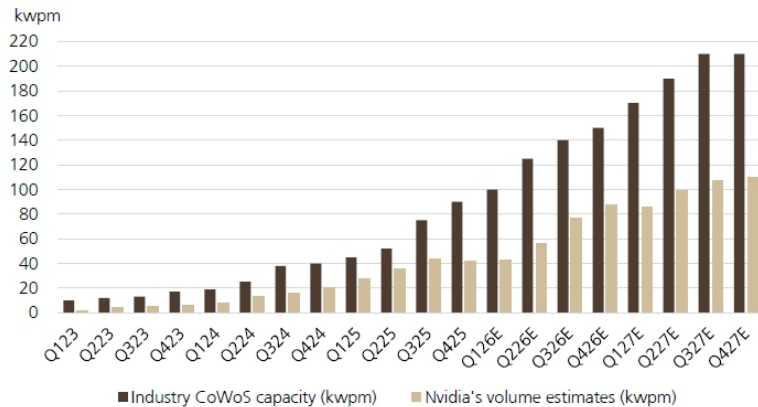


Source: Company data, UBS estimates

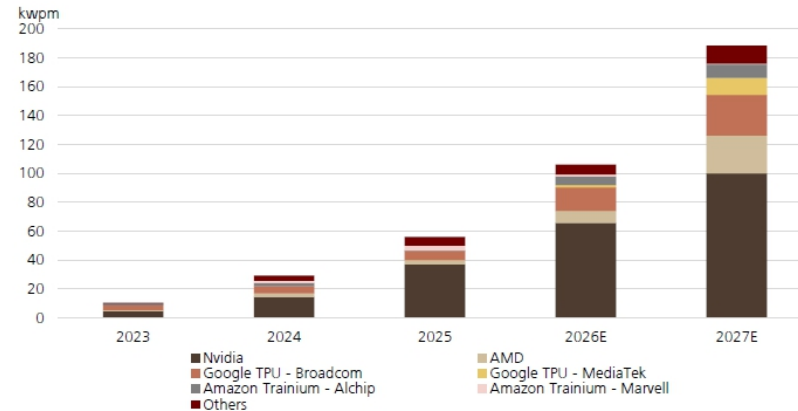
Time to look beyond Nvidia's Rubin yield challenges

- We believe Rubin issues are being resolved, and current visibility suggests a steep ramp-up through H226 to reach 2.1m units. We forecast Nvidia's total CoWoS demand to grow 52% in 2027 to 1,202k wafers, supported by Rubin, Rubin Ultra, and Vera CPUs.
- We forecast Vera CPU production volume to grow to 4.5m in 2027E.
- For Feynman's launch in 2028E, we believe Nvidia is looking to use TSMC's SoIC to stack two GPU dies on top of another two GPU dies (i.e. two GPU stacks) within a CoWoS package, effectively upgrading to a 4-GPU-die package.
- We may see further design changes for Feynman if TSMC's CoPoS enters mass production in 2028.

Industry CoWoS capacity vs Nvidia's volumes



CoWoS demand for major customers



Source: Company data, UBSe

Quantifying the advanced packaging market size

Detailed analysis of advanced packaging Interposer wafer demand and supply chain build units

Interposer Wafer Demand (kps)	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2024	2025	2026E	2027E
Nvidia	128	170	231	261	256	296	322	329	174	444	790	1,202
AMD	11	14	21	54	61	77	82	92	37	42	99	312
ASICs and others	77	96	103	107	150	187	202	210	147	193	383	748
Google TPU - Broadcom									60	76	195	338
Google TPU - MediaTek									0	0	20	141
Amazon Trainium - Alchip									26	5	68	112
Amazon Trainium - Marvell									17	38	18	4
Meta									7	8	6	25
Others									38	66	67	78
Total	216	280	355	423	466	560	606	630	358	679	1,273	2,263
Nvidia Supply Chain Build Units (k chips)	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2024	2025	2026E	2027E
Ampere	0	0	0	0	0	0	0	0	134	0	0	0
Hopper	180	251	215	100	0	0	0	0	4,086	1,402	746	0
Blackwell B200/B300 and GB200/GB300	1,703	1,855	1,715	953	350	111	81	0	314	5,520	6,226	543
Rubin R200 and VR200	0	200	678	1,206	1,544	1,797	1,450	672	0	0	2,084	5,463
Rubin R300 and VR300	0	0	0	0	0	137	639	1,416	0	0	0	2,191
Vera CPU	0	100	428	1,054	1,025	1,180	1,181	1,142	0	0	1,582	4,528
Total	1,883	2,405	3,036	3,313	2,919	3,226	3,351	3,229	4,534	6,921	10,638	12,725
AMD Supply Chain Build Units (k chips)	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2024	2025	2026E	2027E
MI300 + MI325X + MI308X+MI355X	163	170	87	89	93	82	15	4	544	626	508	194
MI400	0	0	38	225	295	433	415	369	0	0	263	1,513
MI500	0	0	0	0	0	0	66	177	0	0	0	242
Venice CPU	0	100	400	800	700	700	800	800	0	0	1,300	3,000
Others	1	1	1	2	2	3	3	4	11	4	6	12
Total	164	271	526	1,116	1,091	1,218	1,298	1,353	555	630	2,077	4,961
SoIC (kps)	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2024	2025	2026E	2027E
SoIC volume	14	18	22	26	38	46	50	51	20	42	80	185
TSMC's backend sales (US\$m)	Q126E	Q226E	Q326E	Q426E	Q127E	Q227E	Q327E	Q427E	2024	2025	2026E	2027E
Sales from adv packaging	2,686	3,433	4,177	5,227	5,707	6,947	7,399	8,124	5,240	8,899	15,523	28,176
Sales from bumping & testing	919	1,039	1,122	1,156	1,179	1,320	1,505	1,580	2,348	3,156	4,236	5,584
Total TSMC's backend sales	3,606	4,471	5,299	6,383	6,885	8,267	8,904	9,704	7,588	12,056	19,759	33,760
% of TSMC's sales	10.0%	11.1%	12.0%	14.0%	14.9%	15.9%	15.0%	15.5%	8.4%	9.8%	11.9%	15.3%

Source: Company data, UBS estimates.

Quantifying the advanced packaging market size

Detailed analysis of advanced packaging supply chain build units and total CoWoS demand by customers

ASIC Supply Chain Build Units (k chips)	2024	2025	2026E	2027E
Google TPU - Broadcom	2,045	2,565	3,680	5,000
Google TPU - MediaTek	0	0	450	3,110
Amazon Trainium - Alchip	1,000	176	1,700	2,600
Amazon Trainium - Marvell	600	1,335	605	145
Meta	348	421	175	425
Others	277	222	192	190
Total	4,270	4,719	6,972	12,200

ASIC vendor as a % of CoWoS wafers demand	2024	2025	2026E	2027E
Google	17%	11%	17%	21%
<i>Broadcom</i>	17%	11%	15%	15%
<i>MediaTek</i>	0%	0%	2%	6%
Amazon	12%	6%	7%	5%
<i>Alchip</i>	7%	1%	5%	5%
<i>Marvell</i>	5%	6%	1%	0%
Meta	2%	1%	0%	1%
Intel / Habana	2%	1%	0%	0%
Microsoft	0%	0%	0%	0%
Tesla	0%	0%	0%	0%
Others	8%	9%	5%	5%
Total ASIC	41%	28%	30%	33%
GPU vendors as a % of CoWoS wafers demand				
Nvidia	49%	65%	62%	53%
AMD	10%	6%	8%	14%
Total GPU	59%	72%	70%	67%

Source: Company data, UBS estimates.

Summary of Nvidia chip production and rack assembly

UBS summary of Blackwell and Rubin hardware assembly: 72.5K/90.0K racks in 2026E-27E

GB200/GB300 NVL72 Rack Units	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
Quanta	6,420	4,000	4,700	4,900	2,800	16,400	2,050	1,440	1,010	700	5,200
Hon Hai	10,550	5,400	6,500	6,000	5,300	23,200	5,000	3,000	2,000	1,000	11,000
Wistron	5,860	3,900	4,200	3,800	3,600	15,500	2,700	2,400	1,700	1,500	8,300
Total (Top 3)	22,830	13,300	15,400	14,700	11,700	55,100	9,750	6,840	4,710	3,200	24,500
SMCI, Wiyynn, GigaByte, Inventec, Asus, Lenovo, Pega, etc	4,204	2,926	3,080	2,940	2,340	11,286	1,950	1,368	942	640	4,900
Others share %	18%	22%	20%	20%	20%	20%	20%	20%	20%	20%	20%
GB200NVL72 racks (market-wide)	20,690	7,302	5,544	3,528	1,404	17,778	1,170	410	283	0	1,863
mix %	77%	45%	30%	20%	10%	27%	10%	5%	5%	0%	6%
GB300NVL72 racks (market-wide)	6,344	8,924	12,936	14,112	12,636	48,608	10,530	7,798	5,369	3,840	27,537
mix %	23%	55%	70%	80%	90%	73%	90%	95%	95%	100%	94%
Total GB200/300NVL72 racks (market-wide)	27,034	16,226	18,480	17,640	14,040	66,386	11,700	8,208	5,652	3,840	29,400
Total GB200/300 GPUs into NVL72 (equiv.) racks	1,946,412	1,168,272	1,330,560	1,270,080	1,010,880	4,779,792	842,400	590,976	406,944	276,480	2,116,800

VR200 NVL72 Rack Units	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
Quanta				100	2,000	2,100	4,000	4,500	4,010	4,010	16,520
Hon Hai				500	2,000	2,500	5,000	5,000	5,500	3,500	19,000
Wistron					500	500	1,800	2,900	2,500	2,500	9,700
Total (Top 3)				600	4,500	5,100	10,800	12,400	12,010	10,010	45,220
SMCI, Wiyynn, GigaByte, Inventec, Asus, Lenovo, Pega, etc				60	990	1,050	3,240	3,720	3,603	3,043	13,606
Others share %				10%	22%	21%	30%	30%	30%	30%	30%
Total VR200 NVL72 racks (market-wide)				660	5,490	6,150	14,040	16,120	15,613	13,053	58,826
Total VR200 GPUs into NVL72 (equiv.) racks				47,520	395,280	442,800	1,010,880	1,160,640	1,124,136	939,819	4,235,475

VR300 NVL288/576 Rack Units	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
Quanta									50	200	250
Hon Hai									500	1,000	1,500
Wistron									0	50	50
Total (Top 3)									550	1,250	1,800
SMCI, Wiyynn, GigaByte, Inventec, Asus, Lenovo, Pega, etc									0	0	0
Others share %									0%	0%	0%
Total VR200NVL144 racks (market-wide)									550	1,250	1,800
Total VR200 GPUs into NVL144 (equiv.) racks									158,400	360,000	129,600

Total NVIDIA Racks	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
GB200/GB300	27,034	16,226	18,480	17,640	14,040	66,386	11,700	8,208	5,652	3,840	29,400
VR200	0	0	0	660	5,490	6,150	14,040	16,120	15,613	13,053	58,826
VR300	0	0	0	0	0	0	0	0	550	1,250	1,800
Total Racks	27,034	16,226	18,480	18,300	19,530	72,536	25,740	24,328	21,815	18,143	90,026
Total GPUs in Racks	1,946,412	1,168,272	1,330,560	1,317,600	1,406,160	5,222,592	1,853,280	1,751,616	1,689,480	1,576,299	6,481,875

Source: Company data, UBS estimates.

Summary of Nvidia chip production and rack assembly

UBS summary hardware assembly: Semiconductor vs. Hardware Shipments

Semiconductor vs. Hardware Shipments: Blackwell

Total GPU Hardware vs. Semi shipments: Blackwell	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
HBM B200/300 (Gaudois)	5,745,544	1,788,750	1,670,000	1,337,000	956,000	5,751,750	750,000	400,000	300,000	200,000	1,650,000
B200/300 GPUs on Baseboards	1,524,240	388,800	434,160	437,400	437,400	1,697,760	340,200	265,320	194,400	145,800	945,720
Total GB200/300 GPUs into NVL72 (equiv.) racks	1,946,412	1,168,272	1,330,560	1,270,080	1,010,880	4,779,792	842,400	590,976	406,944	276,480	2,116,800
Total Blackwell Hardware Builds	3,470,652	1,557,072	1,764,720	1,707,480	1,448,280	6,477,552	1,182,600	856,296	601,344	422,280	3,062,520
Downstream Yield Loss	120,519	35,048	39,917	38,102	30,326	143,394	25,272	17,729	12,208	8,294	63,504
Blackwell Inventory build	2,454,961	2,651,591	2,516,954	2,108,372	1,585,766	1,585,766	1,127,894	653,868	340,316	109,742	109,742

Semiconductor vs. Hardware Shipments: Rubin

Total GPU Hardware vs. Semi shipments: Rubin using CoWoS	2025	Q126E	Q226E	Q326E	Q426E	2026E	Q127E	Q227E	Q327E	Q427E	2027E
CoWoS R200 (S Lin)			200,000	678,045	1,206,270	2,084,315	1,544,158	1,933,509	2,088,629	2,087,747	7,654,043
R200 GPUs on Baseboards				27,702	131,220	158,922	186,460	280,196	338,520	403,340	1,208,516
Total VR200 GPUs into NVL72 (equiv.) racks				47,520	395,280	442,800	1,010,880	1,160,640	1,124,136	939,819	4,235,475
Total Rubin Hardware Builds				75,222	526,500	601,722	1,197,340	1,440,836	1,462,656	1,343,159	5,443,991
Downstream Yield Loss				7,603	39,528	47,131	101,088	116,064	112,414	93,982	423,547
Rubin Inventory build			200,000	795,220	1,435,462	1,435,462	1,681,192	2,057,801	2,571,360	3,221,967	3,221,967

Source: Company data, UBS estimates.

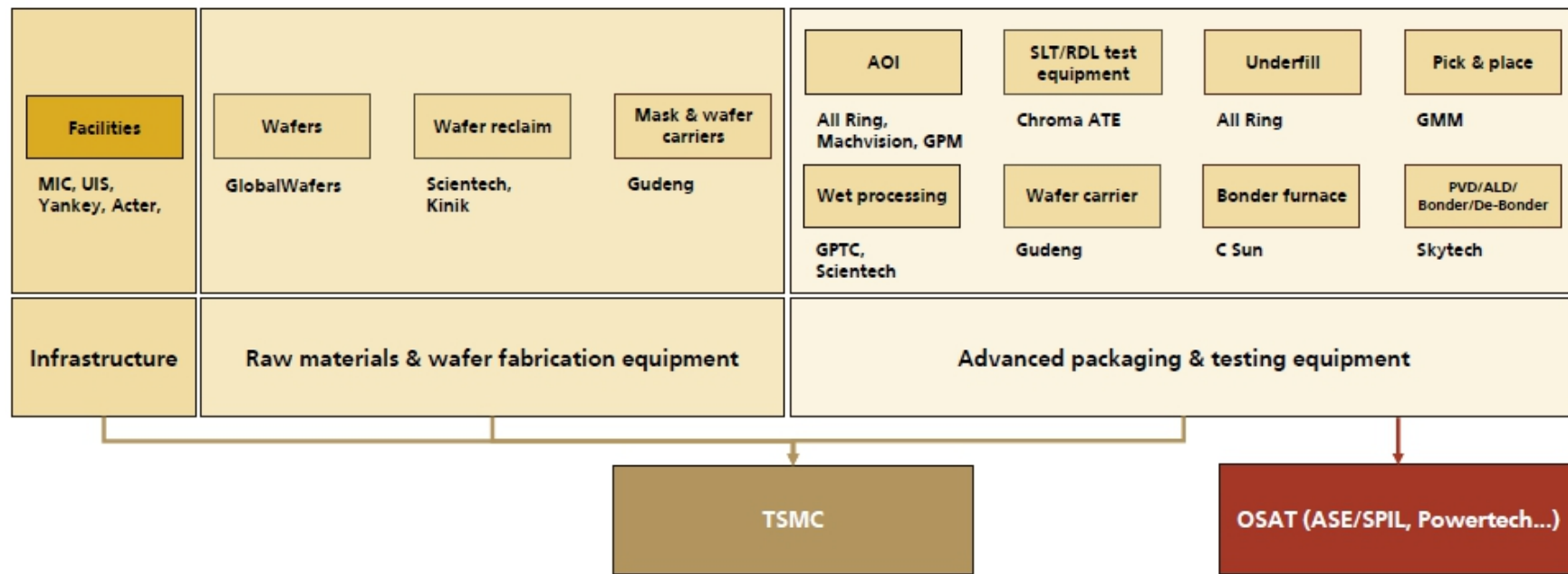
Quantifying the potential upside to foundry and back-end

- We believe TSMC should be a major beneficiary of the GPU opportunities as a key foundry provider for generative AI and high-performance computing.
 - TSMC is currently the sole foundry supplier of Nvidia's data centre grade GPUs and AMD's AI GPUs.
- Our proprietary analysis suggests TSMC's revenue from every Nvidia's Rubin GPU to expand to ~US\$3,569 vs ~US\$2,194 for Blackwell vs ~US\$944 for Hopper. TSMC may earn US\$158k for a NVL72 Blackwell server and potentially US\$257k for Rubin server. As a customer, Nvidia may grow to 20%/21% of sales to TSMC in 2026E/27E from 18% in 2025.
- TSMC quantified that cloud accelerators may grow high 50% CAGR next couple of years.
- Beyond the cloud, gen AI may also drive more silicon content to edge including smartphones and PCs, and re-accelerate the process migration to leading edge for better compute capability, lower power. We forecast 6% silicon content growth for the main processors in smartphones and PCs.

TSMC establishing critical semi supply chain in Taiwan

- After over 30 years, TSMC has managed to establish a resilient supply chain in Taiwan where and when possible, mostly for infrastructure and facility construction, selective equipment, and advanced packaging tools.

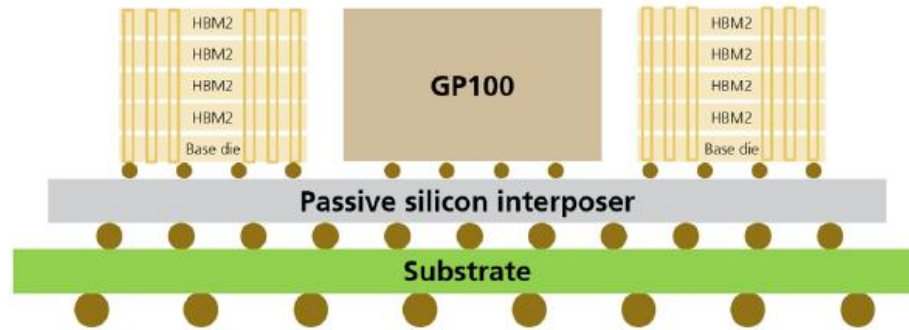
Taiwan's supply chain for TSMC and advanced packaging



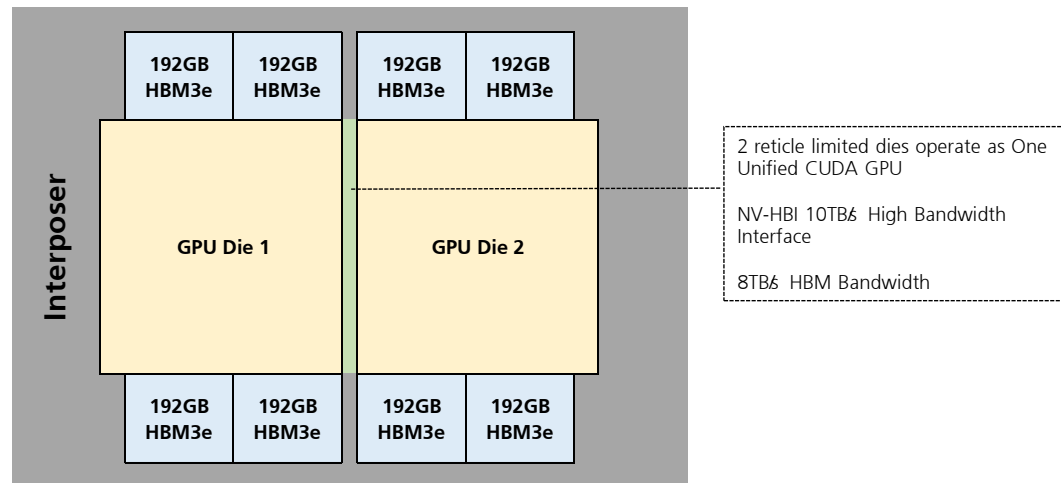
Source: UBS

Quantifying the potential upside to foundry and back-end

Nvidia's CoWoS package of GP100 and HBM2



Blackwell GPU dies are connected together using TSMC CoWoS-L



Source: Company data, UBS

Supply chain implications?

- For equipment, 2.5D packaging expansion could drive demand for high-precision die attach, wet process, underfill, inspection tools, etc. Thermocompression bonding (TCB) could have demand upside from HBM and the next generation die attach process.

A summary of major advanced packaging equipment vendors

Ticker	Company name	Market cap (US\$m)	Share price (LC)	Stock YTD performance	P/E (x)		Major equipment offering(s)	
					2026E	2027E		
6590.T	Shibaura Mechatronics	466	JPY	5,310.0	-72.0%	22.5	17.8	<ul style="list-style-type: none"> • Die bonder for chip-on-wafer (mass reflow) • Hybrid bonder
0522.HK	ASMPT	9,718	HKD	183.7	137.2%	35.0	24.8	<ul style="list-style-type: none"> • Die bonder for on-substrate (mass reflow) • Thermo-compression bonder (Chip-to-substrate/Chip-to-wafer) • Hybrid bonder
KLIC.O	Kulicke and Soffa	7,761	\$	101.1	121.9%	30.1	23.9	<ul style="list-style-type: none"> • Thermo-compression bonder (Chip-to-substrate/Chip-to-wafer) • Ball bonder in InFO
042700.KS	Hanmi Semiconductor	20,410	KRW	320,500.0	151.6%	98.7	69.1	<ul style="list-style-type: none"> • Thermo-compression bonder • Hybrid bonder
BESI.AS	BE Semiconductor Industries	24,212	€	270.4	102.2%	70.0	44.6	<ul style="list-style-type: none"> • Thermo-compression bonder • Flip chip bonder
3583.TW	Scientech	2,229	TWD	875.00	162.0%	43.0	30.8	<ul style="list-style-type: none"> • Wet process cleaning tool • Temporary bonding/debonding system
3131.TWO	Grand Process Technology	2,614	TWD	2,820.00	80.8%	N.A.	N.A.	<ul style="list-style-type: none"> • Wet process cleaning tool
NDSN.O	Nordson Corporation	16,401	\$	286.8	19.3%	25.0	23.2	<ul style="list-style-type: none"> • Underfill dispenser
6187.TWO	All Ring	3,526	TWD	1,140.00	213.2%	50.6	29.6	<ul style="list-style-type: none"> • Underfill dispenser • Automated optical inspection (AOI) tool
SMHNn.DE	SÜSS MicroTec	1,927	€	86.9	121.9%	42.5	26.6	<ul style="list-style-type: none"> • Temporary bonding/debonding system

Source: Company data, LSEG, UBS estimates (for ASMPT, Hanmi, BESI, GPTC, SUSS MicroTec); priced as of 22 May, 2026.
USIEU names priced as of 21 May, 2026

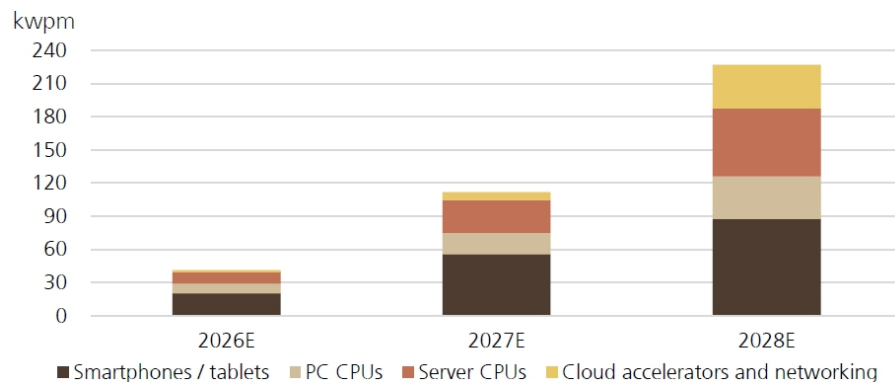
Section 6

Leading-edge foundry

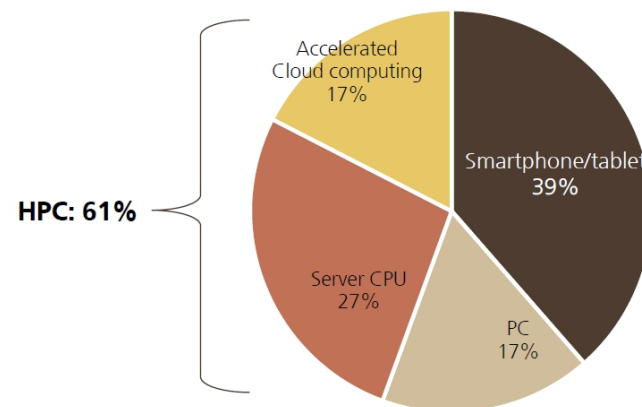
Faster leading-edge expansions

- We see accelerating advanced capacity expansion across the big 3 and China
- Key drivers include:
 - 1) TSMC's faster N2 expansion, we see 90kwpm installed capacity by end 2026E and 140kwpm by end 2027E.
 - 2) Samsung Foundry and Intel should resume expansion given improving execution. We raise Samsung Foundry's N4 capacity to 90/100kwpm by YE 2026/27E, from 80kwpm, considering demand upside from HBM base dies and Groq 3 LPUs.
 - 3) China also appears to be trying to drive more meaningful N7 capacity expansion for domestic Cloud AI compute. We estimate China including SMIC's N7 capacity to reach 30kwpm in 2026 and 50kwpm in 2027.

Quantifying N2 demand opportunities for foundry



N2 foundry demand by application (2028E)

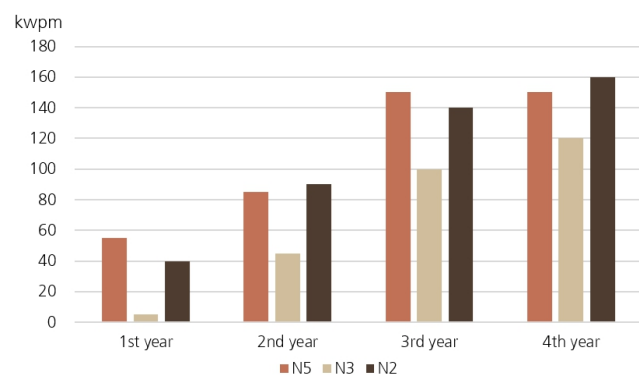


Source: Company data, UBS estimates

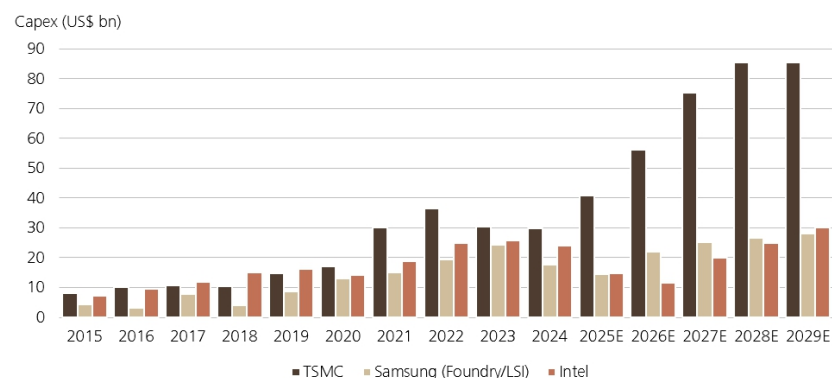
Could TSMC maintain >80% share in N3 and N2?

- Increasing challenges to major 3 players on the technology upgrade (GAA, backside power and high NA lithography), and global expansions in next 3-4 years.
- TSMC has the highest probability to navigate through the technology migrations for N2 and A16 with wide customer base.
- TSMC has been working to accelerate N2 capacity expansion to meet rising demand across applications. We forecast N2 installed capacity to reach 90kwpm by end-2026 and 140kwpm by end-2027.
- N2 could contribute high single digit to TSMC sales in 2026 and 15-20% in 2027, based on our estimates.

TSMC's N5 vs N3 and N2 capacity ramp in the same year of mass productions



Capex of TSMC vs Intel vs Samsung foundry



Source: Company data, UBS estimates

Intel's outsourcing to stay at TSMC for longer

Intel's outsourcing to TSMC could stay for longer

TSMC's Sales from Intel (US\$m)	2020	2021	2022	2023	2024	2025	2026E	2027E	23-27E CAGR
Client Computing Group (CCG)	\$589	\$1,074	\$1,296	\$1,909	\$6,361	\$8,479	\$7,410	\$6,765	37%
Data Center & AI Group (DCAI)	\$182	\$236	\$320	\$262	\$300	\$302	\$309	\$330	6%
Network and Edge	\$271	\$368	\$450	\$407	\$412	\$0	\$0	\$0	-100%
Mobileye	\$290	\$416	\$561	\$624	\$496	\$497	\$520	\$541	-4%
Accel Compute & Graphics (AXG)	\$273	\$325	\$427	\$0	\$0	\$0	\$0	\$0	NM
IFS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	NM
Other/NAND	\$186	\$34	\$56	\$72	\$46	\$210	\$247	\$196	29%
TSMC Sales from Intel	\$1,792	\$2,453	\$3,110	\$3,274	\$7,615	\$9,489	\$8,486	\$7,831	24.4%
Intel % of TSMC Sales	3.9%	4.3%	4.1%	4.7%	8.4%	7.8%	5.3%	3.8%	
Additional Growth from Intel		0.5%	-0.3%	0.6%	5.1%	-1.0%	-3.5%	-2.1%	
TSMC revenue	\$45,505	\$56,822	\$75,881	\$69,300	\$90,184	\$122,031	\$159,336	\$206,348	31.4%
YoY		24.9%	33.5%	-8.7%	30.1%	35.3%	30.6%	29.5%	
TSMC US\$ (Ex-Intel)	\$43,714	\$54,368	\$72,770	\$66,027	\$82,569	\$112,543	\$150,850	\$198,516	31.7%
YoY		24.4%	33.8%	-9.3%	25.1%	36.3%	34.0%	31.6%	

Updated with TSMC Q126 Preview

Source: Company data, UBS estimates

Our expanded foundry database

Our updated overall foundry industry capacity forecasts

Period-end capacity (kwpm)	2019	2020	2021	2022	2023	2024	2025E	2026E	2027E
Overall foundry industry capacity (kwpm)									
FinFET	427	550	689	712	810	847	971	1,100	1,233
YoY	40%	29%	25%	3%	14%	5%	15%	13%	12%
Mature 12"	1,124	1,364	1,551	1,755	1,942	2,181	2,423	2,681	2,891
YoY		21%	14%	13%	11%	12%	11%	11%	8%
8"	2,762	2,786	2,995	3,165	3,308	3,354	3,417	3,447	3,385
YoY		1%	8%	6%	5%	1%	2%	1%	-2%
Total foundry capacity (12" equivalent kwpm)	2,779	3,153	3,572	3,874	4,222	4,519	4,913	5,313	5,629
YoY		13%	13%	8%	9%	7%	9%	8%	6%
Non Chinese foundry capacity (kwpm)									
FinFET		538	673	696	794	826	950	1,063	1,177
YoY			25%	3%	14%	4%	15%	12%	11%
Mature 12"		1,078	1,152	1,264	1,334	1,418	1,486	1,540	1,582
YoY			7%	10%	6%	6%	5%	4%	3%
8"		2,204	2,277	2,339	2,394	2,400	2,413	2,401	2,339
YoY			3%	3%	2%	0%	1%	-1%	-3%
Total non China foundry capacity (12" equiv)		2,595	2,837	2,999	3,192	3,311	3,508	3,670	3,799
YoY			9%	6%	6%	4%	6%	5%	4%
Major Chinese foundry capacity (kwpm)									
FinFET		12	16	16	16	21	21	36	56
YoY			32%	0%	0%	30%	0%	70%	55%
Mature 12"		286	399	491	607	763	938	1,141	1,309
YoY			39%	23%	24%	26%	23%	22%	15%
8"		582	718	826	914	954	1,004	1,046	1,046
YoY			23%	15%	11%	4%	5%	4%	0%
Total major China foundry capacity (12" equiv)		557	735	875	1,030	1,208	1,405	1,642	1,830
YoY			32%	19%	18%	17%	16%	17%	11%
Chinese foundry as % of industry capacity									
FinFET		2%	2%	2%	2%	3%	2%	3%	5%
Mature 12"		21%	26%	28%	31%	35%	39%	43%	45%
8"		21%	24%	26%	28%	28%	29%	30%	31%
Total China foundry capacity as % of industry		18%	21%	23%	24%	27%	29%	31%	33%

Source: Company data, UBS estimates

Our expanded foundry database

Our updated leading edge foundry capacity forecasts

Period-end capacity (kwpm)	2019	2020	2021	2022	2023	2024	2025	2026E	2027E
FinFET foundry capacity (kwpm)									
TSMC	235.0	280.0	335.0	405.0	445.0	470.0	570.0	650.0	720.0
Samsung Foundry	80.0	120.0	160.0	175.0	180.0	190.0	193.0	215.0	240.0
Intel	81.3	111.0	151.3	89.0	142.0	139.4	163.9	185.2	193.8
UMC	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	13.0
GlobalFoundries	25.0	25.0	25.0	25.0	25.0	25.0	20.0	10.0	10.0
China	3.0	11.0	15.0	15.0	15.0	20.0	21.4	36.4	56.4
Total FinFET supply	427.3	550.0	689.3	712.0	810.0	847.4	971.3	1,099.6	1,233.2
YoY	40%	29%	25%	3%	14%	5%	15%	13%	12%

N2 foundry capacity forecasts

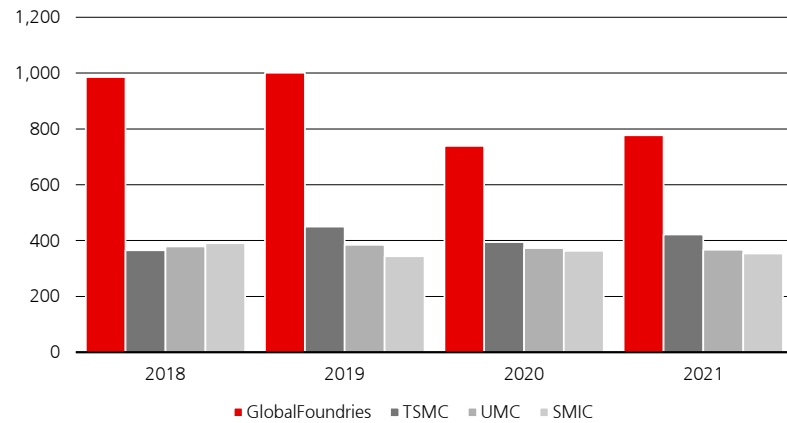
Period-end capacity (kwpm)	2025	2026E	2027E	2028E
2nm				
TSMC	40.0	90.0	140.0	160.0
Samsung Foundry	3.0	10.0	20.0	30.0
Intel	4.0	14.0	30.0	40.0
Total wafer supply	47.0	114.0	190.0	230.0
YoY		143%	67%	21%

Source: Company data, UBS estimates. Note: Our Intel estimates are based on wafer output.

