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Greater China Technology Hardware | Asia Pacific

ABF Substrates: More Capex, More Tightness

New capacity announcements do not overturn our bullish view. AI demand and increasing substrate complexity should keep the market undersupplied from 2027, supporting further pricing and margin expansion. We raise earnings estimates and price targets for Unimicron and NYPCB and reiterate OW on both.

More capacity, but limited near-term relief: Suppliers are stepping up investment, but several newly announced projects are not scheduled to ramp until late 2028-30 or beyond. Our updated supply-demand model continues to indicate undersupply from 2027 through 2030, with tighter supply in CY27-28, which should only be more favorable to pricing. Therefore, capacity additions announced in the past few months do not, in our view, diminish the magnitude of pricing gains over the next two years.

CY27 pricing should accelerate, amid tighter supply-demand in CY27-28, but visibility on the magnitude remains limited: We see ABF substrate prices rising 25%+ in CY27, below buy-side expectations of ~50%. Our supply/demand outlook points to undersupply next year, with larger substrates, higher layer counts, and greater manufacturing complexity further constraining usable output. Raw material cost pass-through was a key driver of CY26 price increases, we expect supply tightness to play a greater role in CY27. This should allow pricing to outpace cost inflation, driving faster margin expansion. We remain constructive on pricing, but the magnitude and timing of increases depends on customer-level negotiations.

With pricing a segment-wide tailwind, we prefer Unimicron for its stronger CY27 capacity growth: As supply tightens, the ability to deliver incremental volume should become a key differentiator. We favor suppliers bringing capacity online in CY27 over those whose expansion plans contribute in later years. Unimicron's Guangfu II ramp should add 10-15% to capacity in CY27, compared with 5-10% growth at NYPCB through debottlenecking, giving Unimicron greater scope to benefit from both pricing and volume growth. Unimicron is also our preferred play heading into earnings, as more demanding expectations for NYPCB leave less room for an upside surprise. But we remain OW on NYPCB given its networking and AMD CPU exposure, alongside its proactive pricing strategy.

We reiterate Overweight on Unimicron and NYPCB: Reflecting stronger earnings trajectories, we raise our EPS estimates for both companies. Based on upside to our revised price targets, our order of preference is *Unimicron (NT$1,775 PT; 24x CY28e P/E; 41% upside), followed by NYPCB (NT$2,000 PT; 22x CY28e P/E; 39% upside).*

Potential risks: 1) Weaker demand for PCs, general servers, and AI servers; 2) meaningful capacity expansion plans; 3) T-glass shortage; 4) CoWoP displacing ABF substrates.

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GREATER CHINA TECHNOLOGY HARDWARE
Asia Pacific
Industry View **In-Line**

Exhibit 1 : What's changed

Company	Ticker	Rating		PT		Last close	Upside (%)	EPS change (%)			PEG		
		New	Old	New	Old			26e	27e	28e	26e	27e	28e
Unimicron	3037.TW	OW	OW	1,775.0	1,465.0	1,255.0	41%	62%	30%	28%	0.16	0.50	0.34
Nan Ya PCB	8046.TW	OW	OW	2,000.0	1,550.0	1,440.0	39%	39%	46%	43%	0.20	0.26	0.26

Source: FactSet, Morgan Stanley Research (e) estimates. Pricing as of the close on October 12, 2026.

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Supply/Demand Update: Undersupply Deepens in CY27–28

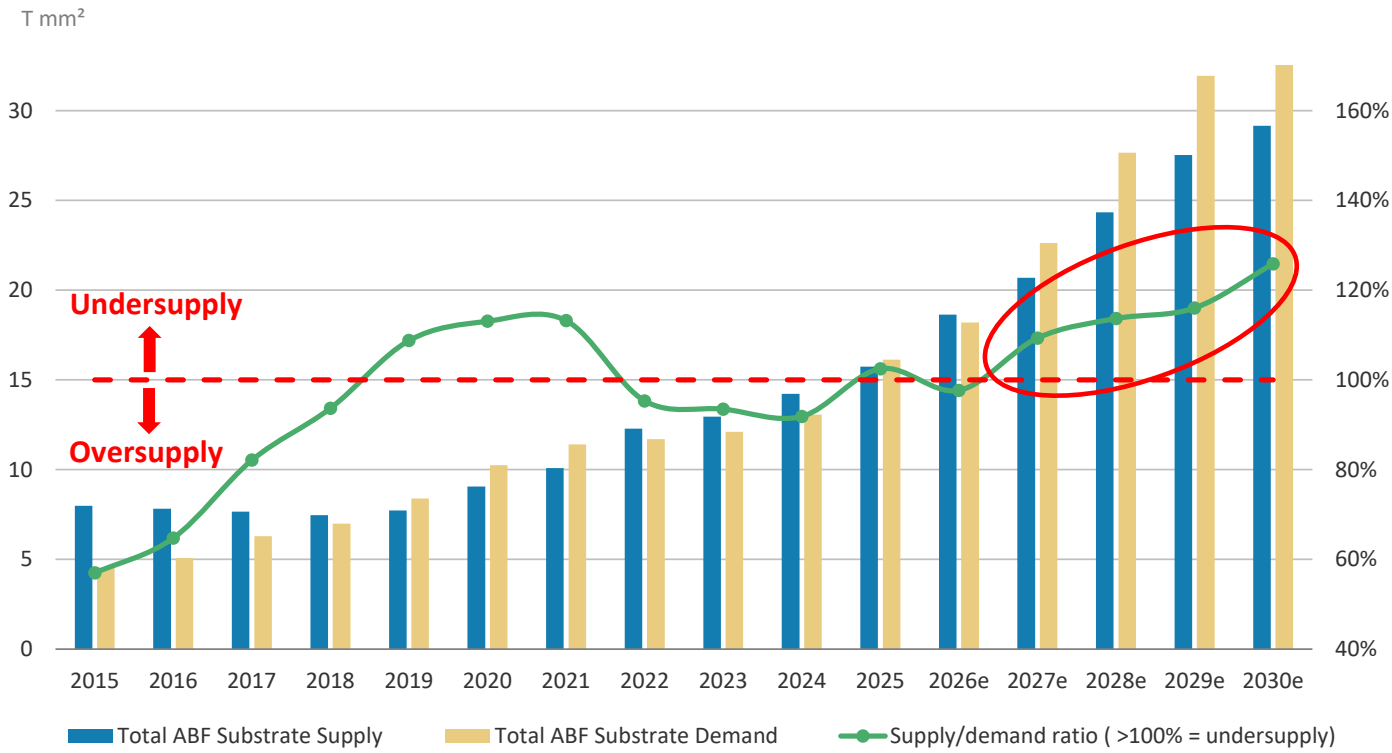
Our updated model points to a wider supply shortfall in CY27–28, despite additional capacity: Incorporating the latest expansion plans and semiconductor demand forecasts, we now expect ABF substrate demand to exceed available supply by 9.3% in CY27 and 13.7% in CY28, versus 6.2% and 9.4% previously. This represents a widening of 3.1ppt and 4.3ppt, respectively, relative to our prior estimates. We maintain our view that CY26 is a broadly balanced market, followed by increasingly tight supply over the next two years.

The main demand upgrade comes from other ASICs, including Chinese AI chips: We raise our shipment assumptions for this category to 6.4mn units in CY27 and 8.7mn in CY28, from 4.6mn and 6.2mn previously. Our Nvidia GPU and server CPU forecasts remain largely unchanged, while we lower AMD GPU estimates while also keeping CY27 Trainium and TPU shipments largely unchanged. The tighter substrate outlook therefore reflects stronger demand across a broader set of ASIC suppliers, rather than higher shipment assumptions for every major AI platform. We also raise our substrate content assumptions for select chips based on our latest supply chain checks, lifting our substrate demand estimates across some segments, including server CPUs and networking.

Higher supply assumptions provide limited relief in CY27-28: We now include additional capacity announcements that have been announced recently, including two additional Kinsus factories, scheduled to come online in CY28 and CY29, beyond the CY27 expansion already in our model. Several larger projects, however, contribute later. NYPCB's new site starts ramping in 2H29, while SEMCO's Sejong expansion begins mass production in September 2028 and its project in Vietnam is scheduled to begin operations by June 2030. These additions increase medium-term supply but do not prevent the modeled shortfall from worsening through CY28.

Increasing substrate complexity adds to the pressure on usable output: Larger body sizes, higher layer counts, and more demanding manufacturing processes constrain the output available to meet demand, even as suppliers expand installed capacity. With the supply gap widening in CY27-28, we expect tightness to become a more important pricing driver than raw material cost pass-through. This supports our forecast for 25%+ price increases in CY27 and further increases in CY28, alongside continued margin expansion.

Exhibit 2: Expecting ABF substrate undersupply gap to widen by 2030 vs. our prior estimates



Source: Morgan Stanley Research (e) estimates.

Exhibit 3: Increased demand assumptions cause undersupply to persist through 2030

ABF SD	2026e	2027e	2028e	2029e	2030e
Old	95.6%	106.2%	109.4%	117.5%	124.6%
New	97.7%	109.3%	113.7%	116.0%	125.9%

Source: Morgan Stanley Research (e) estimates.

Supply-side developments

Unimicron (3037.TW, OW, covered by Howard Kao)

On September 30, Unimicron announced that it has acquired a Hukou site from Bridgestone Taiwan for ~NT$10.089bn (~US$318mn). Based on our checks, this is for capacity expansion plans in 2030 or beyond.

For CY26, Unimicron has announced capex of NT$53.7B.

Over the next few years, Unimicron already has several new production facilities coming online, including:

- **Guangfu II:** ramp in 2027
- **Yangmei II:** ramp in 2028
- **Yangmei III:** ramp in 2029
- **Yangmei IV:** ramp in 2029+
- **Bridgestone:** ramp in 2030+

NYPCB (8046.TW, OW, covered by Howard Kao)

On August 6, NYPCB announced that its Board of Directors had approved a capex budget of NT$46.8bn (~US$1,474mn) to invest in building a new ABF substrate production site. Our checks indicate that this production site is located in the southern part of Taiwan, and will start to ramp up production in 2H29. Given the size of this investment, we estimate that it will approximately double its capacity exiting CY30, relative to its CY28 capacity.

Kinsus (3189.TW, Not Covered)

In our previous model, we had assumed only one factory (k6b) coming online in CY27, increasing capacity ~30%. However, recent checks suggest that Kinsus intends to bring two more factories online, one in CY28 (k6c) and one in CY29 (k6d). This implies that capacity would increase another ~25% in CY28 and ~20% in CY29, bringing Kinsus' total ABF substrate capacity to almost double exiting CY29, relative to its CY26 capacity.

Ibiden (4062.T, covered by Shoji Sato)

Back in February, Ibiden first announced that it will invest capex of ¥500bn in the electronics field planned through F3/29, for ABF substrate expansion. Sato-san's latest view is that Ibiden will need a new factory building to install the equipment and facilities that will be purchased with the ¥500bn. As a result, Sato-san expects Ibiden during its 2Q results briefing (October 30) to announce plans to make a large capital investment, including for a factory building with a long lead time, and raise its medium-term earnings forecast (report here).

SEMCO (009150.KS, covered by Shawn Kim)

On September 29, SEMCO announced investment of KRW4.27 trillion (~US$3,178mn) in Sejong and KRW2.51 trillion (~US$1,488mn) in Vietnam, for AI server semiconductor substrate capacity expansion.

- **Sejong:** Investment period from September 2026 to May 2028, with mass production starting in September 2028. Largest single-product investment to date, serving as key hub for mass production of high-value-added, highly demanding products, proactively responding to the increasing demand for AI server substrates.
- **Vietnam:** The Vietnamese subsidiary aims to complete construction and begin operations by June 2030. It will be operated as a strategic hub to respond to global volume demand and enhance production efficiency through a stable supply system.

With this investment, Samsung Electro-Mechanics plans to actively respond to the growing demand for high-value-added semiconductor substrates in high-growth markets such as AI servers, HPC, and automotive electronics. In particular, this investment is being pursued based on medium- to long-term cooperation with global big tech and semiconductor customers. The investment includes customer funding support and medium- to long-term volume guarantees; thus, the company expects to strengthen the competitiveness of its FCBGA business based on a stable demand foundation.

LG Innotek (011070.KS, covered by Ryan Kim)

According to news reports (link), LG Innotek signed a memorandum of understanding (MOU) with Haiphong, Vietnam, for an investment to expand its semiconductor substrate plant. Under the agreement, LG Innotek will push to build a semiconductor substrate plant in Haiphong.

- Construction will begin in July 2026 and is scheduled to be completed in May 2027.
- The site spans approximately 330,000 square meters (98,000 pyeong), equivalent to 45 soccer fields.
- According to a news report, LG Innotek will invest approximately $1 billion, or about 1.53 trillion won, for its Phase 1 expansion plan, which mainly includes RF-SiP (radio frequency system-in-package) and FC-CSP (flip chip-chip scale package).
- ABF substrates will be part of the Phase 2 expansion plan, but no details or investment size has been disclosed, yet.

According to a press release from LG Innotek on September 30, LG Innotek started mass production of ABF substrates for PC chipsets targeting big tech clients last year. It initiated high-volume mass production of FC-BGA for PC CPUs in the third quarter of this year. Simultaneously, the company is rapidly boosting revenue by securing additional major clients. Starting next year, it plans to sequentially enter the AI accelerator and AI server markets.

- Revenue from LG Innotek's package solution business has maintained an upward trajectory for three consecutive years. With the package solution business demonstrating tangible results alongside its optical solution business, the company has strengthened its capacity to generate stable earnings.
- LG Innotek plans to rapidly expand its market share in the emerging semiconductor substrate market, aiming to build its package solution business, including semiconductor substrates, into a business generating US$743 million in operating profit by 2031.
- In the future, LG Innotek plans to develop its future businesses, including semiconductor substrates and physical AI solutions, to US$5.94 billion by 2030. The company aims to have such future new businesses account for 25% of total revenue, thereby completing a well-balanced business portfolio.

