Morgan Stanley | RESEARCH

IDEA

October 20, 2026 02:30 AM GMT

Greater China Technology Hardware | Asia Pacific

Correction: 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.

We have made alterations to the text and exhibits relating to tech component estimates involving US companies and their Asia-based supply chains to make clear that these estimates are from Asia-based supply chain checks. We also note that our Asia supply chain model estimate cut for AMD's 2026 GPU shipments was in large part due to a prior modelling error. This article was originally published on 14 Oct 2026 8:00 AM GMT, and is being republished on 19 Oct 2026. To receive an electronic copy of the original version of this publication, please send an e-mail to Equity_Research_Publishing@morganstanley.com with the publication title and date.

Clarifying AMD unit assumptions: Please note the changes in our ABF substrate model do not represent equivalent reductions in our company-level AMD GPU shipment forecasts (covered by Joseph Moore). For 2026, our October 14 model estimates AMD GPU substrate units of 0.6mn versus 2.4mn in the July 6 model, primarily because the earlier figure incorrectly included approximately 1.4mn Venice CPU units in the GPU category and also incorporated additional substrate-planning buffers. For 2027, our model estimates 1.3mn units versus 2.7mn previously, reflecting the incorporation of our Asia semiconductor team's updated CoWoS assumptions, which changed from approximately 2.3mn AMD GPU shipments as of June 23 to 1.3mn as of September 10; accordingly, the October 14 model does not represent an additional reduction beyond the revised CoWoS assumptions already published. These substrate-unit assumptions are inputs to our ABF supply/demand analysis and, given differences in scope, planning buffers and update timing, should not be interpreted as one-for-one forecasts of finished AMD GPU shipments. For context, Joe Moore's company-level AMD GPU shipment estimates as of August 5 were approximately 0.7mn for 2026 and 1.1mn for 2027. See Joe's report here for further context.

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

MORGAN STANLEY TAIWAN LIMITED+

Howard Kao
Equity Analyst
Howard.Kao@morganstanley.com +886 2 2730-2989

Irene Yen
Equity Analyst
Irene.Yen@morganstanley.com +886 2 2730-2869

MORGAN STANLEY ASIA LIMITED+

Andy Meng, CFA
Equity Analyst
Andy.Meng@morganstanley.com +852 2239-7689

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%	26%	46%	43%	0.20	0.26	0.26

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

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

+= Analysts employed by non-U.S. affiliates are not registered with FINRA, may not be associated persons of the member and may not be subject to FINRA restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

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.

Supply/Demand Update: Undersupply Deepens in CY27–28

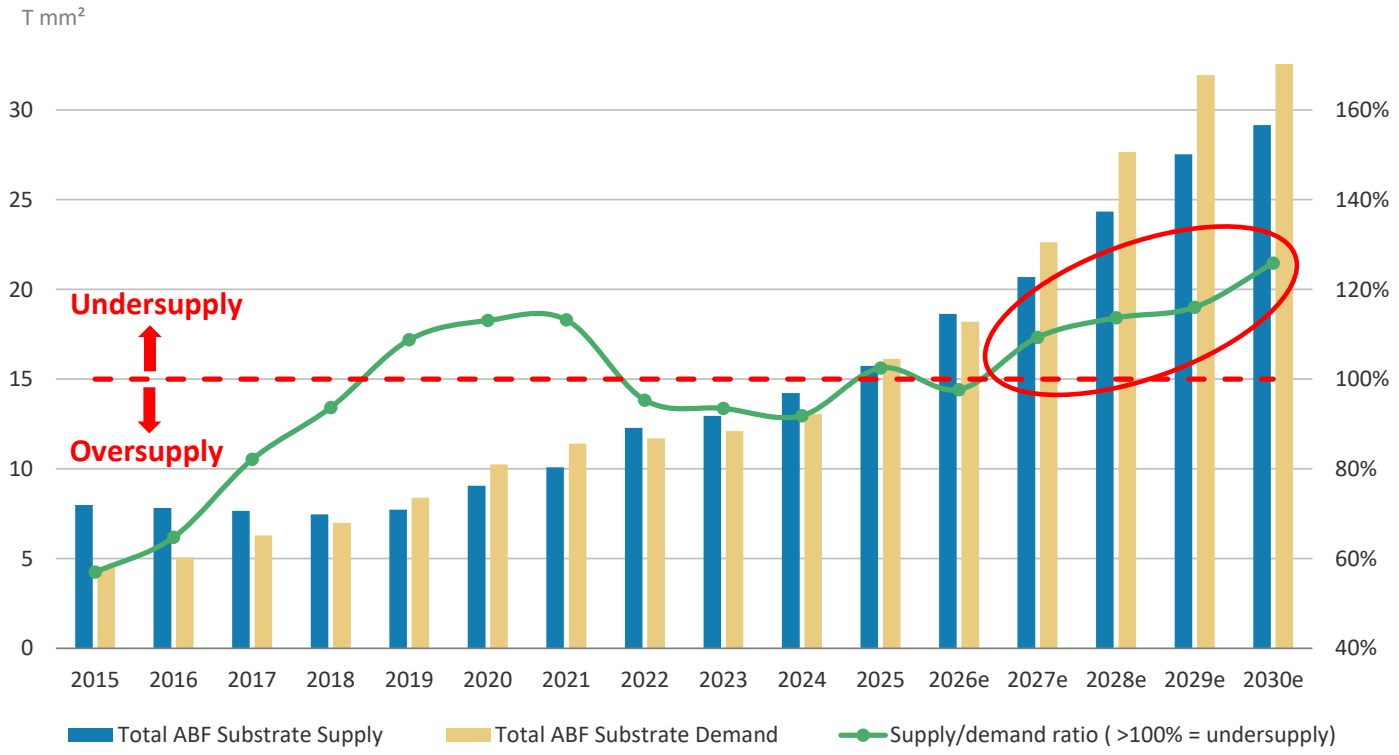
Our updated model points to a wider supply shortfall in CY27-28, despite additional capacity: Incorporating the latest expansion plans and semiconductor demand forecasts, we now expect ABF substrate demand to exceed available supply by 9.3% in CY27 and 13.7% in CY28, versus 6.2% and 9.4% previously. 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 Asia supply chain forecasts for Nvidia GPUs and server CPUs remain largely unchanged, while we lower supply chain estimates for AMD GPUs, but also keep CY27 Trainium and TPU shipments largely unchanged (note, these are separate from Joe Moore's company forecasts). 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