Less likely Leading-edge foundry oversupply risks

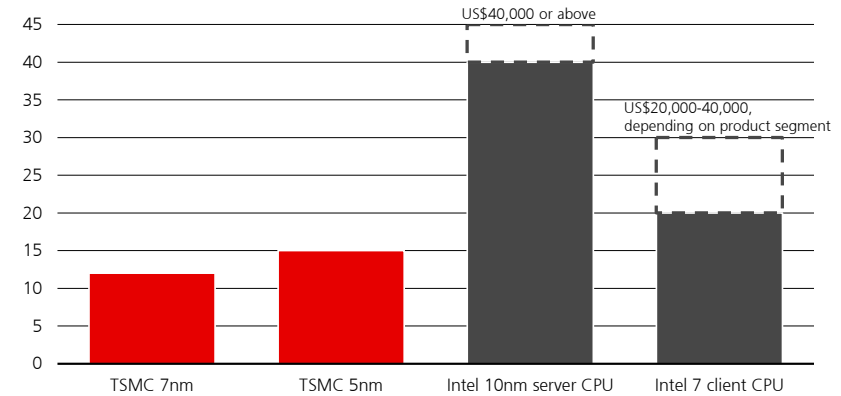
- On industry supply, while the US/Europe are pushing local capacity and subsidies, we believe “cost” still matters for customer orders.

Variable cost per wafer (US\$)



Intel’s wafer cost analysis

Wafer cost at certain node (US\$'000)



Source: Company data, UBSe

Section 7

Trailing-edge foundry

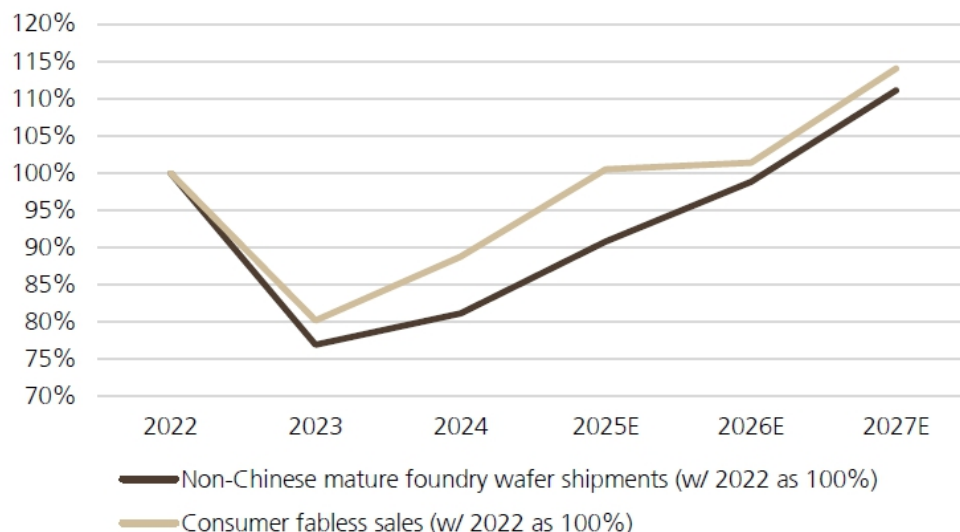
Mature foundry pricing firming with manageable consumer weakness

- As we have been flagging since H225, mature foundry industry pricing continues to trend favorably given improving supply vs demand and more rational competition. We believe Chinese foundry makers are looking to hike prices by ~10% or more in 2026 on a number of products.
- Non-Chinese foundry firms have also started to negotiate pricing YTD. Vanguard, with tighter utilization and stronger PMIC demand, may see more meaningful blended ASP increases starting from Q2'26. We forecast 2-3%/2-3% blended ASP increases in Q2/Q3'26.
- We think UMC's price increase could be less meaningful in 2026 but overall pricing is also likely to be resilient.
- 8" utilization should pick up to 84% in 2026E and >90% in 2027E, from 81% in 2025.
- 12" 28/40nm is slightly impacted by consumer weakness this year, but utilization should also hold up at above 80% in 2026-27E.

Mature foundry pricing firming with manageable consumer weakness

- 1) Moderating Chinese competition. We believe China's larger foundries are re-focusing on leading edge in the coming years to support Cloud AI. Meanwhile, we believe tier-1 foundry firms in China are looking to hike prices given tight supply.
- 2) TSMC's strategic optimization of mature foundry resources for advanced packaging.
- 3) Demand wise, AI servers with rising power semis content are consuming increasing capacity across 8" and mature 12".

We believe non China mature foundry production was below end market consumption in 2023-25, reflecting in its slower pick up of wafer growth vs consumer fabless sales



Thesis #1: 12" 28/40nm supply-demand improving

UBS forecasts—12" 28/40nm foundry supply versus demand

(kwpm 12")	2019	2020	2021	2022	2023	2024	2025	2026E	2027E
Demand									
OLED driver ICs	38	37	51	50	59	81	98	102	108
WiFi SoC	92	105	128	138	145	151	161	159	168
MCU - Auto	17	14	18	25	32	31	41	48	51
MCU - General purpose & IoT	21	22	50	64	73	74	88	100	100
TV SoC	114	109	98	88	82	81	83	81	81
STB SoC	20	21	21	19	17	18	19	19	20
RF Transceivers for 4G / Legacy	19	15	12	8	7	6	6	5	5
SSD controllers	15	18	21	20	20	19	20	20	22
Others	195	254	312	326	238	266	320	368	430
Total 12" wafer demand	533	603	727	762	711	775	894	961	1,051
<i>Demand growth</i>		13.1%	20.6%	4.8%	-6.6%	8.9%	15.3%	7.5%	9.3%
Supply									
TSMC	305	318	335	365	385	395	425	430	430
UMC	87	94	106	116	131	153	158	168	183
SMIC	50	50	60	61	71	110	140	165	185
HLMC	20	40	40	40	45	45	45	65	75
Samsung Foundry	60	60	60	60	60	60	60	60	60
GlobalFoundries	70	70	74	105	133	156	183	219	239
Qingdao SiEn	0	0	0	5	10	10	10	10	10
XMC	0	0	5	10	10	10	10	10	10
Hua Hong	0	0	0	0	0	0	0	5	10
Powerchip	0	0	0	0	0	0	0	0	0
Vanquard	0	0	0	0	0	0	0	0	5
Total 12" wafer supply	592	632	680	762	845	939	1,031	1,132	1,207
<i>Supply growth</i>		6.9%	7.5%	12.2%	10.8%	11.2%	9.8%	9.7%	6.6%
Supply vs Demand	11.0%	4.9%	-6.5%	0.1%	18.8%	21.2%	15.4%	17.8%	14.9%
Implied 28/40nm industry utilisation	89.0%	95.1%	106.5%	99.9%	81.2%	78.8%	84.6%	82.2%	85.1%

Source: Company data, Gartner, UBS estimates. Note: Expansion tracks of companies not covered (HLMC, and Qingdao SiEn) are based on company news, management comments, or IPO prospectuses.

Other mature foundry supply/demand analysis

UBS forecasts—12" 65/90nm foundry expansion

(kwpm 12")	2019	2020	2021	2022	2023	2024	2025	2026E	2027E
Total 12" 90/65nm foundry wafer supply	532	732	872	993	1,097	1,241	1,392	1,549	1,684
YoY		38%	19%	14%	10%	13%	12%	11%	9%
Net addition		200	139	121	104	145	150	157	135
TSMC		235	245	255	255	255	255	255	255
UMC		94	97	99	99	102	104	104	104
Samsung Foundry		75	75	75	75	75	75	75	75
Powerchip		49	58	66	66	72	72	72	72
GlobalFoundries		33	33	33	20	20	24	30	35
Vanguard		0	0	0	0	0	0	0	15
Nexchip		30	70	100	110	140	155	165	165
United Nova Technology (formerly SMEC)		0	0	0	10	20	40	60	85
CanSemi		10	20	36	45	57	65	75	80
CR Micro Foundry		0	0	0	0	0	10	20	30
GTA Semi		0	1	3	15	25	35	50	70
SiEn		0	0	5	20	40	45	55	55
XMC		40	47	50	50	60	75	95	115
SMIC		58	58	78	89	113	132	143	163
Hua Hong		20	60	65	95	95	137	173	188
HLMC		38	38	38	38	38	38	48	48
Others		50	70	90	110	130	130	130	130

Source: Company data, Gartner, UBS estimates. Note: Expansion tracks of companies not covered (Nexchip, CanSemi, GTA Semi, SiEn and UNT (formerly SMEC), HLMC) are based on company news, management comments, or IPO prospectuses.

Other mature foundry supply/demand analysis

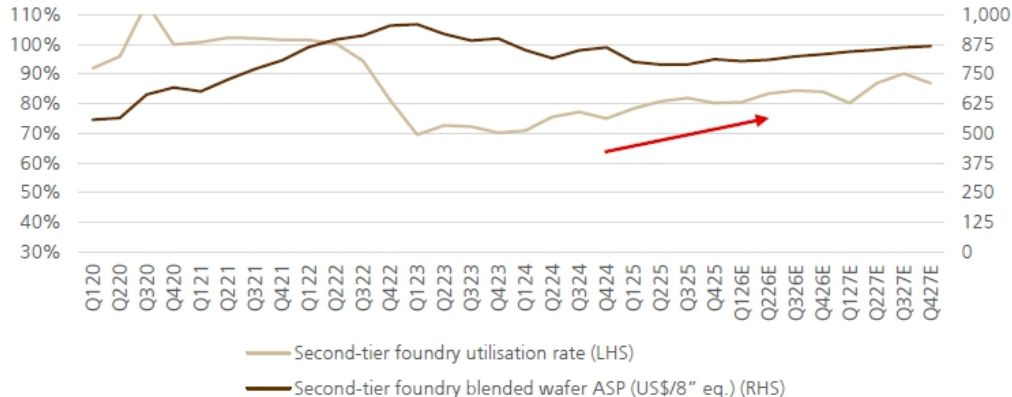
UBS forecasts—8" foundry supply vs demand

(kwpm 8")	2019	2020	2021	2022	2023	2024	2025	2026E	2027E
Demand									
Power ICs	1,446	1,496	1,687	1,521	1,410	1,513	1,634	1,611	1,706
Display driver ICs	198	211	212	190	171	152	147	149	152
MCU - non-auto	349	377	423	387	362	284	269	266	251
Others	875	745	797	877	614	687	825	949	996
Total 8" wafer demand	2,868	2,828	3,119	2,976	2,558	2,636	2,875	2,975	3,105
<i>Demand growth</i>		-1.4%	10.3%	-4.6%	-14.0%	3.1%	9.1%	3.5%	4.4%
Supply									
TSMC	581	581	581	581	581	581	581	581	511
UMC	313	322	329	341	363	363	367	367	367
Samsung Foundry	250	250	250	250	260	260	260	260	260
Vanguard	211	243	252	270	287	287	293	278	285
SMIC	228	249	318	358	398	398	398	398	398
Hua Hong	178	178	178	178	178	178	178	178	178
PSMC	85	95	110	118	118	123	123	123	123
UNT (formerly SMEC)	5	40	80	100	110	130	160	160	160
GlobalFoundries	142	112	117	122	122	122	122	122	122
Key Foundry / Magnachip Fab 4	82	82	82	82	82	82	82	82	82
Skywater	13	13	13	13	13	13	13	13	13
Dongbu Hitek	119	130	138	151	151	151	151	151	151
TowerJazz	141	141	148	148	148	148	148	148	148
GTA Semi	28	35	48	65	83	100	100	100	100
CSMC	60	62	68	78	78	78	98	140	140
Qingdao SiEn	0	3	9	20	25	25	25	25	25
NSEMII (SMIC Ningbo)	15	15	17	28	43	45	45	45	45
SilTerra	35	35	35	35	41	41	41	41	41
X Fab	86	86	86	86	86	86	86	86	86
Lfoundry	42	42	42	42	42	42	42	42	42
Other	148	72	94	100	100	102	104	106	108
Total 8" wafer supply	2,762	2,786	2,995	3,165	3,308	3,354	3,417	3,447	3,385
<i>Supply growth</i>		0.9%	7.5%	5.7%	4.5%	1.4%	1.9%	0.9%	-1.8%
Supply vs Demand	-3.7%	-1.5%	-4.0%	6.4%	29.3%	27.2%	18.9%	15.9%	9.0%
Implied 8" industry utilisation	103.7%	101.5%	104.0%	93.6%	70.7%	72.8%	81.1%	84.1%	91.0%

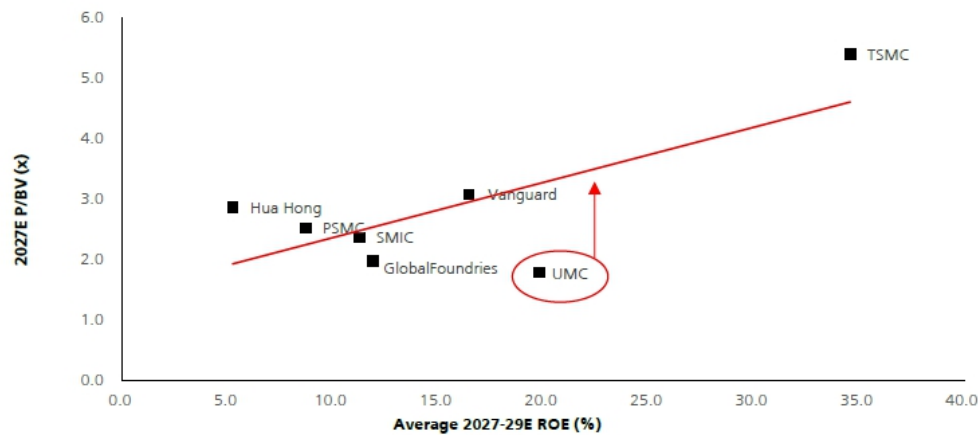
Source: Company data, Gartner, UBS estimates. Note: Expansion tracks of companies not covered (UNT (formerly SMEC), TowerJazz, Dongbu Hitek, X Fab, Key Foundry, CSMC, L Foundry, SilTerra, GTA Semi, Skywater and Qingdao SiEn) are based on company news, management comments, or IPO prospectuses.

Other mature foundry supply/demand analysis

Mature foundry utilisation vs ASP



Foundry 2027E P/BV versus average 2027-29E ROE



Source: Company data, Gartner, LSEG, UBSe. Note: We include UMC, SMIC, PSMC, Vanguard and Hua Hong in the second-tier foundry analysis. Priced as of 28 Jan 2026 (GlobalFoundries price data as of 27 Jan 2026).

Section 8

Company specifics

TSMC – Buy with PT NT\$3,000

- **More robust Cloud AI outlook**
 - TSMC guided for 2026 sales growth of over 30% (in US\$ terms) and capex of US\$56bn.
 - AI accelerator sales grew to the high teens as a percentage of sales in 2025, and TSMC lifted 2024-29 sales CAGR guidance for the segment to high 50%.
- **2026/27/28E capex of US\$56bn/75bn/85bn. Key drivers include:**
 - 1) N3 capacity expansion in addition to CoWoS expansion, to support the migration of AI accelerators from 2026E. We believe TSMC could add N3 capacity to 170kwpm scale in 2026E from 110-120kwpm exiting 2025; and further expand to 190kwpm by 2027E.
 - 2) Accelerating N2 ramp in with faster process migration across segments
 - 3) Faster US expansion. We believe TSMC should install tools for the second phase in Arizona in 2026 for earlier mass production in H227. With more overseas fab build up to follow.
- **Optimism on profitability outlook improves**
 - TSMC flagged rising dilution from N2 ramp into H226 and guided for a 2-3% impact on 2026 GM. As we believe overseas depreciation should also increase in H226, we forecast GM to fall slightly to 64.8% in H2 from 66.8% in H1, but flag upside risk if TSMC's utilisation, product mix, and scale benefits continue to strengthen.
- **Discount to the SOX**
 - TSMC trading at 18x 2027E PE vs. SOX at 29x PE.

TSMC bottom-up supports strong growth

TSMC Revenue	2018	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2023	2024	2025	2026E	2027E
Apple	\$6,906	\$8,158	\$11,928	\$15,156	\$17,753	\$17,521	\$19,393	\$23,194	\$29,704	\$35,505	25.3%	21.5%	19.0%	18.6%	17.2%
AMD	\$1,302	\$1,232	\$3,148	\$5,562	\$7,572	\$7,750	\$8,336	\$11,520	\$15,196	\$22,944	11.2%	9.2%	9.4%	9.5%	11.1%
Qualcomm	\$1,915	\$1,994	\$3,187	\$4,280	\$6,574	\$6,314	\$7,910	\$9,448	\$9,481	\$10,576	9.1%	8.8%	7.7%	6.0%	5.1%
NVIDIA	\$2,302	\$2,024	\$2,802	\$2,987	\$3,144	\$6,097	\$10,865	\$22,268	\$32,482	\$43,993	8.8%	12.0%	18.2%	20.4%	21.3%
Mediatek	\$1,423	\$1,424	\$2,683	\$5,114	\$3,962	\$3,379	\$4,370	\$5,278	\$5,708	\$8,521	4.9%	4.8%	4.3%	3.6%	4.1%
Broadcom	\$3,314	\$2,517	\$2,686	\$3,770	\$4,919	\$3,719	\$4,024	\$5,281	\$13,953	\$23,838	5.4%	4.5%	4.3%	8.8%	11.6%
Intel	\$1,092	\$1,120	\$1,792	\$2,453	\$3,110	\$3,274	\$7,615	\$9,489	\$8,486	\$7,831	4.7%	8.4%	7.8%	5.3%	3.8%
Marvell	\$544	\$514	\$568	\$970	\$1,293	\$1,362	\$1,505	\$2,333	\$3,184	\$4,364	2.0%	1.7%	1.9%	2.0%	2.1%
Renesas / Intersil / Dialog	\$267	\$229	\$267	\$1,087	\$1,292	\$1,218	\$1,057	\$1,121	\$1,254	\$1,318	1.8%	1.2%	0.9%	0.8%	0.6%
NXP	\$700	\$526	\$569	\$911	\$1,167	\$1,158	\$1,149	\$1,273	\$1,380	\$1,502	1.7%	1.3%	1.0%	0.9%	0.7%
TSMC sales from its top 10	\$20,600	\$19,836	\$29,013	\$41,361	\$52,780	\$51,791	\$66,223	\$91,204	\$120,828	\$160,392	75%	73%	75%	76%	78%
TSMC YoY at its top 10	0%	-4%	46%	43%	28%	-2%	28%	38%	32%	33%					
TSMC sales from its top 30	\$31,048	\$31,220	\$41,181	\$50,572	\$61,790	\$60,116	\$74,423	\$100,920	\$131,424	\$171,842	87%	83%	83%	82%	83%
TSMC YoY at its top 30	7%	1%	32%	23%	22%	-3%	24%	36%	30%	31%					
Rest of TSMC/Inventory	\$2,404	\$3,838	\$4,240	\$6,235	\$14,261	\$9,182	\$15,761	\$21,111	\$27,912	\$34,506	13%	17%	17%	18%	17%
Rest of TSMC YoY	-31%	60%	10%	47%	129%	-36%	72%	34%	32%	24%					
TSMC Sales (UBS Estimate)	\$33,452	\$35,059	\$45,422	\$56,808	\$76,051	\$69,298	\$90,184	\$122,031	\$159,336	\$206,348	100%	100%	100%	100%	100%
TSMC Overall YoY	3%	5%	30%	25%	34%	-9%	30%	35%	31%	30%					

Based on Q126 preview note
Source: Company data, UBS estimates

Stock driven by the HPC segment

HPC Silicon Market (US\$bn)	2020	2021	2022	2023	2024	2025	2026E	2027E	15-20 CAGR	20-27E CAGR
Servers and CPUs	\$66.9	\$75.1	\$65.6	\$55.8	\$64.6	\$79.4	\$93.9	\$108.1	7%	7%
Graphics and Gaming	\$12.4	\$21.8	\$18.8	\$19.6	\$17.9	\$26.1	\$28.0	\$31.3	12%	14%
AI Accelerators	\$4.2	\$6.0	\$7.7	\$16.6	\$40.3	\$79.0	\$156.3	\$249.4	66%	79%
Cryptocurrency	\$1.5	\$3.5	\$5.0	\$2.5	\$3.5	\$6.5	\$5.0	\$5.0	38%	19%
Programmable Logic	\$4.9	\$5.6	\$7.5	\$8.5	\$5.4	\$5.0	\$4.2	\$4.8	5%	0%
Networking & Infrastructure	\$17.2	\$18.9	\$21.7	\$23.2	\$24.9	\$34.8	\$48.8	\$68.3	6%	22%
Computing Peripherals	\$8.5	\$9.76	\$10.2	\$10.5	\$10.7	\$10.8	\$9.7	\$10.7	1%	3%
HPC - Market	\$115.6	\$140.7	\$136.5	\$136.6	\$167.2	\$241.6	\$345.9	\$477.6	8%	22%
YoY Growth	14%	22%	-3%	0%	22%	44%	43%	38%		
HPC Wafer Opportunity (US\$bn)	2020	2021	2022	2023	2024	2025	2026E	2027E	15-20 CAGR	20-27E CAGR
Servers and CPUs	\$31.6	\$35.4	\$31.0	\$26.3	\$30.5	\$37.5	\$44.3	\$51.0	7%	7%
Graphics and Gaming	\$4.7	\$8.2	\$7.0	\$7.4	\$6.7	\$9.8	\$10.5	\$11.7	12%	14%
AI Accelerators	\$1.1	\$1.5	\$2.0	\$4.6	\$12.1	\$25.5	\$52.7	\$84.2	60%	87%
Cryptocurrency	\$0.8	\$1.8	\$2.6	\$1.3	\$1.8	\$3.4	\$2.6	\$2.6	38%	19%
Programmable Logic	\$1.3	\$1.5	\$2.0	\$2.3	\$1.5	\$1.4	\$1.2	\$1.4	5%	0%
Networking & Infrastructure	\$5.8	\$6.4	\$7.3	\$7.8	\$8.4	\$11.8	\$16.5	\$23.0	6%	22%
Computing Peripherals	\$3.6	\$4.2	\$4.4	\$4.5	\$4.6	\$4.6	\$4.1	\$4.6	1%	3%
HPC - Market	\$48.8	\$59.0	\$56.4	\$54.2	\$65.5	\$93.9	\$132.0	\$178.5	7%	20%
YoY Growth	14%	21%	-4%	-4%	21%	43%	41%	35%		
TSMC HPC estimates (UBS)	2020	2021	2022	2023	2024	2025	2026E	2027E	15-20 CAGR	20-27E CAGR
Servers and CPUs	\$6.0	\$8.5	\$10.1	\$9.8	\$16.2	\$20.6	\$23.0	\$25.8	NM	23%
Graphics and Gaming	\$3.2	\$4.0	\$5.3	\$6.1	\$6.4	\$9.4	\$10.1	\$11.3	10%	20%
AI Accelerators	\$1.1	\$1.5	\$2.0	\$4.6	\$12.1	\$25.5	\$52.7	\$84.2	60%	87%
Cryptocurrency	\$0.6	\$1.5	\$2.1	\$1.0	\$1.5	\$2.7	\$2.1	\$2.1	38%	19%
Programmable Logic	\$0.7	\$1.0	\$1.4	\$1.8	\$1.2	\$1.2	\$1.1	\$1.3	4%	8%
Networking & Network Processors	\$1.7	\$1.9	\$2.8	\$3.4	\$3.9	\$5.6	\$7.9	\$11.1	1%	31%
Computing Peripherals	\$1.8	\$1.9	\$2.5	\$2.5	\$2.8	\$3.1	\$2.8	\$3.1	6%	8%
Inventory builds	-\$0.2	\$0.8	\$5.1	\$0.8	\$2.1	\$2.3	-\$1.0	-\$1.0		
TSMC HPC revenue (US\$bn)	\$14.9	\$21.0	\$31.3	\$30.0	\$46.0	\$70.3	\$102.7	\$141.6	21%	38%
YoY Growth	46%	41%	49%	-4%	54%	53%	46%	38%		
TSMC share of HPC production	31%	36%	55%	55%	70%	75%	78%	79%		
TSMC revenue (US\$bn)	\$45.5	\$56.8	\$75.9	\$69.3	\$90.2	\$122.0	\$159.3	\$206.3	11%	24%
HPC % of TSMC Sales	33%	37%	41%	43%	51%	58%	64%	69%		

Based on Q126 preview note
Source: Company data, UBS estimates

TSMC - Quantifying the server CPU demand

- **Agentic AI driving new demand for server CPUs**
 - We forecast global server CPU shipments increase from 23m in 2025 to 63-70m units in 2030, a 30% CAGR.
 - We expect ARM to take unit shipment share from 16% in 2025 to 42% in 2030E; AMD should also gain share from 24% to 29%, while Intel's share could decline from 60% to 29% in the same period.
- **TSMC to be a key beneficiary of ARM and AMD's share gains**
 - We view higher server CPU unit shipments by 2030E and meaningful share expansion by ARM-based and AMD as strong potential tailwinds for TSMC.
 - Our analysis indicates that server CPUs may require 200kwpm of leading edge foundry capacity by 2030E, underpinned by higher units and larger die size vs. 71kwpm capacity demand in 2025.
 - We assume TSMC's capacity demand from ARM and AMD could rise meaningfully to 122kwpm by 2030E from 18kwpm in 2025.
 - Translating to a US\$44.1bn revenue opportunity for TSMC by 2030E, reaching 11% of total sales from only US\$3.7bn in 2025 or 3% of sales.
- **We expect much larger leading edge TAM**
 - Historically, a good leading edge node (e.g. N16/12, N7) for TSMC generally peaked at 120-130kwpm capacity, but we think scale will expand to c200kwpm for N3 based on Cloud AI upside potential.
 - We expect TAM of new nodes such as N2 and A14 to reach 300-350kwpm.