The expanded plant will produce major semiconductor substrates including radio frequency system-in-package (RF-SiP), flip chip chip scale package (FC-CSP), and flip chip ball grid array (FC-BGA). "The Gumi site will serve as a 'mother factory' responsible for developing new semiconductor substrate technologies and producing new models and high-value-added products, while the expanded plant in Vietnam will be operated as a production base for general-purpose semiconductor substrates," an LG Innotek official explained.

AT&S (ATSV.VI, Not Covered)

On June 15, AT&S announced that it had signed key terms with AMD and Marvell to add AI/HPC IC substrate capacity in Kulim, Malaysia. The company said the €1.5-2bn investment (approximately US$1.68bn to US$2.24bn) is fully supported and financed by long-term customer commitments, pending final execution.

Shinko (private)

On September 30, Shinko announced that it has entered into a purchase agreement with Japan Display Inc. (JDI) to acquire its Mobara fab. In addition, it has entered into a sale agreement with FICT Ltd. for the transfer of a portion of the fab to be acquired.

- Shinko will position the fab as a new core plant for advanced semiconductor packages, and strengthen its production systems for flip-chip type packages through the determination and implementation of capital investment plans for the fab in conjunction with capacity expansion at its plants in the Nagano area. Through these initiatives, Shinko aims to respond accurately to strong market demand while pursuing sustainable business growth and enhancing corporate value.
- The JDI Mobara fab has a total land area of 373,483 square meters, with Shinko using the eastern area of the Fab (140,738 square meters, or ~38%) and FICT planning to use the western area (232,745 square meters, or ~62%).

Toppan (7911.T, Not Covered)

According to news, Toppan broke ground in March 2024 on a new factory on Pesawat Drive near Singapore's Jurong Lake District, built through its local unit Advanced Substrate Technologies (AST), a JV with Broadcom. It makes FC-BGA substrates, which is Toppan's term for them. It is Toppan's first FC-BGA plant outside Japan. The plant opening ceremony took place on September 30, 2026.

- AST operates a facility of approximately 70,000 m² in the vicinity of Jurong Lake District and employs more than 200 highly skilled engineers and technicians.
- Focus on high-demand, large-size, high-layer-count substrates
- While the investment size is not disclosed directly by the company, Nikkei sized the investment at around ¥50 billion (~US$317mn).

Daeduck (353200.KS, Not Covered)

Daeduck announced on July 20, 2026, that it is investing ₩497 billion (~US$370M) manufacturing facilities and related infrastructure for semiconductor products, running through December 31, 2027.

ABF capex is stepping up, but announced investment still falls short of implied demand. We estimate that ABF substrate makers have announced ~US$14.3bn of investment year to date, materially above the segment's aggregate annual capex in recent years, although these commitments span multiple years. Our tally is not exhaustive. LG Innotek has yet to disclose the size of its planned ABF capacity investment, while Shinko has not quantified the additional spending required to expand capacity following its announced acquisition of a JDI fab.

Our supply chain checks suggest that each US$1 of investment can support US$0.50–0.60 of annual revenue at full ramp. On this basis, the US$14.3bn announced so far could support US$7.2–8.6bn of incremental annual revenue. This compares with US$11.4bn of incremental revenue implied by our industry forecast. We model the ABF substrate market reaching US$20.9bn in 2030, up from US$9.5bn in 2026. Despite the step-up in

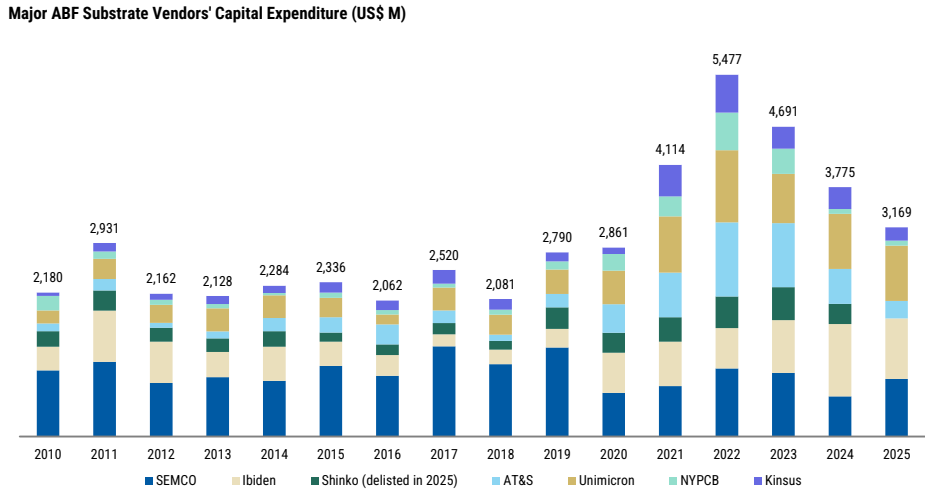
capex announcements, the investments we can currently quantify appear insufficient to meet our demand forecast, pointing to a need for further capacity expansion over the coming years.

Exhibit 4: Announced ABF Substrate capacity investments

	Announced investment (US$ B)
Unimicron	1.7
NYPCB	1.5
Kinsus	0.5
Ibiden	3.2
SEMCO	5.0
AT&S	2.0
Daeduck	0.4
Total	**14.3**

Source: Morgan Stanley Research.

Exhibit 5: Major ABF substrate supplier capex (US$ mn)

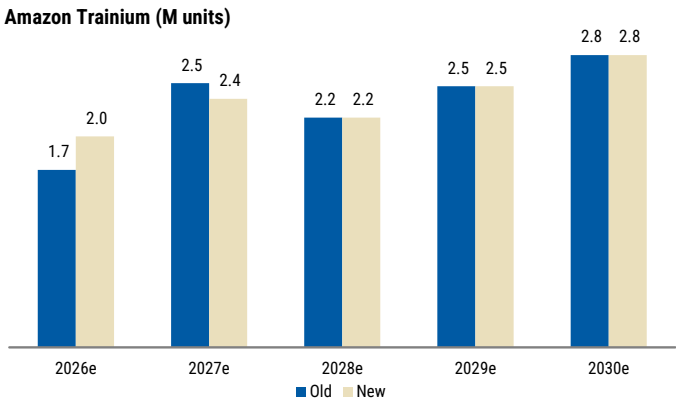


Source: Company data, Morgan Stanley Research.

Stronger ASIC demand from hyperscalers

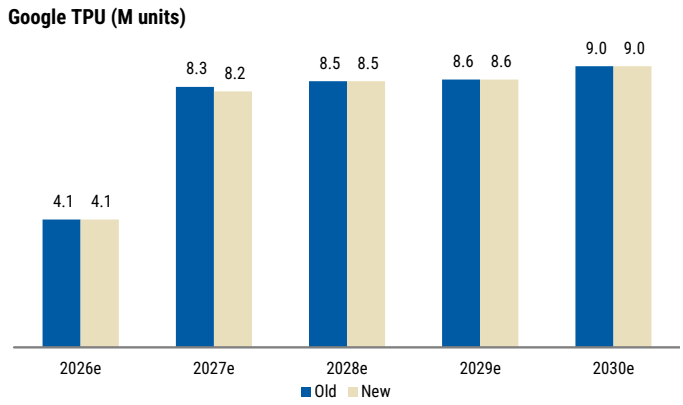
We have updated our ASIC demand forecasts in our ABF model to align with the estimates from our Semiconductors team. As shown in the exhibits below, our revised assumptions point to a higher estimate for Amazon's Trainium processors in 2026, as well as marginally lowered shipment estimates for Amazon's Trainium processors and Google's TPUs in 2027, while the other estimates stay largely unchanged. These ASICs are characterized by large die sizes and high layer-count package substrates, and thus we believe the slightly lowered 2027 volume estimates do not derail our constructive outlook for the substrate suppliers.

Exhibit 6: Changes to Amazon Trainium estimates



Source: Morgan Stanley Research (e) estimates.

Exhibit 7: Changes to Google TPU estimates

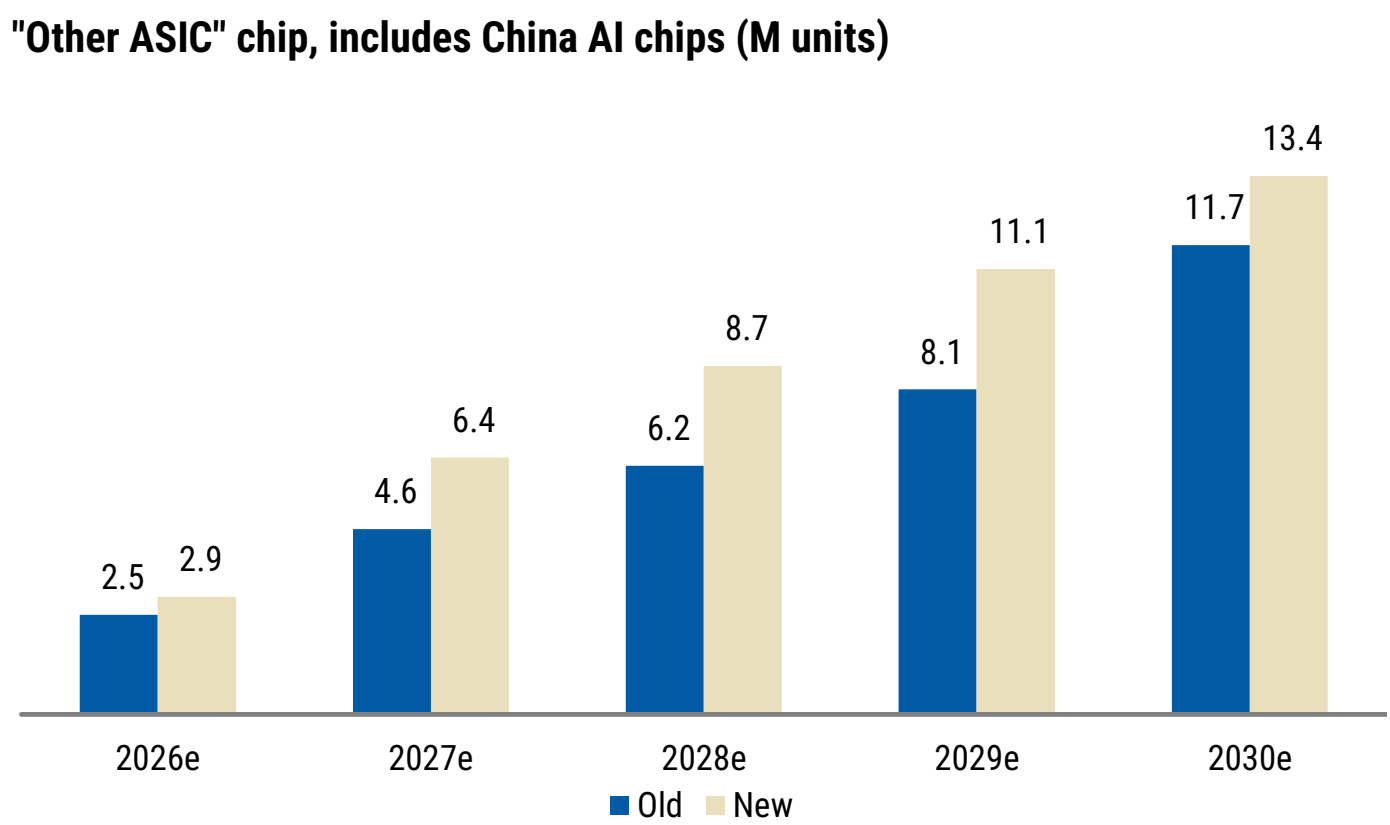


Source: Morgan Stanley Research (e) estimates.

Other ASIC chips

For "Other" ASIC chips, we increase our estimates. Included in this section are ASIC chips from Microsoft, other US companies, and Chinese AI chips, such as those from Huawei, Cambricon, Hygon, T-Head, etc. For Chinese AI chips, we also included the latest estimates from our semiconductor team, which drives the total "Other ASIC chips" category to reach ~13.4mn units by 2030, up from ~11.7mn units previously.

Exhibit 8: Seeing increased demand from Chinese AI chips

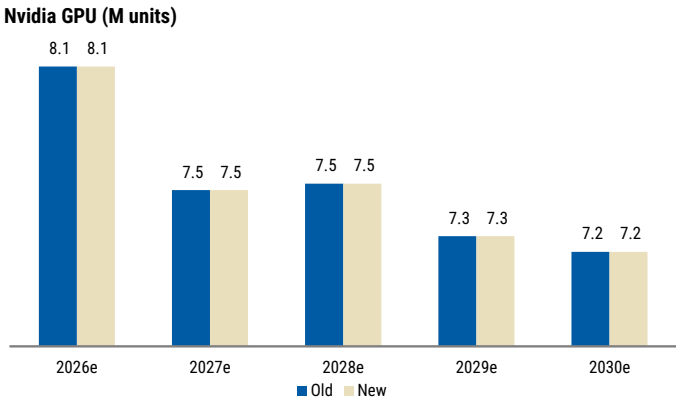


Source: Morgan Stanley Research (e) estimates.

Changes to our GPU and Nvidia CPU forecasts

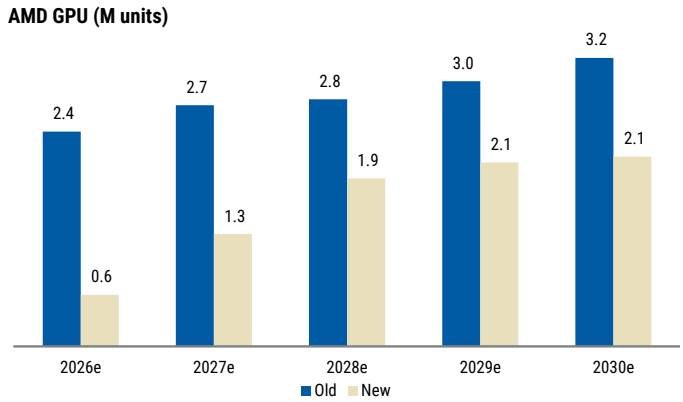
We also update our demand forecasts for Nvidia and AMD GPUs. Our revised estimates generally point to lowered demand for AMD GPUs in 2026-30 compared to our previous assumptions, while our estimates for Nvidia GPUs remain largely unchanged. Our forecasts for Nvidia's server CPU portfolio (including Grace, Vera, and future platforms) also stay largely unchanged.