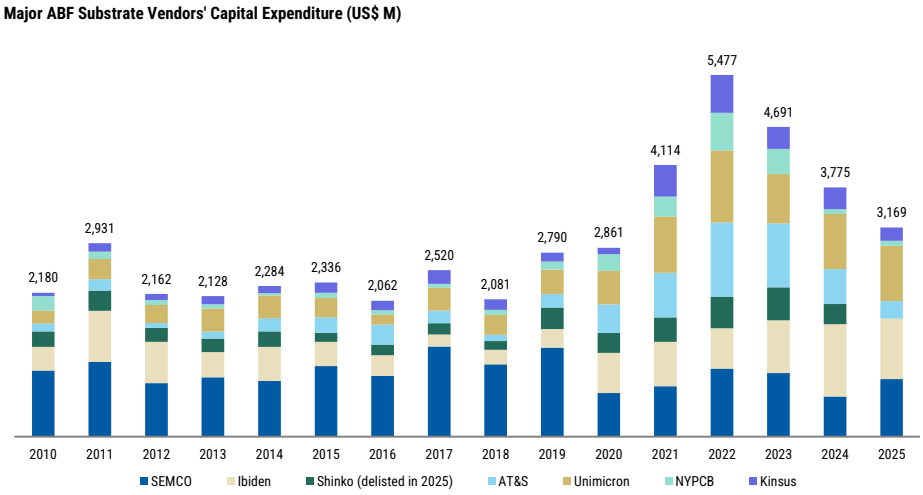
capex announcements, the investments we can currently quantify appear insufficient to meet our demand forecast, pointing to a need for further capacity expansion over the coming years.

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)

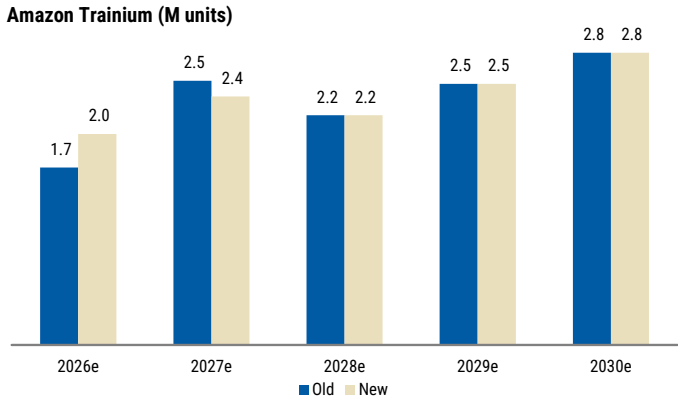


Source: Company data, Morgan Stanley Research.

Stronger ASIC demand from hyperscalers

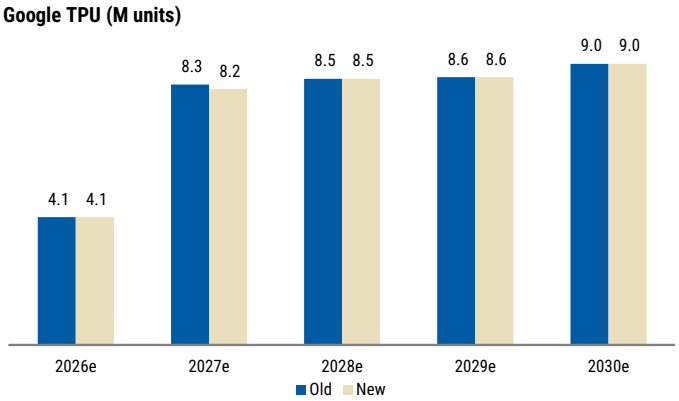
We have updated our ASIC demand forecasts in our Asia team's ABF model to align with the estimates from our Asia semiconductors team. As shown in the exhibits below, our revised assumptions point to a higher estimate for Amazon's Trainium processors in 2026, as well as marginally lowered shipment estimates 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 Asia supply chain estimates for Amazon Trainium



Source: Morgan Stanley Asia-Pacific Research (e) estimates.