UBS server CPU TAM estimates suggest a US\$170bn market by 2030E

Estimate	2025	2027E	2030E	Comment
Traditional CPU Market				
Traditional CPU Market, MM	20	26	30	Grows from 2025 at 8% CAGR like C2005-2020
Traditional CPU ASP, (US\$, K)	\$1,200	\$1,348	\$1,606	Grows from 2025 at 1.5x 4% CAGR like C2005-2020
Traditional Market, US\$bn	24	35	48	Implied by units and ASPs
AI CPU (Bottom-Up)				
AI Accelerator units (Bottom-up), MM	9	23	40	Largest programs (NVDA, AMD, TPU, Trn), ex-China
AI CPU Market (Bottom-up Ests), MM	3	12	33	
Head Node	3	10	~20	UBSe based announced systems
Standalone	0	2	13	Additional CPU units outside of rack
AI CPU ASP, (US\$, K)	\$2,420	\$3,175	\$3,769	Higher core count and clock speed increasing ASPs
AI CPU Market (Bottom-up Ests), US\$bn	7	39	125	
AI CPU (Top-Down)				
AI CPU Market (Top-Down Ests), MM			40	TAM based on 3-4T AI Spend, and 1-to-1 CPU/GPU attach
AI CPU ASP, K			\$3,000	UBS ASP ests
AI CPU Market, US\$bn			120	Implied by units and ASPs
Total Market				
Bottom-up units, MM	23	36	63	Traditional + Bottom-up Ests
Bottom-up TAM, US\$bn	31	74	173	
Top-Down CPU Market, MM			70	Traditional demand + Top-Down Est
Top-Down CPU Market, US\$bn			168	

Source: Company data, UBS estimates

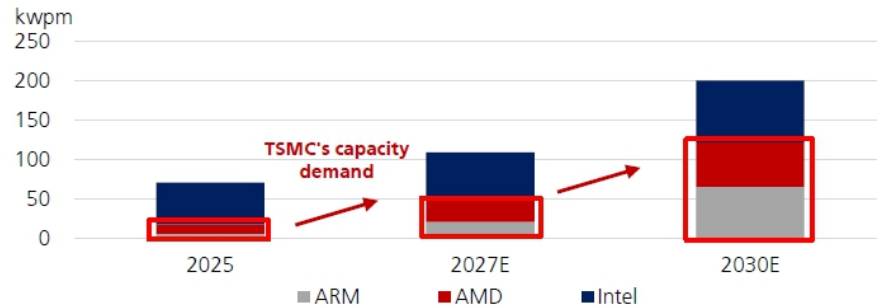
Larger TAM and ARM/AMD's higher share to drive a US\$44bn sales opportunity for TSMC by 2030E

	2025	2027E	2030E
Server CPU units (mn)			
- Traditional servers	20	26	30
- AI server: head node	3	10	20
- AI server: standalone	0	2	13
Total	23	38	63
Server CPU market share based on units			
ARM	16%	32%	42%
AMD	24%	27%	29%
Intel	60%	40%	29%
Server CPU adv capacity requirement (kwpm)			
ARM	6.1	21.0	65.7
AMD	11.8	27.6	56.7
Intel	53.3	60.9	78.3
Total	71.3	109.5	200.7
TSMC's capacity demand (kwpm)	18.0	48.6	122.4
<i>Wafer ASP (US\$)</i>	<i>17,000</i>	<i>24,000</i>	<i>30,000</i>
TSMC's sales opportunity (US\$m)	3,667	14,003	44,068
Server CPU as % sales	3%	6%	11%

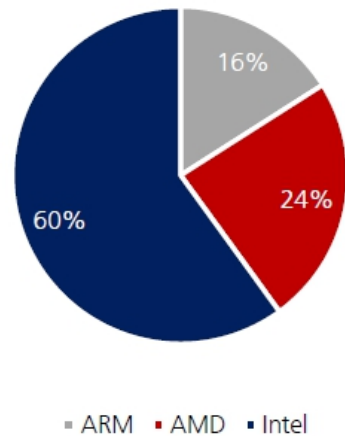
Source: Company data, UBS estimates

TSMC is a key beneficiary of agentic AI lead CPU demand boom

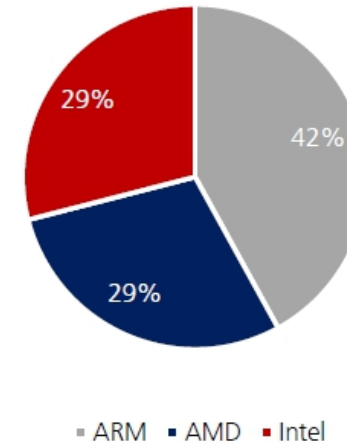
Server CPU's advanced capacity demand to triple to 200kwpm by 2030E, of which TSMC could serve 122kwpm



Server CPU market share in 2025



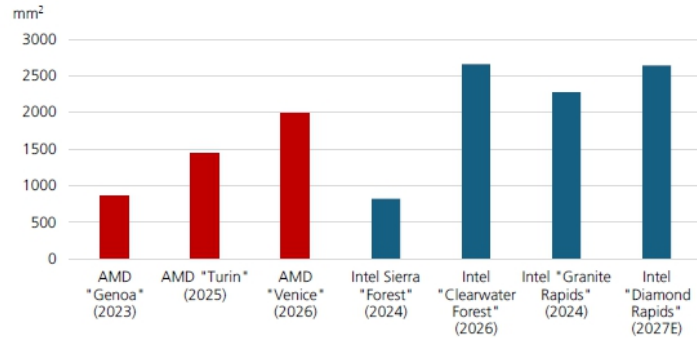
Server CPU market share in 2030E



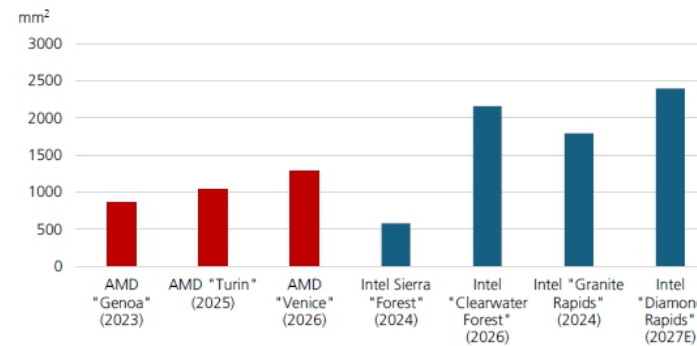
Source: Company data, UBSe

TSMC is a key beneficiary of agentic AI lead CPU demand boom

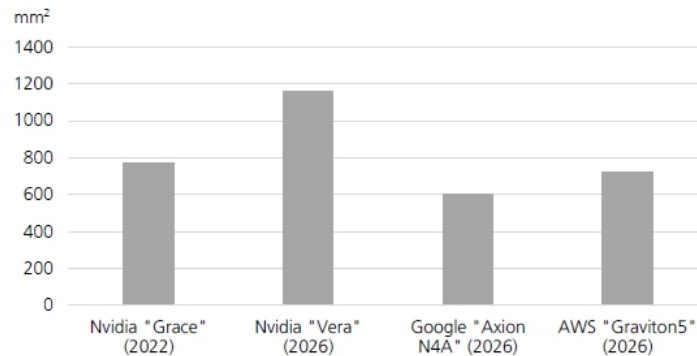
x86 server CPU die size estimates - total die area. Die area has been steadily increasing



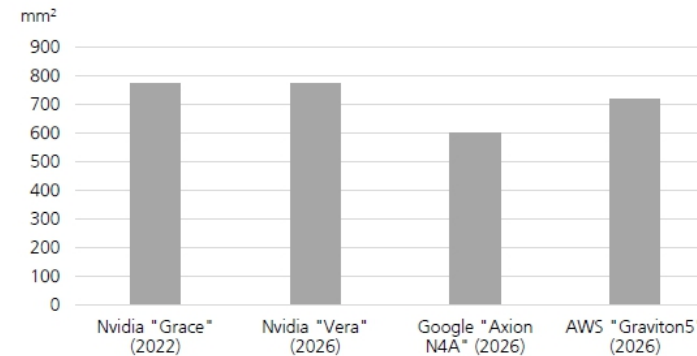
x86 server CPU die size estimates - compute die area. Die area has been steadily increasing



ARM server CPU die size estimates - total die area. ARM-based is smaller than x86 currently



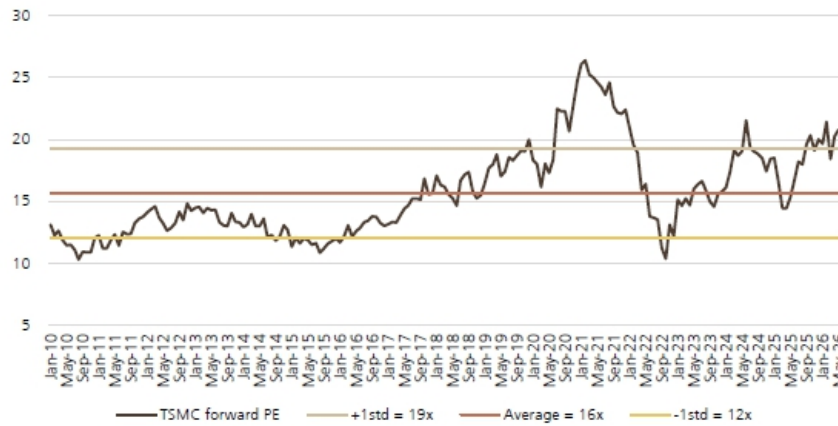
ARM server CPU die size estimates - compute die area. We expect die area to increase



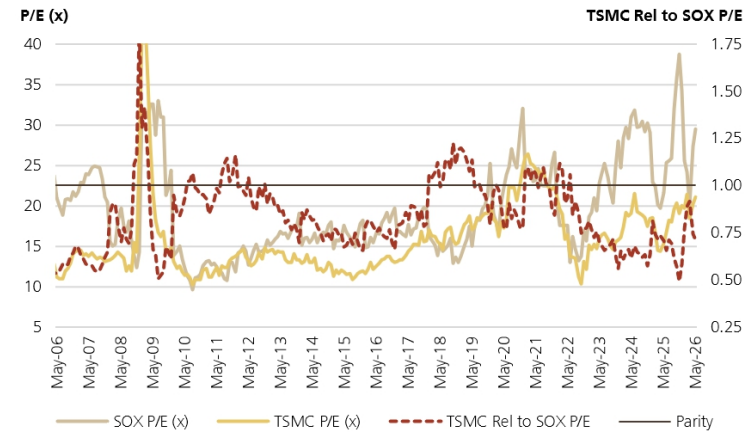
Source: Company data, UBSe

TSMC still at a discount to SOX

TSMC P/E has recovered through 2024, but yet to be back to the previous peak



TSMC's discount to the SOX widened



Source: Company data, LSEG, UBSe

MediaTek – Key Call Buy, PT NT\$5,500

- **Expanding Google TPU addressable market w/ strong operating leverage**
 - MediaTek raised its TPU v8t sales target to be U\$2bn/US\$7-12bn 2026/27. Guidance clearly reflects
 - 1) its TPU v8 shipment is on track for large volume from Q426 with no delays
 - 2) MediaTek's TPU now pivoted for training based on Google's TPU launch has volume demand
 - 3) MediaTek is getting more capacity support from TSMC.
- **Manageable execution challenges for TPU v9**
 - We believe ultimately MediaTek should diversify across TSMC's CoWoS (smaller package with 2 TPU dies) and Intel's EMIB-T (larger package with 4 TPU dies).
 - As for SerDes, MediaTek is on track to deliver 336G based on its solid foundation of 224G.
- **Beyond the disruption of memory supply, we see potential for smartphone upgrade cycle re-accelerating as AI proliferates to edge applications.**
 - MediaTek's flagship 5G achieved breakthrough and we expect volume to rise from 20m in 2026E to 26m in 2027E with upside risk.
 - MediaTek may finally penetrate into Samsung's flagship phone in 2027E, starting with the fan edition S27 using the D9600 SoC.
 - MediaTek also appears to be working with OpenAI on edge AI devices like wearables and IoT, which may use D9600 in 2027.

Source: Company data, UBSe

MediaTek – Key Call Buy, PT NT\$5,500

- Given the investor scepticism and debate, we expect a substantial re-rating potential for the stock.
- Importantly, we forecast strong operating leverage for Cloud ASIC business with OPM potentially reaching over 37% to contribute EPS of NT\$191/228 in 2027/28E.

UBS forecasts for MediaTek's TPU business

	2026E	2027E	2028E	2029E	2030E
Google's TPU sales (US\$mn)	2,028	16,000	30,450	36,000	40,000
Google's TPU sales (NT\$mn)	63,945	504,000	959,175	1,134,000	1,260,000
% of total sales	10%	44%	57%	59%	60%
Gross profits (NT\$mn)	26,857	211,680	402,854	476,280	529,200
Gross margin	42%	42%	42%	42%	42%
OPEX (NT\$mn)	12,789	27,720	47,959	51,030	56,700
OPEX ratio	20.0%	5.5%	5.0%	4.5%	4.5%
Operating profits (NT\$mn)	14,068	183,960	354,895	425,250	472,500
Operating margin	22%	37%	37%	38%	38%
Tax rate	13.4%	14.5%	14.5%	14.5%	14.5%
Net profits (NT\$mn)	12,181	157,286	303,435	363,589	403,988
EPS contribution (NT\$)	7.6	98.8	190.5	228.3	253.7
Consolidated EPS (NT\$)	63.4	163.4	259.3	305.4	339.5

Source: Company data, UBSe

MediaTek's key growth drivers for the next 3-5 years

Identified new growth drivers may contribute c83% of MediaTek's revenue in 2028E vs c40% in 2023

Base case (NT\$m)	2025	2026E	2027E	2028E
5G flagship	110,921	109,819	157,353	175,391
% of sales	19%	17%	14%	10%
Units (m)	21.5	19.7	26.0	28.0
ASP (US\$)	165.3	176.8	192.1	198.9
5G non-flagship	166,745	134,258	135,510	157,806
% of sales	28%	21%	12%	9%
Units (m)	189.0	156.0	160.0	185.0
ASP (US\$)	28.3	27.3	26.9	27.1
PC CPUs		4,703	9,073	14,952
% of sales		1%	1%	1%
Units (m)		3.7	7.2	11.9
- Total NB units (m)		186	192	198
- WOA penetration in PC market		10%	15%	20%
- NVIDIA/MediaTek's share		20%	25%	30%
Royalty fee (US\$ per chip)		40.0	40.0	40.0
Cloud ASICs		63,945	504,000	959,175
% of sales		10%	44%	57%
Edge AI ASICs			15,750	31,500
% of sales			1%	2%
Automotive	11,233	15,008	20,160	55,125
% of sales	2%	2%	2%	3%
TAM for cockpit, connectivity (US\$bn)	24	28	32	35
MediaTek's share	2%	2%	2%	5%
Wi-Fi 7	4,487	7,668	11,907	16,507
% of sales	1%	1%	1%	1%
Units (m)	17.8	33.4	54.6	79.6
ASP (US\$)	8.1	7.3	6.9	6.6
Revenue from new growth drivers (NT\$m)	293,386	335,401	853,753	1,410,456
% of sales	49%	51%	74%	83%
Total MediaTek sales (NT\$m)	595,966	652,014	1,156,814	1,691,719
YoY growth	12%	9%	77%	46%

Source: Company data, UBS estimates

Edge AI – inflection point for smartphone SoC content

MediaTek sharpening its SoC computing capabilities

Model number	MediaTek Dimensity 9000	MediaTek Dimensity 9200	MediaTek Dimensity 9300	MediaTek Dimensity 9400	MediaTek Dimensity 9500
Year introduced	2021	2022	2023	2024	2025
Fabrication	TSMC N4 (FinFET)	TSMC N4 (FinFET)	TSMC N4 (FinFET)	TSMC N3E (FinFET)	TSMC N3P (FinFET)
Packaging	FCCSP	FCCSP	FCCSP	FCCSP	FCCSP
Transistors (bn)	15.3	17.0	22.7	29.1	30.0
Die area (sq-mm)	112.8	123.2	140.4	129.1	129.1
MTr/mm ²	135.7	138.0	161.7	225.4	232.3
CPU cores	1x Cortex-X2 (Prime-core, 3.1GHz) + 3x Cortex-A710 (P-cores, 2.9GHz) + 4x Cortex-A510 (E-cores, 1.8GHz)	1x Cortex-X3 (Prime-core, 3.4GHz) + 3x Cortex-A715 (P-cores, 3.0GHz) + 4x Cortex-A510 (E-cores, 2.0GHz)	1x Cortex-X4 (Prime-core, 3.3GHz) + 3x Cortex-X4 (P-cores, 2.9GHz) + 4x Cortex-A720 (E-cores, 2.0GHz)	1x Cortex-X925 @ 3.63 GHz 3x Cortex-X4 @ 3.3 GHz 4x Cortex-A720 @ 2.4 GHz	1x Arm C1-Ultra @ 4.21 GHz 3x Arm C1-Premium @ 3.5GHz 4x Arm C1-Pro @ 2.7GHz
GPU cores	Mali-G710 MP7	Immortalis G715 MP11	12x Immortalis G720 MP12	Arm Immortalis-G925 MC12	Arm Mali-G1 Ultra MC12
Neural engine cores	APU 590	APU 690	APU 790	MediaTek NPU 890	MediaTek NPU 990
Neural engine performance	20 TOPS	24 TOPS	>48 TOPS	>65 TOPS	~100 TOPS
Memory	24GB LPDDR5X	24GB LPDDR5X	24GB LPDDR5T	24GB LPDDR5X	24GB LPDDR5X

Qualcomm also drives more powerful AI computing engines on chipsets

Model number	Qualcomm Snapdragon 8 Gen 1	Qualcomm Snapdragon 8 Gen 2	Qualcomm Snapdragon 8 Gen 3	Qualcomm Snapdragon 8 Elite	Qualcomm Snapdragon 8 Elite Gen 5
Year introduced	2021	2022	2023	2024	2025
Fabrication	Samsung Foundry 4LPX (FinFET)	TSMC N4 (FinFET)	TSMC N4 (FinFET)	TSMC N3E (FinFET)	TSMC N3P (FinFET)
Packaging	FCCSP	FCCSP	FCCSP	FCCSP	FCCSP
Transistors (bn)	16.0	16.0	19.5	26.8	28.3
Die area (sq-mm)	128.5	118.4	137.3	124.1	126.3
MTr/mm ²	124.5	135.2	142.0	216.0	224.0
CPU cores	1x Cortex-X2 (Prime-core, 3.0GHz) + 3x Cortex-A710 (P-cores, 2.5GHz) + 4x Cortex-A510 (E-cores, 1.8GHz)	1x Cortex-X3 (Prime-core, 3.2GHz) + 2x Cortex-A715 (P-cores, 2.8GHz) + 2x Cortex-A710 (P-cores, 2.8GHz) + 3x Cortex-A510 (E-cores, 2.0GHz)	1x Cortex-X4 (Prime-core, 3.4GHz) + 3x Cortex-A720 (P-cores, 3.2GHz) + 2x Cortex-A720 (P-cores, 3.0GHz) + 2x Cortex-A520 (E-cores, 2.3GHz)	2x Oryon Gen 2 (Prime core, 4.32 GHz) 6x Oryon Gen 2 (P-cores, 3.53 GHz)	up to 4.6 GHz 2x Oryon Gen 3 (Prime core, 4.6 GHz) 6x Oryon Gen 3 (P-cores, 3.62 GHz)
GPU cores	Adreno 730	Adreno 740	Adreno 750	Adreno 830	Adreno 840
Neural engine cores	Hexagon 790 NPU	Hexagon NPU	Hexagon NPU	Hexagon NPU	Hexagon NPU
Neural engine performance	26 TOPS	26 TOPS	45 TOPS	>65 TOPS	>80 TOPS
Memory	24GB LPDDR5	24GB LPDDR5X	24GB LPDDR5X	24GB LPDDR5X	24GB LPDDR5X

Source: Company data, UBS estimates

Meaningful price uptick for upcoming flagship SoCs

Cost bump in Dimensity 9500 could lead to higher chip selling price

	Dimensity 9000	Dimensity 9200	Dimensity 9300	Dimensity 9400	Dimensity 9500
Year	2021	2022	2023	2024	2025
Process node	TSMC N4 (FinFET)	TSMC N4 (FinFET)	TSMC N4 (FinFET)	TSMC N3E (FinFET)	TSMC N3P (FinFET)
Transistors (bn)	15.3	17.0	22.7	29.1	30.0
Density (MTr/mm ²)	135.7	138.0	161.7	225.4	232.3
12" wafer area (mm ²)	70,686	70,686	70,686	70,686	70,686
Die size (mm ²)	112.8	123.2	140.4	129.1	129.1
Yield	75%	80%	80%	70%	70%
Usable area	88%	88%	88%	88%	88%
Known good die per wafer	414	404	355	337	337
Wafer price (US\$)	15,000	15,000	15,000	18,000	18,900
Die fabrication cost (US\$)	36.3	37.1	42.3	53.4	56.0
Back-end cost (~25% of front-end; US\$)	9.1	9.3	10.6	13.3	14.0
Other component cost (US\$)	8.2	8.4	9.5	12.0	12.6
Total cost (US\$)	53.5	54.8	62.4	78.7	82.7

Apple has seen manufacturing cost inflation migrating to the 3nm process

	Apple A14 Bionic	Apple A15 Bionic	Apple A16 Bionic	Apple A17 Pro	Apple A18 Pro
Year	2020	2021	2022	2023	2024
Process node	TSMC N5 (FinFET)	TSMC N5P (FinFET)	TSMC N4P (FinFET)	TSMC N3B (FinFET)	TSMC N3E (FinFET)
Transistors (bn)	11.8	15.0	16.0	19.0	20.0
Density (MTr/mm ²)	134.5	139.3	141.9	183.0	190.5
12" wafer area (mm ²)	70,686	70,686	70,686	70,686	70,686
Die size (mm ²)	87.8	107.7	112.8	103.8	105.0
Yield	70%	75%	78%	70%	70%
Usable area	88%	88%	88%	88%	88%
Known good die per wafer	496	433	430	419	415
Wafer price (US\$)	15,000	15,000	15,500	18,000	18,000
Die fabrication cost (US\$)	30.2	34.6	36.0	42.9	43.4
Back-end cost (~25% of front-end)	7.6	8.7	9.0	10.7	10.9
Other component cost (US\$)	3.8	4.3	4.5	5.4	5.4
Manufacturing cost (US\$)	37.8	43.3	45.0	53.6	54.3

Source: Company data, UBS estimates

MediaTek's automotive initiatives

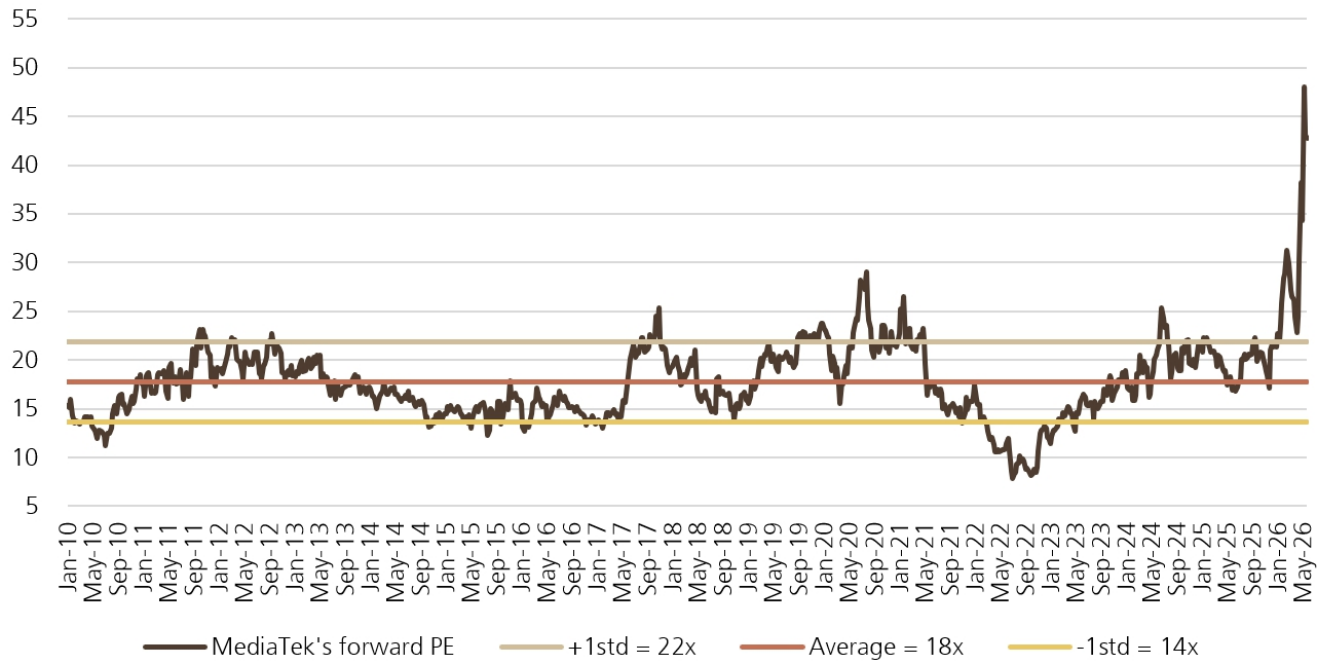
- Auto ramping to US\$1bn in 2-3 years
 - MediaTek shared it is making solid progress on design in and design win for automotive.
 - Sales contribution from its premium cockpit C-X1 co-developed with Nvidia would start from late 2026.
 - Management expected auto addressable market to be US\$40bn, and aimed to reach US\$1bn sales within 2-3 years, which could be mid single digit of sales by 2028.
 - We believe MediaTek may replicate its success in flagship 5G to gain good share in auto, especially as Chinese car makers may look to diversify from Qualcomm.
- On its Automotive Investor Day 2022, Qualcomm estimated an automotive TAM of US\$100bn by 2030, consisting of **US\$16bn in connectivity** and car-to-cloud, **US\$25bn in digital cockpits** and US\$59bn in ADAS/AD.
 - If we take a conservative benchmark for MediaTek's automotive TAM, connectivity and cockpits still only size up to US\$41bn versus MediaTek's automotive revenue of US\$200-300m in 2023.
 - Assuming MediaTek takes only 7-10% market share, the revenue opportunity could be US\$3-4bn into 2027-28E and account for 9-13% of company sales.
- MediaTek's sees its auto business to grow significantly in 2026.
- MediaTek is working with DENSO for ADAS chip solutions.

Source: Company data, UBS estimates

MediaTek – Valuation

- Our price target is NT\$5,500, based on 26x 2027-28E PE.

MediaTek 1-year forward P/E (x)



Source: Company data, LSEG, UBS

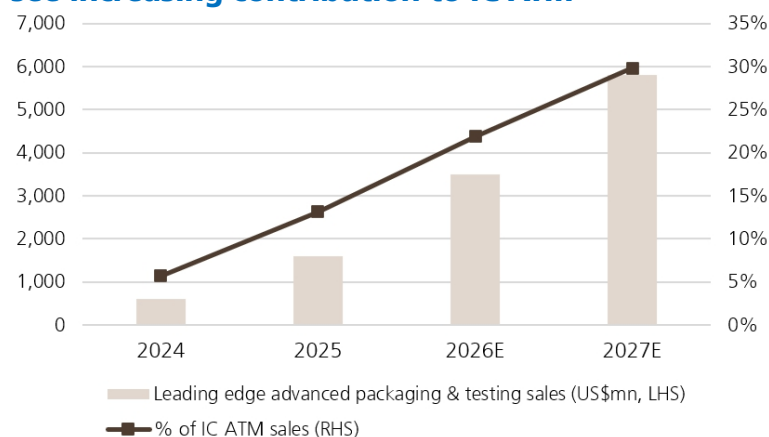
ASE –Buy with PT of NT\$660

- Capex up further to US\$8.5bn in 2026, showing strong LEAP and testing demand
 - ASE announced total capex of US\$8.5bn in 2026, another step up from US\$5.5bn in 2025.
 - ASE will increase machinery capex to US\$5.5bn in 2026 from US\$3.4bn in 2025. This reflects the robust demand profile of cloud AI in upcoming years.
 - Management also anticipates capex to trend up further into 2027
 - ASE guided for LEAP and testing sales to more than double to US\$3.5bn in 2026 (UBSe: US\$3.5bn) from US\$1.6bn in 2025.
- GM expansion could accelerate into late 2026E and 2027E
 - We foresee structural tailwinds to ASE's margin expansion and expect substantial improvement into late 2026-27, when LEAP sales grow even faster, while full-process CoWoS, with higher margins, ramps up and scale improves.
 - We forecast corporate GM to increase to 23.9%/25.1% in 2027/2028 from 21.2% in 2026, with IC ATM GM rising to 31.5%/32.8% from 27.9% over the same period.

ASE –Buy with PT of NT\$660

- Management guided that LEAP & testing sales to more than double to US\$3.5bn in 2026, from US\$1.6bn in 2025. We forecast sales for the segment to rise to US\$3.5bn in 2026 driven by:
 - 1) more TSMC substrate outsourcing; we expect content per unit to rise due to larger package sizes;
 - 2) tighter CoWoS supply vs. demand at TSMC should support ASE's full process service as clients diversify; and
 - 3) an increase in the chip probing business with upside from final testing of AI accelerators

ASE's leading edge adv packaging & testing sales see increasing contribution to IC ATM



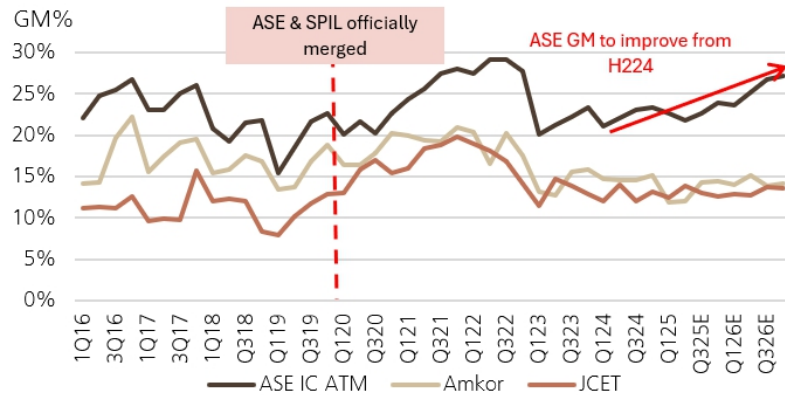
ASE's leading edge advanced packaging business

	2023	2024	2025	2026E	2027E
Leading edge adv packaging	250	550	1,200	2,630	4,305
Non CoWoS	250	250	275	303	333
CoWoS		350	925	2,327	3,972
- TSMC's outsourced WoS		311	886	2,008	2,568
Units (k per month)		432	923	1,115	1,259
Unit service revenue (US\$)		60	80	150	170
- CoWoS S outsourcing (kwpm)		14	15	10	10
- Units per interposer		30	30	30	30
- CoWoS L outsourcing (kwpm)			32	82	107
- Units per interposer			15	10	9
- ASE's own CoWoS		39	39	320	1,404
Units (kwpm)		0.5	0.5	4.1	18
Unit revenue (US\$)		6,500	6,500	6,500	6,500
Testing	50	400	875	1,500	1,500
LEAP & testing revenue (US\$mn)	250	600	1,600	3,505	5,805
YoY		140%	167%	119%	66%
% of IC ATM sales		2%	6%	13%	30%
% of whole company's sales		1%	3%	8%	20%

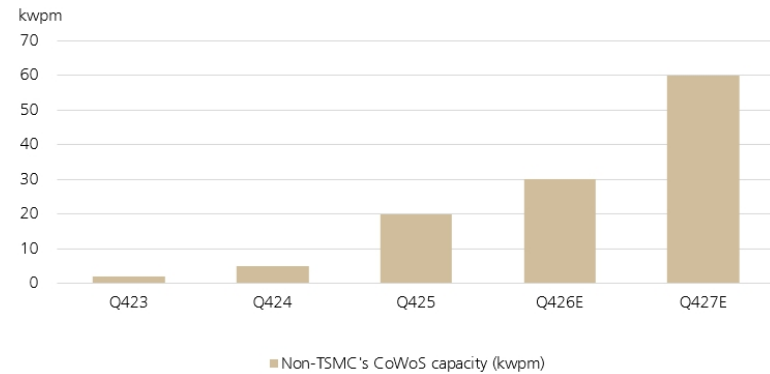
Source: Company data, UBS

ASE – Margin Recovery, CoWoS Ramp, Capex

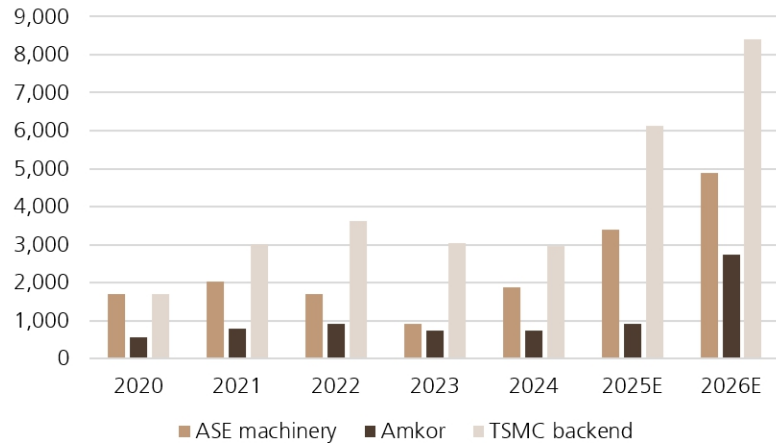
OSAT's GM now structurally better given improved competition



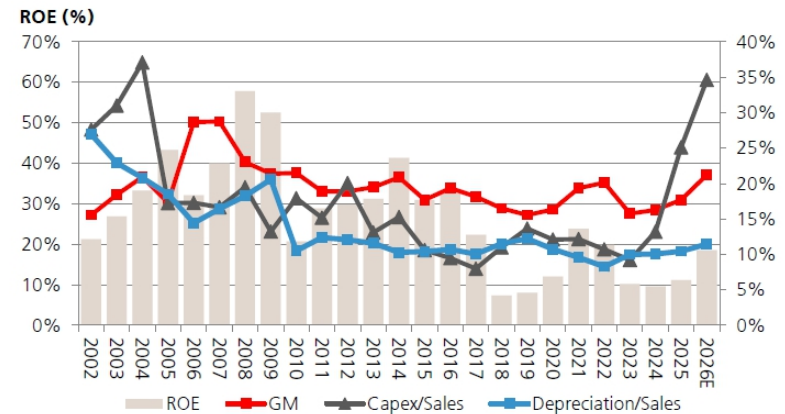
ASE/Amkor's CoWoS capacity in 2023-26E (installed capacity at end of the year)



Capex of TSMC, ASE and Amkor



Capex spending increasing significantly

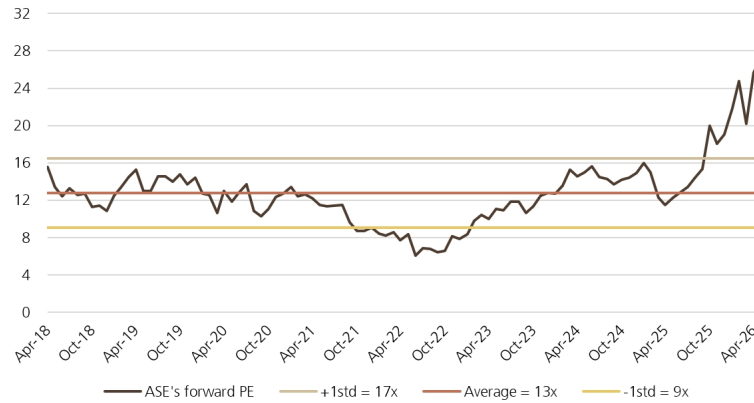


Source: Company data, UBS

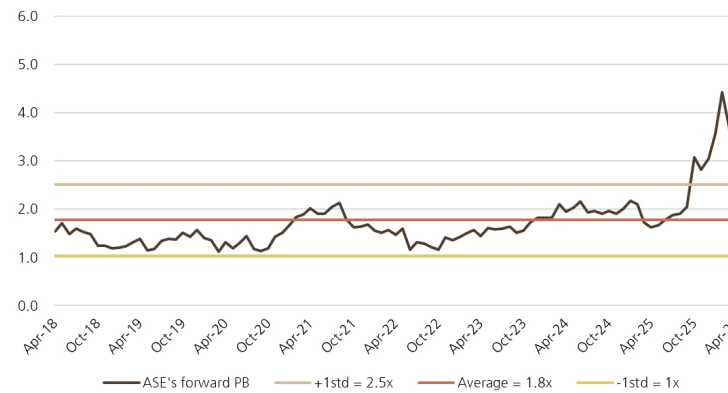
ASE – Valuation

- Our NT\$660 price target is based on 25x 2027E P/E, with long-term earnings CAGR of 27%.