Exhibit 9: Changes to our Nvidia GPU estimates



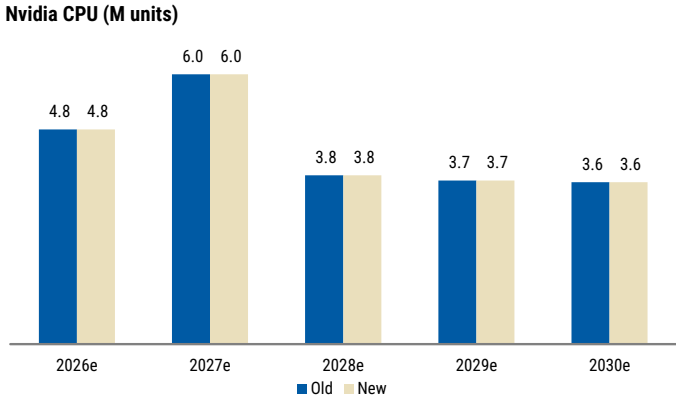
Source: Morgan Stanley Research (e) estimates.

Exhibit 10: Changes to our AMD GPU estimates



Source: Morgan Stanley Research (e) estimates.

Exhibit 11: Changes to our Nvidia CPU estimates



Source: Morgan Stanley Research (e) estimates.

Earnings Calendar and Comps Table

Exhibit 12: Earnings Calendar

Company	C2Q26 Result Date	Earnings Call
SEMCO	Oct 28	Oct 28
Ibiden	Oct 29	Oct 30
AT&S	Nov 5	Nov 5
Kinsus	Late Oct	No
Unimicron	Oct 27	No
Nan Ya PCB	Nov 5	No

Source: Company data, Morgan Stanley Research.

3Q preview: Morgan Stanley estimates vs. consensus

Unimicron

We expect a slightly stronger gross margin of 27.6%, ~30bps above the Street estimate, reflecting a more favorable product mix and improving pricing environment. On operating expenses, our estimate is roughly the same as consensus, resulting in an operating margin of 19.4%, ~70bps above the Street estimate. However, our non-op income estimate of NT $661mn is materially higher than the Street's estimate of NT$1,495mn in non-op loss. This leads to our EPS estimate of NT$5.21 being ~37% higher than the Street.

Exhibit 13: Unimicron 3Q preview: We are 30bps above the Street on 3Q GM

Year to Dec. 31 (NT$ mn)	MS Est. 3Q26E	Q/Q	Y/Y	Consensus 3Q26E	Diff. %
P&L Summary					
Net sales	**52,104**	**21%**	**53%**	**49,333**	**6%**
COGS	(37,714)			(35,839)	
Gross profit	**14,390**	**35%**	**216%**	**13,494**	**7%**
Operating expenses	(4,279)			(4,266)	
Operating income	**10,110**	**52%**	**560%**	**9,228**	**10%**
Non-operating income	661			(1,495)	
Pre-tax income	**10,771**	**-31%**	**266%**	**7,733**	**39%**
Net income	**8,174**	**-38%**	**272%**	**5,972**	**37%**
EPS (NT$)	**5.21**			**3.81**	
Margins		**ppt**	**ppt**		**ppt**
Gross margin	27.6%	2.8%	14.2%	27.4%	0.3%
Operating margin	19.4%	3.9%	14.9%	18.7%	0.7%
Pretax margin	20.7%	-15.6%	12.0%	15.7%	5.0%
Net margin	15.7%	-14.9%	9.2%	12.1%	3.6%

Source: Company data, Visible Alpha, Morgan Stanley Research estimates.

NYPCB

Our estimates are modestly ahead of consensus, driven primarily by stronger operating profitability. Our operating margin estimate of 26.2% is 50bps above consensus (25.7%), reflecting stronger gross margin (29.2% vs. 28.9% consensus) and lower-than-expected operating expenses. As a result, our operating profit forecast exceeds consensus slightly (~3%), which, when combined with lower taxes, flows through to EPS of NT$5.84, around

7% above the Street estimate of NT$5.44. Overall, we assume earnings will come in better than expected, driven more by better profitability than by top-line performance.

Exhibit 14: NYPCB 3Q preview: we are 7% above the Street on 3Q EPS

	3Q26E Results				
NT$mn	**MS Est.**	**QoQ**	**YoY**	**Cons**	***Variance***
Net sales	**16,378**	**21%**	**49%**	**16,175**	***1%***
COGS	-11,598	NM	NM	-11,493	*1%*
Gross profit	**4,780**	**42%**	**355%**	**4,683**	***2%***
Operating expenses	-491	NM	NM	-525	*-6%*
Operating income	**4,289**	**48%**	**591%**	**4,158**	***3%***
Non-operating income	201	163%	-30%	166	*21%*
Pre-tax income	**4,489**	**51%**	**395%**	**4,324**	***4%***
Income tax	-718	NM	NM	-807	*-11%*
Net income	**3,771**	**67%**	**420%**	**3,517**	***7%***
EPS (NT$)	**5.84**	**67%**	**420%**	**5.44**	***7%***
Margins (%)		***ppt***	***ppt***		***ppt***
Pre-tax margin	27.4%	5.5	19.1	26.7%	0.7
Net margin	23.0%	6.4	16.4	21.7%	1.3

Source: Company data, Visible Alpha, Morgan Stanley Research estimates.

Morgan Stanley vs. consensus

Exhibit 15: Unimicron: Morgan Stanley vs. consensus estimates

Unimicron	MSe			Consensus			Variance		
	2026	2027	2028	2026	2027	2028	2026	2027	2028
Revenue	189,806	279,618	381,382	184,496	278,117	387,823	3%	1%	-2%
GM	25.7%	36.3%	43.4%	25.6%	36.2%	41.4%	0%	0%	2%
OpM	16.9%	29.7%	37.6%	16.6%	28.3%	34.0%	0%	1%	4%
Net income	36,923	66,887	114,374	32,735	62,664	104,089	13%	7%	10%
EPS	23.99	43.46	74.32	21.27	40.72	67.63	13%	7%	10%

Source: Visible Alpha, Morgan Stanley Research estimates.

Exhibit 16: NYPCB: Morgan Stanley vs. consensus estimates

NYPCB	MSe			Consensus			Variance		
	2026	2027	2028	2026	2027	2028	2026	2027	2028
Revenue	60,045	97,041	139,167	58,967	101,052	141,537	2%	-4%	-2%
GM	26.3%	39.7%	51.1%	26.6%	41.5%	47.9%	0%	-2%	3%
OpM	23.2%	37.4%	49.2%	23.2%	39.0%	45.7%	0%	-2%	4%
Net income	12,098	31,176	58,269	11,603	32,767	53,372	4%	-5%	9%
EPS	18.72	48.25	90.18	17.96	50.71	82.60	4%	-5%	9%

Source: Visible Alpha, Morgan Stanley Research estimates.

Exhibit 17: ABF substrate peer comparison table

ABF Substrate		Closing price (LC)			Market Cap	EPS (LC)			Current P/E (X)			PT PEG (X)			P/B (X)			P/S (X)			EV/EBITDA			ROA (%)			ROE (%)		
Ticker	Company	10/13/2026	Rating	Price target	(US$ mn)	26E	27E	28E	26E	27E	28E	26E	27E	28E	26E	27E	28E	26E	27E	28E	26E	27E	28E	26E	27E	28E	26E	27E	28E
3037.TW	Unimicron	1,180.00	OW	1,775.00	55,602	23.99 e	43.46 e	74.32 e	49.2	27.2	15.9	0.11	0.33	0.22	12.9	9.5	6.6	9.4	6.3	4.7	32.3	16.0	9.4	13%	18%	24%	30%	40%	49%
8046.TW	NYPCB	1,440.00	OW	2,000.00	29,143	18.72 e	48.25 e	90.18 e	76.9	29.8	16.0	0.15	0.19	0.18	16.4	11.6	7.9	15.5	9.6	6.7	45.6	21.2	11.5	17%	33%	43%	24%	46%	59%
4062.T	Ibiden	10,620.00	OW	15,000.00	37,390	157.49 e	237.17 e	324.53 e	67.4	44.8	32.7	1.45	0.89	0.89	9.4	7.8	6.4	10.5	8.5	6.9	27.0	19.6	15.0	9%	13%	15%	16%	20%	23%
009150.KS	SEMCO	1,363,000.00	OW	2,620,000.00	77,156	22,407.26 e	56,728.00 e	80,243.41 e	60.8	24.0	17.0	0.42	0.16	0.41	9.6	7.0	5.0	6.9	4.4	3.2	28.5	14.3	10.0	11%	23%	25%	17%	34%	34%
011070.KS	LG Innotek	452,500.00	OW	640,000.00	8,024	40,702.27 e	49,133.89 e	57,404.59 e	11.1	9.2	7.9	0.06	0.44	0.47	1.6	1.4	1.2	0.4	0.4	0.4	5.1	4.3	3.5	7%	8%	8%	15%	16%	16%
ATS.AV	AT&S	148.20	NC	--	6,651	5.28	8.94	14.97	28.0	16.6	9.9	-0.02	0.24	0.15	4.4	3.5	2.3	2.4	1.9	1.6	6.3	6.3	6.3	4%	6%	8%	16%	21%	24%
3189.TW	Kinsus	836.00	NC	--	13,678	10.58	25.44	52.96	79.0	32.9	15.8	0.38	0.23	0.15	10.2	8.0	6.0	8.2	5.6	3.7	8.5	8.5	8.5	6%	12%	19%	13%	24%	38%
Average									53.2	26.3	16.4	0.4	0.4	0.4	9.2	7.0	5.1	7.6	5.2	3.9	21.9	12.9	9.2	10%	16%	20%	19%	29%	35%
Median									60.8	27.2	15.9	0.1	0.2	0.2	9.6	7.8	6.0	8.2	5.6	3.7	27.0	14.3	9.4	9%	13%	19%	16%	24%	34%

Source: FactSet (for AT&S and Kinsus), Morgan Stanley Research estimates (for Unimicron, NYPCB, Ibiden and SEMCO). NC = Not covered by Morgan Stanley Research.

Related Reports:

Nan Ya PCB: Announces preliminary August profits (2 Oct 2026)

Greater China Technology Hardware: ABF substrates – Kinsus announces preliminary

August profit (23 Sep 2026)

Greater China Technology Hardware: ABF substrates – AT&S announces expanded collaboration with Marvell (23 Sep 2026)

Greater China Technology Hardware: ABF Substrates – Implications of AT&S' F1Q26/27 Results (4 Aug 2026)

Nan Ya PCB: Margin improvement monthly in 2Q; total 2Q net profit 4% above MSe (30 Jul 2026)

Unimicron: 2Q26 post-results briefing takeaways (29 Jul 2026)

The State of the Current Cycle

The ABF substrate market has gone through a few cycles over the past two decades. We believe we are now still in the early innings of an up-cycle.

There was a prolonged down-cycle from 2012-18 as the PC TAM shrank amid the rise of smartphones and tablets. During this tough period, companies were not able to generate profits and had to compete on price to fill their idle capacity. As a result, during those years, there was no or very limited capacity expansion, and capital expenditures by the major ABF substrate suppliers were kept at a minimum.

Even as general server demand picked up, lifting utilization rates across the group going into 2020, ABF substrate suppliers remained cautious on the longer-term demand outlook and remained disciplined, hesitating to expand capacity. Hence, capex turned up just slightly in 2019-20, increasing ~US$600mn vs. ~US$2.2bn on average per year in 2012-18.

This underinvestment led to sudden undersupply, as the shock from Covid-19 drove strong work-from-home demand for PCs, as well as increased data usage and storage for general computing driven by online entertainment. This ultimately led to a significant increase in ABF substrate market value from 2020-22, reflected by the sudden surge in demand along with meaningful pricing adjustments owing to the lack of supply.

During this 2020-22 period, much capacity expansion was set in motion as ABF substrate suppliers and customers came to agree that necessary investments were needed for future growth. Some subsidies were even given to these suppliers to facilitate this capacity expansion. This is why capex jumped from ~US$2.9bn in 2020 to US$4.1bn in 2021 and US$5.5bn in 2022; even in 2023-24, capex remained elevated, as capacity expansion plans continued.