Exhibit 7: Changes to Asia supply chain estimates for Google TPUs

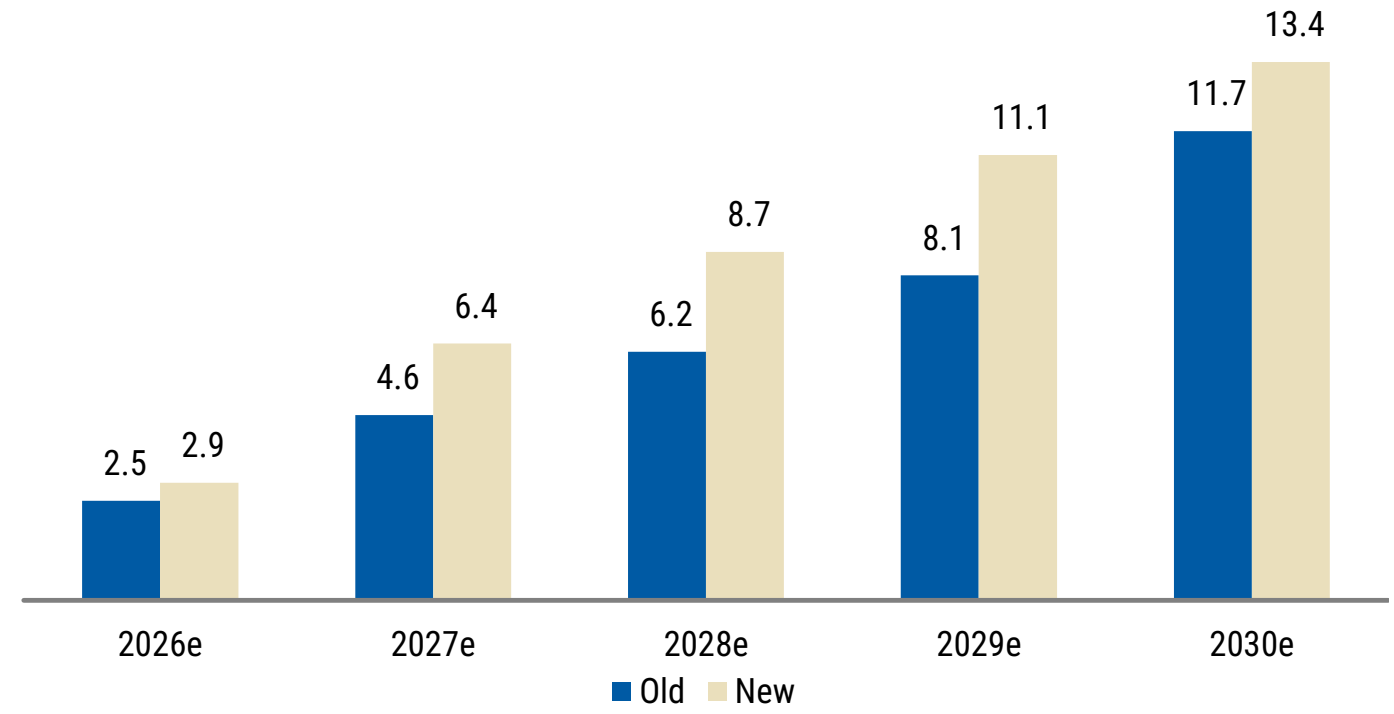


Source: Morgan Stanley Asia-Pacific Research (e) estimates.

Other ASIC chips

For "Other" ASIC chips, we increase our estimates. Included in this section, based on Asia supply chain forecasts, 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

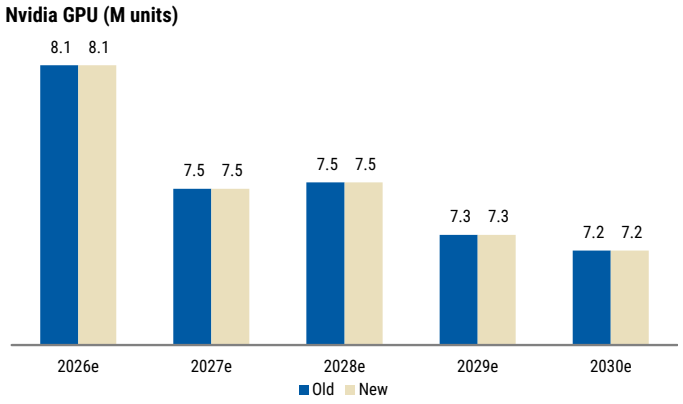


Source: Morgan Stanley Asia-Pacific Research (e) estimates.

Changes to our GPU and Nvidia CPU forecasts

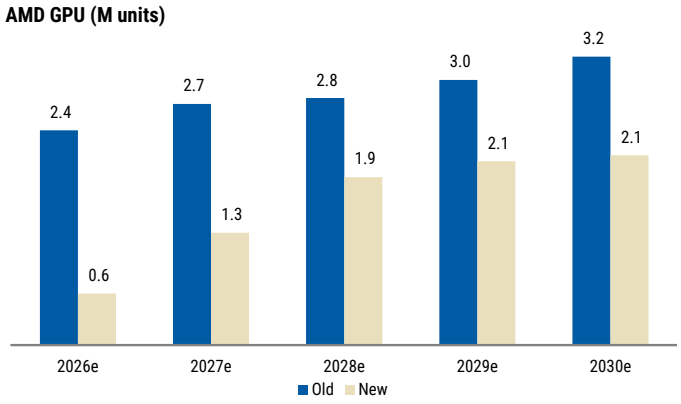
We also update our Asia supply chain demand forecasts for Nvidia and AMD GPUs. Our revised estimates generally point to lowered demand for AMD GPUs in 2026-30 compared to our previous assumptions, while our estimates for Nvidia GPUs remain largely unchanged. Our forecasts for Nvidia's server CPU portfolio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

Exhibit 9: Changes to Asia supply chain estimates for Nvidia GPUs



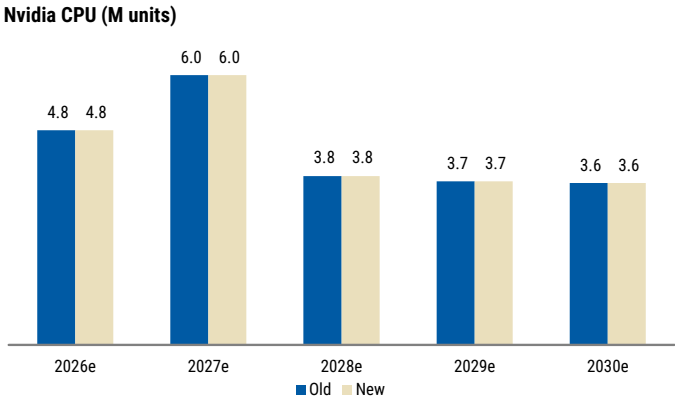
Source: Morgan Stanley Asia-Pacific Research (e) estimates.

Exhibit 10: Changes to Asia supply chain estimates for AMD GPUs



Source: Morgan Stanley Asia-Pacific Research (e) estimates.

Exhibit 11: Changes to Asia supply chain estimates for Nvidia CPUs



Source: Morgan Stanley Asia-Pacific 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***
Gross margin	29.2%	4.4	19.6	28.9%	0.2
Operating margin	26.2%	4.8	20.5	25.7%	0.5
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.