1-yr forward P/E (x)



1-yr forward P/BV (x)



ASE's forward PE band before SPIL consolidation



ASE's forward PB band before SPIL consolidation



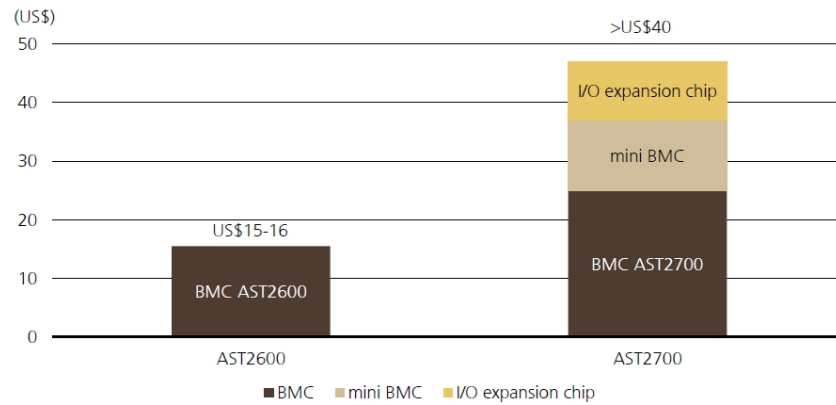
Source: Company data, LSEG, UBS

Aspeed – Buy, PT NT\$22,000

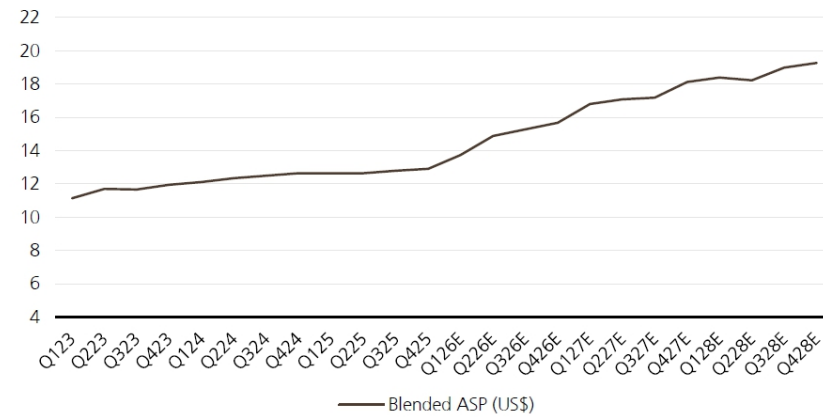
- We expect the addressable market for server BMC to structurally expand to 77m units by 2030E, above Aspeed's 66m forecast in March.
 - Our forecast implies 30% CAGR in the next five years from 21m units in 2025.
 - UBS forecasts server CPU volumes to grow from 23m in 2025 to 63m-plus in 2030E.
 - We estimate the blended BMC attach rate at over 1 per CPU due to the higher attach rate in GPU and ASIC servers and upside from non-CPU boards, such as switch and storage modules.
- Steep ramp of new AST2700 in 2027-28E
 - The new AST2700 is set to ramp quickly from 4% of Aspeed's shipments in 2026 to 26/39% in 2027/28E
 - Underpinned by the smoother, timely rollout of new server CPU platforms from AMD and Intel, the adoption of new AI accelerators ramping in 2027 (including Nvidia's Rubin Ultra), and key ASIC programmes.
- Aspeed has unveiled a robust product roadmap through 2030 with upgrades across main BMC, BIC (or called AMC), I/O expander, and security chips.

Aspeed – Buy, PT NT\$22,000

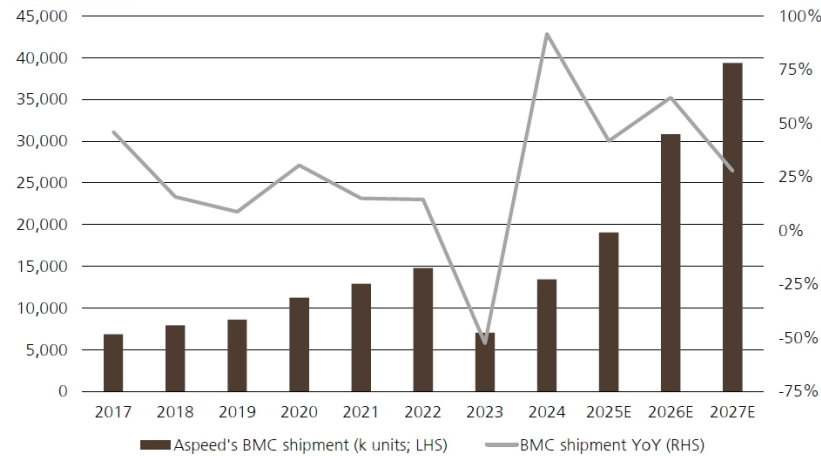
Increasing silicon content within servers through BMC migration and I/O expanders



AST2700/2750 to meaningfully lift Aspeed's BMC ASP

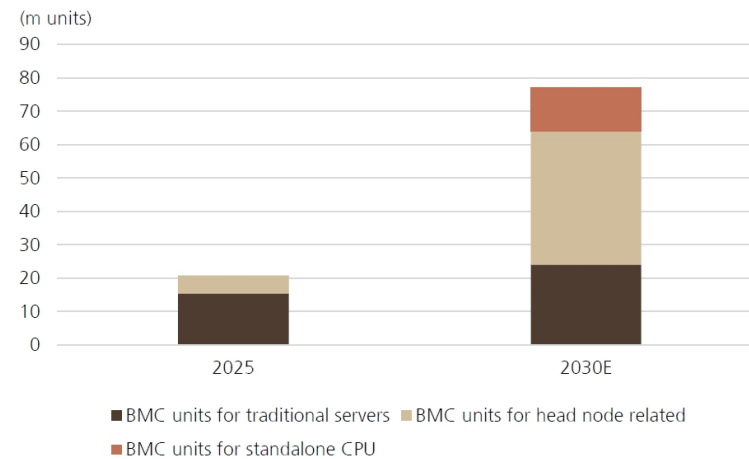


Expanding addressable market for Aspeed's BMC units



Source: Company data, UBS estimates

Server BMC TAM analysis



Aspeed – Buy, PT NT\$22,000

Server BMC TAM analysis

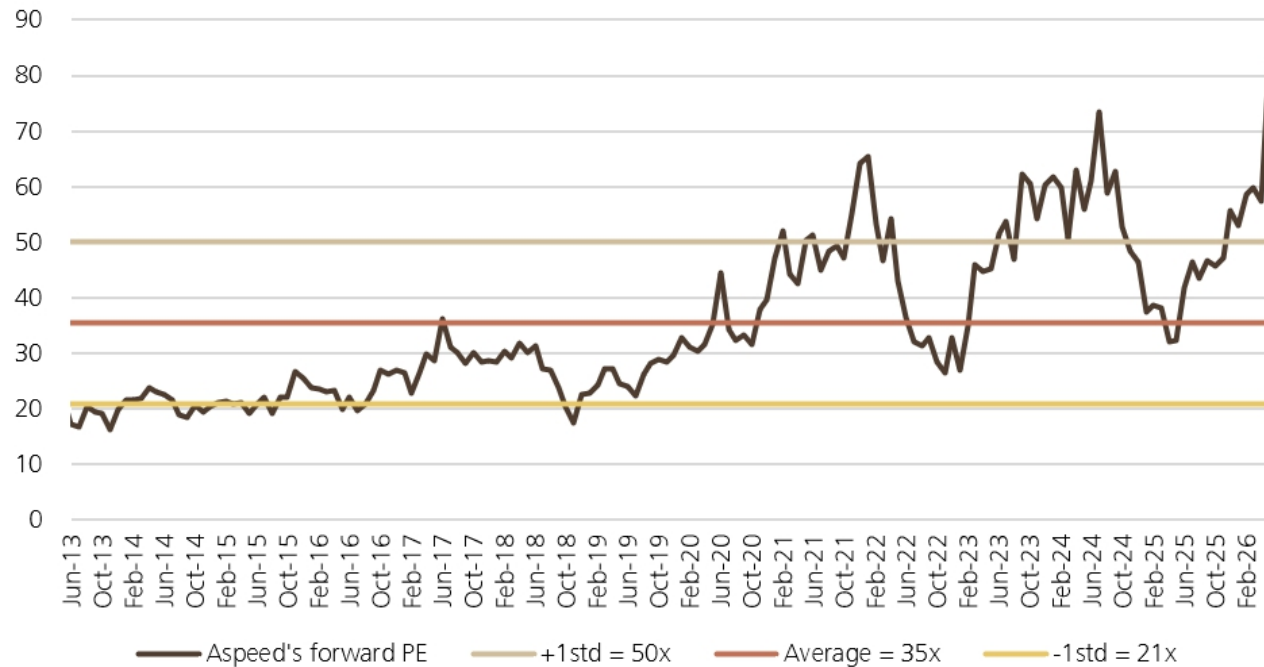
Server CPU units (m units)	2025	2030E	25-30 CAGR	Comment
Traditional server	20	30	8%	Grows from 2025 at 8% CAGR like C2005-2020
AI related	3	33	62%	
<i>Head node related</i>	3	20	46%	UBSe based announced systems
<i>Standalone CPU</i>	0	13	NA	Additional CPU units outside of rack
Total server CPU units	23	63	22%	22% unit CAGR growth in 2025-30E
BMC attach rate per CPU				
Traditional server	0.77	0.80		Expect slight increase given AMD's share gain and content from non CPU boards
AI related				
<i>Head node related</i>	1.80	2.00		Expect rising attach rate to satisfy more complicated AI server architecture
<i>Standalone CPU</i>	0.90	1.00		
BMC TAM (mn units)				
Traditional server	15.4	24.0	9%	
AI related	5.4	53.0	58%	
<i>Head node related</i>	5.4	40.0	49%	
<i>Standalone CPU</i>	0.0	13.0	NA	
BMC TAM	20.8	77.0	30%	

Source: Company data, UBS estimates

Aspeed – Buy, PT NT\$22,000

- Our price target of NT\$22,000 is based on a 55x 2027-28E PE. Aspeed has traded at an average PE of 53x since mid-2023, following the emergence of the cloud AI theme.

Aspeed 1-year forward P/E (x)



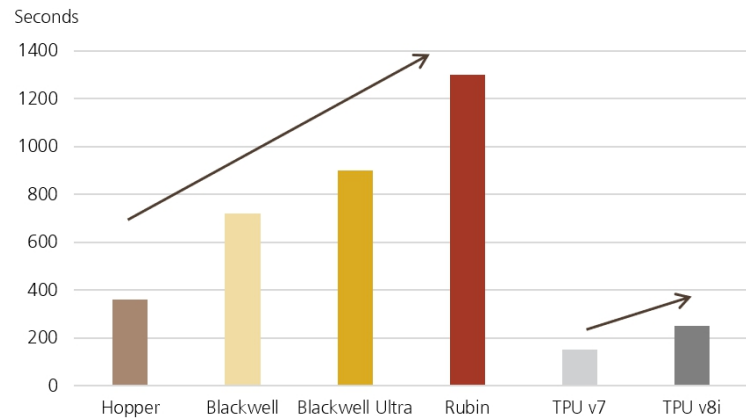
Source: Company data, LSEG, UBSe

Hon Precision – Buy with PT of NT\$8,800

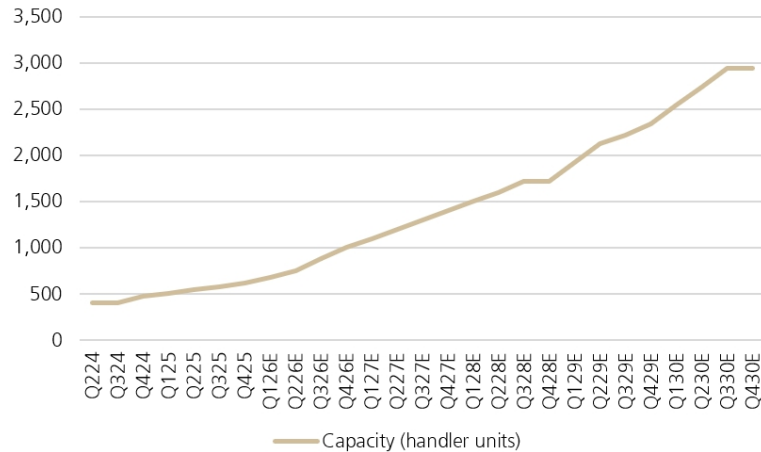
- **Faster capacity expansion signals stronger test demand and Hon's positioning**
 - Hon Precision has announced the acquisition of new land and a building near its existing Taichung facilities, and updated its expansion plan to factor in a more robust demand outlook from AI/HPC applications.
 - Management lifted targeted capacity expansion for 2026 from 40% to 50%, and is aiming to expand capacity by another 50% in 2027.
- **Server CPU expanding AI/HPC TAM**
 - Newer generations of server CPUs should have higher test content with longer FT time and the addition of SLT, given its greater design complexity and the requirement of board-level verification.
 - Hon Precision sees upside in demand into H226 from Google's Axion CPU, which requires high-end ATC (active thermal control) handlers.
 - For SLT, Hon Precision is developing ATC for chip thermal design power (TDP) of greater than 10kW, in preparation for Google's next generation CPU and TPU, which are expected to ramp up in late 2027/2028E.
- **CPO as a strong contributor from Q426E**
 - Following its customer's production schedule, Hon Precision received strong orders for CPO switch ASIC FT handlers, with shipments poised for Q426 or early 2027.
 - This batch of FT handlers will be for pure electrical test.

Hon Precision – Buy with PT of NT\$8,800

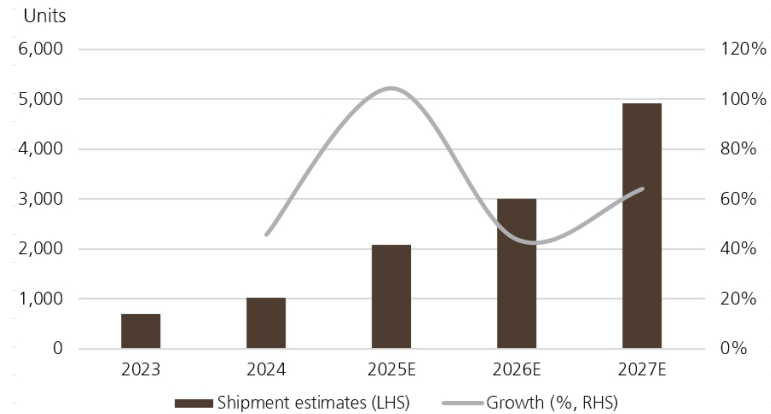
Nvidia GPU's FT time vs ASIC (TPU as an example)—estimated



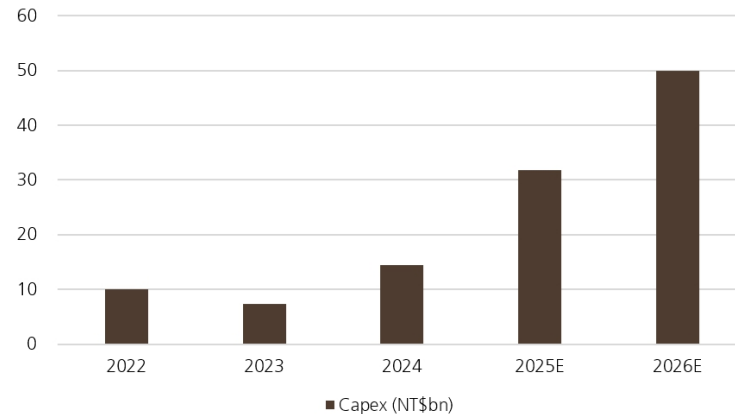
Hon Precision's estimated capacity (tools per quarter)



Hon Precision's handler shipments and YoY growth



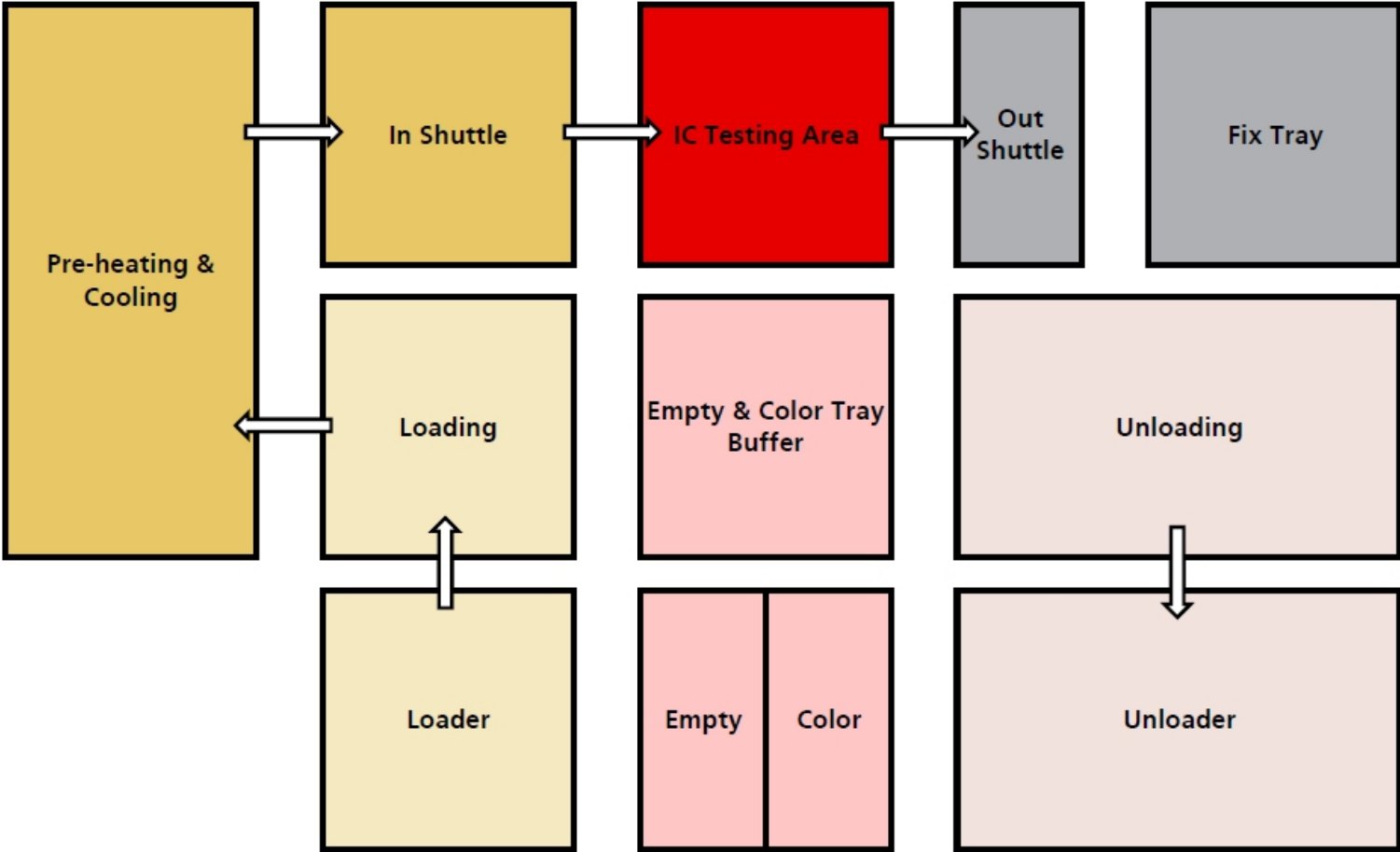
KYEC's CAPEX (2022-26E)



Source: Company data, UBS estimates

Hon Precision – Buy with PT of NT\$8,800

Process flow within FT handlers

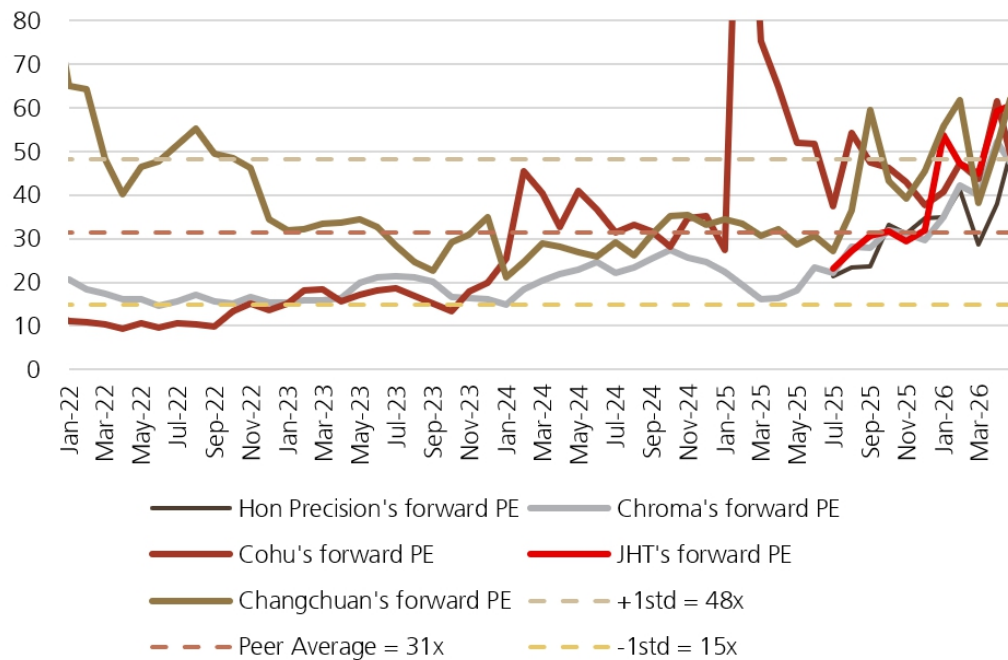


Source: UBS

Hon Precision – Valuation

- Our price target of NT\$8,800 is based on 42x 2027E PE, in line with its peers' three-year historical average (since cloud AI took off).

Hon Precision's 12-month forward PE band (x) vs peers



Source: Company data, LSEG, UBSe

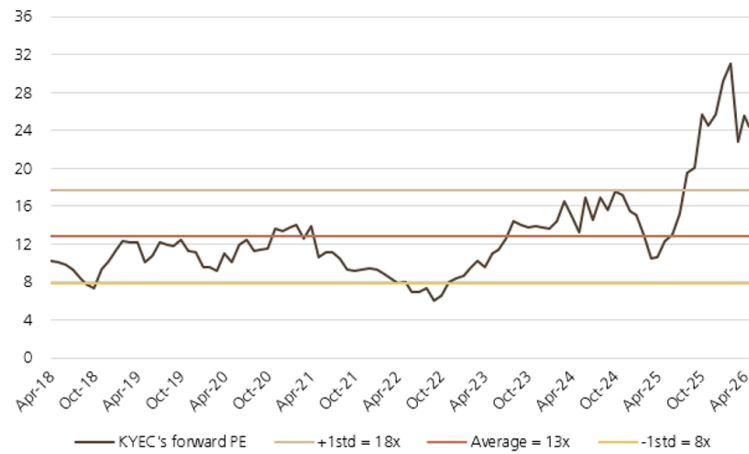
KYEC – Buy with PT of NT\$380

- **A laggard to catch up on intact test opportunity with Cloud AI**
 - We expect KYEC's fundamentals to remain steady in the coming years, underpinned by structural growth of test insertions, longer test time, expanding TAM of Cloud AI chips including accelerators, CPUs, networking, and TSMC's outsourced probing business.
- **KYEC a solid server CPU proxy**
 - AI CPU should expand KYEC's Cloud AI TAM on top of AI accelerators. KYEC is the sole final test provider of key ARM based server CPU projects including Google's Axion CPU with significant growth potential ahead.
 - We believe Google CPU may be ~2% sales in 2026, and could potentially reach over 5% in 2027E. The new server CPUs, especially for AI use, have good test content with burn in, final test, and system level test.
- **Strengthening demand from Google TPU**
 - Google's Tensor Processing Unit (TPU) is picking up quickly as a new driver for KYEC in 2026 and beyond. We now believe the testing sales could reach over 10% sales in 2026 compared to our prior estimate of 9-10%, a sharp jump from 2025's 2-3% sales contribution.
 - This will come from contribution of FT, burn-in, and CP businesses for both Broadcom and MediaTek's TPU projects.

KYEC – Valuation

- Our price target of NT\$380 is based on 22x 2027E PE

KYEC's 12-month forward PE band (x)



KYEC's 12-month forward P/BV band (x)



Source: Company data, LSEG, UBSe

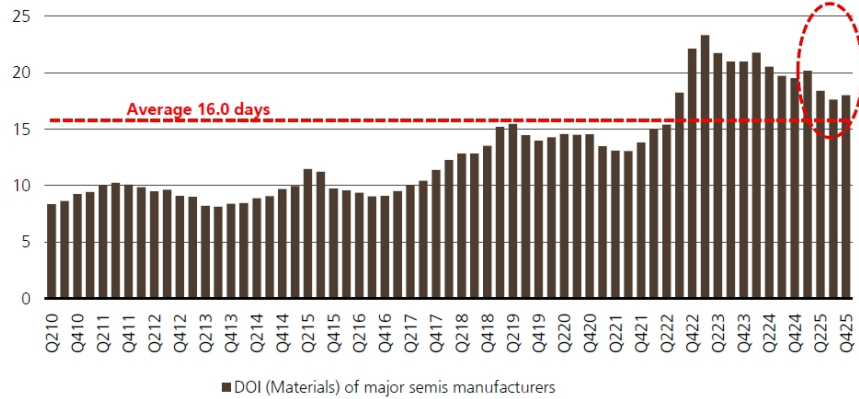
GlobalWafers – Buy with PT of NT\$800

- More structural and across the board demand improvement ahead
 - GWC is seeing demand upside across all wafer diameters. Its existing 12” capacity (ex new expansion) is at full capacity. 8” utilisation is also improving.
- Negotiating with clients on price hike from H226
 - With tightening industry supply outlook, GWC is engaging with clients about raising price for 12” in H226. The goal is to manage the increasing cost burden from rising depreciation and cost inflation.
 - Our view is the pricing environment should get better increasingly, and the new long term contracts signed from H226 should feature higher price.
- GM under pressure in 2026 but should improve from 2027
 - We lower gross margin estimate to 21.4% in 2026 but expect good expansion to 27.1% in 2027 considering stronger demand recovery, higher utilisation, mix improvement, and more favorable pricing.

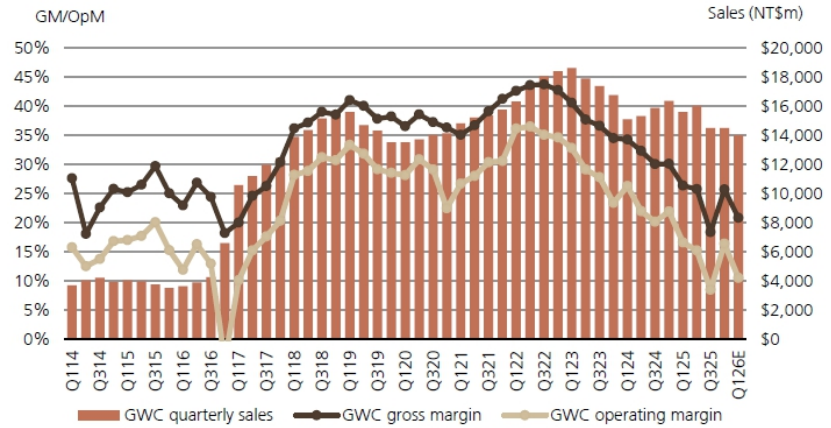
Source: Company data, UBS estimates

GlobalWafers – Buy with PT of NT\$800

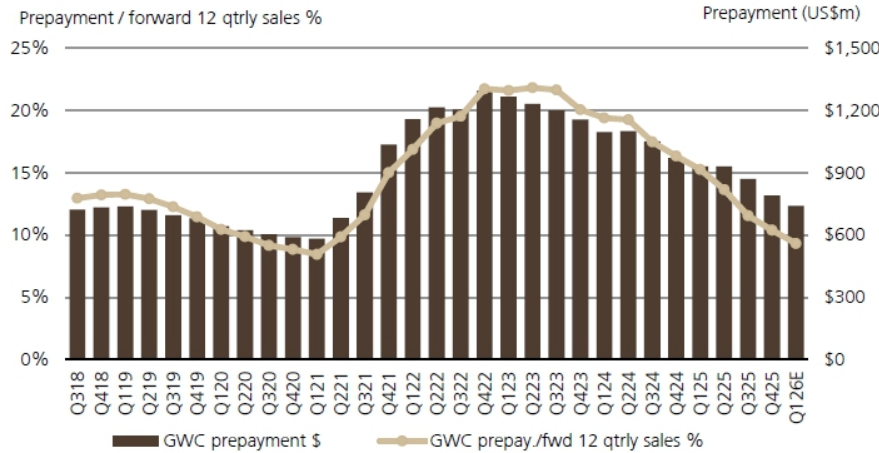
Raw material inventory days at customers



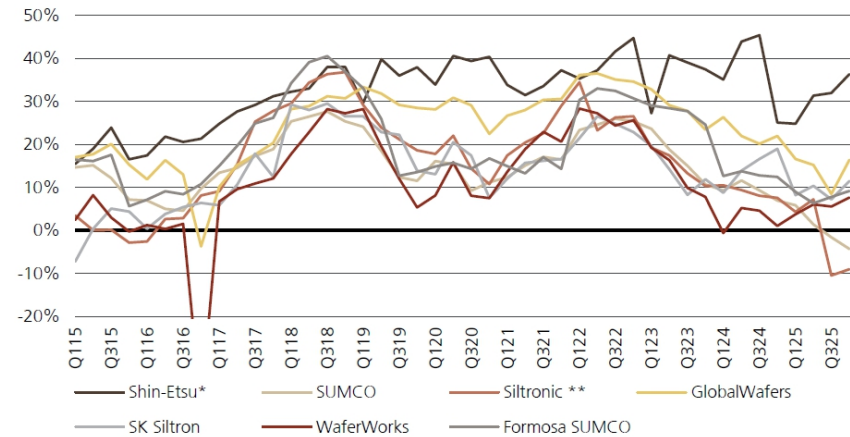
GWC sales, GM, OPM



Prepayments down from peak



Wafer companies' OP (EBIT) margins



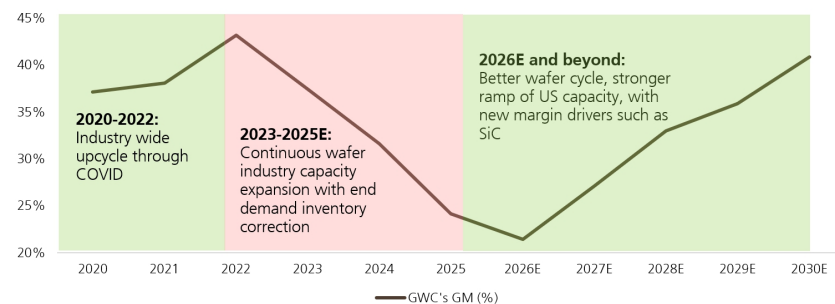
Source: Company data, UBS estimates

GlobalWafers – Buy with PT of NT\$800

Capex of major wafer makers

(US\$m)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026E
Shin-Etsu*	150	139	469	623	545	442	408	N/A	N/A	N/A	N/A	N/A
SUMCO	130	152	203	534	540	502	620	984	1,811	1,620	534	505
Siltronic	83	98	143	299	406	217	495	1,129	1,424	563	425	662
GlobalWafers	36	46	112	222	246	277	198	406	1,173	1,488	887	190
SK Siltron	58	60	138	615	466	267	320	585	651	689	427	N/A
Total	456	495	1,065	2,294	2,203	1,704	2,041	3,621	5,621	4,844	2,755	1,811

GM outlook improving with a better cycle, stronger ramp-up of US capacity, and SiC opportunities



UBSe GlobalWafer's SiC opportunity in 2028E

	Upside case	Base case
AI accelerator die units (mn)	20	15
KGDs per wafer	30	30
SiC carrier demand (k)	667	500
SiC carrier demand (kwpm)	56	42
SiC carrier price (US\$)	2000	1500
GWC's share	50%	50%
Revenue opportunity (NT\$m)	19,800	11,138
Upside to 2028 sales	20%	11%

Source: Company data, UBS estimates.