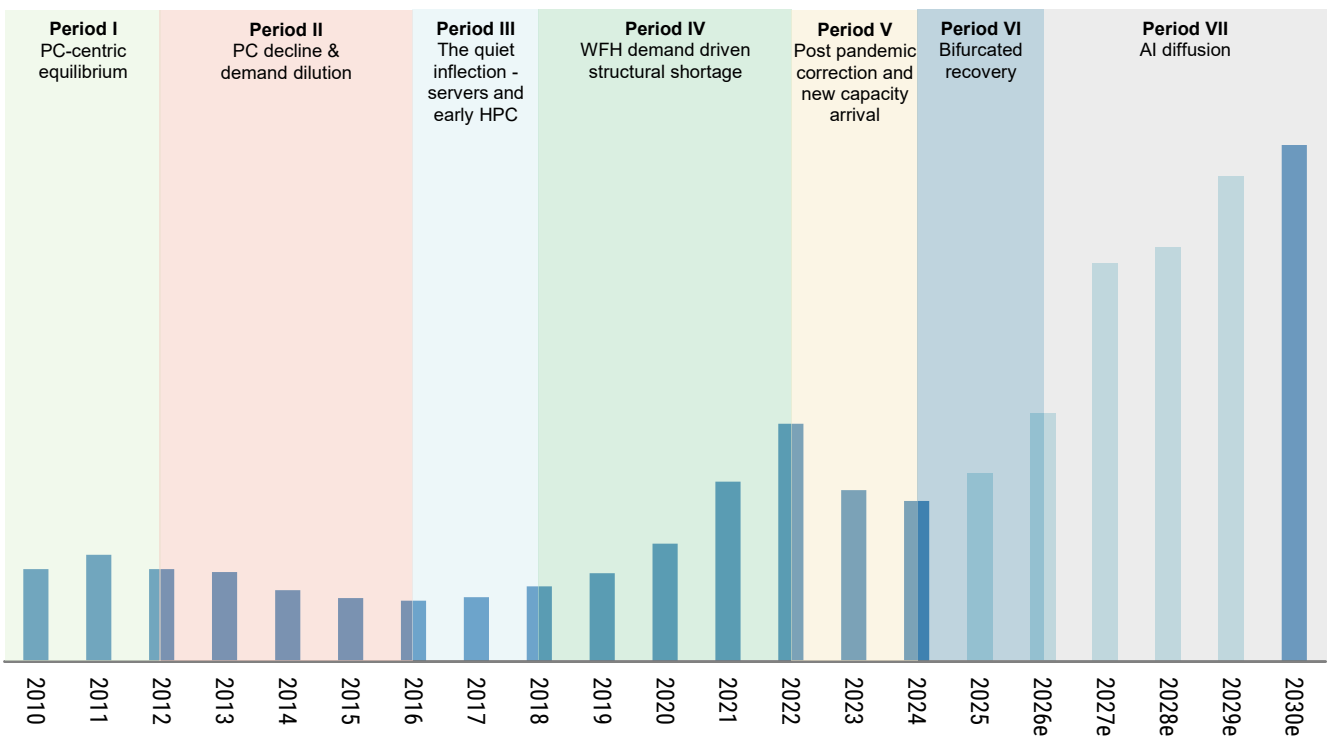
Unfortunately, demand did not play out as expected. As the world came out of the pandemic, demand for PCs and online entertainment fell sharply. This normalization of demand, coupled with capacity expansion from practically every major ABF substrate supplier, resulted in the ABF substrate market once again becoming oversupplied. This led to a sharp decline in ABF substrate market value in 2023-24, as volumes normalized, driving prices down to normalize against the new supply/demand dynamic.

Fortunately, cloud demand remained strong for general computing, and with AI demand starting to pick up, the down-cycle this time around was much shorter (two years) vs. the prior down-cycle (six years).

In 1H24, the ABF substrate market troughed and we saw an upward inflection since then, but the pace of the recovery has been moderate and bifurcated. Midrange/low-end markets such as PCs have shown moderate demand recovery, with high-end server and AI-related end-demand recovering and growing at a faster pace. This is why we turned the page on our bearish stance in 1H25, but did not turn more bullish until early 2026.

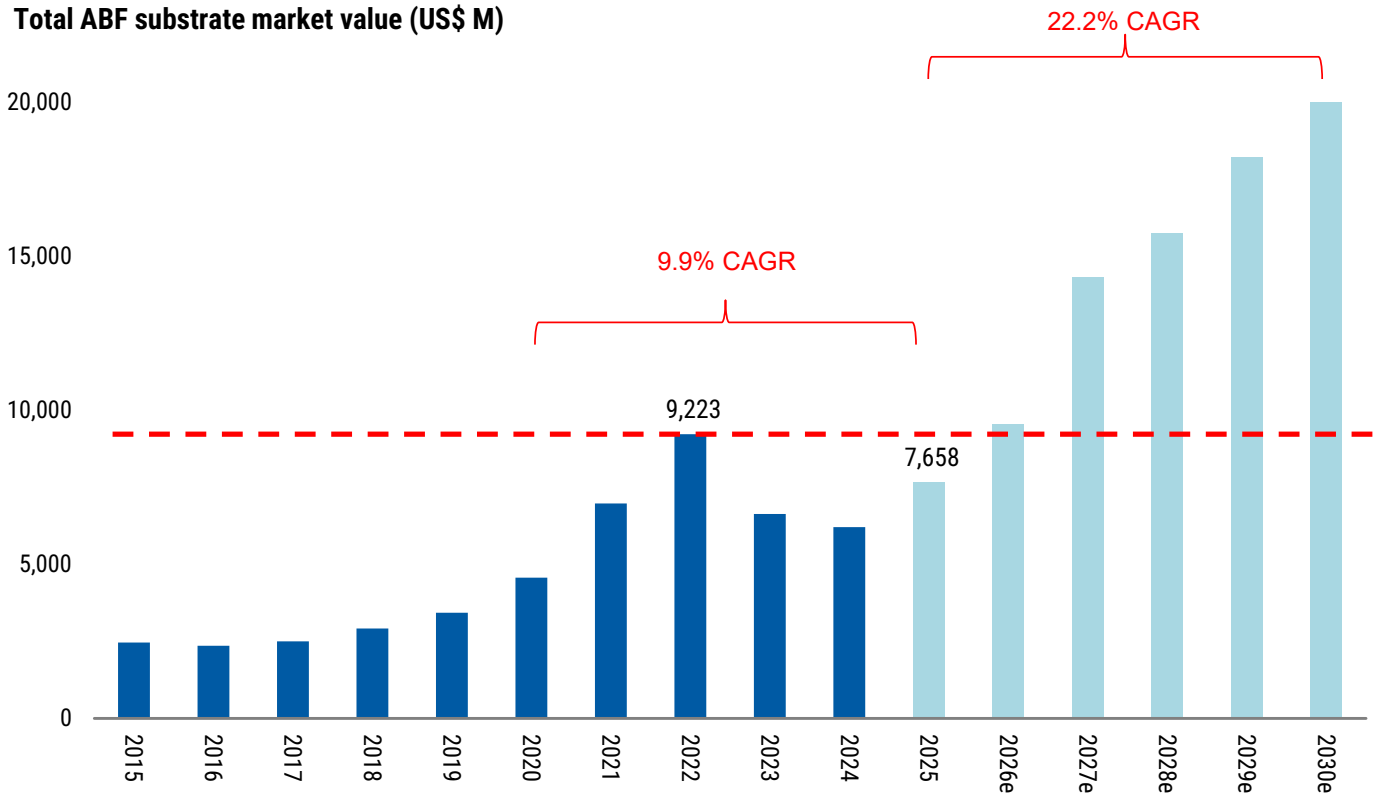
Periods	Description
Period I (2010-2012): PC-centric equilibrium	ABF substrate demand is primarily driven and dominated by CPU and GPU demand for desktops, notebooks, discrete GPUs, with a meaningfully smaller exposure towards server CPUs.
Period II (2012-16): PC decline and demand dilution	Global PC demand entered a structural down-cycle as consumer behavior changed, with smartphones and tablets absorbing more consumer time spent. This resulted in lower volumes and increased pricing competition as suppliers fought to fill idle capacity.
Period III (2016-18): The quiet inflection - servers and early HPC	During these years, the PC market matured, while cloud computing started to take off. At the same time, server CPU substrates quietly grew larger with more layers. We also started to see early accelerators being adopted in high performance computing.
Period IV (2018-2022): WFH demand driven structural shortage	The Covid-19 pandemic drove massive work from home demand for consumer electronics and cloud computing. This sudden surge in PC demand and increased time spent on gaming and online entertainment, bundled with a continuous increase in substrate package size and layer count, resulted in a structural shortage, which also resulted in longer lead times and raised prices. It was during this period (2021-22) that ABF suppliers globally started to invest in new capacity.
Period V (2022-2024): Post-pandemic correction and new capacity arrival	As the world came out of the Covid-19 pandemic, WFH demand faded and PC and cloud computing demand were negatively affected. But at the same time, the new investments and capacity additions were just starting to slowly come online, resulting in a drop in utilization rates and pricing.
Period VI (2024-2026): Bifurcated recovery	PC demand normalized at the pre-Covid levels, with some replacement demand driven by Windows upgrade, while the recovery and growth of AI and general server demand for cloud picks up at a meaningfully higher growth trajectory.
Period VII (2026-30): AI diffusion	Demand for AI proliferates from training to inference, driving ABF substrate market growth to re-accelerate over the next five years after a two-year down-cycle following the Covid-19 pandemic. This drives increased demand for AI computing, networking, and cloud computing, while demand for PCs remains soft.

Exhibit 18: We are entering the AI diffusion era



Source: Morgan Stanley Research (e) estimates.

Exhibit 19: We now expect ABF substrate demand growth to accelerate – to a 22.2% CAGR over 2025-30e



Source: Prismark, Morgan Stanley Research (e) estimates.

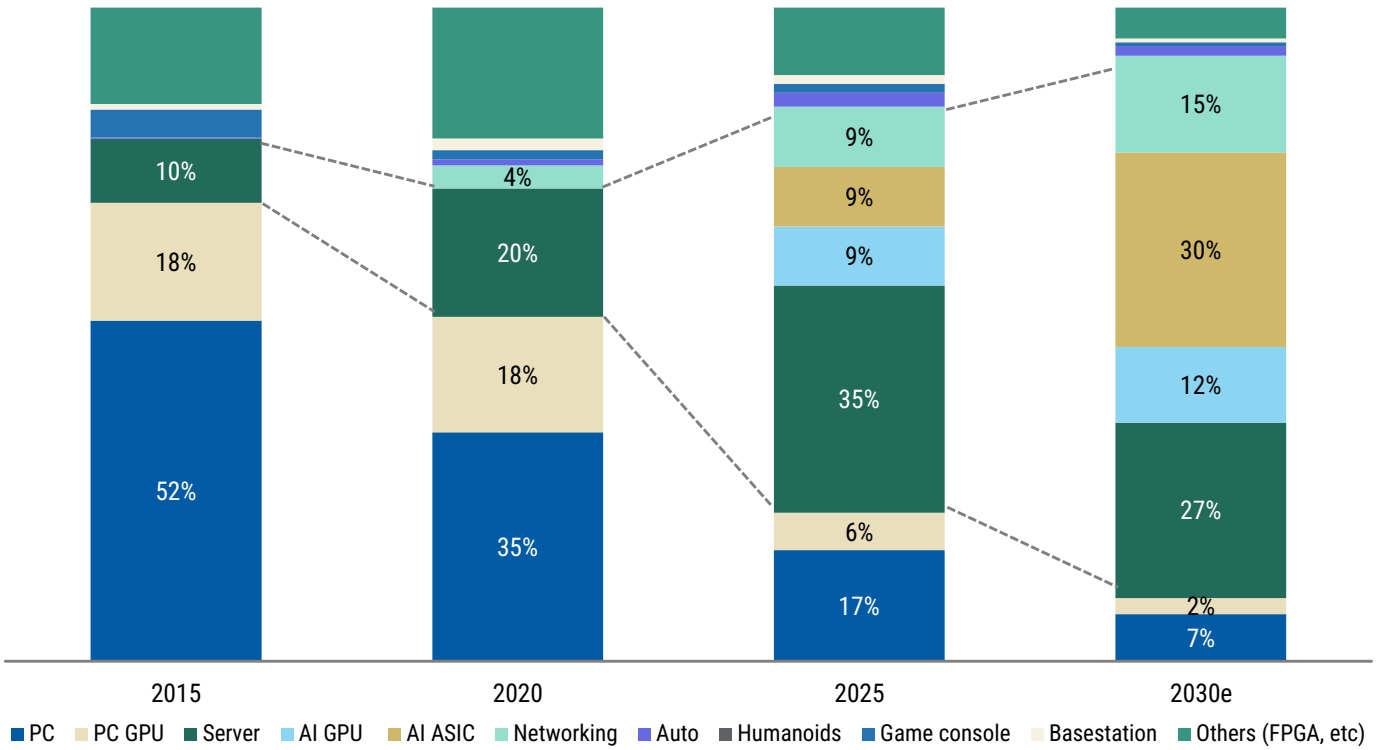
Breaking down ABF substrate end demand

The end market mix for ABF substrates has shifted dramatically over the past decade. PCs were once the dominant demand driver, accounting for approximately 70% of global ABF substrate market value in 2015, supported primarily by PC CPUs and GPUs. Since then, however, the industry's demand profile has undergone a structural transformation. We estimate that PC-related applications represented only ~23% of total ABF substrate market value in 2025, and this share is expected to decline further to below 10% by 2030.

In contrast, demand from servers, AI GPUs, AI ASICs, and networking applications has expanded rapidly. We estimate that these segments collectively accounted for only around 10% of the ABF substrate market in 2015, but their share increased to ~60% by 2025. Looking ahead, we expect they will represent more than 80% of total ABF substrate market value by 2030.

In our view, this structural shift in end-market demand has been the primary driver of ABF substrate industry growth over the past decade and will become even more pronounced over the next five years. As AI infrastructure deployment accelerates, we expect continued expansion in server, AI accelerator, and networking demand to drive meaningful acceleration in ABF substrate market growth.

Exhibit 20: PC-related ABF demand is seen declining from ~70% in 2015 to <10% by 2030, while server, AI GPU, AI ASIC, and networking-related ABF demand should rise from ~10% in 2015 to 75%+ by 2030



Source: Morgan Stanley Research (e) estimates.

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Unimicron: Estimate Changes

We raise our 2026, 2027 and 2028 EPS estimates 62%, 30%, and 28%, respectively, primarily driven by our assumptions for better margin profiles.