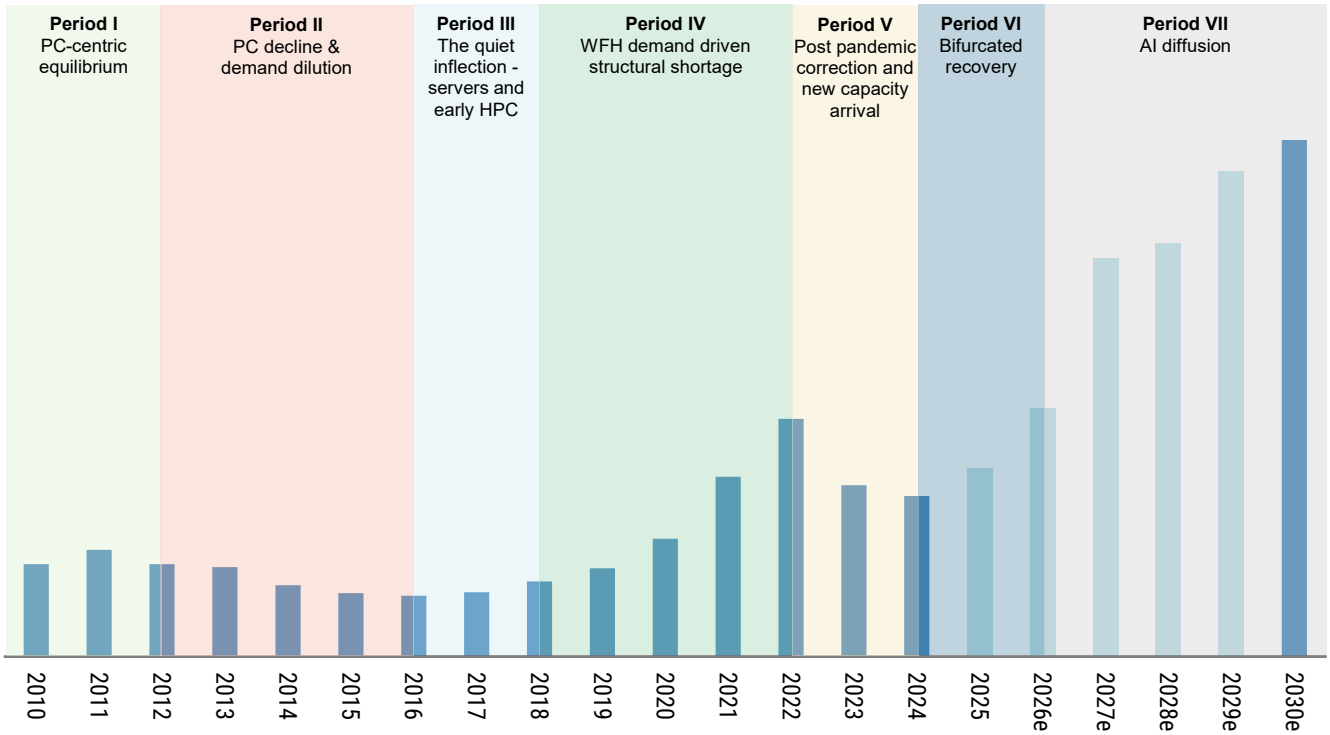
Unfortunately, demand did not play out as expected. As the world came out of the pandemic, demand for PCs and online entertainment fell sharply. This normalization of demand, coupled with capacity expansion from practically every major ABF substrate supplier, resulted in the ABF substrate market once 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.

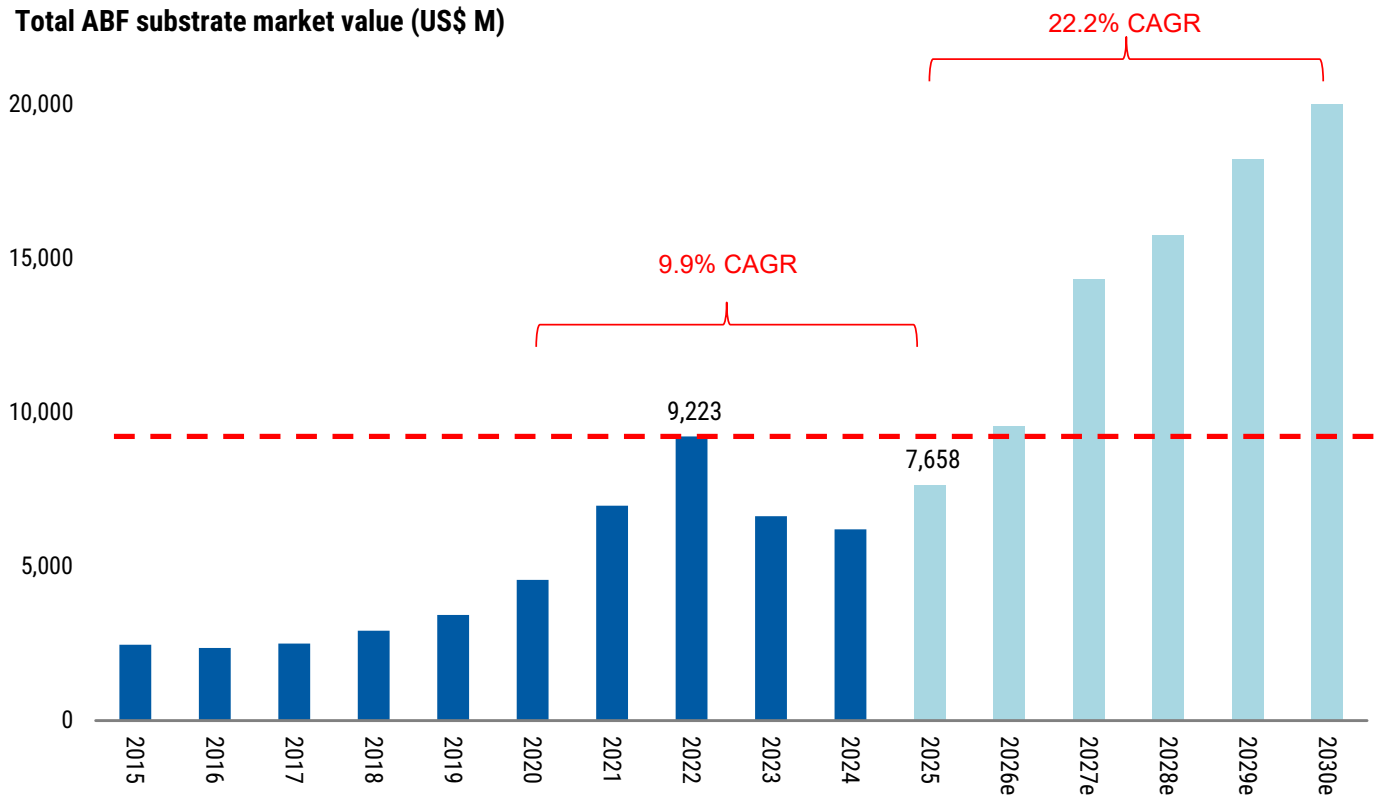
Periods	Description
Period I (2010-2012): PC-centric equilibrium	ABF substrate demand is primarily driven and dominated by CPU and GPU demand for desktops, notebooks, discrete GPUs, with a meaningfully smaller exposure towards server CPUs.
Period II (2012-16): PC decline and demand dilution	Global PC 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.