12" silicon wafers – worst should be behind

300mm wafer supply and demand

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E
Total inventory-adjusted demand (k pcs/mon)	5,018	5,694	6,269	5,620	6,228	7,273	7,736	6,783	6,975	7,721	8,423	9,509	10,491	11,459
<i>YoY</i>		13.5%	10.1%	-10.3%	10.8%	16.8%	6.4%	-12.3%	2.8%	10.7%	9.1%	12.9%	10.3%	9.2%
DRAM	1,083	1,180	1,254	1,312	1,341	1,496	1,638	1,424	1,548	1,792	1,924	2,087	2,346	2,652
NAND	1,366	1,495	1,544	1,444	1,500	1,618	1,737	1,388	1,294	1,322	1,349	1,355	1,402	1,477
Logic & others	2,703	2,851	3,284	3,209	3,624	4,216	4,344	3,957	4,196	4,629	5,157	5,968	6,594	7,271
Inventory adjustment	-135	168	188	-345	-238	-58	18	13	-63	-21	-8	0	0	0
Total output (k pcs/mon)	5,143	5,605	6,281	6,032	6,490	7,324	7,752	7,419	7,299	7,842	8,758	9,519	10,043	10,472
<i>YoY</i>		9.0%	12.1%	-4.0%	7.6%	12.8%	5.9%	-4.3%	-1.6%	7.4%	11.7%	8.7%	5.5%	4.3%
Shin-Etsu	1,533	1,729	2,043	1,880	1,997	2,186	2,295	2,369	2,409	2,409	2,625	2,740	2,820	2,902
SUMCO	1,311	1,406	1,562	1,522	1,683	1,880	1,910	1,699	1,607	1,775	1,936	2,022	2,045	2,069
Siltronic	816	956	1,021	890	944	1,039	1,075	849	850	887	1,017	1,156	1,266	1,320
GlobalWafers	712	722	792	748	815	986	1,034	1,008	895	950	1,062	1,240	1,350	1,485
SK Siltron	770	791	863	993	1,052	1,128	1,256	1,213	1,146	1,093	1,142	1,187	1,300	1,347
China and others effective capacity	0	0	0	0	0	104	182	282	392	729	976	1,174	1,261	1,349
Total Industry Capacity	5,137	5,623	6,347	6,989	7,146	7,730	8,008	8,289	8,816	9,446	10,243	10,837	11,209	11,549
Industry Utilization %	97.7%	101.3%	98.8%	80.4%	87.1%	94.1%	96.6%	81.8%	79.1%	81.7%	82.2%	87.7%	93.6%	99.2%

Source: Company data, UBS estimates

8" silicon wafer demand should also pick up in 2026E

200mm wafer supply and demand

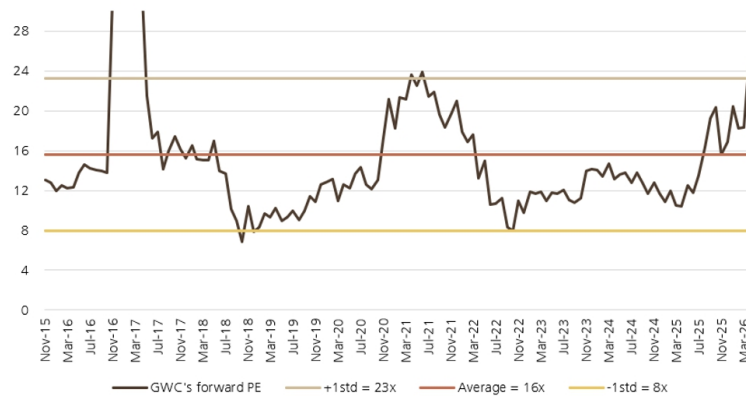
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E
Wafer demand															
Total inventory-adjusted demand (k pcs/mon)	4,297	4,550	5,291	5,636	4,943	4,980	5,958	6,050	4,631	4,120	3,989	4,303	4,681	5,093	5,401
YoY		5.9%	16.3%	6.5%	-12.3%	0.7%	19.6%	1.5%	-23.5%	-11.0%	-3.2%	7.9%	8.8%	8.8%	6.0%
Inventory adjustment (k pcs/mon)	-100	-50	30	30	-130	-60	70	150	0	0	-20	0	0	10	10
Total capacity (k pcs/mon)															
YoY		4.4%	1.3%	7.3%	3.8%	2.5%	1.3%	5.1%	-5.6%	-4.1%	1.5%	-5.9%	-1.2%	0.6%	0.0%
Shin-Etsu	1,200	1,236	1,285	1,363	1,403	1,432	1,460	1,471	1,133	869	752	752	752	752	752
SUMCO	1,250	1,288	1,200	1,200	1,200	1,250	1,163	1,375	1,211	1,038	1,175	800	700	700	700
GlobalWafers	1,000	1,032	1,095	1,106	1,117	1,128	1,139	1,151	1,162	1,174	1,174	1,174	1,174	1,174	1,174
Siltronic	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650
SK Siltron	550	630	649	655	662	669	675	682	689	696	696	696	696	696	696
WaferWorks	200	200	218	297	388	413	476	500	500	500	500	500	500	500	500
Ferrotec JV		0	0	51	100	100	100	100	100	100	100	100	100	100	100
China and others effective capacity	70	100	105	259	272	298	355	399	528	700	767	798	830	863	863
Industry Utilization %															
	87.3%	88.6%	101.7%	101.0%	85.3%	83.9%	99.0%	95.6%	77.5%	71.9%	68.6%	78.7%	86.7%	93.7%	99.4%

Source: Company data, UBS estimates

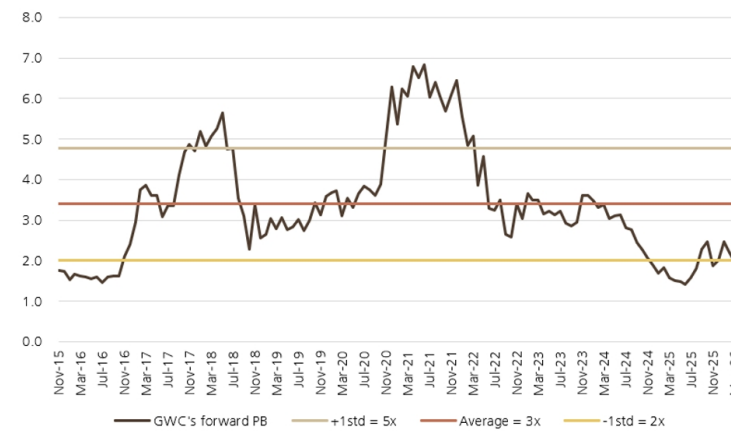
GlobalWafers – Valuation

- Our price target of NT\$800 is based on 3.6x 2027E P/BV, with 18.5% long-term ROE. Our target multiple is at the mid-cycle of its 1.5-6x historical range.

1-yr forward P/E (x)



1-yr forward P/BV (x)



Source: Company data, LSEG, UBS

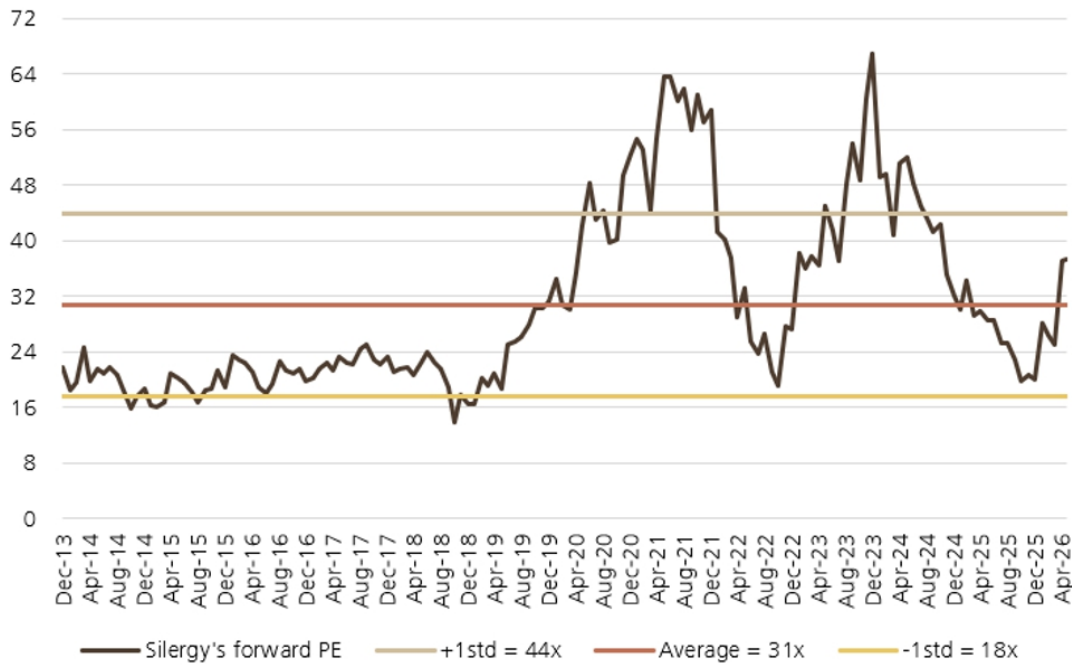
Silergy – Buy with PT of NT\$700

- Management more optimistic on 2026, with further acceleration into 2027
 - Management foresees more robust growth in 2026 and beyond, driven by stronger server demand, a faster ramp of new products based on the gen 4 technology platform and an expanding customer base in China and overseas.
 - Tight 8” foundry capacity favours Silergy, which is ramping up 12” foundry products earlier than most fabless peers.
- Updates on auto- and server-related businesses
 - AI accelerator power supply demand is increasing a lot more rapidly to support better compute. Silergy is seeing strong upside from server motherboards and optical transceivers, on top of PSU & storage growth.
 - Silergy is sampling the key V-core PMIC to AI servers and aims to enter mass production by end-2026.
 - For auto, management thinks sales growth may resume in Q2 after the Q1 low season, and Silergy could outgrow China’s auto market, given a focus on EV/HEV, with an expanding product portfolio and customer base in a global auto ecosystem.
 - Management expects Silergy to lift silicon content per car from US\$120 in 2025 to US\$250+ in 2026.
- Temporary GM setback in Q1 but it could recover from H226
 - Faster Gen 4 ramp-up for new products. Gen 4 could reach 20% of sales by end-2026. Gen 4 may drive 5% or more GM improvement than Gen 3 due to an enhanced cost structure.
 - A more favourable product mix, with servers and auto outgrowing PCs.
 - Silergy may raise prices from Q326 to pass through increasing foundry and back-end cost.

Silergy – Valuation

- Our price target of NT\$700 is based on 36x 2027E P/E.

Silergy 1-year forward P/E (x)



Source: Company data, LSEG, UBSe

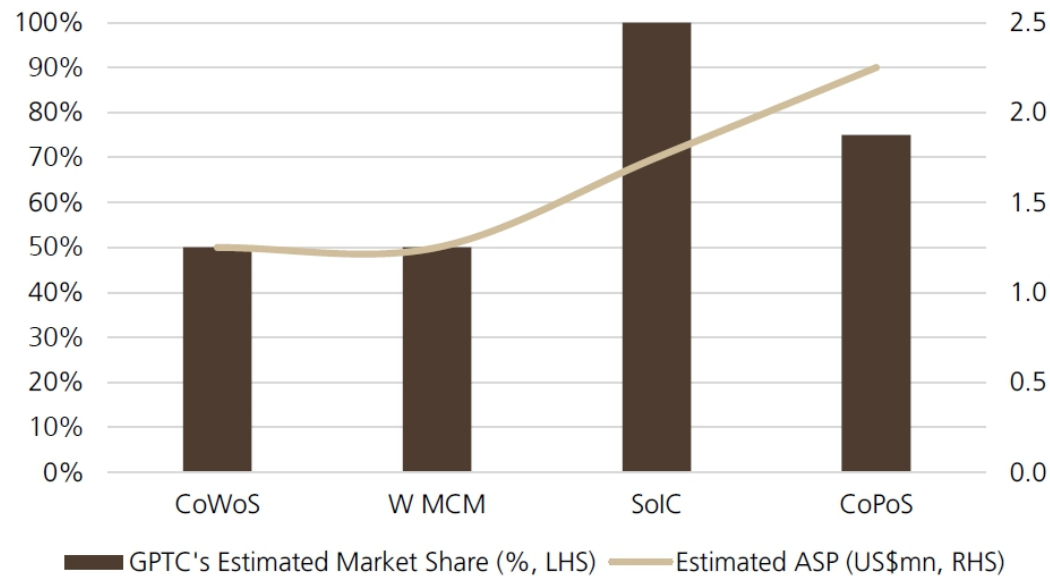
GPTC – Buy with PT of NT\$4,000

- Bright order outlook for 2026 and beyond. **Our top pick in the advanced packaging space.** We forecast its tool shipment to reach 220 units in 2026 and 280/340 units in 2027/28. Key growth drivers are:
 - 1) The accelerating CoWoS capacity expansion across TSMC and OSATs. The pick up of ASE's CoWoS expansion is positive for GPTC, as it has >80-90% share in ASE vs ~50% share in TSMC.
 - 2) Beyond CoWoS, the industry is also ramping up new solutions including panel level packaging, 3D IC stacking and co-packaged optics (CPO). The TAM for equipment demand is set to grow rapidly, with higher tool value.
 - 3) We forecast GPTC's tool delivery to ASE and Micron to double or more in 2027. ASE and Micron combined could take up about 35-40% of tool shipments in 2026.
- Development of new advanced packaging solutions
 - TSMC should be ramping up meaningful SoIC capacity in the next 3-4 years, as more high performance compute chips to shift to “chiplet” design. We believe Nvidia may consider adopting SoIC for Feynman coming out in 2028.
 - On panel level packaging, we are more optimistic and believe TSMC should be working toward mass production of 310x310mm² technology in 2028.
 - For CPO, GPTC is more relevant for “XPU” integration, which may enter commercialization in 2029 for tool move in from 2028.

GPTC – Buy with PT of NT\$4,000

- Tool ASP set to rise in coming years. Price of panel level packaging tools could be 2-2.5x of CoWoS's. SolC's tools are also 30-50% more expensive than CoWoS's. We forecast GPTC's blended tool ASP to increase by 22%/16% in 2027/28E.
- GPTC could more than double annual capacity from ~100 units in 2025 to close to 300 by end-2026. Capacity may further increase in 2027.

GPTC tool price set to steadily rise with new technology and stable market share

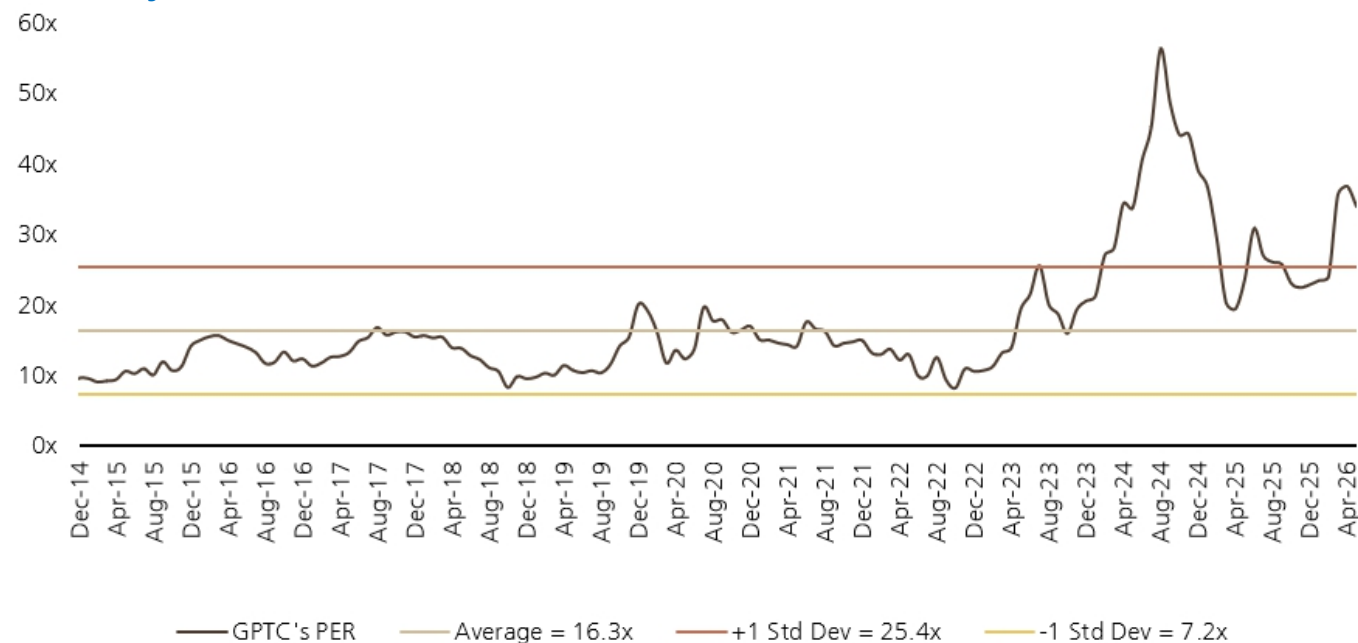


Source: Company data, UBS estimates

GPTC – Valuation

- Our price target of NT\$4,000 is based on 33x 2027E P/E, inline with 30-35x average PE of pure play advanced packaging peers.

GPTC's 1-yr forward P/E (x)



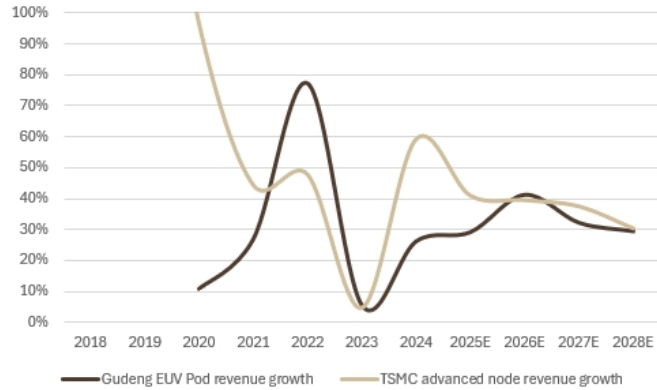
Source: Company data, LSEG, UBSe

Gudeng – Buy with PT of NT\$710

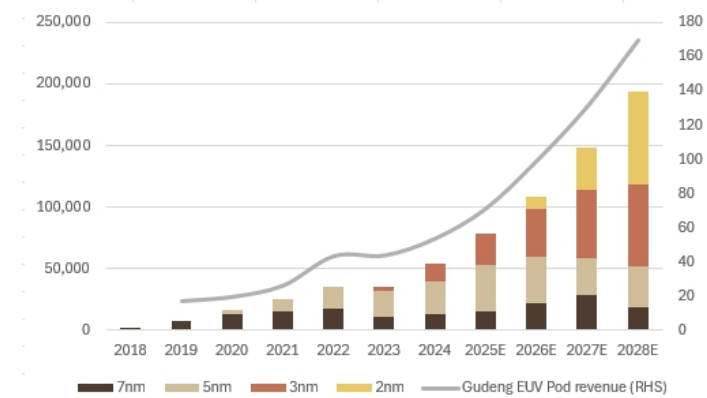
- Beneficiary of larger advanced node TAM
 - Gudeng is set to be a major beneficiary from structurally larger leading edge logic capacity TAM, which should lift its growth of EUV mask pod, DUV mask pod and FOUP.
 - Historically a good leading edge node (e.g. N16/12, N7) for TSMC generally peaked at 120-130kwpm capacity.
 - Larger TAM is underpinned by the strong contribution from server CPU and accelerators and re-accelerating process migration for smartphones and PCs given edge AI applications.
 - Gudeng with its >85% share in EUV pods should be a key beneficiary of TSMC ramping up the N2 capacities faster in 2026-27. AI and HPC should increase the types of projects at N2 and lift the demand for the mask and the pod too. From 2027-28, high NA adoption may enable an upgrade cycle with better ASP for Gudeng.
- FOUP growth to re-accelerate in 2026 on TSMC share gain and China recovery
 - We are constructive on Gudeng's growth opportunities from EUV mask carriers in the next 2-3 years
 - 1) TSMC's N3 expansion, with TSMC migrating N5/N4 into N3 due to increasing tightness from AI related demand.
 - 2) Faster overall process migration into N2 vs N3.
 - 3) Greater product variety for N2 with more high performance compute opportunities, which is positive for the mask units and the carriers.

Gudeng – Buy with PT of NT\$710

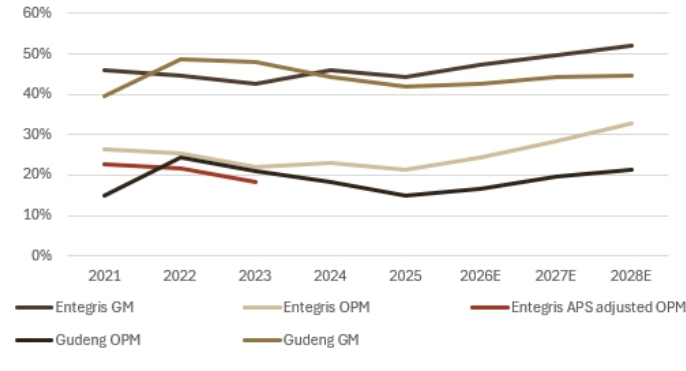
Gudeng's EUV Pod revenue growth vs. TSMC's advanced node revenue growth



TSMC's advanced capacity ramp vs. Gudeng's EUV revenue (US\$mn)



Gudeng vs. Entegris margin trend



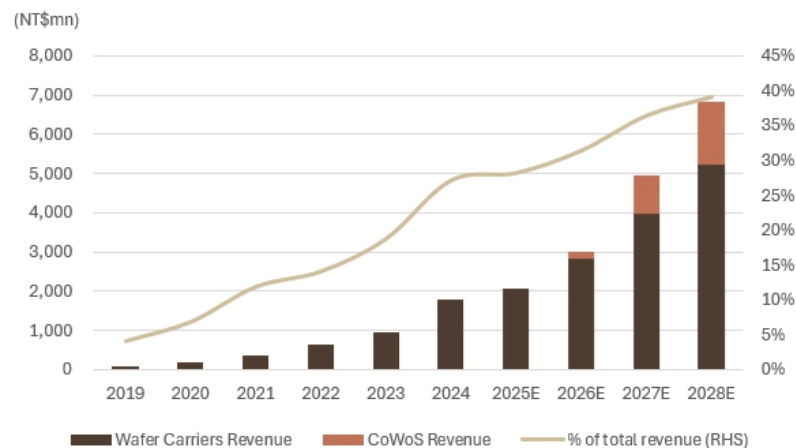
Source: Company data, UBS estimates. Note: TSMC's advanced node is defined as N7 and below

Gudeng – Buy with PT of NT\$710

Gudeng's Sales forecasts by product segment

(NT\$m)	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E
Revenue	2,375	2,513	3,121	4,494	5,078	6,545	7,347	9,581	13,619	17,441
- YoY chg	45%	6%	24%	44%	13%	29%	12%	30%	42%	28%
Breakdown by product line										
Reticle Carriers	1,028	1,141	1,449	2,334	2,262	2,209	2,895	4,307	5,584	7,104
- YoY chg		11%	27%	61%	-3%	-2%	31%	49%	30%	27%
Wafer Carriers	99	174	373	636	957	1,781	2,076	3,014	4,966	6,826
- YoY chg		76%	114%	71%	50%	86%	17%	45%	65%	37%
Carrier - Others	2	4	24	71	78	83	0	0	0	0
- YoY chg		100%	500%	196%	10%	6%	-100%			
Equipment	207	462	558	987	1,074	1,231	1,191	1,500	1,872	2,246
- YoY chg		123%	21%	77%	9%	15%	-3%	26%	25%	20%
Others	1,039	732	717	466	707	1,241	1,186	760	1,197	1,265
- YoY chg		-30%	-2%	-35%	52%	75%	-4%	-36%	58%	6%

Advanced packaging a new catalyst for Gudeng's wafer carrier growth

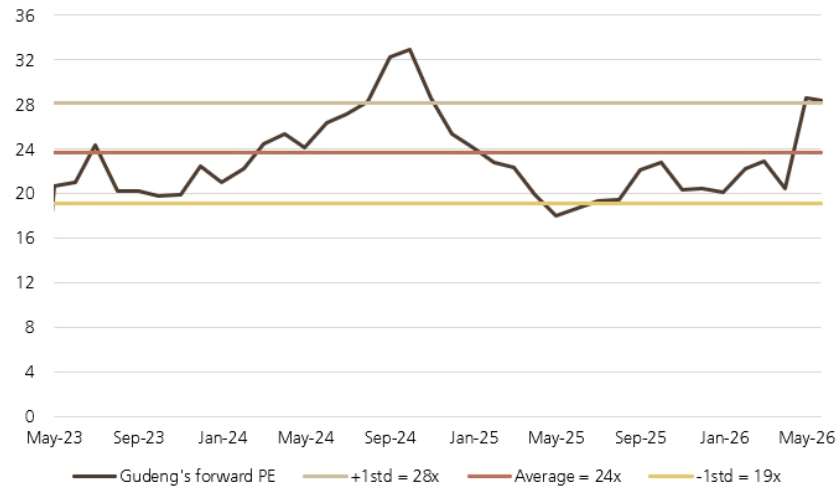


Company data, UBS estimates

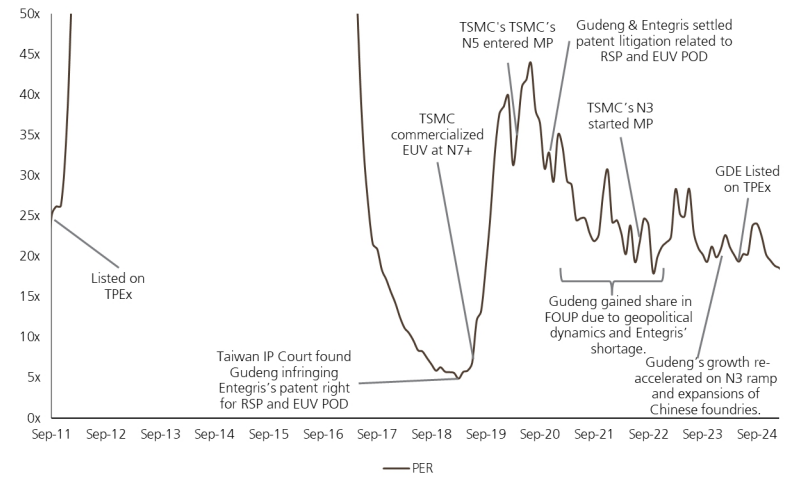
Gudeng – Valuation

- Our price target of NT\$710 is based on 30x 2027/28E P/E.

1-yr forward P/E (x)



Forward P/E and major events



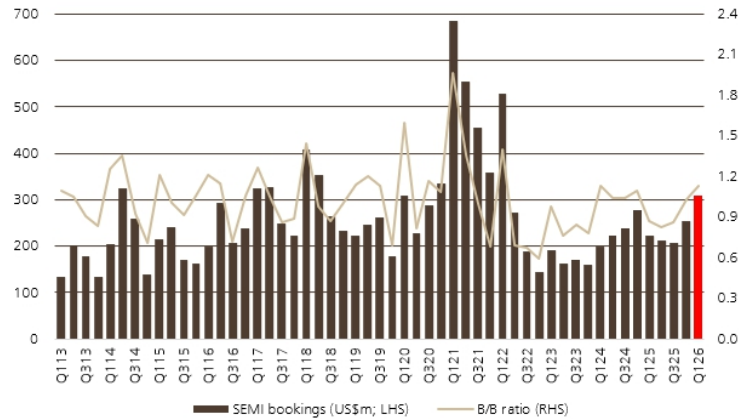
Source: Company data, FactSet, UBS

ASMPT – Buy with PT HK\$200

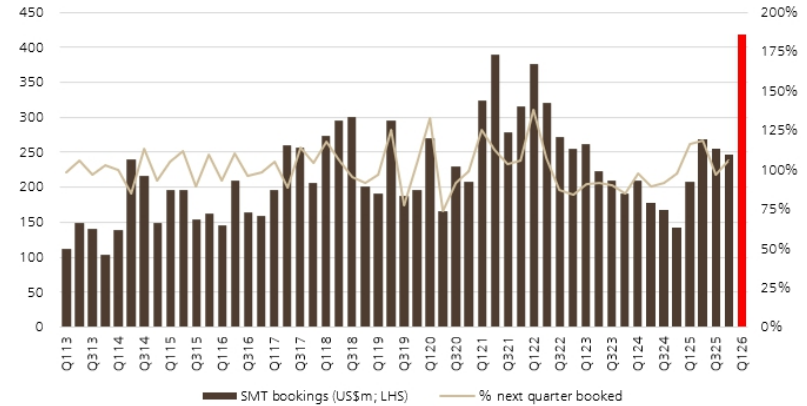
- Strong order recovery across SEMI and SMT.
 - In Q126 ASMPT saw a strong order recovery across SEMI and SMT segments, with SMT at record levels within the last four years. AI is driving structural strong growth across multiple products including TCB, Photonics, CPO, and mainstream wire and die bonding.
 - ASMPT is seeking strategic options for SMT, and has divested NEXX under SEMI to focus its business on advanced packaging.
- TCB (Thermo-Compression Bonding) TAM Expansion and Opportunity for ASMPT
 - 1) HBM should be a larger portion of the TCB TAM heading into 2026 and in the near future with HBM4 12hi orders from multiple customers and 16hi development ongoing.
 - 2) Logic chip-to-wafer (C2W) opportunity should start to play out for high interconnect advanced package. ASMPT secured four C2W bookings in Q1 and expects orders to meaningfully increase in '27.
 - 3) Logic chip-to-substrate (C2S) – The company fulfilled a sizable shipment and secured repeated orders in Q1. Longer term, logic could become a larger driver of TCB demand if C2W opportunity takes off.
- We also note that ASMPT is involved in CoPoS-related solutions and believe Intel's EMIB-T could be an opportunity in 2027E.
- Photonics and CPO as new drivers
 - In Q126, Optical segment came in as a bright spot growing 5x as compared to same period last year. Longer-term, we are optimistic about photonics demand and the fast evolution to CPO to further drive ASMPT's technology upgrades and higher packaging value-add.