Exhibit 21: Estimate Changes

Year to Dec. 31 (NT$m)	2026E			2027E			2028E		
	New	Old	% diff	New	Old	% diff	New	Old	% diff
P&L Summary									
Net sales	**189,806**	**184,755**	**3%**	**279,618**	**265,117**	**5%**	**381,382**	**355,074**	**7%**
COGS	(141,118)	(141,992)		(178,011)	(180,574)		(215,803)	(219,066)	
Gross profit	**48,688**	**42,763**	**14%**	**101,607**	**84,543**	**20%**	**165,579**	**136,007**	**22%**
Operating expenses	(16,638)	(17,635)		(18,619)	(19,803)		(22,141)	(23,141)	
Operating income	**32,050**	**25,129**	**28%**	**82,988**	**64,740**	**28%**	**143,439**	**112,866**	**27%**
Non-operating income	13,789	5,014		2,845	2,162		2,845	2,162	
Pre-tax income	**45,839**	**30,143**	**52%**	**85,833**	**66,902**	**28%**	**146,283**	**115,028**	**27%**
Net income	**36,923**	**22,855**	**62%**	**66,887**	**51,521**	**30%**	**114,374**	**89,367**	**28%**
Diluted EPS (NT$)	**23.99**	**14.85**	**62%**	**43.46**	**33.48**	**30%**	**74.32**	**58.07**	**28%**
Margins			***ppt***			***ppt***			***ppt***
Gross margin	25.7%	23.1%	2.5	36.3%	31.9%	4.4	43.4%	38.3%	5.1
Operating margin	16.9%	13.6%	3.3	29.7%	24.4%	5.3	37.6%	31.8%	5.8
Pretax margin	24.2%	16.3%	7.8	30.7%	25.2%	5.5	38.4%	32.4%	6.0
Net margin	19.5%	12.4%	7.1	23.9%	19.4%	4.5	30.0%	25.2%	4.8

Source: Morgan Stanley Research (E) estimates.

Price Target and Valuation Methodology

Our 12-month price target increases ~21% to NT$1,775 (from NT$1,465), driven by our increased earnings estimates for CY26-28: We believe the company's earnings have returned to a growth track from 2026 onward and will show stronger growth in 2027, driven by the high-end ABF substrate market's reversion to undersupply and Unimicron's dominant supply share in AI ASICs and also server CPUs, which puts it in a favorable position to benefit from rising AI investments.

We believe the overall ABF substrate market bottomed in 2H24, and see growth accelerating from 2H26 onward with the ramp of multiple next-generation, large body size ABF substrates for new server GPUs, CPUs, ASICs, and networking chips. New technologies such as embedded passives and Intel's EMIB-T should also increase the manufacturing complexity of the package substrates, which adds to the under-capacity as usable output decreases.

Similar to our analysis of other tech hardware companies within our coverage, we use a residual income (RI) valuation model to value Unimicron – we think it derives the most accurate value of the firm as it takes into account cost of equity. Our key assumptions include:

- Cost of equity of 9.2% (unchanged)
  - Risk-free rate of 1% (10-year Taiwan government note yield);
  - Equity risk premium of 8.7%;
  - Beta of 1.0;
- Medium-term growth rate of 14% (slightly lowered from 15%)
- Terminal growth rate of 3% (unchanged, similar to the rest of the companies under our tech hardware coverage).

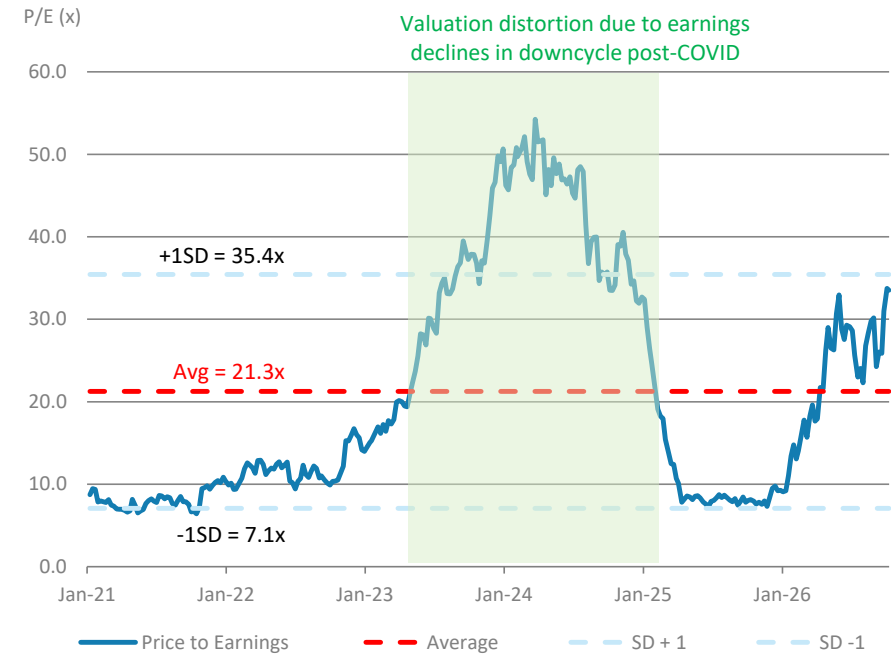
Our bull and bear case values increase by similar magnitudes, to NT$3,030 and NT $595, respectively.

Exhibit 22: Unimicron residual income (RI) model

		2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	2036E	2037E
Total Equity		**190,342**	**273,784**	**320,735**	**374,258**	**435,275**	**504,834**	**584,132**	**674,531**	**777,586**	**895,069**	**993,111**
Net Profit		**66,887**	**114,374**	**130,386**	**148,640**	**169,450**	**193,173**	**220,217**	**251,048**	**286,195**	**326,262**	**336,050**
Return on Equity		**40.4%**	**49.3%**	**43.9%**	**42.8%**	**41.9%**	**41.1%**	**40.4%**	**39.9%**	**39.4%**	**39.0%**	**35.6%**
Beta	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Equity Risk Premium (Rm-Rf)	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Risk Free Rate (Rf)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cost of Equity	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%	9.2%
Residual Income		**43,926**	**76,343**	**94,963**	**107,758**	**122,331**	**138,933**	**157,850**	**179,408**	**203,979**	**231,983**	**236,456**
Spread		**31.2%**	**40.1%**	**34.7%**	**33.6%**	**32.7%**	**31.9%**	**31.3%**	**30.7%**	**30.2%**	**29.8%**	**26.4%**
Beginning Equity Capital		190,342										
PV of Forecast Period		902,874										
PV of Continuing Value		1,638,486										
Equity Value		**2,731,703**										
No. of Shares		1,539										
Projected Price		**1,775.0**										

Source: Morgan Stanley Research (E) estimates.

Exhibit 23: Unimicron P/E chart



Source: TEJ, Morgan Stanley Research estimates.

Financials

Exhibit 24: Quarterly Estimates

NT$ mn	1Q26	2Q26	3Q26E	4Q26E	1Q27E	2Q27E	3Q27E	4Q27E	2025	2026E	2027E	2028E
Sales	**37,446**	**42,890**	**52,104**	**57,365**	**58,800**	**64,212**	**73,685**	**82,922**	**131,241**	**189,806**	**279,618**	**381,382**
Cost of goods sold	-30,720	-32,252	-37,714	-40,431	-40,105	-42,178	-46,252	-49,476	-112,949	-141,118	-178,011	-215,803
Gross profit	**6,726**	**10,638**	**14,390**	**16,934**	**18,695**	**22,034**	**27,432**	**33,445**	**18,292**	**48,688**	**101,607**	**165,579**
Operating expenses	-3,969	-3,987	-4,279	-4,402	-4,398	-4,532	-4,760	-4,929	-11,618	-16,638	-18,619	-22,141
Operating profit	**2,757**	**6,651**	**10,110**	**12,532**	**14,297**	**17,502**	**22,673**	**28,516**	**6,674**	**32,050**	**82,988**	**143,439**
Interest income (loss)	21	191	191	191	191	191	191	191	183	594	765	765
Investment income (loss)	-10	72	20	20	20	20	20	20	8	103	80	80
Gains (Losses) from investment disposal	2	0	0	0	0	0	0	0	3	2	0	0
Gains from FAs disposal	732	575	0	0	0	0	0	0	817	1,307	0	0
Exchange gain	227	-45	0	0	0	0	0	0	7	182	0	0
Others	2,571	8,131	450	450	500	500	500	500	1,134	11,602	2,000	2,000
Pre-tax profit	6,299	15,576	10,771	13,193	15,008	18,213	23,384	29,227	8,827	45,839	85,833	146,283
Net Income for Minority	338	227	227	227	227	227	227	227	877	1,020	910	910
Income tax	-918	-2,233	-2,370	-2,375	-3,077	-4,553	-5,144	-5,261	-1,277	-7,896	-18,035	-30,999
Net profit	**5,043**	**13,115**	**8,174**	**10,591**	**11,704**	**13,433**	**18,012**	**23,739**	**6,673**	**36,923**	**66,887**	**114,374**
EPS (NT$)	**3.25**	**8.36**	**5.21**	**6.75**	**7.46**	**8.57**	**11.49**	**15.14**	**4.34**	**23.99**	**43.46**	**74.32**
Margins (%)												
Gross margin	18.0%	24.8%	27.6%	29.5%	31.8%	34.3%	37.2%	40.3%	13.9%	25.7%	36.3%	43.4%
Operating margin	7.4%	15.5%	19.4%	21.8%	24.3%	27.3%	30.8%	34.4%	5.1%	16.9%	29.7%	37.6%
Pre-tax margin	16.8%	36.3%	20.7%	23.0%	25.5%	28.4%	31.7%	35.2%	6.7%	24.2%	30.7%	38.4%
Net margin	13.5%	30.6%	15.7%	18.5%	19.9%	20.9%	24.4%	28.6%	5.1%	19.5%	23.9%	30.0%
QoQ Growth												
Sales	8%	15%	21%	10%	2%	9%	15%	13%				
Gross profit	23%	58%	35%	18%	10%	18%	24%	22%				
Operating profit	17%	141%	52%	24%	14%	22%	30%	26%				
Pre-tax profit	52%	147%	-31%	22%	14%	21%	28%	25%				
Net profit	41%	158%	-38%	30%	11%	15%	34%	32%				
YoY Growth												
Sales	24%	32%	53%	65%	57%	50%	41%	45%	14%	45%	47%	36%
Gross profit	67%	151%	216%	209%	178%	107%	91%	98%	12%	166%	109%	63%
Operating profit	118%	341%	560%	430%	419%	163%	124%	128%	30%	380%	159%	73%
Pre-tax profit	359%	4266%	266%	218%	138%	17%	117%	122%	21%	419%	87%	70%
Net profit	451%	44197%	272%	200%	132%	2%	120%	124%	31%	453%	81%	71%

Source: Company data, Morgan Stanley Research (E) estimates.

Exhibit 25: Consolidated Financial Summary

Income Statement

NT$ mn; FY End Dec	2025	2026E	2027E	2028E
Net sales	**131,241**	**189,806**	**279,618**	**381,382**
Cost of goods sold	-112,949	-141,118	-178,011	-215,803
Gross profit	**18,292**	**48,688**	**101,607**	**165,579**
Operating expenses	-11,618	-16,638	-18,619	-22,141
Sales & Marketing	-1,607	-2,009	-2,625	-3,441
G&A	-5,012	-7,802	-8,330	-9,600
R&D	-4,999	-6,827	-7,664	-9,100
Operating profit	**6,674**	**32,050**	**82,988**	**143,439**
Interest income	183	594	765	765
Investment income	8	103	80	80
Gains from investment disposal	3	2	0	0
Gains from fixed assets disposal	817	1,307	0	0
Exchange gain	7	182	0	0
Other non-operating income	1,134	11,602	2,000	2,000
Net non-operating profit	**2,153**	**13,789**	**2,845**	**2,845**
Pre-tax profit	8,827	45,839	85,833	146,283
Net Income for Minority	-877	-1,020	-910	-910
Income tax	-1,277	-7,896	-18,035	-30,999
Net profit	**6,673**	**36,923**	**66,887**	**114,374**
Reported EPS (NT$)	**4.34**	**23.99**	**43.46**	**74.32**

Cash Flow Statement

NT$ mn; FY End Dec	2025	2026E	2027E	2028E
Cashflow from Operations	**14,967**	**53,838**	**79,867**	**123,541**
Net Profits	6,673	36,923	66,887	114,374
Depreciation	18,773	19,887	20,070	18,852
Investment losses (income)	0	-103	-80	-80
Investment Disposal Loss	-3	-2	0	0
Change in Working Capital	-2,943	-629	-3,578	-5,716
Other adjustments	-7,533	-2,238	-3,432	-3,889
Cashflow from Investing	**-23,018**	**-23,506**	**-12,210**	**-11,194**
(Purchases) Sale of fixed asset	-24,307	-23,506	-12,210	-11,194
(Purchases) Sale of LT investment	-77	0	0	0
Other adjustments	1,367	0	0	0
Cashflow from financing	**19,073**	**13,082**	**8,285**	**-2,034**
Increase in L-T debt	9,950	-1,001	-1,001	-1,001
Increase in S-T debt	4,331	0	0	0
Issuance of stock	0	0	0	0
Other adjustments	7,087	17,161	26,317	29,819
Exchange Rate Adjustment	96	-182	0	0
Net change in cash	11,118	43,232	75,943	110,313

Balance Sheet

NT$ mn; FY End Dec	2025	2026E	2027E	2028E
Cash	54,872	98,104	174,048	284,360
Mkt Securities	38	38	38	38
AR/NR	27,570	39,873	58,740	80,117
Inventory	17,802	22,242	28,056	34,013
Others	5,016	7,254	10,687	14,576
Current Assets	**105,298**	**167,511**	**271,568**	**413,104**
Long-term Investments	836	836	836	836
Fixed Assets	125,866	129,485	121,624	113,966
Other Assets	23,792	23,792	23,792	23,792
Total Assets	**255,792**	**321,624**	**417,821**	**551,699**
S-t Borrowings	10,845	10,845	10,845	10,845
AP/NP	17,494	21,858	27,572	33,425
Other S-T Liabilities	47,115	58,866	74,256	90,020
Other LT Liabilities	38,457	55,618	81,935	111,754
L-t Debt	34,873	33,872	32,871	31,870
Total Liabilities	**148,785**	**181,058**	**227,479**	**277,915**
Common Shares	15,296	15,296	15,296	15,296
Other Shareholders' Equity	91,711	125,270	175,046	258,488
Total Equity	**107,007**	**140,566**	**190,342**	**273,784**
Total Liab./Shrhldr's Equity	**255,792**	**321,624**	**417,821**	**551,699**

Financial Ratios

	2025	2026E	2027E	2028E
Margins				
Gross margin	13.9%	25.7%	36.3%	43.4%
Operating expenses/sales	-8.9%	-8.8%	-6.7%	-5.8%
Operating margin	5.1%	16.9%	29.7%	37.6%
Tax rate	14.5%	17.2%	21.0%	21.2%
Pre-tax margin	6.7%	24.2%	30.7%	38.4%
Net Margin	5.1%	19.5%	23.9%	30.0%
YoY Growth				
Turnover	13.8%	44.6%	47.3%	36.4%
Gross Profit	12.1%	166.2%	108.7%	63.0%
Operating Profits	30.4%	380.2%	158.9%	72.8%
Pretax Profits	20.6%	419.3%	87.2%	70.4%
Net Profits	31.3%	453.3%	81.2%	71.0%
Adjusted Cash Dividend (NT$)	2.00	11.07	20.05	34.28
Net Debt/Equity	-8.6%	-38.0%	-68.5%	-88.3%
Liabilities/Equity	139.0%	128.8%	119.5%	101.5%
Liabilities/Assets	58.2%	56.3%	54.4%	50.4%
ROAE	6.5%	29.8%	40.4%	49.3%
ROAA	2.7%	12.8%	18.1%	23.6%
A/R Turnover (days)	71.2	64.8	64.4	66.4
A/P Turnover (days)	52.7	50.9	50.7	51.6
Inventory Turnover (days)	52.8	51.8	51.6	52.5
Cash conversion (days)	71.3	65.7	65.3	67.4

Source: Company data, Morgan Stanley Research (E) estimates.