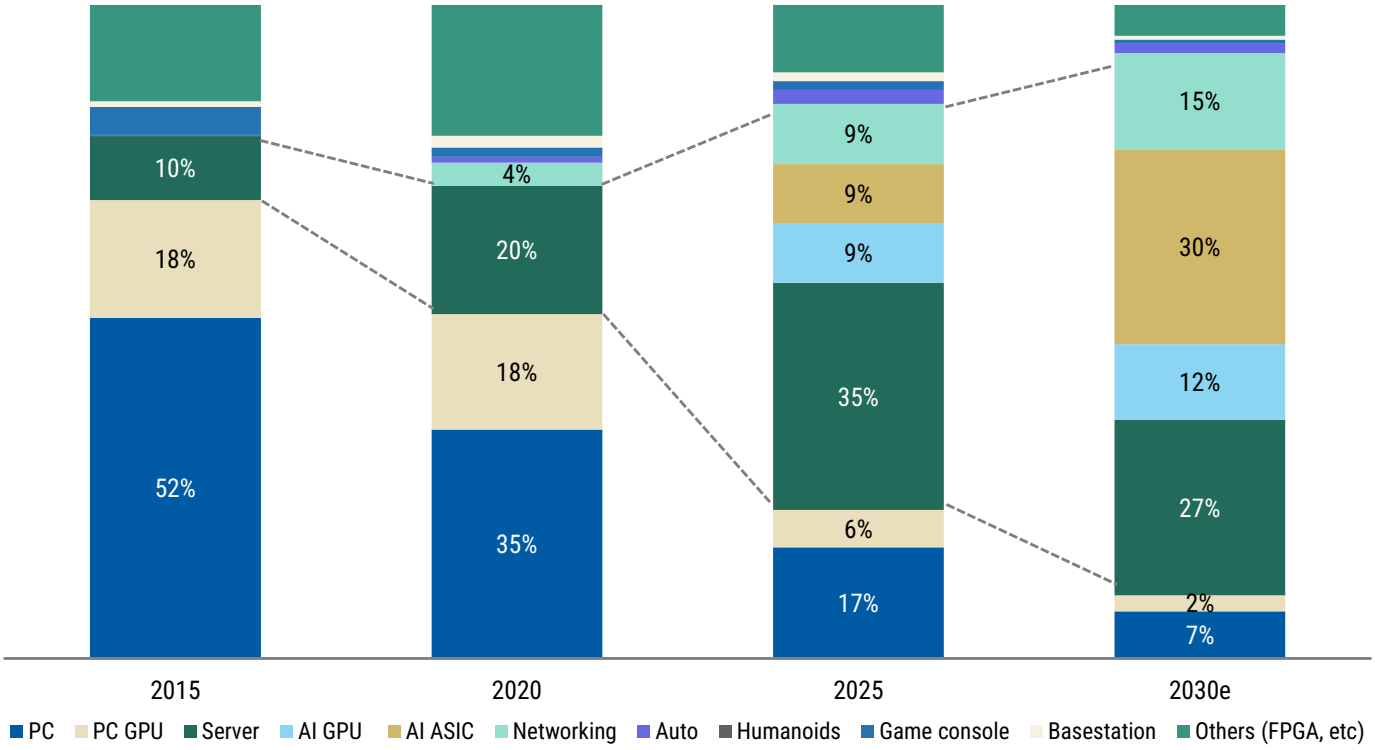
Breaking down ABF substrate end demand

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.

This report references U.S. Executive Order 14032 and/or entities or securities that are designated thereunder. U.S. persons may be prohibited from buying certain securities of entities named in this report. Readers are solely responsible for ensuring that their investment activities are carried out in compliance with applicable laws.

This report references export controls and/or entities that may be subject to export control restrictions. Readers are solely responsible for ensuring that their investment or trade activities are carried out in compliance with applicable laws.

This report references U.S. Executive Order 14105 and/or entities that may be in scope of such order. U.S. persons may be prohibited from engaging in certain transactions or otherwise require certain other transactions be notified to the U.S. Department of Treasury. Readers are solely responsible for ensuring that their investment or trade activities are carried out in compliance with applicable laws.

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).