ASMPT – Buy with PT HK \$200

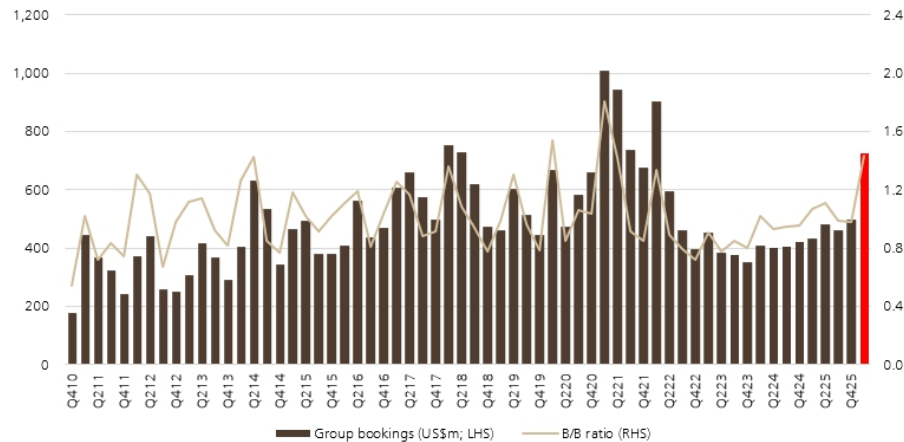
Q126 saw a recovery in Semi bookings



Record-high/better than expected Q126 SMT bookings



Q126 saw a rebound in book-to-bill driven by both Semi and SMT bookings

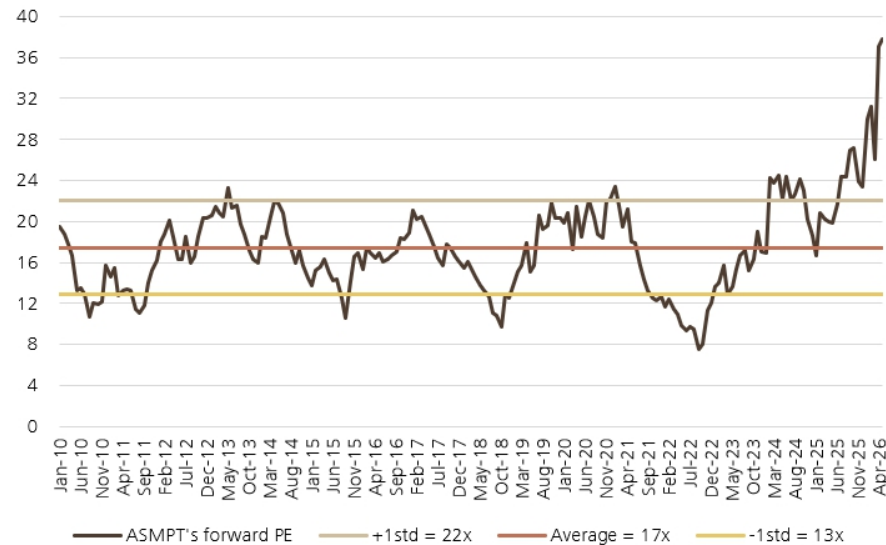


Source: Company data, UBS estimates

ASMPT – Buy with PT HK \$200

- Our price target is based on 27x 2027E PE, with a 28% long-term earnings CAGR
- With stabilizing and improving mainstream tool demand, we see good upside to the stock along with its ongoing TCB development across logic and HBM.

ASMPT 1-year forward PE (x)



Source: Company data, LSEG, UBSe

Realtek – Neutral with PT NT\$525

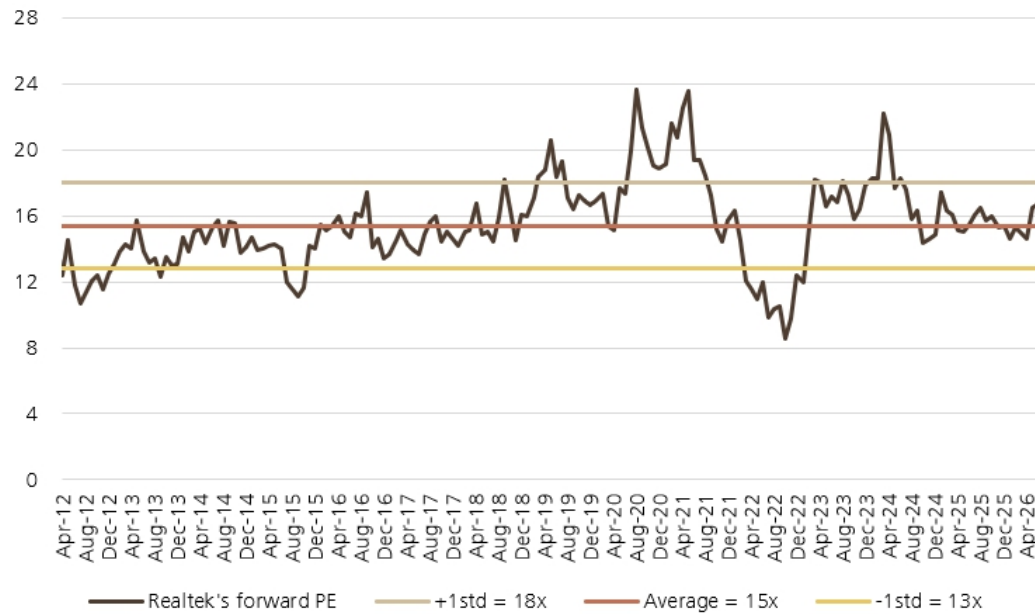
- In the next 3-5 years, we see Realtek as a major beneficiary of networking backbone upgrade in Wireless and Wireline to support growing data amount and faster transmission demand.
 - Wi-Fi / Ethernet / switch / PON could be the major growth drivers. These products account for close to 60% of Realtek's sales, with 5-10% ASP upside per year and expanding application base.
- Healthy demand and inventory to drive another restocking in early 2026. In Q1, Realtek saw significant consumer restocking, particularly in PC, and the pre-build has appeared to continue into Q2.
 - 1) strong restocking from PC and consumer, given lean inventory;
 - 2) replacement cycle among TV, gaming, and home appliances; and
 - 3) ongoing memory price inflation and component shortage that encourages customers to stock up in H1.
 - 4) Into H2, networking demand from router, Ethernet, switch, PON is set to sustain strength on structural AI infrastructure build out.
- Realtek shifts business model to invest aggressively for leading-edge process for datacenter, enterprise and ASICs.
 - E.g. 100G PAM4 DSP, PON in 2026. 200G PAM4 DSP in 2027. Also noting AI glasses will be worth watching in 2026.

Source: Company data, UBSe

Realtek – Valuation

- Our price target of NT\$525 is based on 16x 2026E PE.

Realtek 1-year forward P/E (x)



Source: Company data, LSEG, UBSe

Vanguard – Neutral, PT NT\$155

- **Steady utilization improvement**

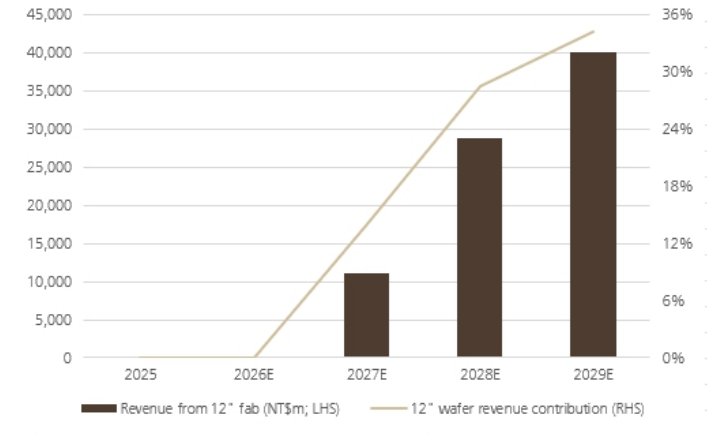
- Vanguard's utilization rate could reach towards 85%-90% in Q2, from 80% in Q1 and 74% in '25.
- Vanguard's strength in PMIC is a combination of 1) server-related sales growing from LSD% of sales in 2025 to low-teens% in 2026 2) share gain within smartphones through Qualcomm's diversification
- We forecast utilization to be 86% in 2026 and 90% in 2027 vs 74% in 2025.

- **12" expansion in SG**

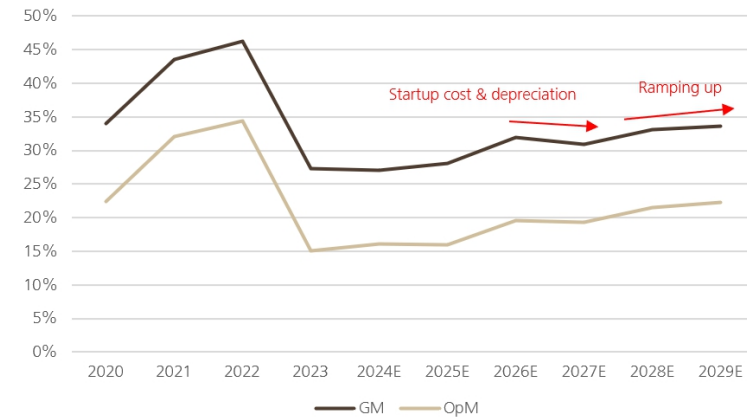
- Per management's commentary in Q1, the 12"fab is ramping ahead of schedule due to stronger customer demand.
- Vanguard announced a new interposer opportunity with TSMC's technology transfer, on top of the original product base of mixed signal, analog and power management.
- Increasing technology complexity should reduce capacity to 44kwpm (prev. 55kwpm).
- Total capex lowered to US\$6.7bn (prev. US\$7.8bn) with TSMC's tool consignment.
- Versus prev. expectations, the faster ramp should allow the fab to reach full capacity earlier, as well as more manageable margin dilution.

Vanguard – Valuation

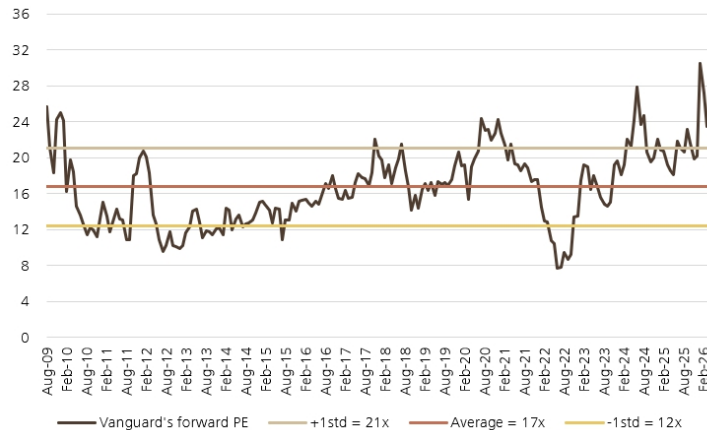
12" fab could ramp to 34% of revenue by 2029E



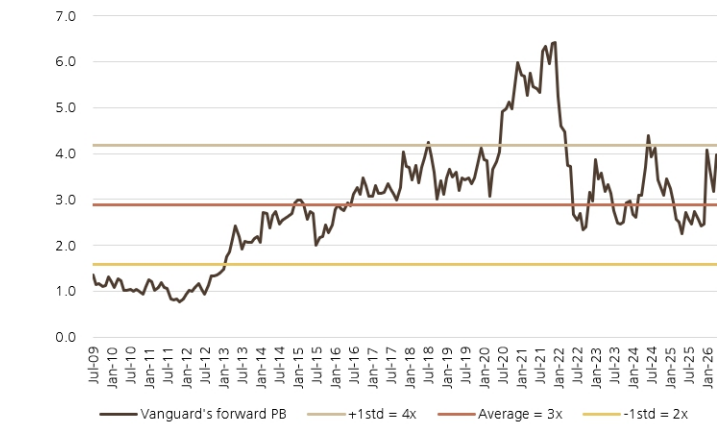
New fab ramp likely to dilute medium-term margin profile



Vanguard's 12-month forward P/E (x)



Vanguard's 12-month forward P/BV (x)



Source: Company data, LSEG, UBS

PSMC – Neutral, PT NT\$60

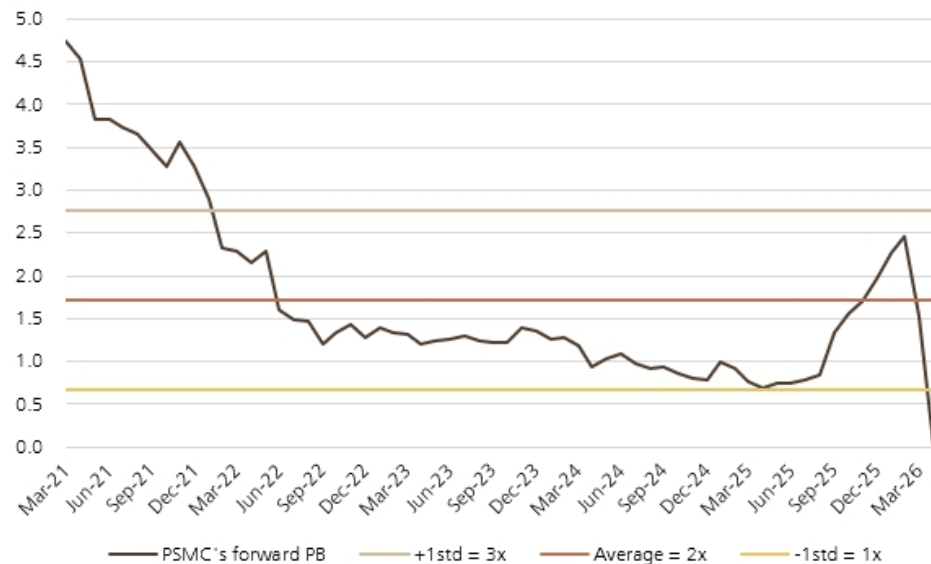
- Selling Tongluo P5 12" fab to Micron, a positive for future profitability
 - We view this positively, as PSMC has been suffering from heavy depreciation in recent years.
 - Management anticipates its memory foundry pricing will pick up more significantly from June this year.
 - Longer term, PSMC is collaborating with Micron to upgrade its legacy DRAM to the 1P process, with mass production targeted for H228.
- Improving demand for memory and logic foundry since Q126
 - PSMC's utilization improved to 88% (from 82% in Q425)
- Improving Demand/Positive outlook for memory business
 - The UBS technology team estimates that DRAM supply will remain tight not only in 2026 but also into 2027. PSMC should benefit from resilient DDR contract pricing trend via its DRAM foundry business, which will also drive operational performance and margin improvement.
- Supply/demand improving for mature foundry; with improving pricing dynamics
 - PSMC is seeing improving supply-demand dynamics for both 8" and 12" foundries, and has raised mature foundry pricing in 2026. Though capacity is capped post the P5 fab sale.
 - PMIC continues to be a key driver driven by stronger AI server and stable smartphone demand.
 - We forecast PSMC blended ASP to increase +16% and +10% for 12" and 8" logic foundry in 2026.

Source: Company data, UBS estimates

PSMC – Valuation

- Our price target of NT\$60 is based on 2x forward P/BV and long-term ROE of 18.7%.
- We utilized a 2x forward P/BV:
 - To reflect improved profitability outlook after the fab sale, stronger outlook for memory, and better supply-demand for logic foundry, we utilized a 2x forward P/BV, which is closer to the upper end of PSMC’s valuation range in the past five years.

1-yr forward P/BV (x)



Source: Company data, LSEG, UBSe

Section 9

Appendix

How far-reaching is the US ambition for leading edge semis reshoring?

- **What about for DRAM and NAND?**

- DRAM and NAND are key components of leading edge semis too, and all of the devices are manufactured outside of the US, including Micron and SanDisk.
- Micron has two major front end expansions planned in the US, including 1) 80kwpm capacity in Boise likely for DRAM and HBM. We think equipment move-in should begin from mid 2026. The fab may take two years to reach full capacity. 2) 200kwpm capacity in New York likely for DRAM.
- We expect equipment move-in to start in 2028. The fab may take four years to reach full capacity.
- Our demand analysis indicates the US may need 415kwpm of DRAM capacity and 144kwpm of NAND capacity. This means a more significant challenge for memory than advanced logic foundry for US self sufficiency in the next 3-4 years.

Analyzing US logic supply and demand

TSMC's US capacity expansion plan

Plant Location	Online Timing	Investment (US\$bn)	Nodes	Capacity (12" WPM)	Sales potential (US\$bn)
Arizona Phase I	H125	\$12.0	4nm	20k	\$3.4
Arizona Phase II	2027	\$28.0	3/2nm	30k	\$7.6
Arizona Phase III	2029-30	\$25.0	2/1.4nm	30k	\$9.0
Arizona Phase IV-V*	After 2029-30	\$60.0	2/1.4nm	60k	\$18.0
Arizona Phase VI*	After 2029-30	\$40.0	1.4/1nm	30k	\$9.7
Total		\$165.0		170k	\$47.7

US logic wafer demand analysis, next 3-4 years

	Apple's iPhones, PCs, iPads etc	Samsung smartphones	PCs		Server CPUs			Server accelerators		
			AMD	Intel	AMD	Intel	ARM	Nvidia	AMD	ASICs, Networking & Others
Device unit (mn)		220.0	80.1	160.1	4.2	11.8	5.0	10.0	1.0	5.0
Adv logic wafer consumption (kwpm)	91.4	44.0	32.6	65.7	11.0	65.6	8.6	25.1	1.3	9.2
Total adv logic wafer consumption (kwpm)	91.4	44.0	98.3		85.1			35.6		
US %	30%	13%	24%		45%			60%		
US wafer demand (kwpm)	27.4	5.7	23.6		38.3			21.3		

Total US demand for the leading edge logic foundry (kwpm) **116.4**

Source: Company data, UBS estimates. Note: Our Apple demand analysis covers most of its major tech products, including iPhones, MacBooks, iPads, Apple Watch etc. *Arizona Phase IV-V, and VI based on our estimates.

Analyzing US memory supply and demand

US NAND wafer demand analysis, next 3-4 years

	iPhones	Samsung smartphone	PC	Server
Units Total (M)	225	220	267	15
Content Per Unit (GB)	527	365	915	4,821
<i>US as % of Units</i>	30%	13%	24%	45%
US NAND Demand (M GB)	35,519	10,439	58,614	31,674
Required Bit Shipment (M GB)	35,519	10,439	58,614	31,674
Bit Shipments (M 1Gb equiv)	284,153	83,512	468,909	253,390
<i>3-Bit (TLC) Mix Assumption %</i>	50%	50%	65%	65%
<i>4-Bit (QLC) Mix Assumption %</i>	50%	50%	35%	35%
Unit/Die Shipments (M 1Gb equiv)	96,323	28,309	163,099	88,136
<i>Yield %</i>	80%	80%	80%	80%
Blended Gross Units Per Wafer (64Gb Equiv)	4,350	4,350	4,207	4,207
<i>176L Equivalent</i>	3,300	3,300	3,300	3,300
<i>232L Equivalent</i>	4,350	4,350	4,350	4,350
<i>27XL Equivalent</i>	5,212	5,212	5,212	5,212
Implied Wafer Capa (k wpy)	432	127	757	409
Implied Wafer Capa (k wpm)	36	11	63	34
Total Implied Wafer Capa (k wpy)	1,726			
Total US demand for NAND wafer capacity (k wpm)	144			

Source: UBS estimates.

Analyzing US memory supply and demand

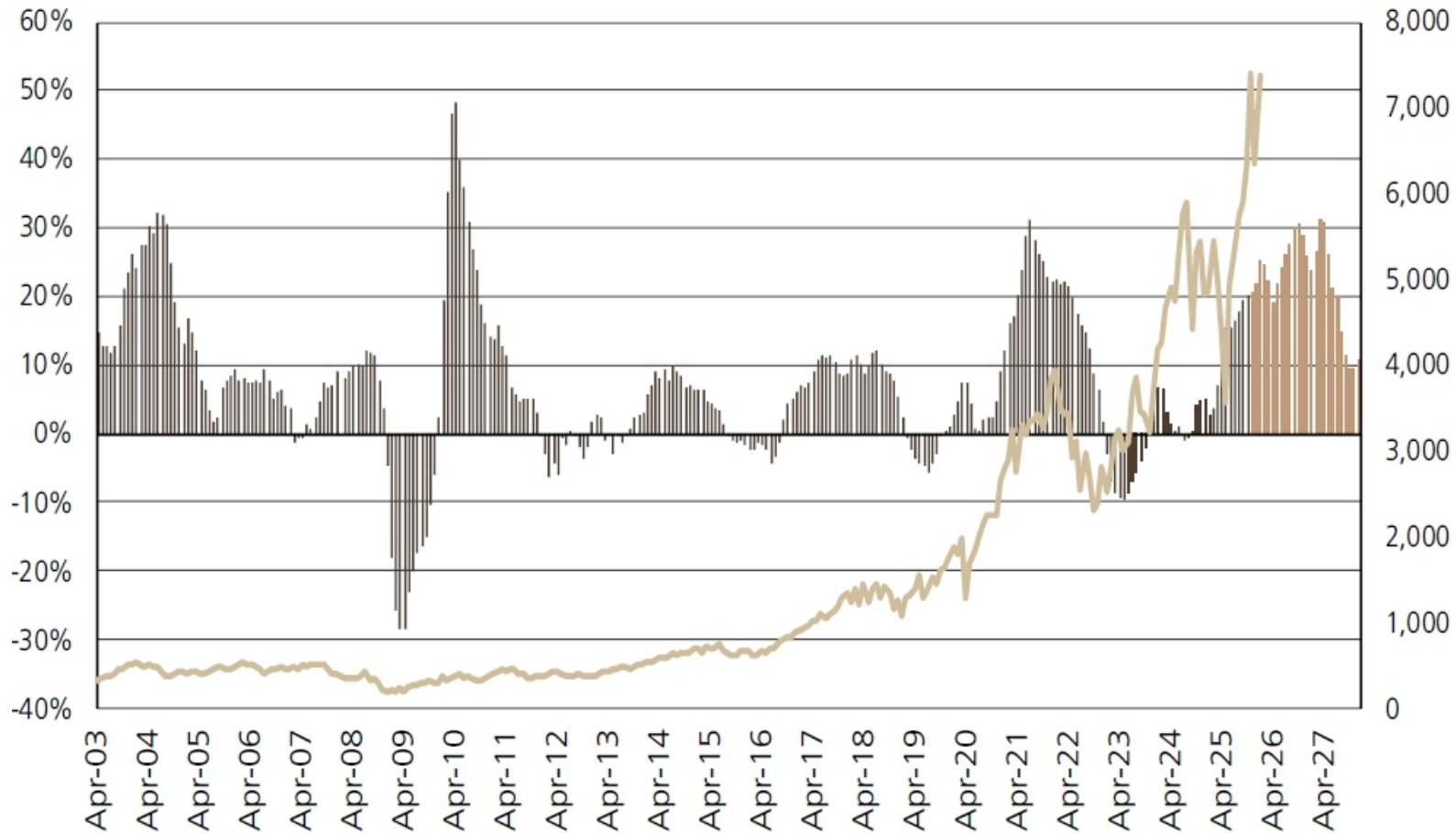
US DRAM wafer demand analysis, next 3-4 years

	iPhones	Samsung smartphone	PC	Servers		
				DDR	HBM	
Units Total (M)	225	220	267	15	Global HBM Demand (M GB)	3,785
Content Per Unit (GB)	10	11	15	877		
<i>US as % of Units</i>	30%	13%	24%	45%	<i>US as % of Server HBM Demand</i>	60%
US DRAM Demand (M GB)	683	317	933	5,765	US Server HBM Demand (M GB)	2,271
Required Bit Shipment (M GB)	683	317	933	5,765	Required HBM Bit Shipment (M GB)	2,271
Bit Shipments (M 1Gb equiv)	5,464	2,540	7,467	46,120	Bit Shipments (M 1Gb equiv)	18,169
<i>Yield %</i>	89%	89%	89%	89%	<i>Yield %</i>	60%
Blended Gross Dies Per Wafer (1Gb)	35,795	35,795	25,858	26,676	Blended Gross Dies Per Wafer (1Gb)	12,330
<i>1a nm Equivalent</i>	20,067	20,067	19,064	19,064	<i>1b nm (HBM3E)</i>	13,117
<i>1b nm Equivalent</i>	28,179	28,179	26,770	26,770	<i>1b nm (HBM4)</i>	10,494
<i>1c nm Equivalent</i>	35,795	35,795	34,006	34,006		
Implied Wafer Capa (k wpy)	171	80	324	1,943	Implied Wafer Capa (k wpy)	2,456
Implied Wafer Capa (k wpm)	14	7	27	162	Implied Wafer Capa (k wpm)	205
Total Implied Wafer Capa (k wpy)	4,974					
Total US demand for DRAM wafer capacity (k wpm)	415					

Source: UBS estimates.

Cycle updates

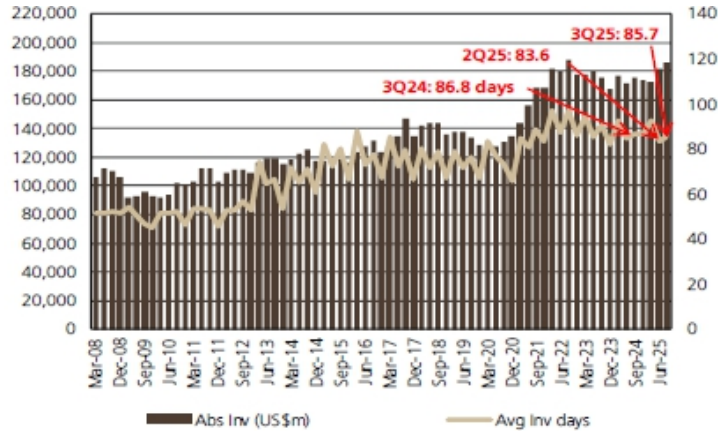
Semis (ex-memory) YoY 3MMA revs growth (Sell In) vs. the semis SOX index



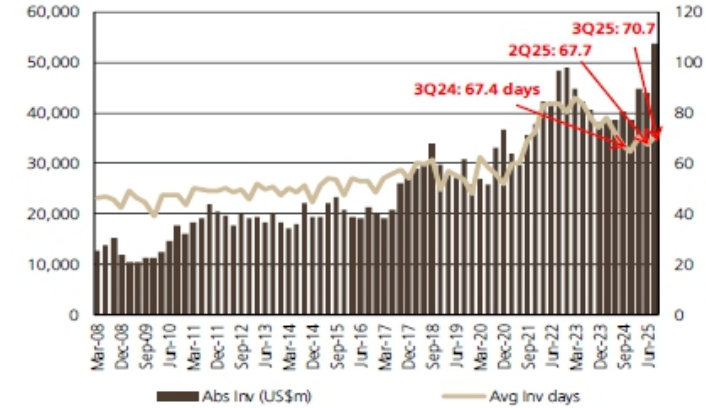
Source: SIA, Bloomberg, UBS

Cycle updates

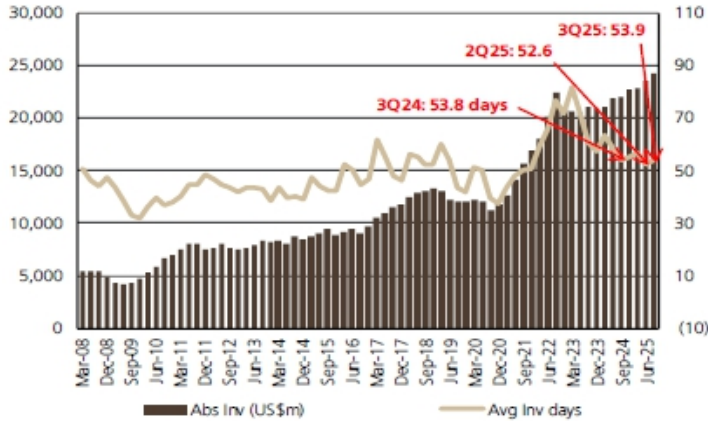
OEMs – Absolute inventory & Inventory days



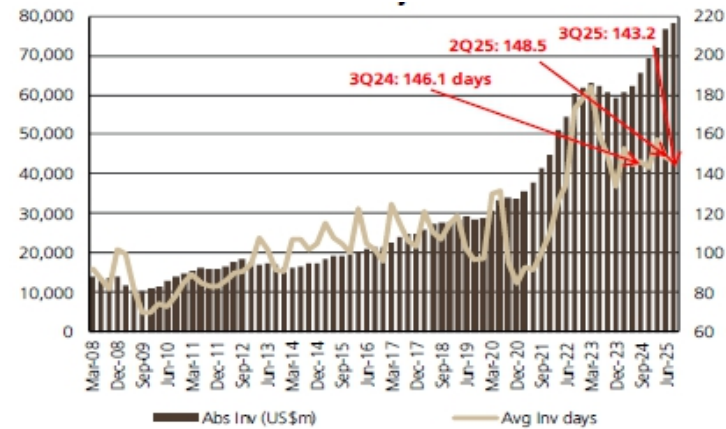
EMS – Absolute inventory & Inventory days



Distributors – Absolute inventory & Inventory days



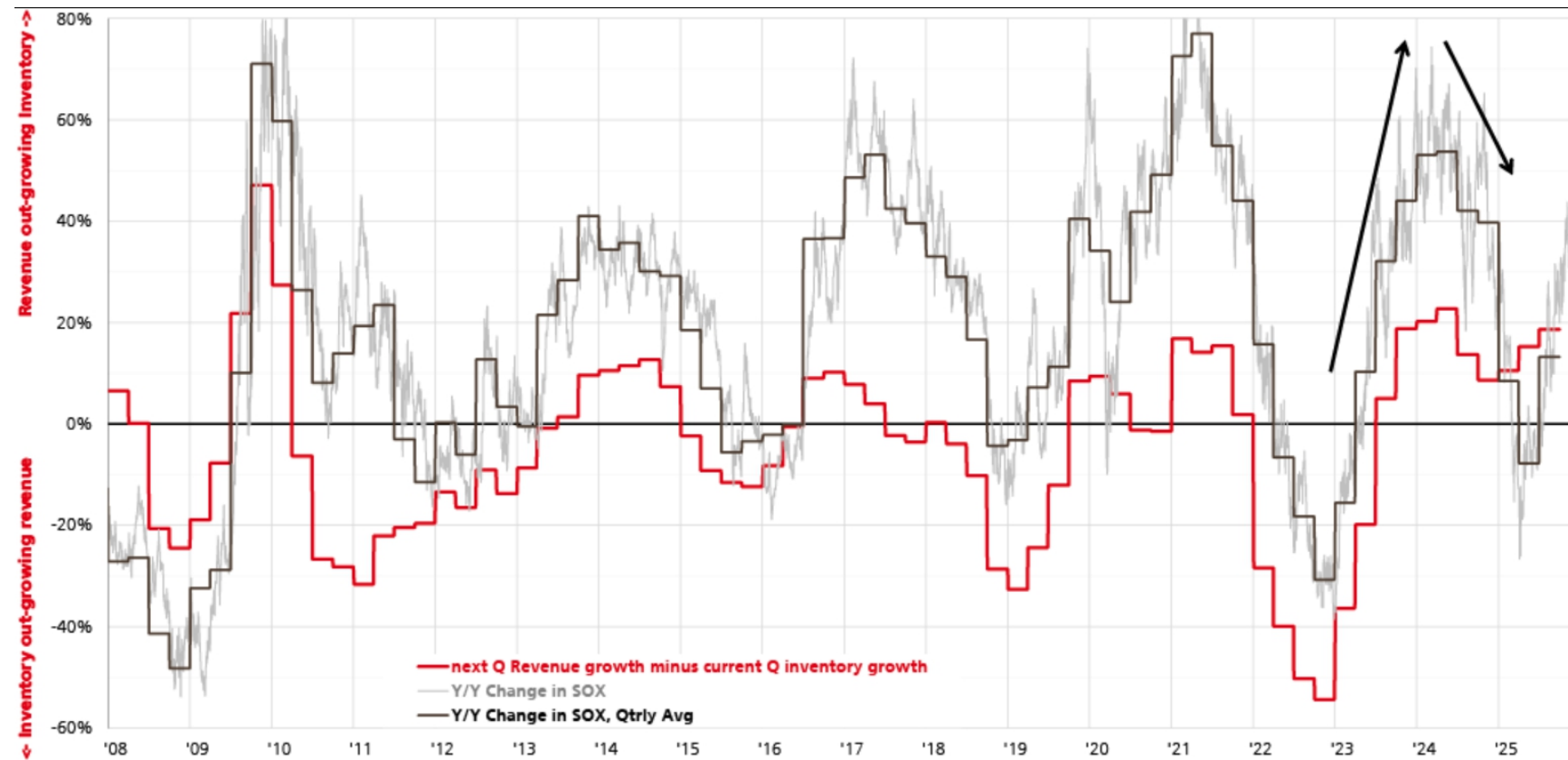
Non Memory Semis – Absolute inventory & Inventory days



Source: Company data, Gartner, UBS

Cycle updates

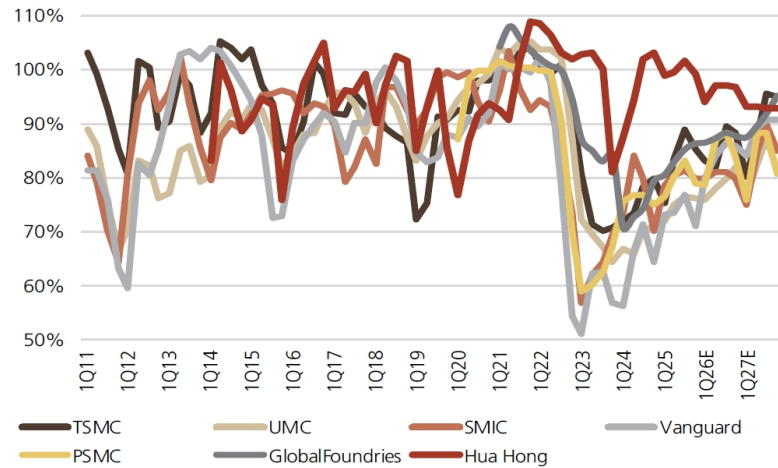
Semis inventory starting to catch up to revenue



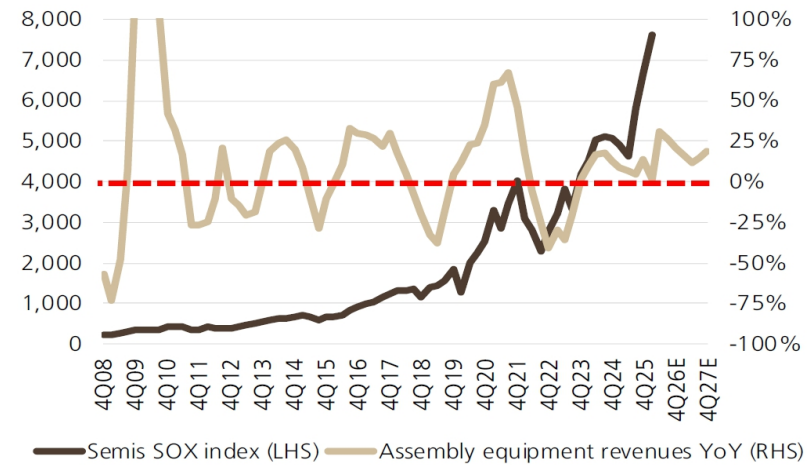
Source: Company data, Gartner, UBSe

What are the leading indicators for cycles?