NYPCB: Estimate Changes

We raise our 2026, 2027 and 2028 EPS estimates 20%, 46%, and 43%, respectively, primarily driven by higher assumptions for AI semiconductors volumes and higher margin profiles.

Exhibit 26: Estimate Changes

	2026E			2027E			2028E		
NT$ mn	New	Old	Variance	New	Old	Variance	New	Old	Variance
Net sales	**60,045**	**56,808**	**6%**	**97,041**	**78,966**	**23%**	**139,167**	**111,555**	**25%**
COGS	-44,229	-43,726	1%	-58,520	-52,309	12%	-67,996	-61,587	10%
Gross profit	**15,816**	**13,081**	**21%**	**38,520**	**26,657**	**45%**	**71,171**	**49,968**	**42%**
Operating expenses	-1,883	-1,805	4%	-2,247	-2,045	10%	-2,662	-2,397	11%
Operating income	**13,933**	**11,276**	**24%**	**36,273**	**24,612**	**47%**	**68,510**	**47,572**	**44%**
Non-operating income	726	811	-10%	812	762	7%	812	762	7%
Pre-tax income	**14,659**	**12,087**	**21%**	**37,086**	**25,374**	**46%**	**69,322**	**48,333**	**43%**
Income tax	-2,561	-1,979	29%	-5,909	-4,037	46%	-11,053	-7,712	43%
Net income	**12,098**	**10,108**	**20%**	**31,176**	**21,337**	**46%**	**58,269**	**40,621**	**43%**
EPS (NT$)	**18.72**	**15.64**	**20%**	**48.25**	**33.02**	**46%**	**90.18**	**62.87**	**43%**
Margins (%)			***ppt***			***ppt***			***ppt***
Gross margin	26.3%	23.0%	3.3	39.7%	33.8%	5.9	51.1%	44.8%	6.3
Operating margin	23.2%	19.9%	3.4	37.4%	31.2%	6.2	49.2%	42.6%	6.6
Pre-tax margin	24.4%	21.3%	3.1	38.2%	32.1%	6.1	49.8%	43.3%	6.5
Net margin	20.1%	17.8%	2.4	32.1%	27.0%	5.1	41.9%	36.4%	5.5

Source: Morgan Stanley Research (E) estimates.

Price Target and Valuation Methodology

Our price target increases ~29%, to NT$2,000, reflecting our raised earnings estimates for CY26-28: We believe the company's earnings have returned to a growth track from 2026 onward and will show stronger growth in 2027, driven by the high-end ABF substrate market's reversion to undersupply, NYPCB's dominant supply share for networking chips, and its proactive pricing strategy, which puts it in a favorable position to benefit from rising AI investments.

We believe the overall ABF substrate market bottomed in 2H24, and growth should accelerate from 2H26 onward with the ramp of multiple next-generation, large body size ABF substrates for new server GPUs, CPUs, ASICs and networking chips. New technologies, such as embedded passives and Intel's EMIB-T, should also increase manufacturing complexity of the package substrates, adding to the overall undercapacity as usable output decreases.

Similar to our analysis of other tech hardware companies within our coverage, we use a residual income (RI) valuation model to value NYPCB – we think it derives the most accurate value of the firm given that it takes into account cost of equity. Key assumptions (all unchanged):

- Cost of equity of 9.3%;
  - Risk-free rate of 1% (10-year Taiwan government note yield);
  - Equity risk premium of 8.7%;
  - Beta of 1.0;
- Medium-term growth rate of 17% – fair given our analysis of the substrate market over the next couple of years;
- Terminal growth rate of 3% (similar to the rest of the companies under our tech hardware coverage).

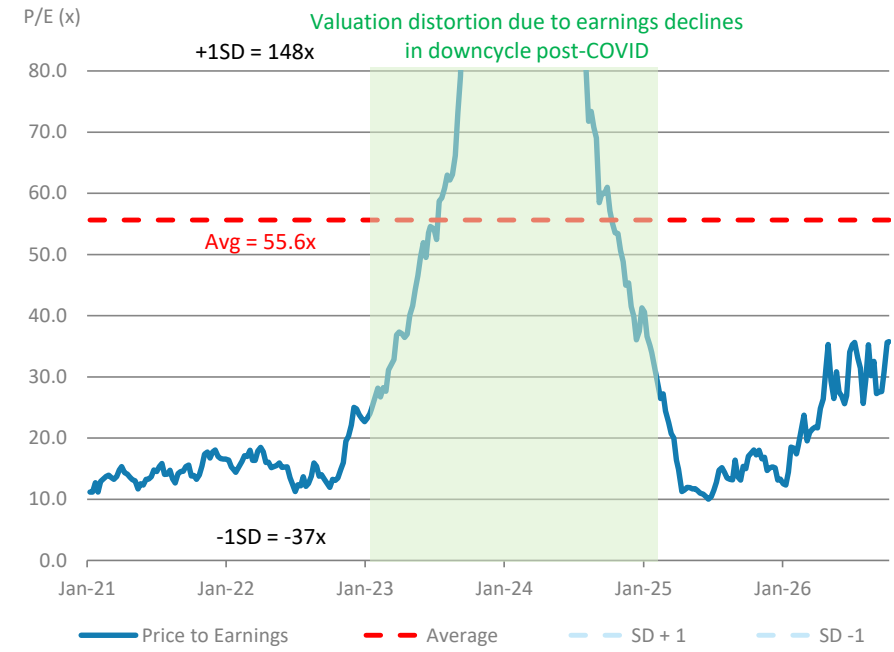
Our bull and bear case values increase by similar magnitudes, to NT$3,575 and NT $1,020, respectively.

Exhibit 27: NYPCB residual income (RI) model

		2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	2036E	2037E
Total Equity		**79,907**	**117,433**	**168,505**	**228,260**	**298,173**	**379,972**	**475,676**	**587,650**	**718,659**	**871,940**	**1,022,633**
Net Profit		**31,176**	**58,269**	**68,174**	**79,764**	**93,324**	**109,189**	**127,751**	**149,469**	**174,878**	**204,608**	**210,746**
Return on Equity		**45.6%**	**59.1%**	**47.7%**	**40.2%**	**35.5%**	**32.2%**	**29.9%**	**28.1%**	**26.8%**	**25.7%**	**22.2%**
Beta	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Equity Risk Premium (Rm-Rf)	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Risk Free Rate (Rf)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cost of Equity	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
Residual Income		**20,646**	**39,786**	**45,118**	**52,141**	**59,784**	**68,396**	**78,262**	**89,662**	**102,900**	**118,314**	**113,207**
Spread		**36.3%**	**49.8%**	**38.4%**	**30.9%**	**26.2%**	**22.9%**	**20.6%**	**18.8%**	**17.5%**	**16.5%**	**13.0%**
Beginning Equity Capital		79,907										
PV of Forecast Period		444,886										
PV of Continuing Value		767,515										
Equity Value		**1,292,308**										
No. of Shares		646										
Projected Price		**2,000.0**										

Source: Morgan Stanley Research (E) estimates.

Exhibit 28: NYPCB P/E chart



Source: TEJ, Morgan Stanley Research estimates.

Financials

Exhibit 29: Quarterly Estimates

	1Q26	2Q26	3Q26E	4Q26E	1Q27E	2Q27E	3Q27E	4Q27E	2025	2026E	2027E	2028E
Net sales	**11,177**	**13,575**	**16,378**	**18,914**	**20,443**	**22,935**	**25,454**	**28,209**	**40,173**	**60,045**	**97,041**	**139,167**
COGS	(9,406)	(10,216)	(11,598)	(13,009)	(13,584)	(14,390)	(15,040)	(15,507)	(36,526)	(44,229)	(58,520)	(67,996)
Gross profit	**1,771**	**3,360**	**4,780**	**5,905**	**6,859**	**8,545**	**10,414**	**12,702**	**3,647**	**15,816**	**38,520**	**71,171**
Operating expenses	(419)	(460)	(491)	(513)	(530)	(551)	(573)	(593)	(1,665)	(1,883)	(2,247)	(2,662)
SG&A	(419)	(460)	(491)	(513)	(530)	(551)	(573)	(593)	(1,665)	(1,883)	(2,247)	(2,662)
R&D	0	0	0	0	0	0	0	0	0	0	0	0
Operating income	**1,352**	**2,899**	**4,289**	**5,393**	**6,329**	**7,994**	**9,841**	**12,109**	**1,982**	**13,933**	**36,273**	**68,510**
Non-operating income	**246**	**76**	**201**	**204**	**204**	**204**	**201**	**204**	**363**	**726**	**812**	**812**
Interest income	34	41	41	41	41	41	41	41	144	158	166	166
Investment income	13	13	9	12	13	13	9	12	18	47	47	47
Disposal of investment	0	0	0	0	0	0	0	0	0	0	0	0
Exchange gain	112	(38)	0	0	0	0	0	0	(158)	74	0	0
Other	87	60	150	150	150	150	150	150	358	447	600	600
Pre-tax income	**1,598**	**2,976**	**4,489**	**5,596**	**6,534**	**8,198**	**10,041**	**12,313**	**2,346**	**14,659**	**37,086**	**69,322**
Income tax	(290)	(714)	(718)	(839)	(980)	(1,476)	(1,607)	(1,847)	(399)	(2,561)	(5,909)	(11,053)
Minority interest	0	0	0	0	0	0	0	0	0	0	0	0
Net income	**1,309**	**2,262**	**3,771**	**4,757**	**5,554**	**6,723**	**8,435**	**10,466**	**1,947**	**12,098**	**31,176**	**58,269**
Adj.wtd.avg.shrs (mn)	646	646	646	646	646	646	646	646	646	646	646	646
EPS	**2.03**	**3.50**	**5.84**	**7.36**	**8.59**	**10.40**	**13.05**	**16.20**	**3.01**	**18.72**	**48.25**	**90.18**
Fully Diluted shares (mn)	646	646	646	646	646	646	646	646	646	646	646	646
Diluted EPS (NT$)	**2.03**	**3.50**	**5.84**	**7.36**	**8.59**	**10.40**	**13.05**	**16.20**	**3.01**	**18.72**	**48.25**	**90.18**
Margins (%)												
Gross Margin	15.8	24.7	29.2	31.2	33.6	37.3	40.9	45.0	9.1	26.3	39.7	51.1
Operating Margin	12.1	21.4	26.2	28.5	31.0	34.9	38.7	42.9	4.9	23.2	37.4	49.2
Pretax Margin	14.3	21.9	27.4	29.6	32.0	35.7	39.4	43.6	5.8	24.4	38.2	49.8
Net Margin	11.7	16.7	23.0	25.1	27.2	29.3	33.1	37.1	4.8	20.1	32.1	41.9
QoQ Growth (%)												
Sales	0	21	21	15	8	12	11	11				
Gross Profit	27	90	42	24	16	25	22	22				
Operating Profit	40	114	48	26	17	26	23	23				
Pretax Profit	13	86	51	25	17	25	22	23				
Net Profit	9	73	67	26	17	21	25	24				
YoY Growth (%)												
Sales	32	42	49	69	83	69	55	49	24	49	62	43
Gross Profit	312	337	355	322	287	154	118	115	920	334	144	85
Operating Profit	3,986	692	591	460	368	176	129	125	NM	603	160	89
Pretax Profit	524	NM	395	297	309	176	124	120	1,338	525	153	87
Net Profit	531	NM	420	296	324	197	124	120	856	521	158	87

Source: Company data, Morgan Stanley Research (E) estimates.