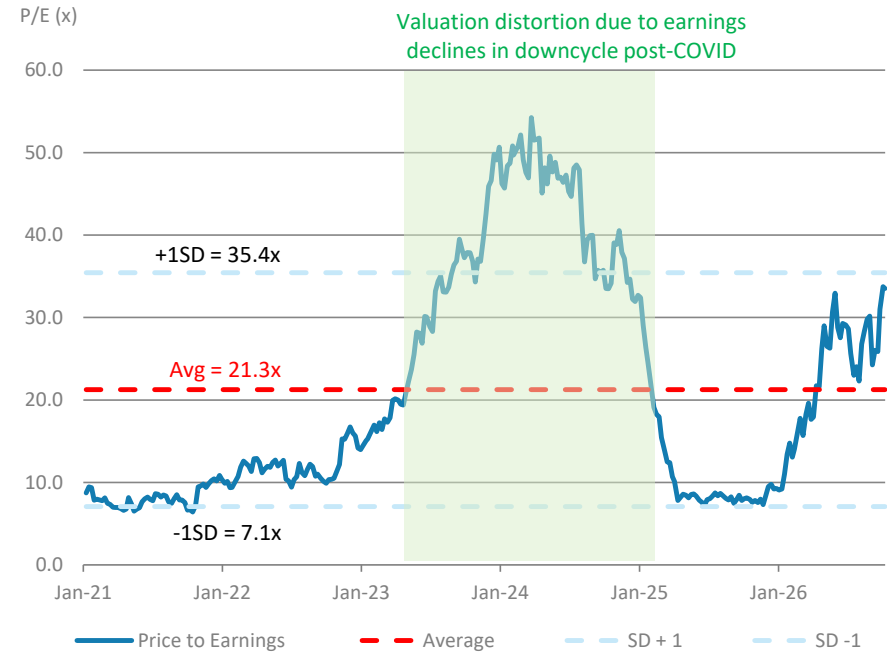
Our bull and bear case values increase by similar magnitudes, to NT$3,030 and NT $595, respectively.

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**

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**

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

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).

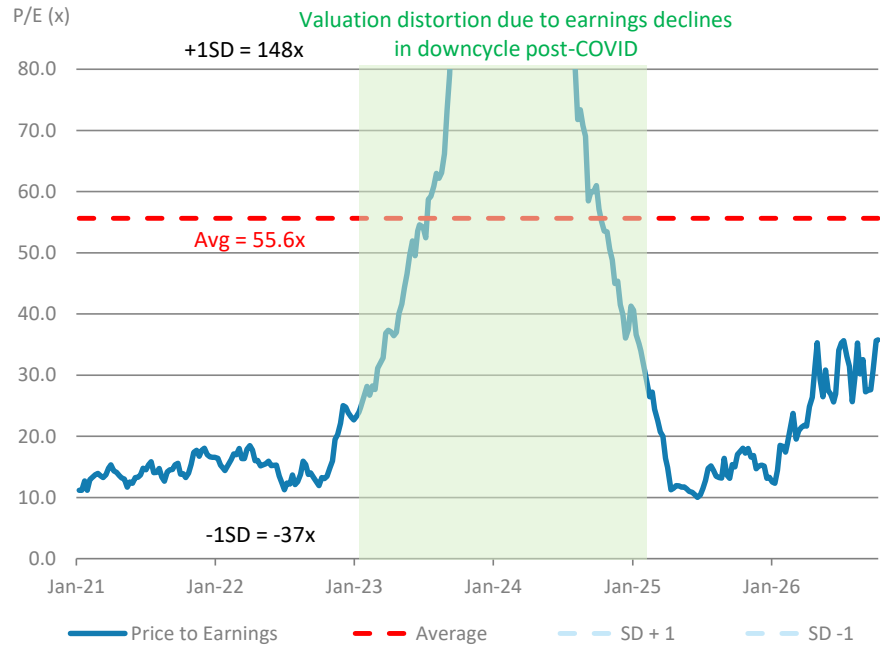
Our bull and bear case values increase by similar magnitudes, to NT$3,575 and NT $1,020, respectively.

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.

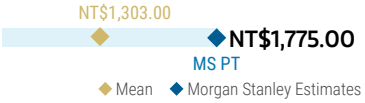
Risk Reward – Unimicron (3037.TW)

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

PRICE TARGET NT$1,775.00

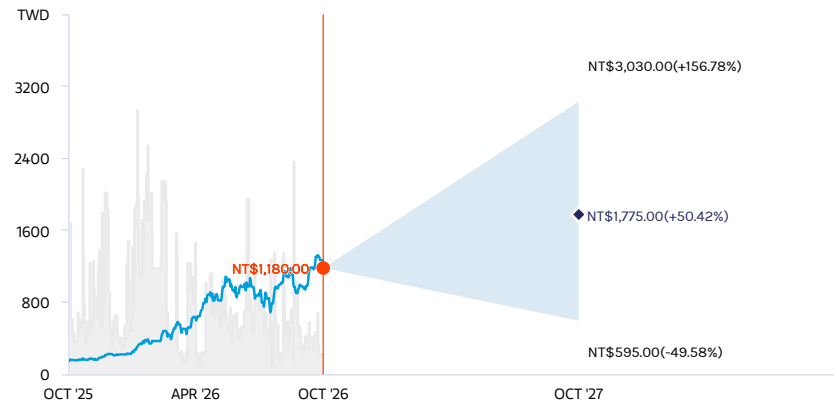
Base case, residual income (RI) valuation model, which we think derives the most accurate value of the firm given that it takes into account cost of equity. We use a cost of equity of 9.2% [risk-free rate of 1% (10-year Taiwan government note yield), equity risk premium of 8.7%, and a beta of 1.0], a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



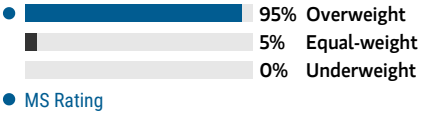
Key: Historical Stock Performance Current Stock Price Price Target

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)

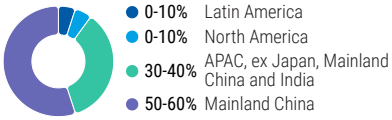
KEY EARNINGS INPUTS

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%.