Foundry capacity utilisation rates (Q111-Q427E)



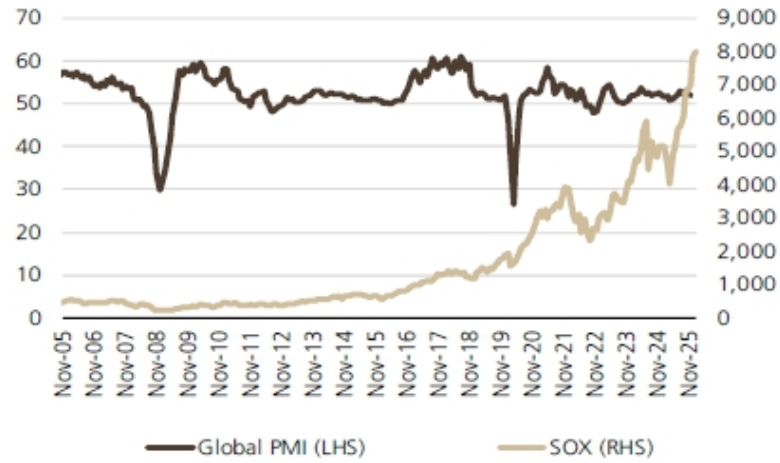
Assembly equipment revenues growth YoY (%) vs. semis SOX index



Source: Company data, Bloomberg, UBSe; Notes: Companies include KLIC, BE Semis, ASMPT(excl SMT), Disco (Japan) and Towa (Japan).

What are the leading indicators for cycles?

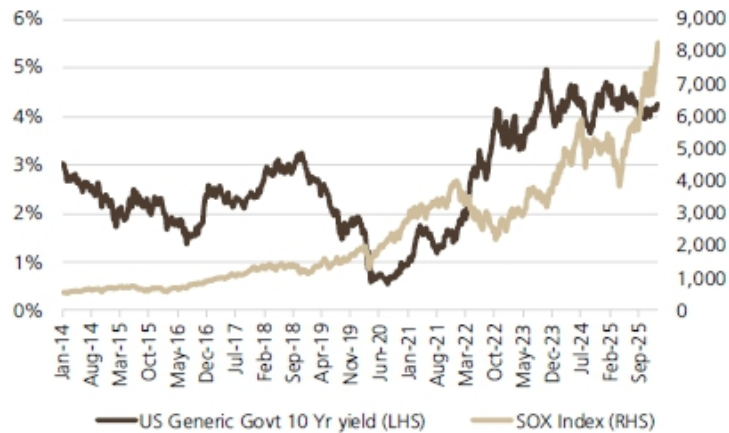
SOX vs. Global PMI



SOX vs. Global Growth Surprise Index



SOX vs. US 10-Y government bond yields



Source: Datastream, Bloomberg, UBS

Semi capex estimates

	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E
Capex US\$m										
Memory Total	41,189	47,010	61,035	60,807	47,747	61,833	76,602	118,686	141,742	142,161
DRAM	17,816	23,790	31,252	35,248	36,283	47,121	60,523	95,178	111,109	106,113
NAND/non-volatile	23,373	23,221	29,783	25,559	11,463	14,712	16,079	23,508	30,632	36,049
Large non Memory IDMs	18,960	16,384	22,312	33,734	35,754	30,778	23,505	24,845	26,884	30,547
Tier-one/two foundries	25,340	35,125	51,103	60,782	58,099	52,673	62,314	82,544	103,268	113,801
Other & SAT	17,044	19,049	28,713	32,016	32,170	30,111	35,735	34,596	22,956	18,218
Total	102,533	117,569	163,163	187,338	173,769	175,395	198,156	260,671	294,851	304,727
China Capex	6,522	11,800	10,309	11,668	10,787	16,403	18,120	20,900	23,100	24,100
Domestic China Capex	2,234	3,727	8,905	7,880	14,903	15,946	12,253	17,180	18,232	19,721
Total Capex ex-China	93,776	102,042	143,949	167,789	148,079	143,046	167,783	222,590	253,519	260,905
% YoY										
Memory Total	-25.4%	14.1%	29.8%	-0.4%	-21.5%	29.5%	23.9%	54.9%	19.4%	0.3%
DRAM	-28.9%	33.5%	31.4%	12.8%	2.9%	29.9%	28.4%	57.3%	16.7%	-4.5%
NAND/non-volatile	-22.5%	-0.7%	28.3%	-14.2%	-55.1%	28.3%	9.3%	46.2%	30.3%	17.7%
Large non Memory IDMs	29.1%	-13.6%	36.2%	51.2%	6.0%	-13.9%	-23.6%	5.7%	8.2%	13.6%
Tier-one/two foundries	25.8%	38.6%	45.5%	18.9%	-4.4%	-9.3%	18.3%	32.5%	25.1%	10.2%
Total	-4.0%	14.7%	38.8%	14.8%	-7.2%	0.9%	13.0%	31.5%	13.1%	3.3%
% Capital intensity										
Memory Total	38.7%	40.0%	39.7%	46.9%	51.7%	37.5%	34.3%	20.7%	17.8%	
DRAM	28.5%	37.0%	33.6%	45.3%	69.9%	49.7%	40.2%	23.1%	18.5%	
NAND	58.2%	47.0%	53.2%	54.3%	31.8%	22.3%	23.8%	15.0%	16.1%	
Non-memory	20.1%	21.9%	25.4%	28.6%	29.4%	26.0%	23.4%	21.9%	20.2%	
Total	24.9%	26.7%	29.4%	32.7%	33.3%	29.1%	26.7%	21.3%	19.0%	
Total (excluding discretetes)	30.8%	32.5%	35.2%	39.6%	41.1%	34.3%	30.6%	23.2%	20.3%	

Source: Company data, Gartner, UBSe

WFE by segment

	2019	2020	2021	2022	2023	2024	2025	2026E	2027E	2028E
WFE US\$m										
Memory Total	22,850	29,450	44,650	39,000	27,500	37,450	44,443	62,605	84,092	82,486
DRAM	10,250	13,400	23,100	22,500	20,750	29,400	33,815	48,047	65,411	60,529
NAND	12,600	16,050	21,550	16,500	6,750	8,050	10,628	14,558	18,682	21,957
Non-memory Total	28,050	30,550	43,850	58,500	62,900	62,550	68,807	79,395	88,408	99,514
Total	50,900	60,000	88,500	97,500	90,400	100,000	113,250	142,000	172,500	182,000
China WFE	7,000	14,000	17,000	22,800	30,500	39,000	42,750	47,050	50,000	50,350
% of total	13.8%	23.3%	19.2%	23.4%	33.7%	39.0%	37.7%	33.1%	29.0%	27.7%
Domestic China (excl. multinational)	3,500	9,100	12,750	18,510	28,000	37,800	41,750	46,450	49,500	49,850
% YoY										
Memory Total	-33.5%	28.9%	51.6%	-12.7%	-29.5%	36.2%	18.7%	40.9%	34.3%	-1.9%
DRAM	-34.1%	30.7%	72.4%	-2.6%	-7.8%	41.7%	15.0%	42.1%	36.1%	-7.5%
NAND	-33.0%	27.4%	34.3%	-23.4%	-59.1%	19.3%	32.0%	37.0%	28.3%	17.5%
Non-memory Total	43.8%	8.9%	43.5%	33.4%	7.5%	-0.6%	10.0%	15.4%	11.4%	12.6%
Total	-5.5%	17.9%	47.5%	10.2%	-7.3%	10.6%	13.3%	25.4%	21.5%	5.5%
China WFE	16.7%	100.0%	21.4%	34.1%	33.8%	27.9%	9.6%	10.1%	6.3%	0.7%
Domestic China (excl. multinational)	29.6%	160.0%	40.1%	45.2%	51.3%	35.0%	10.4%	11.3%	6.6%	0.7%
Segment % of total WFE										
Memory Total	44.9%	49.1%	50.5%	40.0%	30.4%	37.5%	39.2%	44.1%	48.7%	45.3%
DRAM	20.1%	22.3%	26.1%	23.1%	23.0%	29.4%	29.9%	33.8%	37.9%	33.3%
NAND	24.8%	26.8%	24.4%	16.9%	7.5%	8.1%	9.4%	10.3%	10.8%	12.1%
Non-memory Total	55.1%	50.9%	49.5%	60.0%	69.6%	62.6%	60.8%	55.9%	51.3%	54.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Company data, Gartner, UBS

WFE model projecting +25%/+21% for 2026E/27E

	2024	% YoY	2025	% YoY	2026E	% YoY	2027E	% YoY	2028E	% YoY
North America										
Intel	23,944	-7%	17,672	-26%	17,600	0%	19,500	11%	24,000	23%
Micron	9,796	39%	18,040	84%	30,887	71%	40,500	31%	31,000	-23%
Texas Instruments	4,820	-5%	4,550	-6%	2,375	-48%	1,600	-33%	2,484	55%
Global Foundries	625	-65%	722	16%	1,812	151%	2,293	27%	1,810	-21%
SanDisk	601	-38%	1,197	99%	1,600	34%	1,850	16%	1,000	-46%
Europe										
ST Micro	2,642	-36%	1,843	-30%	2,069	12%	2,136	3%	1,921	-10%
Infineon	2,892	-12%	2,240	-23%	3,677	64%	4,249	16%	3,626	-15%
NXP	876	-13%	537	-39%	1,224	128%	1,378	13%	1,512	10%
Korea										
Samsung Memory	22,805	-10%	24,520	8%	37,538	53%	43,131	15%	48,501	12%
Samsung Foundry / LSI	13,987	20%	9,428	-33%	10,232	9%	11,476	12%	12,490	9%
SK Hynix	6,283	-57%	11,644	85%	29,664	155%	33,976	15%	36,476	7%
Japan										
Kioxia	1,463	78%	2,000	37%	2,612	31%	2,985	14%	2,985	0%
Sony	1,300	-50%	1,750	35%	1,500	-14%	1,000	-33%	1,000	0%
Rapidus			3,500	NA	3,500	0%	1,120	-68%	1,120	0%
Taiwan										
TSMC	29,755	-2%	40,895	37%	56,000	37%	75,000	34%	85,000	13%
UMC	2,701	-9%	1,521	-44%	1,500	-1%	1,500	0%	1,500	0%
Nanya	509	6%	426	-16%	1,584	272%	1,750	10%	1,800	3%

Source: Company data, Gartner, UBSe (Intel, Micron, TXN, WDC, STM, Infineon, NXP, Samsung, SK Hynix, Sony, TSMC, UMC, Nanya, SMIC, Hua Hong, CR Micro, Silan, Sanan)

WFE model projecting +25%/+21% for 2026E/27E

	2024	% YoY	2025	% YoY	2026E	% YoY	2027E	% YoY	2028E	% YoY
China										
SMIC	7,664	0%	7,500	-2%	7,500	0%	7,500	0%	7,000	-7%
Hua Hong	2,739	202%	2,120	-23%	1,900	-10%	2,100	11%	2,100	0%
Shanghai Huali	2,500	100%	4,500	80%	5,500	22%	5,500	0%	6,000	9%
Unigroup/YMTC	3,500	250%	4,000	14%	6,000	50%	8,000	33%	9,000	13%
Chengdu Gaozhen	400	100%	400	0%	400	0%	400	0%	400	0%
CXMT (Innotron)	10,000	11%	6,000	-40%	10,000	67%	11,000	10%	12,000	9%
Nexchip	1,837	75%	1,469	-20%	1,763	20%	2,028	15%	2,332	15%
SMEC	494	-66%	519	5%	571	10%	628	10%	691	10%
CR Micro	990	-15%	981	-1%	1,270	29%	546	-57%	735	35%
Silan	383	24%	533	39%	611	15%	924	51%	811	-12%
Yandong Micro	496	47%	1,400	182%	1,500	7%	1,600	7%	1,600	0%
Sanan	376	6%	208	-45%	282	35%	282	0%	282	0%
Yangjie	120	85%	162	35%	162	0%	162	0%	162	0%
GalaxyCore	228	38%	250	10%	275	10%	303	10%	333	10%
Jiejie Micro	85	-50%	81	-4%	93	15%	107	15%	123	15%
Other										
Others	18,155	-10%	20,097	11%	19,116	-5%	10,176	-47%	4,780	-53%
Total	175,395	1%	198,156	13%	260,671	32%	294,851	13%	304,727	3%
WFE	100,000	11%	113,250	13%	142,000	25%	172,500	21%	182,000	6%

Source: Company data, Gartner, UBSe (Intel, Micron, TXN, WDC, STM, Infineon, NXP, Samsung, SK Hynix, Sony, TSMC, UMC, Nanya, SMIC, Hua Hong, CR Micro, Silan, Sanan)

China Fab project pipeline in China

No.	Project name	Location	Wafer size	Investment	
				(US\$ m)	Current status
Foundry					
1	SMIC				Will add 60kwpm 12" capacity at the end of 2024 vs 2023, ahead of original plan of 30-50kwpm addition
1.1	Dongfang	Shanghai	12"	8,870	Ramping up from Q124
1.2	Jingcheng	Beijing	12"	7,600	Ramping up from Q323
1.3	Xiqing	Tianjin	12"	7,500	Fab shell under construction
1.4	Shenzhen	Shenzhen	12"	2,350	Ramping up from Q422
2	HuaHong Wuxi Fab 9	Wuxi	12"	6,700	Fab shell completed and 1st batch of tool moved-in in Aug 2024
3	Huali Chengdu	Chengdu	12"	3,257	Fab shell under construction; designed capacity 30kwpm
4	Huali Shanghai Phase II	Shanghai	12"		Fab shell under construction
5	ICRD	Shanghai	12"		40/28nm
6	Nexchip (Phase II & III)	Hefei	12"	5,714	Capacity by July 2024: 120kwpm 12"; plan to add 30-50kwpm in 2024 and another 30-40kwpm in 2025
7	Sien	Qingdao	12"		Ramping up capacity
8	GTA Shanghai (Phase II)	Shanghai	8"/12"	5,129	Ramping up; designed capacity: 70kwpm 6", 110kwpm 8", 50kwpm 12", 30kwpm SiC
9	UNT-C (formerly SMEC) 12-inch production line	Shaoxing	12"	3,171	Running at 10kwpm, expect to reach 20kwpm/30kwpm by Q324/YE2024
10	UNT-C compound semi production line	Shaoxing	6"/8"	714	5kwpm exiting 2023; expect to reach 10kwpm by YE2024; expect to MP 8" SiC from 2025
11	Cansemi (Phase III)	Guangzhou	12"	2,321	Expect to start production in 2024
12	RongSemi	Ningbo	12"		90-40nm CIS, power IC, TDDI, power discrete, NOR Flash, etc.; ramping up from 2025
13	PXW Micro	Shenzhen	12"		28/20nm, covering logic, analog, RF, CIS, etc.
14	PST	Shenzhen	12"		40/28nm
15	ZSemi 12-inch MEMS and specialty process line	Guangzhou	12"	1,000	Designed capacity: 20kwpm; start production from June 2024
IDM					
1	CXMT				
1.1	Hefei Fab2	Hefei	12"		DRAM; designed capacity: 120kwpm; planned
1.2	Beijing Fab	Beijing	12"		DRAM; under construction
1.3	Shanghai Fab	Shanghai	12"		DRAM; under construction
2	YMTC				
2.1	Wuhan Fab2	Wuhan	12"		NAND; designed capacity: 200kwpm; ramping up
2.2	Wuhan Fab3	Wuhan	12"		Under evaluation
3	SwaySure	Shenzhen	12"		Memory; ramping up capacity
4	CR Micro 12-inch line	Shenzhen	12"	3,143	Designed capacity: 40kwpm; equipment move-in; ramping up from 2025
5	CR Micro 12-inch power semi production line	Chongqing	12"	1,071	Ramping up; expect to reach 35kwpm by YE2024
6	CHIPSEMI 12-inch power semi production line	Chongqing	12"	2,071	Fab shell under construction; Phase I designed capacity: 20kwpm
7	Hangzhou Fullsemi 12-inch Analog IC production line	Hangzhou	12"	2,571	Equipment move-in
8	Silan Hangzhou 12-inch fab	Hangzhou	12"	557	Designed capacity: 30kwpm; construction under progress; Silan will keep expanding capacity over the next 3-5
9	Silan advanced compound semi SiC power production line	Xiamen	6"	214	Ramping up; expect to reach 12kwpm by YE2024
10	Wingtech Nexperia Lingang 12-inch line	Shanghai	12"	1,714	Designed capacity: 100kwpm (phase 1: 30-50kwpm); ramping up
11	Zhuzhou CRRC mid-low voltage power device line	Zhuzhou	8"	1,589	Fab shell under construction
12	Shaoxing BYD semi power device and MEMS	Shaoxing	8"	1,429	Construction of Phase I completed
13	GalaxyCore CIS 12-inch line	Shanghai	12"	978	Ramping up
14	Haining Lion Micro 6-inch RF line	Haining	6"	714	Ramping up
15	Yandong Micro 12-inch line	Beijing	12"	643	Ramping up
16	Beijing Electric Control Integrated Circuit Manufacturing	Beijing	12"	31,500	Designed capacity: 50kwpm; equipment move-in expected from Q425; MP from YE2026
17	Ascenpower SiC production line	Guangzhou	8"	500	Ramping up
18	Starpower specialty power & SiC chip	Jiaxing	6"	286	Expect to start production in 2024

Source: Company Data, UBS China Semiconductors: Jimmy Yu

Summary of CHIPS Act Grants

Grantee	Grant Awarded	Status	Project Size	Grant %	Project Type	Technology Type
Leading Edge						
Intel	\$7.8B	Final	\$100B	7.8%	Modernization, expansion, 2 plants	Leading-edge, advanced packaging
TSMC	\$6.6B	Final	\$65B	10.2%	3 new fabs	Leading-edge
Samsung	\$4.7B	Final	\$45B	10.5%	2 new fabs, new facility, expansion	Leading-edge, mature-node, adv. packaging
Micron Technology	\$6.4B	Final	\$127B	5.0%	3 new fabs (1 Idaho, 2 NY), expansion (PMT)	Leading-edge
Entegris	\$77MM	Final	\$722MM	10.7%	New facility	Advanced materials
Absolics	\$75MM	Final	\$600MM	12.5%	New facility	Advanced packaging
Total Grants Allocated	\$25.67B		\$338.3B	7.6%		
Total Leading-Edge Allocation	\$28B					
Allocation Remaining	\$2.33B					
Mature Node						
Texas Instruments	\$1.6B	Final	\$18.0B	8.9%	New facilities	Mature-node
GlobalFoundries	\$1.5B	Final	\$12.5B	12.0%	New facility + expansion and revitalization	Mature-node
Wolfspeed	\$750MM	PMT	\$6.0B	12.5%	New SiC wafer fabs in NC and NY	Mature-node
Global Wafers	\$400MM	PMT	\$4.0B	10.0%	New facilities + expansion	Wafers
SK hynix	\$450MM	PMT	\$3.87B	11.6%	New facility	Advanced packaging and R&D
Amkor	\$400MM	PMT	\$2.0B	20.0%	New facility	Advanced packaging and test
Hemlock	\$325MM	PMT	\$800MM	40.6%	New facility	Polysilicon production
Microchip	\$162MM	PMT	N/A		Modernization, expansion	Mature-node
Polar Semi	\$123MM	Final	\$525MM	23.4%	Modernization, expansion	Mature-node
Akash Systems	\$18MM	PMT	\$121MM	15.0%	New facility	Mature-node
Infinera (Nokia)	\$93MM	PMT			New facilities	Mature-node
HP	\$50MM	PMT	N/A		Modernization, expansion	Mature-node
X-FAB	\$50MM	PMT	\$200MM	25.0%	Modernization, expansion	Mature-node
BAE Systems	\$35.5MM	Final	N/A		Modernization	Mature-node
Coherent	\$33.0MM	PMT	N/A		Modernization, expansion	InPh/Optoelectronics
Corning	\$32.0MM	PMT	\$315MM	10.2%	Modernization, expansion	Semi supply chain (Litho glass)
SolAero (Rocket Lab)	\$24MM	Final	\$98MM	24.5%	Modernization, expansion	Mature-node
Edwards Vacuum	\$18MM	PMT	\$319MM	5.6%	New facility	Semi supply chain (Dry pumps)
SkyWater Technology	\$16MM	PMT	N/A		Modernization	Mature-node
Roque Valley	\$6.7MM	PMT	\$25MM	26.8%	Modernization	Mature-node
Powerex	\$3.0MM	PMT	\$15MM	20.0%	Modernization, expansion	Advanced packaging
Total Grants Allocated	\$6.1B		\$48.8B	12.5%		
Total Mature-Node Allocation	\$11B					
Allocation Remaining	\$4.9B					

Source: Company Data, US Department of Commerce

UBS forecasts on smartphone volume

Smartphone volume (m)	2024	1Q25	2Q25	3Q25	4Q25	2025	1Q26E	2Q26E	3Q26E	4Q26E	2026E	1Q27E	2Q27E	3Q27E	4Q27E	2027E
Samsung	224	61	58	61	60	240	60	60	63	56	238	63	59	64	58	243
% YoY	-0.4%	0.8%	7.4%	5.2%	15.4%	6.9%	-1.7%	3.4%	2.5%	-6.2%	-0.5%	5.9%	-1.7%	1.6%	2.1%	2.0%
% of total	18.3%	19.8%	19.5%	18.9%	17.6%	18.9%	21.8%	22.5%	21.5%	18.2%	20.9%	22.6%	21.6%	21.6%	18.2%	20.9%
Apple	222	52	48	54	90	243	60	57	55	93	264	62	58	57	95	271
% YoY	-2.9%	1.0%	10.3%	3.9%	19.2%	9.7%	16.5%	17.7%	3.0%	3.0%	8.8%	3.0%	3.0%	3.0%	2.0%	2.6%
% of total	18.1%	16.9%	16.2%	16.6%	26.4%	19.2%	21.9%	21.2%	19.0%	30.0%	23.2%	22.1%	21.3%	19.3%	30.0%	23.3%
Huawei	48	13	13	11	12	48	12	12	10	11	45	13	12	10	12	47
% YoY	32.8%	0.0%	7.7%	4.8%	-10.1%	0.2%	-8.4%	-4.8%	-9.1%	-5.2%	-6.8%	8.3%	0.0%	0.0%	9.1%	4.4%
% of total	3.9%	4.3%	4.2%	3.4%	3.4%	3.8%	4.4%	4.5%	3.4%	3.6%	4.0%	4.7%	4.4%	3.4%	3.8%	4.0%
OPPO*	105	24	24	28	27	102	21	22	25	24	92	21	21	26	25	93
% YoY	1.6%	-6.7%	-7.0%	-4.2%	7.6%	-2.7%	-10.6%	-8.3%	-9.4%	-10.8%	-9.8%	0.0%	-4.5%	4.0%	4.2%	1.1%
% of total	8.6%	7.7%	8.1%	8.6%	7.9%	8.1%	7.7%	8.3%	8.6%	7.8%	8.1%	7.5%	7.7%	8.8%	7.9%	8.0%
Vivo	100	23	27	29	27	106	21	20	26	24	91	22	20	27	25	94
% YoY	8.6%	0.9%	18.3%	6.7%	-0.4%	6.1%	-7.5%	-26.2%	-9.7%	-11.1%	-13.8%	4.8%	0.0%	3.8%	4.2%	3.3%
% of total	8.1%	7.4%	9.1%	8.9%	7.9%	8.3%	7.7%	7.5%	8.9%	7.8%	8.0%	7.9%	7.3%	9.2%	7.9%	8.1%
Xiaomi	169	42	42	43	38	165	35	37	39	35	145	37	39	41	38	153
% YoY	15.8%	3.0%	0.5%	0.5%	-11.8%	-2.0%	-16.5%	-13.7%	-11.1%	-7.4%	-12.3%	4.5%	5.2%	5.2%	7.5%	5.6%
% of total	13.8%	13.7%	14.3%	13.4%	11.1%	13.1%	12.8%	13.7%	13.2%	11.3%	12.7%	13.1%	14.1%	13.7%	11.9%	13.2%
Transsion	106	21	24	29	22	96	19	21	24	20	84	22	24	26	23	95
% YoY	10.4%	-24.5%	-5.9%	16.0%	-22.4%	-9.9%	-8.1%	-10.8%	-17.2%	-9.3%	-11.8%	14.0%	12.0%	8.3%	19.5%	13.2%
% of total	8.1%	6.5%	7.7%	8.9%	6.1%	7.3%	6.6%	7.5%	7.7%	6.0%	6.9%	7.4%	8.2%	8.3%	7.0%	7.7%
Lenovo	53	12	13	15	14	54	12	13	15	15	55	13	16	14	13	55
% YoY	16.8%	-4.7%	1.1%	2.0%	2.2%	0.2%	0.0%	0.0%	4.1%	5.7%	2.6%	6.6%	21.8%	-6.6%	-14.2%	0.9%
% of total	4.4%	4.0%	4.3%	4.5%	4.1%	4.2%	4.4%	4.8%	5.2%	4.8%	4.8%	4.6%	5.8%	4.8%	4.0%	4.8%
Honor	64	17	16	18	19	69	15	14	15	17	61	16	12	16	17	61
% YoY	15.7%	3.0%	3.2%	9.4%	15.6%	7.8%	-11.8%	-12.5%	-14.3%	-8.1%	-11.6%	6.7%	-14.3%	6.7%	0.0%	0.0%
% of total	5.2%	5.6%	5.4%	5.4%	5.4%	5.5%	5.5%	5.3%	5.2%	5.5%	5.4%	5.7%	4.4%	5.4%	5.4%	5.2%
Other	133	42	32	37	34	144	19	11	19	15	64	11	13	15	11	49
% YoY	-3.6%	107.5%	1.6%	-13.1%	-14.3%	8.3%	-55.0%	-65.6%	-46.8%	-56.7%	-55.7%	-41.2%	15.5%	-23.7%	-26.9%	-22.8%
% of total	10.8%	13.6%	10.8%	11.3%	9.8%	11.4%	6.8%	4.1%	6.7%	4.7%	5.6%	3.9%	4.7%	5.0%	3.4%	4.2%
Total	1,223	305	297	323	341	1,265	274	266	291	309	1,139	279	273	295	315	1,162
% YoY	5.0%	5.3%	4.1%	2.1%	2.7%	3.5%	-10.3%	-10.3%	-9.9%	-9.4%	-10.0%	2.1%	2.5%	1.4%	2.1%	2.0%