Exhibit 30: Consolidated Financial Summary

Consolidated Income Statement

NT$mn (Year End Dec 31)	2025	2026E	2027E	2028E
Net sales	**40,173**	**60,045**	**97,041**	**139,167**
COGS	(36,526)	(44,229)	(58,520)	(67,996)
Gross profit	**3,647**	**15,816**	**38,520**	**71,171**
Operating expenses	(1,665)	(1,883)	(2,247)	(2,662)
Operating income	**1,982**	**13,933**	**36,273**	**68,510**
Non-operating income	**363**	**726**	**812**	**812**
Interest income	144	158	166	166
Investment income	18	47	47	47
Disposal of investment	-	-	-	-
Exchange gain	(158)	74	-	-
Other	358	447	600	600
Pre-tax income	**2,346**	**14,659**	**37,086**	**69,322**
Income tax	(399)	(2,561)	(5,909)	(11,053)
Minority interests	-	-	-	-
Net income	**1,947**	**12,098**	**31,176**	**58,269**
Adj. wtd. Avg. shrs (m)	646	646	646	646
Reported EPS (NT$)	**3.01**	**18.72**	**48.25**	**90.18**
Diluted shrs (m)	646	646	646	646
Diluted EPS (NT$)	**3.01**	**18.72**	**48.25**	**90.18**

Consolidated Cash Flow Statement

NT$mn (Year End Dec 31)	2025	2026E	2027E	2028E
Operating Cashflow	**3,027**	**13,641**	**28,372**	**53,474**
Net Profits	1,947	12,098	31,176	58,269
Depreciation & Amort.	6,894	6,013	5,482	5,030
Investment losses/(income)	(18)	(47)	(47)	(47)
Working capital change	12,615	(4,278)	(7,967)	(9,467)
Other adjustments	(18,410)	(147)	(273)	(311)
Investing Cashflow	**(1,723)**	**(2,888)**	**(2,820)**	**(2,742)**
Capex	(2,422)	(3,000)	(3,000)	(3,000)
Change of L/T investment	0	0	0	0
Change of S/T investment	0	0	0	0
Other adjustments	625	0	0	0
Financing Cashflow	**(887)**	**2,613**	**(760)**	**(12,416)**
Increase in L/T debt	0	0	0	0
Increase in S/T debt	0	0	0	0
Issuance of stock	0	(0)	0	0
Cash dividends	(646)	(1,292)	(8,031)	(20,696)
Other adjustments	(241)	3,906	7,271	8,280
FX adjustment	(309)	(74)	0	0
Net change in cash	**109**	**13,291**	**24,793**	**38,317**

Consolidated Balance Sheet

NT$mn (Year End Dec 31)	2025	2026E	2027E	2028E
Cash	**8,590**	**21,881**	**46,673**	**84,990**
Mkt securities	117	117	117	117
AR/NR	9,552	14,277	23,074	33,091
Inventory	5,068	6,136	8,119	9,434
Others	296	443	716	1,027
Current Assets	**23,623**	**42,854**	**78,699**	**128,658**
Long-term investments	500	500	500	500
Fixed assets	35,373	32,248	29,586	27,298
Other assets	1,711	1,711	1,711	1,711
Total Assets	**61,207**	**77,314**	**110,497**	**158,168**
S/T borrowings	-	-	-	-
AP/NP	1,711	2,072	2,741	3,185
Other ST liabilities	5,478	6,633	8,776	10,197
Total Current Liabilities	**7,189**	**8,705**	**11,517**	**13,382**
L/T debt	-	-	-	-
Other LT libilities	7,896	11,801	19,073	27,352
Total Liabilities	**15,085**	**20,506**	**30,590**	**40,735**
Common shares	6,462	6,462	6,462	6,462
Retained Earnings	13,031	23,716	46,815	84,341
Other SH' Equity	26,630	26,630	26,630	26,630
Total Shareholders' Equity	**46,123**	**56,808**	**79,907**	**117,433**
Total Liab./SH's Equity	**61,207**	**77,314**	**110,497**	**158,168**

Consolidated Financial Ratios

	2025	2026E	2027E	2028E
Margins (%)				
Gross margin	9.1	26.3	39.7	51.1
Operating margin	4.9	23.2	37.4	49.2
Pretax margin	5.8	24.4	38.2	49.8
Net margin	4.8	20.1	32.1	41.9
YoY growth (%)				
Sales	24.4	49.5	61.6	43.4
Operating profits	NM	602.8	160.3	88.9
Pretax profits	1,338.4	525.0	153.0	86.9
Net profits	855.6	521.4	157.7	86.9
Others				
Cash dividend payout (%)	66%	66%	66%	66%
Cash div (NT$)	2.00	12.43	32.03	59.86
Yield (%)	0%	1%	2%	4%
Net Debt/Equity (%)	-19%	-39%	-59%	-72%
Liabilities/Equity (%)	33%	36%	38%	35%
Liabilities/Assets (%)	25%	27%	28%	26%
ROAE (%)	4%	24%	46%	59%
ROAA (%)	3%	17%	33%	43%
AR/NR Turnover (days)	75	72	70	74
Inventory Turnover (days)	46	46	44	47
AP/NP Turnover (days)	16	16	15	16
Cash conversion cycle	105	103	100	105

Source: Company data, Morgan Stanley Research (E) estimates.

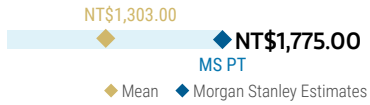
Risk Reward – Unimicron (3037.TW)

Price hikes and spec upgrades to support higher earnings estimates; OW

PRICE TARGET NT$1,775.00

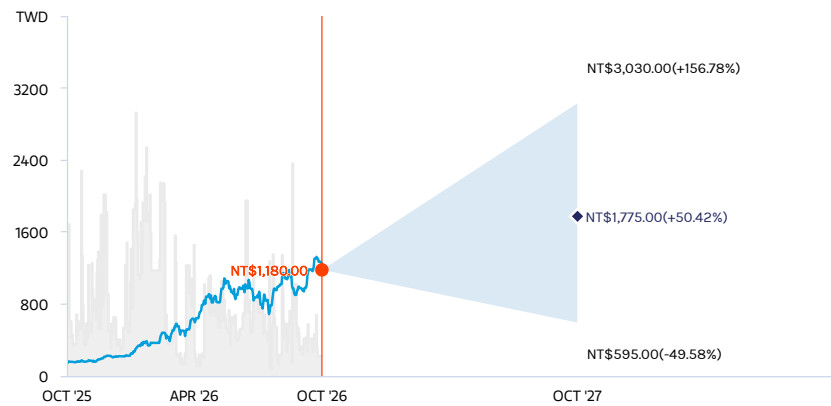
Base case, residual income (RI) valuation model, which we think derives the most accurate value of the firm given that it takes into account cost of equity. We use a cost of equity of 9.2% [risk-free rate of 1% (10-year Taiwan government note yield), equity risk premium of 8.7%, and a beta of 1.0], a medium-term growth rate of 14%, and a terminal growth rate of 3%.

Consensus Price Target Distribution NT$930.00



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART

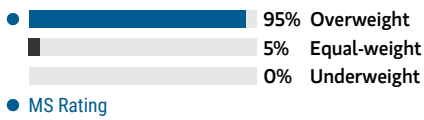


Source: Refinitiv, Morgan Stanley Research

OVERWEIGHT THESIS

- We expect the ABF substrate market to revert to undersupply from 2027 onward, with the undersupply gap reaching 26% by 2030.
- This is primarily driven by AI demand, with next-gen AI/networking chips adopting larger body size ABF substrates.
- In the near to medium term, the short supply of T-glass will be a key watch point, but we believe this will mainly affect low-end ABF and BT substrates, as suppliers prioritize supply to the AI chip vendors.
- Our price target implies 41x 2027e P/E or 24x 2028e P/E, above the 10-20x range at which it traded in the previous up-cycle. We deem this fair, given AI chip substrate spec upgrades and suppliers' ability to raise prices.

Consensus Rating Distribution



Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Pricing Power:	*Positive*
Secular Growth:	*Positive*

View descriptions of Risk Rewards Themes here

BULL CASE NT$3,030.00

70x 2027e P/E

Demand for AI servers, general servers and PCs is much stronger than expected: Pricing increases more than expected, 30%+ in 2026-27, driving stronger margin expansion for Unimicron.

BASE CASE NT$1,775.00

41x 2027e P/E

Entering up-cycle driven by AI chip upgrades: Robust demand for AI GPUs and ASICs, supported by continued data center infrastructure investments by CSPs and neo cloud, leads to undersupply in the high-end ABF market from 2027 onward. PC demand is sluggish, while general servers still show double-digit unit growth in 2026. ASP has bottomed and started to inflect upward, driven by raw material price hikes and substrate spec upgrades.

BEAR CASE NT$595.00

14x 2027e P/E

Demand for AI servers and general servers softens, with PC demand weakening further: The result is greater ABF oversupply; thus, there are pricing declines of ~15-20% in 2026-27, leading to weaker margins for Unimicron over the next two years.

Risk Reward – Unimicron (3037.TW)

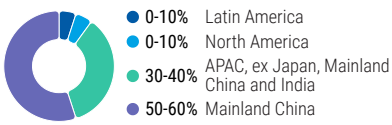
KEY EARNINGS INPUTS

Drivers	Dec 2025	Dec 2026e	Dec 2027e	Dec 2028e
IC substrate ASP YoY (%)	7.5	37.1	43.3	35.1
IC substrate GM (%)	15.2	30.8	42.4	49.1

INVESTMENT DRIVERS

- 5G smartphone demand
- 5G base station demand
- Automotive demand

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies here

MS ALPHA MODELS

4/5 MOST — 3 Month Horizon

Source: Refinitiv, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Better-than-expected ABF substrate demand from PC and server customers
- Capex cuts; halt to its capacity expansion plan
- Continued yield issues of alternative technology that doesn't require substrate (e.g., CoWoP)

RISKS TO DOWNSIDE

- Sudden demand shortfall
- Technological change that would not require ABF substrates
- Intensifying competition
- Yield issues or production hiccups when ramping new capacity

OWNERSHIP POSITIONING

Inst. Owners, % Active 75.6%



Source: Refinitiv, Morgan Stanley Research

MS ESTIMATES VS. CONSENSUS

FY Dec 2027e

Sales / Revenue (NT$, mn)	242,591	279,618 / 279,811	326,592
Net income (NT$, mn)	49,732	66,887 / 64,363	92,145
EPS (NT$)	30.18	43.46 / 40.32	52.18

◆ Mean ◆ Morgan Stanley Estimates

Source: Refinitiv, Morgan Stanley Research

Risk Reward – Nan Ya PCB (8046.TW)

Price hikes and spec upgrades to support higher earnings estimates; OW

PRICE TARGET NT$2,000.00

Base case, residual income (RI) valuation model, which we think derives the most accurate value of the firm given that it takes into account cost of equity. We use a cost of equity of 9.3% [risk-free rate of 1% (10-year Taiwan government note yield), equity risk premium of 8.7%, and a beta of 1.0], a medium-term growth rate of 17%, and a terminal growth rate of 3%.

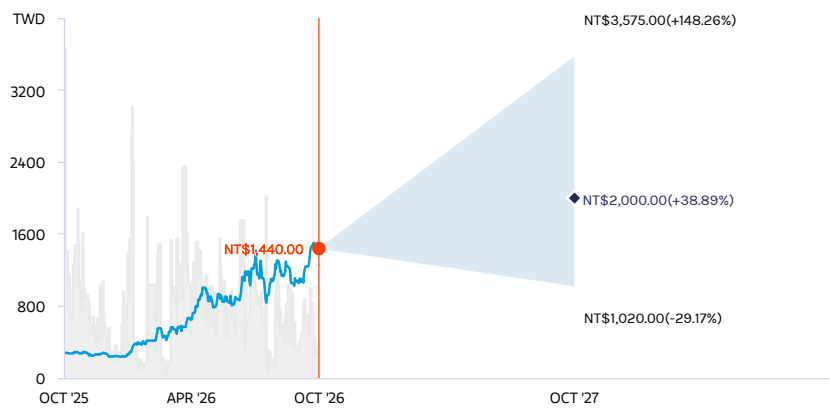
Consensus Price Target Distribution NT$1,095.00 NT$1,755.00 NT$2,500.00

MS PT

Mean Morgan Stanley Estimates

Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART



Key: Historical Stock Performance Current Stock Price Price Target

Source: Refinitiv, Morgan Stanley Research

OVERWEIGHT THESIS

- Price hikes for BT and ABF substrates, driven by raw material cost increases, will likely drive margin improvement for NYPCB.
- We believe the ABF substrate market will become undersupplied again from 2027 onward, driven by AI demand, with next-gen AI/networking chips adopting large-body size ABF substrates.
- NYPCB should benefit from ABF substrate structural tailwinds as well - rising data traffic, big data analysis, AI/ML, and 5G.
- Our price target implies 41x 2027e P/E or 22x 2028e P/E, vs. the 10-30x range in which it traded in the previous up-cycle. We deem this fair given ABF substrate spec upgrades and suppliers' ability to raise prices.

Consensus Rating Distribution

93% Overweight
7% Equal-weight
0% Underweight

MS Rating

Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Pricing Power: *Positive*
Secular Growth: *Positive*

View descriptions of Risk Rewards Themes here

BULL CASE NT$3,575.00

74x 2027e P/E

BT prices increase further in 2H26, and ABF becomes undersupplied faster than expected (current expectation is from 2027 onward), driving even stronger margin expansion for Nan Ya PCB.

BASE CASE NT$2,000.00

41x 2027e P/E

Entering up-cycle driven by AI chip upgrades: Robust demand for AI GPUs/ASICs and networking chips, supported by continued data center infrastructure investments by CSPs and neo cloud, leads to undersupply in the high-end ABF market from 2027 onward. PC demand is sluggish, while general servers still show double-digit unit growth in 2026. ASP has bottomed and started to inflect upward, driven by raw material price hikes and substrate spec upgrades.

BEAR CASE NT$1,020.00

21x 2027e P/E

ABF demand weakens further, resulting in greater oversupply in the next few years. Thus, ABF pricing decreases 20% or more in 2026-27, leading to weaker margins for Nan Ya PCB.

Risk Reward – Nan Ya PCB (8046.TW)

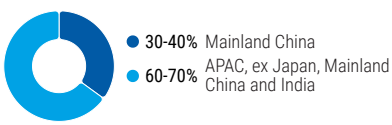
KEY EARNINGS INPUTS

Drivers	Dec 2025	Dec 2026e	Dec 2027e	Dec 2028e
ABF ASP y/y (%)	10.0	21.1	41.6	39.7
ABF GM (%)	17.3	33.7	46.8	58.8

INVESTMENT DRIVERS

- 5G smartphone demand
- 5G base station demand
- Automotive demand

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies here

MS ALPHA MODELS

4/5 MOST — 3 Month Horizon

Source: Refinitiv, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Better-than-expected ABF and BT demand
- Faster-than-expected pickup in AI and 5G demand
- Stronger-than-expected ASP hike
- Continued yield issues of alternative technology that doesn't require substrate (e.g. CoWoP)

RISKS TO DOWNSIDE

- Sudden demand shortfall, creating headwinds for ABF substrate demand and pricing
- Technological change that would not require ABF substrates
- Intensifying competition

OWNERSHIP POSITIONING

Inst. Owners, % Active 78.1%



Source: Refinitiv, Morgan Stanley Research

MS ESTIMATES VS. CONSENSUS

FY Dec 2027e

Sales / Revenue (NT$, mn)	86,962	97,041 / 103,905	128,352
Net income (NT$, mn)	23,382	31,176 / 33,310	42,537
EPS (NT$)	36.19	48.25 / 51.55	65.83

◆ Mean ◆ Morgan Stanley Estimates

Source: Refinitiv, Morgan Stanley Research

Risk Reward Reference links

1. View explanation of Options Probabilities methodology - Options_Probabilities_Exhibit_Link.pdf

2. View descriptions of Risk Rewards Themes - RR_Themes_Exhibit_Link.pdf

3. View explanation of regional hierarchies - GEG_Exhibit_Link.pdf

4. View explanation of Theme/Exposure methodology - ESG_Sustainable_Solutions_External_Link.pdf

5. View explanation of HERS methodology - ESG_HERS_External_Link.pdf



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(as of September 30, 2026)
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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1599	43%	455	48%	28%	783	44%
Equal-weight/Hold	1563	42%	394	42%	25%	763	43%
Not-Rated/Hold	2	0%	1	0%	50%	1	0%
Underweight/Sell	570	15%	96	10%	17%	227	13%
Total	3,734		946			1774	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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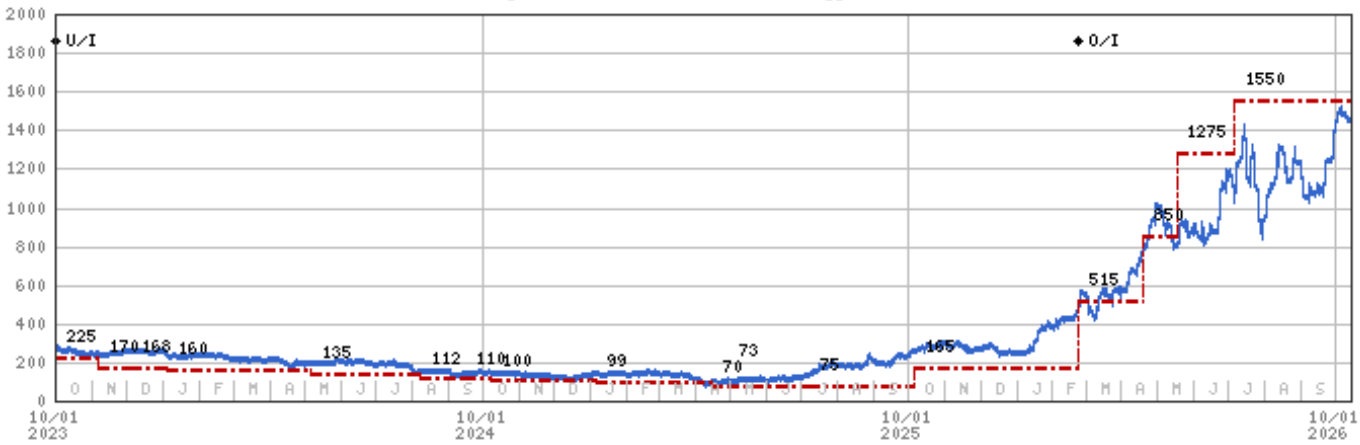
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Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

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Stock Price, Price Target and Rating History (See Rating Definitions)

Nan Ya PCB (8046.TW) - As of 10/14/26 GMT in TWD
Industry : Greater China Technology Hardware



Stock Rating History: 10/1/21 : NA/I; 10/22/21 : O/I; 6/1/22 : E/I; 12/21/22 : U/I; 2/23/26 : O/I

Price Target History: 10/22/21 : 580; 11/9/21 : 630; 2/9/22 : 650; 2/25/22 : 670; 6/1/22 : 420; 8/23/22 : 275; 10/27/22 : 235; 12/21/22 : 180; 2/2/23 : 165; 2/25/23 : 155; 6/7/23 : 225; 11/7/23 : 170; 12/4/23 : 168; 1/4/24 : 160; 5/7/24 : 135; 8/9/24 : 112; 9/15/24 : 110; 10/8/24 : 100; 1/6/25 : 99; 4/15/25 : 70; 4/29/25 : 73; 7/7/25 : 75; 10/6/25 : 165; 2/23/26 : 515; 4/20/26 : 850; 5/18/26 : 1275; 7/7/26 : 1550

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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Unimicron (3037.TW) - As of 10/14/26 GMT in TWD
Industry : Greater China Technology Hardware



Stock Rating History: 10/1/21 : NA/I; 10/22/21 : O/I; 6/1/22 : E/I; 2/22/23 : U/I; 4/15/25 : E/I; 2/23/26 : O/I

Price Target History: 10/22/21 : 188.06; 10/27/21 : 237.55; 2/9/22 : 267.24; 2/24/22 : 366.22; 6/1/22 : 237.55; 8/23/22 : 178.16; 10/27/22 : 133.62; 12/21/22 : 123.72; 2/2/23 : 116.79; 2/22/23 : 98.98; 6/7/23 : 138.57; 11/7/23 : 125.7; 1/24/24 : 118.77; 4/15/25 : 81.66; 7/30/25 : 120.75; 2/23/26 : 500; 2/26/26 : 550; 4/20/26 : 785; 5/18/26 : 1225; 6/12/26 : 1285; 7/7/26 : 1465

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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INDUSTRY COVERAGE: Greater China Technology Hardware

COMPANY (TICKER)	RATING (AS OF)	PRICE* (10/13/2026)
Andy Meng, CFA		
AAC Technologies Holdings (2018.HK)	O (01/29/2024)	HK$36.56
Accelink Technologies Co. Ltd. (002281.SZ)	U (05/12/2022)	Rmb145.86
BYD Electronics (0285.HK)	O (04/28/2023)	HK$22.96
China TransInfo Technology Co Ltd (002373.SZ)	E (07/18/2023)	Rmb7.42
Dahua Technology Co. Ltd. (002236.SZ)	E (12/12/2024)	Rmb15.27
Eoptolink Technology Inc Ltd (300502.SZ)	O (02/27/2026)	Rmb351.30
Genius Electronic Optical Co. Ltd. (3406.TW)	E (10/13/2026)	NT$1,175.00
GoerTek Inc (002241.SZ)	E (08/14/2026)	Rmb20.63
Gosuncn Technology Group Co Ltd (300098.SZ)	U (11/07/2022)	Rmb4.16
HIKVision Digital Technology (002415.SZ)	E (12/12/2024)	Rmb33.62
Largan Precision (3008.TW)	O (10/13/2026)	NT$7,275.00
LianChuang Electronic Technology Co Ltd (002036.SZ)	U (06/12/2024)	Rmb5.74
Lingyi Itech Guangdong Co (002600.SZ)	U (04/23/2025)	Rmb10.77
Lingyi Itech Guangdong Co (1688.HK)	O (08/14/2026)	HK$4.85
Luxshare Precision Industry Co., Ltd. (2475.HK)	O (08/14/2026)	HK$48.86
Luxshare Precision Industry Co., Ltd. (002475.SZ)	O (10/24/2016)	Rmb46.15
OFILM Group Co Ltd (002456.SZ)	U (06/12/2024)	Rmb6.37
Q Technology (Group) Company Ltd (1478.HK)	U (03/23/2026)	HK$4.84
Quectel Wireless Solutions Co Ltd (603236.SS)	E (10/09/2024)	Rmb70.39
Shanghai Conant Optical Co Ltd (2276.HK)	O (04/10/2026)	HK$33.40
Shenzhen Transsion Holdings Co Ltd (688036.SS)	E (03/23/2026)	Rmb48.94
Sunny Optical (2382.HK)	E (03/23/2026)	HK$58.85
Suzhou TFC Optical Communication Co Ltd. (300394.SZ)	E (11/06/2025)	Rmb246.70
Wingtech Technology Co Ltd (600745.SS)	U (05/18/2026)	Rmb14.23
Xiaomi Corp (1810.HK)	O (04/14/2021)	HK$25.04
Yangtze Optical Fibre and Cable JSC Ltd (601869.SS)	U (10/13/2021)	Rmb370.48
Yangtze Optical Fibre and Cable JSC Ltd (6869.HK)	O (07/15/2026)	HK$150.60
Yongxin Optics Co Ltd (603297.SS)	E (11/15/2022)	Rmb100.25
Zhejiang Crystal-Optech Co Ltd (002273.SZ)	O (11/15/2022)	Rmb21.04
Zhongji Innolight Co Ltd (300308.SZ)	O (09/07/2026)	Rmb735.00
Zhongji Innolight Co Ltd (3308.HK)	O (09/07/2026)	HK$890.00
ZTE Corporation (0763.HK)	O (06/04/2026)	HK$20.12
ZTE Corporation (000063.SZ)	E (06/04/2026)	Rmb28.02
Derrick Yang		
Accton Technology Corporation (2345.TW)	O (06/06/2024)	NT$2,040.00
Advantech (2395.TW)	O (01/20/2021)	NT$718.00
AirTAC International (1590.TW)	O (04/16/2025)	NT$1,170.00
Asia Vital Components Co. Ltd. (3017.TW)	O (07/30/2024)	NT$3,280.00
AU Optronics (2409.TW)	E (02/10/2026)	NT$34.15
Auras Technology Co Ltd (3324.TWO)	E (05/04/2023)	NT$1,475.00
Bizlink (3665.TW)	O (03/10/2025)	NT$2,260.00
BOE Technology (000725.SZ)	O (09/06/2019)	Rmb5.35
Chenbro (8210.TW)	O (07/23/2025)	NT$838.00
Chroma Ate Inc. (2360.TW)	O (10/05/2021)	NT$2,200.00
Delta Electronics Inc. (2308.TW)	O (07/13/2017)	NT$1,775.00
E Ink Holdings Inc. (8069.TWO)	E (08/10/2026)	NT$147.50
Ennostar Inc (3714.TW)	U (09/23/2022)	NT$60.80
Fositek Corp (6805.TW)	O (06/25/2025)	NT$2,210.00
Hiwin Technologies Corp. (2049.TW)	O (03/30/2026)	NT$327.00
Innolux (3481.TW)	E (04/07/2025)	NT$50.00
King Slide Works Co. Ltd. (2059.TW)	O (11/08/2023)	NT$10,060.00

Lens Technology (300433.SZ)	E (07/22/2020)	Rmb26.33
Lite-On Technology (2301.TW)	E (01/15/2025)	NT$276.00
TCL Corp. (000100.SZ)	E (04/07/2025)	Rmb4.51
Tianma Microelectronics (000050.SZ)	U (01/24/2018)	Rmb6.08
Wuhan Jingce Electronic Group Co Ltd (300567.SZ)	E (11/26/2021)	Rmb167.28
Howard Kao		
Acer Inc. (2353.TW)	U (04/23/2025)	NT$31.25
Asustek Computer Inc. (2357.TW)	U (11/16/2025)	NT$966.00
Catcher Technology (2474.TW)	U (11/17/2025)	NT$194.00
Compal Electronics (2324.TW)	U (04/23/2025)	NT$35.80
Elite Material Co. (2383.TW)	O (09/14/2026)	NT$5,545.00
FIT Hon Teng Ltd (6088.HK)	O (11/03/2025)	HK$4.38
Foxconn Industrial Internet Co. Ltd. (601138.SS)	O (07/10/2019)	Rmb52.29
Giga-Byte Technology Co. Ltd. (2376.TW)	E (11/16/2025)	NT$355.50
Gold Circuit Electronics Ltd. (2368.TW)	O (10/06/2022)	NT$1,170.00
Hon Hai Precision (2317.TW)	O (03/15/2024)	NT$240.00
Inspur Electronic Information (000977.SZ)	E (08/28/2023)	Rmb61.65
Kingboard Laminates Holdings Ltd. (1888.HK)	O (09/14/2026)	HK$44.70
LandMark Optoelectronics Corporation (3081.TWO)	E (03/26/2026)	NT$2,725.00
Lenovo (0992.HK)	O (07/10/2026)	HK$31.10
Lotes Co. Ltd. (3533.TW)	E (05/12/2025)	NT$1,860.00
Nan Ya PCB (8046.TW)	O (02/23/2026)	NT$1,440.00
Pegatron Corporation (4938.TW)	E (03/25/2026)	NT$102.50
Quanta Computer Inc. (2382.TW)	O (05/01/2023)	NT$323.00
Shengyi Technology Co Ltd. (600183.SS)	E (05/26/2022)	Rmb122.54
Shennan Circuits Co Ltd (002916.SZ)	E (08/24/2023)	Rmb337.24
Unimicron (3037.TW)	O (02/23/2026)	NT$1,180.00
Visual Photonics Epitaxy Co Ltd (2455.TW)	E (09/11/2023)	NT$508.00
Wistron Corporation (3231.TW)	O (07/12/2023)	NT$187.00
Wiwynn Corp (6669.TW)	O (11/10/2025)	NT$2,195.00
Yageo Corp. (2327.TW)	O (10/28/2025)	NT$599.00
Zhen Ding (4958.TW)	++	NT$552.00
Irene Yen		
Co-Tech Development Corp. (8358.TWO)	O (09/14/2026)	NT$493.00
Taiwan Union Technology Corporation (6274.TWO)	O (09/14/2026)	NT$1,655.00

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