Source: Company data, Gartner, UBS

UBS forecasts on PC/Notebook shipments

PC

UBS global PC model													
(mil units)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025E	2026E	2027E
Desktop units	118.2	108.0	102.3	99.8	100.3	79.8	85.3	76.1	62.4	61.1	68.3	59.6	60.4
% YoY	-11.5%	-8.7%	-5.3%	-2.4%	0.5%	-20.4%	6.9%	-10.9%	-17.9%	-2.1%	11.8%	-12.7%	1.3%
Notebook units	176.3	171.6	173.2	174.9	178.6	228.3	256.4	208.0	179.9	186.3	202.5	182.0	186.2
% YoY	-5.2%	-2.7%	0.9%	1.0%	2.1%	27.8%	12.3%	-18.9%	-13.5%	3.6%	8.7%	-10.1%	2.3%
Chromebook	6.8	9.4	12.8	14.9	16.3	32.6	35.3	19.4	16.6	18.3	19.9	16.7	18.1
% YoY	18.8%	38.2%	35.7%	16.8%	9.4%	100.0%	8.2%	-45.2%	-14.2%	10.2%	8.8%	-16.2%	8.3%
Consumer PC units	138.4	123.3	111.1	105.9	98.4	117.5	130.2	105.3	88.4	86.9	93.8	81.9	84.4
% YoY	-10.2%	-10.9%	-9.9%	-4.7%	-7.0%	19.4%	10.7%	-19.1%	-16.1%	-1.7%	7.9%	-12.7%	3.1%
Commercial PC units	156.1	156.2	164.3	168.8	180.5	190.6	211.6	178.8	153.9	160.5	177.0	159.8	162.2
% YoY	-5.6%	0.1%	5.2%	2.8%	6.9%	5.6%	11.0%	-15.5%	-13.9%	4.3%	10.3%	-9.8%	1.6%
Total units	294.5	279.5	275.4	274.7	278.9	308.2	341.7	284.1	242.3	247.5	270.8	241.6	246.6
% YoY	-7.8%	-5.1%	-1.5%	-0.3%	1.5%	10.5%	10.9%	-16.9%	-14.7%	2.1%	9.4%	-10.8%	2.1%

Notebook

('000 units)	2023	2024	1Q25	2Q25	3Q25	4Q25	2025E	1Q26	2Q26E	3Q26E	4Q26E	2026E
Quanta	46,900	45,900	10,800	12,100	12,700	10,900	46,500	10,000	10,200	10,300	10,000	40,500
%QoQ			-3%	12%	5%	-14%		-8%	2%	1%	-3%	
%YoY	-18.7%	-2.1%	3%	3%	1%	-2%	1.3%	-7%	-16%	-19%	-8%	-12.9%
Compal	33,900	32,300	7,000	7,100	7,100	6,800	28,000	5,900	6,301	6,931	7,278	26,410
%QoQ			-10%	1%	0%	-4%		-13%	7%	10%	5%	
%YoY	-13.7%	-4.7%	-7%	-18%	-14%	-13%	-13.3%	-16%	-11%	-2%	7%	-5.7%
Pegatron	7,925	8,055	1,885	2,375	2,400	2,410	9,070	1,800	1,900	2,000	2,050	7,750
%QoQ			-3%	26%	1%	0%		-25%	6%	5%	2%	
%YoY	-1.9%	1.6%	22%	16%	-4%	24%	12.6%	-5%	-20%	-17%	-15%	-14.6%
Inventec	18,700	20,000	5,000	5,600	5,400	5,300	21,300	5,400	5,400	5,076	4,822	20,698
%QoQ			-7%	12%	-4%	-2%		2%	0%	-6%	-5%	
%YoY	-5.6%	7.0%	11%	14%	4%	-2%	6.5%	8%	-4%	-6%	-9%	-2.8%
Wistron	19,000	20,200	4,900	5,900	6,400	6,900	24,100	6,100	6,500	6,175	5,558	24,333
%QoQ			-8%	20%	8%	8%		-12%	7%	-5%	-10%	
%YoY	-10.4%	6.3%	7%	16%	23%	30%	19.3%	24%	10%	-4%	-19%	1.0%
Total	126,425	126,455	29,585	33,075	34,000	32,310	128,970	29,200	30,301	30,482	29,707	119,690
%QoQ			-6.2%	11.8%	2.8%	-5.0%		-9.6%	3.8%	0.6%	-2.5%	
%YoY	-13.5%	0.0%	3.3%	1.9%	0.6%	2.4%	2.0%	-1.3%	-8.4%	-10.3%	-8.1%	-7.2%

Source: Gartner, UBSe

UBS forecasts on TV shipments

	2023	1Q24	2Q24	3Q24	4Q24E	2024E	1Q25E	2Q25E	3Q25E	4Q25E	2025E	1Q26E	2Q26E	3Q26E	4Q26E	2026E
LCD TV unit shipment (mn units)																
North America	45.67	9.46	10.92	12.51	13.89	46.78	9.65	10.37	12.76	14.30	47.09	9.56	10.17	13.02	14.59	47.33
Western Europe	23.85	6.26	6.03	5.67	8.25	26.21	6.01	5.55	5.50	8.41	25.47	6.13	5.61	5.28	8.50	25.51
Eastern Europe	13.86	3.16	3.29	3.71	4.13	14.28	3.22	3.16	3.75	4.21	14.33	3.16	3.25	3.78	4.25	14.44
China	37.47	8.53	8.11	8.60	11.05	36.29	9.04	8.03	8.86	11.28	37.20	8.77	8.35	9.12	11.50	37.74
Japan	4.51	1.13	1.06	1.10	1.23	4.52	1.10	1.07	1.12	1.19	4.48	1.07	1.10	1.17	1.17	4.52
Asia (ex-China and Japan)	32.66	7.40	7.48	8.95	8.83	32.66	7.62	7.33	9.13	9.09	33.17	7.78	7.55	9.40	9.28	34.00
Latin America	24.70	5.70	6.70	6.92	6.18	25.50	5.53	6.43	6.99	6.31	25.25	5.58	6.56	7.06	6.43	25.63
Middle East and Africa	13.07	3.50	3.19	3.42	3.09	13.20	3.53	3.22	3.39	3.10	13.25	3.57	3.29	3.45	3.13	13.44
Total	195.79	45.14	46.78	50.88	56.64	199.44	45.70	45.16	51.49	57.89	200.25	45.61	45.87	52.30	58.85	202.63
LCD TV YoY growth (%)																
North America	8.9%	-1.7%	10.7%	4.2%	-2.0%	2.4%	2.0%	-5.0%	2.0%	3.0%	0.7%	-1.0%	-2.0%	2.0%	2.0%	0.5%
Western Europe	-7.9%	14.4%	21.5%	6.4%	2.0%	9.9%	-4.0%	-8.0%	-3.0%	2.0%	-2.8%	2.0%	1.0%	-4.0%	1.0%	0.2%
Eastern Europe	5.3%	-13.4%	8.1%	20.1%	1.0%	3.0%	2.0%	-4.0%	1.0%	2.0%	0.4%	-2.0%	3.0%	1.0%	1.0%	0.8%
China	-12.2%	-3.6%	-8.5%	-4.9%	3.0%	-3.1%	6.0%	-1.0%	3.0%	2.0%	2.5%	-3.0%	4.0%	3.0%	2.0%	1.5%
Japan	-8.3%	-3.4%	1.4%	8.2%	-4.0%	0.2%	-3.0%	1.0%	2.0%	-3.0%	-0.8%	-2.0%	3.0%	5.0%	-2.0%	0.9%
Asia (ex-China and Japan)	2.2%	-4.7%	1.5%	0.9%	2.0%	0.0%	3.0%	-2.0%	2.0%	3.0%	1.6%	2.0%	3.0%	3.0%	2.0%	2.5%
Latin America	6.9%	1.9%	6.0%	2.8%	2.0%	3.2%	-3.0%	-4.0%	1.0%	2.0%	-1.0%	1.0%	2.0%	1.0%	2.0%	1.5%
Middle East and Africa	-0.3%	0.5%	-2.7%	8.4%	-2.0%	1.0%	1.0%	1.0%	-1.0%	0.5%	0.4%	1.0%	2.0%	2.0%	1.0%	1.5%
Total	-0.5%	-1.0%	4.6%	3.3%	0.7%	1.9%	1.3%	-3.5%	1.2%	2.2%	0.4%	-0.2%	1.6%	1.6%	1.6%	1.2%
OLED TV Shipment breakdown (mn units)																
North America	1.59	0.30	0.35	0.51	0.59	1.75	0.32	0.38	0.57	0.65	1.91	0.34	0.40	0.62	0.71	2.08
Western Europe	2.05	0.49	0.51	0.44	0.83	2.27	0.53	0.55	0.49	0.92	2.49	0.58	0.60	0.55	1.03	2.75
Eastern Europe	0.35	0.09	0.10	0.10	0.14	0.43	0.09	0.11	0.11	0.15	0.46	0.09	0.11	0.11	0.16	0.48
China	0.13	0.03	0.03	0.02	0.02	0.10	0.02	0.03	0.02	0.02	0.09	0.02	0.02	0.02	0.02	0.09
Japan	0.50	0.10	0.12	0.10	0.14	0.47	0.10	0.12	0.11	0.15	0.48	0.10	0.12	0.11	0.16	0.50
Asia (ex-China and Japan)	0.63	0.15	0.14	0.16	0.15	0.60	0.16	0.15	0.18	0.16	0.64	0.16	0.16	0.18	0.16	0.67
Latin America	0.17	0.03	0.04	0.04	0.05	0.17	0.03	0.05	0.04	0.05	0.18	0.04	0.05	0.05	0.06	0.19
Middle East and Africa	0.14	0.03	0.04	0.04	0.03	0.15	0.04	0.04	0.05	0.03	0.16	0.04	0.05	0.05	0.04	0.17
Total	5.57	1.22	1.33	1.43	1.95	5.93	1.29	1.42	1.56	2.13	6.40	1.38	1.51	1.70	2.34	6.92
OLED TV YoY growth (%)																
North America	-11%	-1%	16%	15%	10%	10%	8%	8%	10%	10%	9%	7%	7%	10%	10%	9%
Western Europe	-19%	-3%	34%	11%	7%	10%	8%	8%	11%	11%	10%	9%	9%	12%	12%	11%
Eastern Europe	3%	8%	73%	40%	1%	23%	4%	4%	7%	7%	6%	3%	3%	5%	5%	4%
China	-52%	-34%	-25%	-28%	-12%	-25%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%
Japan	-13%	3%	-2%	-15%	-5%	-5%	-3%	-2%	3%	4%	1%	2%	2%	6%	6%	4%
Asia (ex-China and Japan)	-7%	-7%	-9%	-3%	-5%	-6%	7%	7%	7%	7%	7%	5%	5%	5%	5%	5%
Latin America	-3%	-6%	3%	-6%	2%	-1%	5%	5%	5%	5%	5%	6%	6%	7%	7%	7%
Middle East and Africa	-1%	-10%	7%	12%	2%	3%	5%	5%	8%	8%	6%	6%	6%	6%	6%	6%
Total	-15%	-3%	17%	8%	5%	6%	6%	6%	9%	9%	8%	7%	7%	9%	10%	8%

Source: Omdia, UBS estimates

UBS forecasts on server shipments

	2023	2024	2025	2026E	2027E
Total Server shipments (K unit)	14,087	16,025	20,078	23,874	27,844
<i>Yoy growth (%)</i>	<i>-5.7%</i>	<i>13.8%</i>	<i>25.3%</i>	<i>18.9%</i>	<i>16.6%</i>
Out of which conventional servers	13,304	14,435	18,835	22,739	26,441
<i>Yoy growth (%)</i>	<i>-6.4%</i>	<i>8.5%</i>	<i>30.5%</i>	<i>20.7%</i>	<i>16.3%</i>
<i>% of total</i>	<i>94%</i>	<i>90%</i>	<i>94%</i>	<i>95%</i>	<i>95%</i>
Traditional Enterprise	4,217	4,283	4,214	4,298	4,384
<i>Yoy growth (%)</i>	<i>-16.1%</i>	<i>1.6%</i>	<i>-4.0%</i>	<i>-6.0%</i>	<i>-6.0%</i>
<i>% of total</i>	<i>30%</i>	<i>27%</i>	<i>21%</i>	<i>18%</i>	<i>16%</i>
Hyperscalers	9,915	9,883	11,102	15,864	19,576
<i>Yoy growth (%)</i>	<i>12.4%</i>	<i>-0.3%</i>	<i>12.3%</i>	<i>42.9%</i>	<i>23.4%</i>
<i>% of total</i>	<i>70%</i>	<i>62%</i>	<i>55%</i>	<i>66%</i>	<i>70%</i>
Standard servers	8,873	8,047	9,600	14,463	17,899
<i>Yoy growth (%)</i>	<i>13.4%</i>	<i>-9.3%</i>	<i>19.3%</i>	<i>50.6%</i>	<i>23.8%</i>
<i>% of total hyperscalers</i>	<i>89%</i>	<i>81%</i>	<i>86%</i>	<i>91%</i>	<i>91%</i>
<i>% of total servers</i>	<i>63%</i>	<i>50%</i>	<i>48%</i>	<i>61%</i>	<i>64%</i>
AI Servers	783	1,591	1,243	1,136	1,404
<i>Yoy growth (%)</i>	<i>7.3%</i>	<i>103.1%</i>	<i>-21.8%</i>	<i>-8.7%</i>	<i>23.6%</i>
<i>% of total hyperscalers</i>	<i>8%</i>	<i>16%</i>	<i>11%</i>	<i>7%</i>	<i>7%</i>
<i>% of total servers</i>	<i>6%</i>	<i>10%</i>	<i>6%</i>	<i>5%</i>	<i>5%</i>
Database Servers	259	246	258	266	274
<i>Yoy growth (%)</i>	<i>2.0%</i>	<i>4.0%</i>	<i>4.0%</i>	<i>5.0%</i>	<i>5.0%</i>
<i>% of total hyperscalers</i>	<i>3%</i>	<i>2%</i>	<i>2%</i>	<i>2%</i>	<i>1%</i>
<i>% of total servers</i>	<i>2%</i>	<i>2%</i>	<i>1%</i>	<i>1%</i>	<i>1%</i>

Source: Company data, Dell'Oro, UBS

UBS forecasts on automobile sales volume

Sales, m units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Q125	Q225	Q325	Q425	2025	2026E	2027E	2028E	2029E
Western Europe	16.1	17.2	17.8	17.9	18.1	13.8	13.9	13.0	14.8	15.1	3.9	3.9	3.6	3.8	15.2	15.6	15.8	16.0	16.2
% growth	17.8%	7.2%	3.2%	0.5%	1.3%	-23.6%	0.2%	-6.2%	14.0%	1.6%	-1.9%	-3.1%	6.8%	2.3%	0.7%	2.5%	1.6%	1.5%	1.0%
of which: Germany	3.5	3.6	3.7	3.7	3.9	3.2	2.9	2.9	3.1	3.1	0.7	0.8	0.8	0.8	3.1	3.2	3.3	3.3	3.4
% growth	5.5%	4.8%	2.5%	0.6%	5.1%	-18.6%	-9.3%	-0.3%	7.7%	-0.2%	-5.0%	-6.3%	10.3%	6.1%	0.9%	2.5%	2.0%	1.5%	1.0%
of which: France	2.3	2.4	2.5	2.6	2.7	2.1	2.1	1.9	2.2	2.1	0.5	0.5	0.4	0.5	2.0	2.0	2.1	2.1	2.1
% growth	5.9%	5.6%	4.3%	4.1%	2.3%	-23.9%	1.9%	-10.2%	14.7%	-2.5%	-8.3%	-8.7%	-1.0%	-0.8%	-5.0%	2.0%	1.5%	1.5%	1.0%
of which: Italy	1.7	2.0	2.2	2.1	2.1	1.5	1.6	1.5	1.8	1.8	0.5	0.5	0.4	0.4	1.7	1.8	1.8	1.8	1.8
% growth	15.6%	19.8%	6.2%	-4.0%	0.8%	-26.6%	6.6%	-10.1%	19.3%	-0.3%	-3.1%	-5.9%	0.2%	0.9%	-2.3%	2.0%	1.5%	1.5%	1.0%
of which: Spain	1.2	1.3	1.4	1.5	1.5	1.0	1.0	0.9	1.1	1.2	0.3	0.4	0.3	0.3	1.3	1.4	1.5	1.5	1.5
% growth	22.7%	11.0%	8.5%	7.1%	-4.0%	-31.5%	0.1%	-7.7%	17.5%	7.9%	14.0%	13.3%	17.1%	8.1%	12.9%	7.0%	1.5%	1.5%	1.0%
of which: UK	3.0	3.1	2.9	2.7	2.7	1.9	2.0	1.9	2.3	2.3	0.7	0.5	0.6	0.5	2.4	2.4	2.4	2.5	2.5
% growth	7.4%	2.0%	-5.2%	-6.3%	-1.8%	-28.1%	4.1%	-5.3%	18.4%	2.8%	4.0%	-2.2%	4.0%	-0.2%	1.6%	2.0%	1.5%	1.5%	1.0%
RoWE	4.4	4.7	5.0	5.1	5.2	4.1	4.2	3.9	4.4	4.6	1.1	1.2	1.1	1.2	4.6	4.7	4.8	4.9	4.9
% growth	49.6%	7.6%	5.8%	2.6%	1.5%	-21.3%	2.4%	-6.9%	13.2%	3.6%	-3.4%	-2.1%	9.1%	1.2%	0.9%	2.0%	1.5%	1.5%	1.0%
Eastern Europe	2.8	2.6	2.8	2.7	2.5	2.9	2.9	2.0	3.1	3.6	0.7	0.8	0.9	1.1	3.5	3.6	3.6	3.7	3.8
% growth	-39.3%	-7.6%	6.9%	-3.7%	-5.6%	14.3%	-0.1%	-31.5%	55.7%	17.0%	-12.9%	-5.8%	-1.2%	7.4%	-2.4%	2.0%	1.0%	2.0%	2.0%
of which: Russia	1.6	1.4	1.6	1.8	1.8	1.6	1.7	0.7	1.1	1.6	0.3	0.3	0.4	0.4	1.4	1.4	1.4	1.4	1.4
% growth	-35.6%	-11.2%	11.6%	13.1%	-2.5%	-8.7%	4.5%	-57.9%	59.5%	46.0%	-24.6%	-26.6%	-17.9%	0.6%	-16.5%	0.0%	0.0%	2.0%	2.0%
Europe	18.9	19.8	20.6	20.6	20.6	16.7	16.8	15.0	17.9	18.7	4.5	4.7	4.5	4.9	18.7	19.2	19.4	19.8	20.0
% growth	3.3%	5.0%	3.7%	-0.1%	0.4%	-18.9%	0.1%	-10.6%	19.5%	4.3%	-3.7%	-3.6%	5.1%	3.4%	0.1%	2.4%	1.5%	1.6%	1.2%
North America	20.7	21.1	20.8	20.7	20.3	17.1	17.7	16.5	18.7	19.5	4.8	5.2	5.0	4.9	19.9	19.3	19.1	19.1	19.2
% growth	6.4%	1.7%	-1.5%	-0.2%	-2.0%	-15.8%	3.8%	-7.0%	13.2%	4.2%	4.9%	3.3%	5.3%	-4.3%	2.2%	-2.9%	-1.0%	0.0%	0.5%
of which: USA	17.5	17.6	17.2	17.3	17.1	14.6	15.1	13.9	15.6	16.0	3.9	4.2	4.1	4.1	16.4	16.0	15.8	15.8	15.8
% growth	5.8%	0.4%	-2.1%	0.8%	-1.3%	-14.6%	3.3%	-7.9%	12.4%	2.8%	4.6%	2.7%	5.9%	-3.7%	2.2%	-2.4%	-1.3%	0.0%	0.0%
South America	4.4	3.9	4.4	4.7	4.5	3.2	3.8	3.9	4.0	4.2	1.0	1.1	1.2	1.3	4.6	4.8	4.9	5.1	5.3
% growth	-18.5%	-10.9%	12.7%	6.5%	-3.6%	-28.8%	16.9%	2.2%	3.1%	5.5%	15.7%	11.5%	7.4%	8.3%	10.3%	4.0%	3.0%	3.0%	3.0%
of which: Brazil	2.5	2.0	2.2	2.5	2.7	2.0	2.0	2.0	2.2	2.5	0.5	0.6	0.7	0.7	2.5	2.7	2.7	2.8	2.9
% growth	-25.6%	-19.9%	9.7%	13.0%	8.2%	-26.6%	1.2%	-1.0%	11.4%	14.0%	7.0%	3.2%	0.1%	0.6%	2.3%	4.0%	3.0%	3.0%	3.0%
Asia	38.0	41.3	42.6	42.1	39.0	35.9	37.0	38.3	40.5	40.5	10.0	10.1	10.5	11.9	42.4	42.5	43.6	44.7	45.8
% growth	3.1%	8.7%	3.0%	-1.0%	-7.3%	-8.1%	3.0%	3.6%	5.7%	0.0%	9.6%	7.6%	7.0%	-2.8%	4.8%	0.3%	2.6%	2.4%	2.4%
of which: Japan	4.9	4.8	5.1	5.2	5.1	4.5	4.4	4.2	4.7	4.3	1.3	1.0	1.1	1.1	4.5	4.6	4.6	4.5	4.5
% growth	-9.6%	-2.0%	5.9%	0.5%	-1.3%	-11.5%	-3.3%	-3.7%	12.0%	-7.9%	14.0%	6.9%	-4.5%	-2.0%	3.4%	3.2%	-1.0%	-1.0%	-1.0%
of which: China	24.4	27.6	28.0	27.0	24.7	23.7	23.9	24.1	25.5	25.9	6.1	6.5	6.8	7.9	27.3	26.8	27.3	27.8	28.4
% growth	5.8%	12.8%	1.6%	-3.5%	-8.6%	-4.2%	1.0%	0.9%	5.6%	1.8%	11.9%	10.4%	11.6%	-6.7%	5.4%	-2.0%	2.0%	2.0%	2.0%
of which: India	3.2	3.4	3.7	4.0	3.5	2.8	3.5	4.4	4.7	4.9	1.3	1.2	1.2	1.4	5.2	5.4	5.7	6.1	6.5
% growth	7.0%	8.2%	9.1%	7.3%	-11.6%	-20.6%	26.5%	23.7%	7.4%	4.1%	3.7%	-0.1%	-0.2%	17.8%	5.4%	5.0%	6.0%	6.0%	6.0%
of which: South Korea	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.6	1.7	1.6	0.4	0.4	0.4	0.4	1.6	1.7	1.7	1.7	1.7
% growth	11.4%	-1.0%	-1.6%	1.4%	-3.3%	6.9%	-8.7%	-2.4%	3.3%	-6.5%	2.2%	4.9%	11.6%	-4.6%	3.3%	2.0%	1.0%	1.0%	1.0%
of which: ASEAN	3.0	3.0	3.2	3.4	3.3	2.5	2.8	3.3	3.3	3.1	0.8	0.7	0.8	0.9	3.2	3.4	3.6	3.8	4.0
% growth	-4.9%	2.4%	5.8%	5.5%	-1.6%	-26.2%	12.0%	21.0%	-1.1%	-5.5%	3.1%	2.2%	-2.1%	3.9%	1.8%	7.0%	7.0%	5.0%	4.0%
Other	0.7	0.7	0.7	0.8	0.6	0.6	0.7	0.6	0.6	0.6	0.1	0.2	0.1	0.2	0.6	0.6	0.7	0.7	0.7
% growth	13.0%	-3.3%	7.4%	7.6%	-16.5%	-8.0%	19.0%	-12.8%	-4.2%	3.7%	-3.0%	-4.9%	2.4%	12.9%	1.8%	3.0%	3.0%	3.0%	3.0%
ROW	6.2	6.1	6.2	5.6	4.9	4.2	5.0	5.4	5.7	5.9	1.6	1.4	1.5	1.6	6.1	6.3	6.5	6.7	6.9
% growth	-3.2%	-2.3%	1.9%	-10.0%	-11.4%	-14.0%	18.6%	6.3%	6.0%	4.0%	10.3%	1.1%	3.9%	1.0%	4.0%	3.0%	3.0%	3.0%	3.0%
Total	88.2	92.2	94.5	93.7	89.5	77.2	80.3	79.0	86.7	88.7	21.9	22.5	22.7	24.6	91.7	92.1	93.6	95.3	97.1
% growth	2.0%	4.5%	2.5%	-0.9%	-4.5%	-13.7%	4.0%	-1.6%	9.8%	2.3%	5.8%	3.8%	6.1%	-1.1%	3.4%	0.4%	1.6%	1.8%	1.8%

Source: UBS estimates

UBS forecasts on EV

	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Europe	1,393,744	2,331,037	2,690,005	3,153,215	3,074,476	4,075,583	4,890,700	5,771,026	6,636,679	7,300,347	8,760,417
growth y/y	136%	67%	15%	17%	-2%	33%	20%	18%	15%	10%	20%
% of LV sales	8.4%	13.9%	18.0%	17.6%	16.5%	21.8%	25.5%	29.7%	33.6%	36.5%	43.8%
% share of BEV from EV	55.9%	55.3%	62.2%	68.6%	69.1%	68.8%	65.0%	67.0%	68.0%	69.0%	70.0%
BEV sales	779,299	1,288,565	1,672,935	2,163,278	2,123,355	2,804,648	3,178,955	3,866,587	4,512,942	5,037,240	6,132,292
PHEV sales	614,445	1,042,472	1,017,070	989,937	951,121	1,270,935	1,711,745	1,904,438	2,123,737	2,263,108	2,628,125
US	320,971	616,152	983,376	1,465,968	1,632,548	1,564,823	1,120,000	1,232,400	1,422,000	1,896,000	2,528,000
growth y/y	-3%	92%	60%	49%	11%	-4%	-28%	10%	15%	33%	33%
% of LV sales	2.2%	4.1%	7.1%	9.4%	10.2%	9.5%	7.0%	7.8%	9.0%	12.0%	16.0%
% share of BEV from EV	81.1%	79.6%	82.4%	81.3%	80.5%	81.4%	78.6%	76.9%	77.8%	75.0%	75.0%
BEV sales	260,193	490,456	810,466	1,191,414	1,313,806	1,273,747	880,000	948,000	1,106,000	1,422,000	1,896,000
PHEV sales	60,778	125,696	172,910	274,554	318,742	291,076	240,000	284,400	316,000	474,000	632,000
China	1,213,823	3,170,344	6,072,308	8,059,213	11,341,035	13,398,261	14,517,073	16,621,489	18,061,107	21,129,358	23,542,442
growth y/y	14%	161%	92%	33%	41%	18%	8%	14%	9%	17%	11%
% of LV sales	5.1%	13.3%	25.2%	31.7%	43.8%	49.1%	54.2%	60.9%	64.9%	74.4%	80.1%
% share of BEV from EV	83.9%	83.2%	76.7%	67.2%	57.5%	63.1%	63.1%	65.1%	67.1%	69.1%	71.1%
BEV sales	1,017,968	2,638,241	4,655,935	5,412,710	6,519,158	8,447,911	9,153,348	10,812,660	12,110,387	14,590,307	16,727,445
PHEV sales	195,855	532,103	1,416,373	2,646,503	4,821,877	4,950,350	5,363,725	5,808,829	5,950,720	6,539,051	6,814,997
Japan	26,894	47,935	98,632	120,711	80,655	104,213	140,000	190,000	290,000	390,000	490,000
growth y/y	-28%	78%	106%	22%	-33%	29%	34%	36%	53%	34%	26%
% of LV sales	0.6%	1.0%	2.3%	2.6%	1.9%	2.3%	3.0%	4.1%	6.4%	8.7%	11.1%
% share of BEV from EV	57.9%	52.2%	61.9%	61.4%	57.7%	60.6%	64.3%	73.7%	65.5%	61.5%	59.2%
BEV sales	15,578	25,035	61,096	74,085	46,569	63,101	90,000	140,000	190,000	240,000	290,000
PHEV sales	11,316	22,900	37,536	46,626	34,086	41,112	50,000	50,000	100,000	150,000	200,000
ROW	289,568	608,532	679,679	1,382,893	1,571,286	1,557,120	1,868,544	2,242,253	2,690,703	3,094,309	3,558,455
growth y/y	13%	110%	12%	103%	14%	-1%	20%	20%	20%	15%	15%
% of LV sales	1.6%	3.0%	3.1%	6.0%	6.6%	6.3%	7.3%	8.5%	9.8%	10.9%	12.7%
% share of BEV from EV	70.0%	75.0%	80.0%	75.0%	75.0%	75.0%	70.0%	70.0%	70.0%	70.0%	70.0%
BEV sales	202,698	456,399	543,743	1,037,170	1,178,465	1,167,840	1,307,981	1,569,577	1,883,492	2,166,016	2,490,919
PHEV sales	86,870	152,133	135,936	345,723	392,822	389,280	560,563	672,676	807,211	928,293	1,067,537
Total	3,245,000	6,774,000	10,524,000	14,182,000	17,700,000	20,700,000	22,536,317	26,057,167	29,100,490	33,810,014	38,879,314
% of global LV sales	4.2%	8.4%	13.3%	16.4%	20.0%	22.6%	24.5%	27.8%	30.5%	34.8%	39.8%
y-o-y		108.8%	55.4%	34.8%	24.8%	16.9%	8.9%	15.6%	11.7%	16.2%	15.0%
BEV	2,275,736	4,898,696	7,744,175	9,878,657	11,181,353	13,757,247	14,610,283	17,336,824	19,802,821	23,455,562	27,536,656
BEV % of total LV sales	2.9%	6.1%	9.8%	11.4%	12.6%	15.0%	15.9%	18.5%	20.8%	24.2%	28.2%
y-o-y		115.3%	58.1%	27.6%	13.2%	23.0%	6.2%	18.7%	14.2%	18.4%	17.4%
PHEV	969,264	1,875,304	2,779,825	4,303,343	6,518,648	6,942,753	7,926,033	8,720,343	9,297,669	10,354,452	11,342,658
PHEV % of total LV sales	1.3%	2.3%	3.5%	5.0%	7.4%	7.6%	8.6%	9.3%	9.8%	10.7%	11.6%
y-o-y		93.5%	48.2%	54.8%	51.5%	6.5%	14.2%	10.0%	6.6%	11.4%	9.5%

Source: UBS estimates

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Buy	FSR is > 6% above the MRA.	54%	24%
Neutral	FSR is between -6% and 6% of the MRA.	40%	21%
Sell	FSR is > 6% below the MRA.	6%	21%

Source: UBS. Rating allocations are as of 31 March 2026.

1:Percentage of companies under coverage globally within the 12-month rating category.

2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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UBS Securities Pte. Ltd., Taipei Branch: Ryan Sun, Sunny Lin.

Company Disclosures

Company Name	Reuters	12-month rating	Price	Price date
ASE Industrial ^{28,16b}	3711.TW	Buy	NT\$561.00	22 May 2026
ASMPT Limited ²⁸	0522.HK	Buy	HK\$184.60	22 May 2026
ASPEED Technology Inc ²⁸	5274.TWO	Buy	NT\$17,780	22 May 2026
Alchip Technologies ²⁸	3661.TW	Buy	NT\$4,895	22 May 2026
Chroma ATE ²⁸	2360.TW	Buy	NT\$2,270	22 May 2026
GlobalWafers	6488.TWO	Buy	NT\$717.00	22 May 2026
Grand Process Technology ¹³	3131.TWO	Buy	NT\$2,820	22 May 2026
Gudeng Precision Industrial ¹³	3680.TWO	Suspended	NT\$568.00	22 May 2026
Hon.Precision, Inc.	7769.TW	Buy	NT\$7,730	22 May 2026
Hua Hong Semiconductor ^{16a}	1347.HK	Neutral	HK\$130.10	22 May 2026
King Yuan Electronics ²⁸	2449.TW	Buy	NT\$296.00	22 May 2026
MediaTek Inc. ²⁸	2454.TW	Buy	NT\$3,860	22 May 2026
Powerchip Semiconductor Manufacturing	6770.TW	Neutral	NT\$63.80	22 May 2026
Realtek Semiconductor Corp ²⁸	2379.TW	Neutral	NT\$578.00	22 May 2026
Semiconductor Manufacturing Intl Corp ^{16a,20}	0981.HK	Neutral (CBE)	HK\$79.85	22 May 2026
Silergy Corporation ¹³	6415.TW	Buy	NT\$562.00	22 May 2026
Taiwan Semiconductor Manufacturing ^{28,8,16b}	2330.TW	Buy	NT\$2,255	22 May 2026
Vanguard ^{2,13,4,6}	5347.TWO	Neutral	NT\$162.00	22 May 2026

Source: UBS Global Research; LSEG Eikon. All prices as of local market close. Ratings in this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date.

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