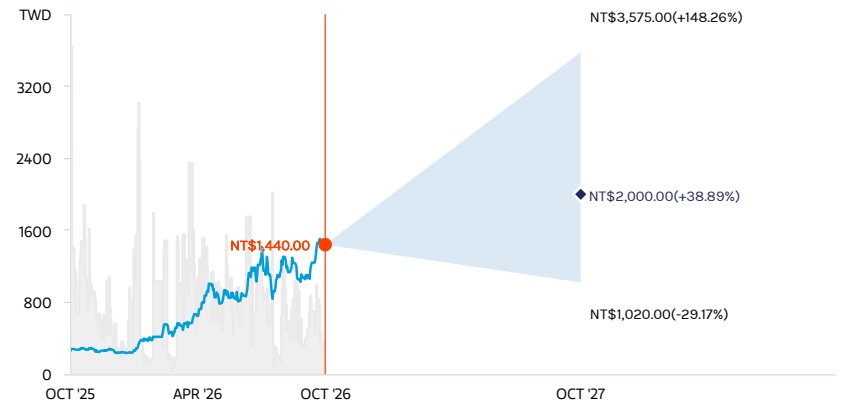
Consensus Price Target Distribution NT$1,095.00 NT$1,755.00 NT$2,500.00

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

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared or are disseminated by Morgan Stanley Asia Limited (which accepts the responsibility for its contents) and/or Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research), and/or Morgan Stanley Taiwan Limited and/or Morgan Stanley & Co International plc, Seoul Branch, and/or Morgan Stanley Australia Limited (A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents), and/or Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents), and/or Morgan Stanley India Company Private Limited having Corporate Identification No (CIN) U22990MH1998PTC115305, regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105); Stock Broker (SEBI Stock Broker Registration No. INZ000244438), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-567-2021) having registered office at Altimus, Level 39 & 40, Pandurang Budhkar Marg, Worli, Mumbai 400018, India; Telephone no. +91-22-61181000; Compliance Officer Details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: tejarshi.hardas@morganstanley.com; Grievance officer details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: msic-compliance@morganstanley.com which accepts the responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research, and their affiliates (collectively, "Morgan Stanley"). Morgan Stanley India Company Private Limited (MSICPL) may use AI tools in providing research services. All recommendations contained herein are made by the duly qualified research analysts.

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/eqr/disclosures/webapp/generalresearch, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Howard Kao; Andy Meng, CFA; Irene Yen.

.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

As of September 30, 2026, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: AAC Technologies Holdings, Accton Technology Corporation, Acer Inc., AirTAC International, Asustek Computer Inc., AU Optronics, Auras Technology Co Ltd, Bizlink, Catcher Technology, Chenbro, Co-Tech Development Corp., Compal Electronics, Delta Electronics Inc., E Ink Holdings Inc., Elite Material Co., Ennostar Inc, Eoptolink Technology Inc Ltd, Fositek Corp, Genius Electronic Optical Co. Ltd., Giga-Byte Technology Co. Ltd., Hiwin Technologies Corp., LandMark Optoelectronics Corporation, Largan Precision, Lens Technology, Lingyi Itech Guangdong Co, Lite-On Technology, Lotes Co. Ltd., Nan Ya PCB, Quectel Wireless Solutions Co Ltd, Sunny Optical, Suzhou TFC Optical Communication Co Ltd., Taiwan Union Technology Corporation, Unimicron, Visual Photonics Epitaxy Co Ltd, Wistron Corporation, Wiwynn Corp, Xiaomi Corp, Yageo Corp., Yangtze Optical Fibre and Cable JSC Ltd, Zhejiang Crystal-Optech Co Ltd, Zhen Ding, Zhongji Innolight Co Ltd, ZTE Corporation.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Asustek Computer Inc., Unimicron, Wistron Corporation, Wiwynn Corp, Zhen Ding, Zhongji Innolight Co Ltd.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Asustek Computer Inc., Lenovo, Unimicron, Wistron Corporation, Wiwynn Corp, Xiaomi Corp, Yageo Corp., Zhen Ding, Zhongji Innolight Co Ltd.

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from AAC Technologies Holdings, Accton Technology Corporation, Acer Inc., Advantech, AirTAC International, Asustek Computer Inc., AU Optronics, Bizlink, Catcher Technology, Chenbro, Compal Electronics, Delta Electronics Inc., E Ink Holdings Inc., Elite Material Co., Ennostar Inc, Eoptolink Technology Inc Ltd, FIT Hon Teng Ltd, Giga-Byte Technology Co. Ltd., Gold Circuit Electronics Ltd., Hon Hai Precision, Innolux, Lenovo, Lens Technology, Lingyi Itech Guangdong Co, Lite-On Technology, Lotes Co. Ltd., Luxshare Precision Industry Co., Ltd., Pegatron Corporation, Q Technology (Group) Company Ltd, Quanta Computer Inc., Shanghai Conant Optical Co Ltd, Shenzhen Transsion Holdings Co Ltd, Suzhou TFC Optical Communication Co Ltd., TCL Corp., Unimicron, Wistron Corporation, Wiwynn Corp, Xiaomi Corp, Yageo Corp., Yangtze Optical Fibre and Cable JSC Ltd, Zhen Ding, Zhongji Innolight Co Ltd.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from AAC Technologies Holdings, Accton Technology Corporation, Acer Inc., Asustek Computer Inc., AU Optronics, BYD Electronics, Compal Electronics, E Ink Holdings Inc., Eoptolink Technology Inc Ltd, Giga-Byte Technology Co. Ltd., GoerTek Inc, Hon Hai Precision, Innolux, Lenovo, Lingyi Itech Guangdong Co, Quanta Computer Inc., Xiaomi Corp, Yageo Corp..

Within the last 12 months, Morgan Stanley has provided or is providing investment banking services to, or has an investment banking client relationship with, the following company: AAC Technologies Holdings, Accton Technology Corporation, Acer Inc., Advantech, AirTAC International, Asustek Computer Inc., AU Optronics, Bizlink, Catcher Technology, Chenbro, Compal Electronics, Delta Electronics Inc., E Ink Holdings Inc., Elite Material Co., Ennostar Inc, Eoptolink Technology Inc Ltd, FIT Hon Teng Ltd, Giga-Byte Technology Co. Ltd., Gold Circuit Electronics Ltd., Hon Hai Precision, Innolux, Lenovo, Lens Technology, Lingyi Itech Guangdong Co, Lite-On Technology, Lotes Co. Ltd., Luxshare Precision Industry Co., Ltd., Pegatron Corporation, Q Technology (Group) Company Ltd, Quanta Computer Inc., Shanghai Conant Optical Co Ltd, Shenzhen Transsion Holdings Co Ltd, Suzhou TFC Optical Communication Co Ltd., TCL Corp., Unimicron, Wistron Corporation, Wiwynn Corp, Xiaomi Corp, Yageo Corp., Yangtze Optical Fibre and Cable JSC Ltd, Zhen Ding, Zhongji Innolight Co Ltd.

Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: AAC Technologies Holdings, Accton Technology Corporation, Acer Inc., Asustek Computer Inc., AU Optronics, BYD Electronics, Compal Electronics, E Ink Holdings Inc., Eoptolink Technology Inc Ltd, Giga-Byte Technology Co. Ltd., GoerTek Inc, Hon Hai Precision, Innolux, Lenovo, Lingyi Itech Guangdong Co, Quanta Computer Inc., Xiaomi Corp, Yageo Corp., Zhen Ding.

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality

of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.
Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.
Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of September 30, 2026)
The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.
For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

	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.

Analyst Stock Ratings

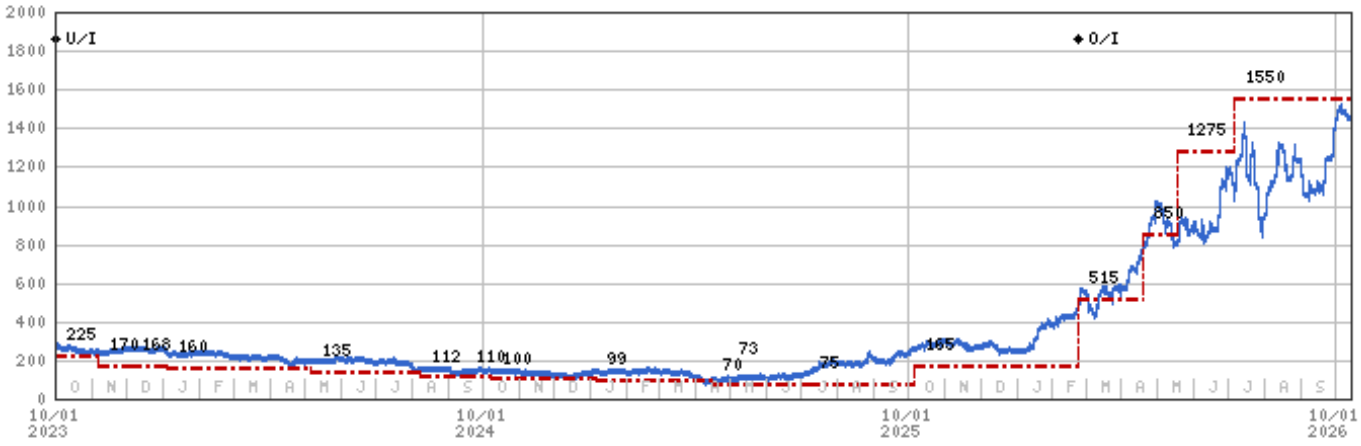
Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
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.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.
Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.
Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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

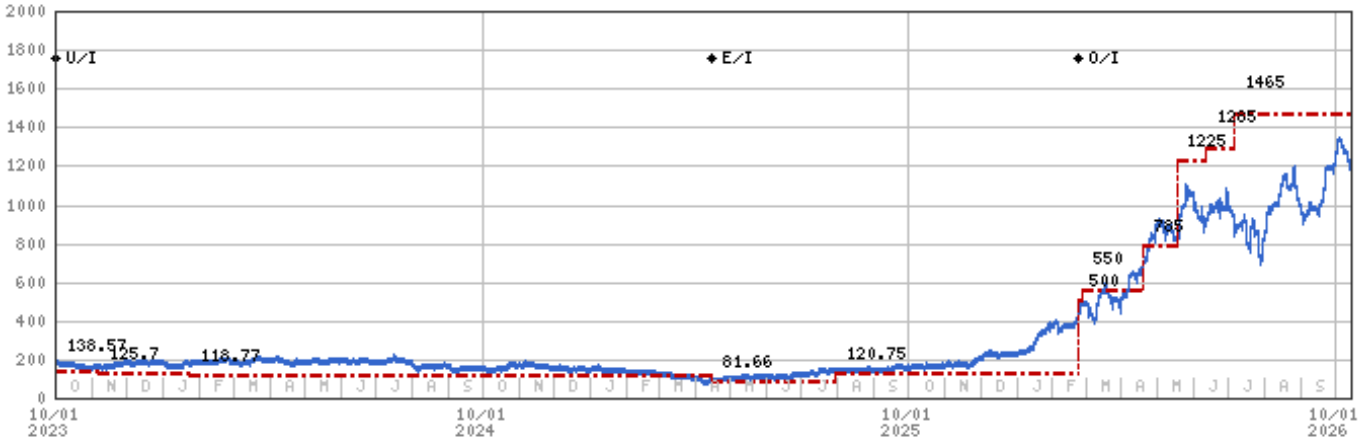
Price Target History: 10/22/21 : 580; 11/9/21 : 630; 2/9/22 : 650; 2/25/22 : 670; 6/1/22 : 420; 8/23/22 : 275; 10/27/22 : 235; 12/21/22 : 180; 2/2/23 : 165; 2/25/23 : 155; 6/7/23 : 225; 11/7/23 : 170; 12/4/23 : 168; 1/4/24 : 160; 5/7/24 : 135; 8/9/24 : 112; 9/15/24 : 110; 10/8/24 : 100; 1/6/25 : 99; 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)

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.

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.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding any material conflict of interest that can reasonably be expected to have influenced Morgan Stanley Smith Barney LLC's choice of a third-party research provider or the subject company of a third-party research report, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures.
For Morgan Stanley specific disclosures, you may refer to https://www.morganstanley.com/eqr/disclosures/webapp/generalresearch.
Each Morgan Stanley research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions.
Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.
Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.
Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.
Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (http://www.morganstanley.com/terms.html). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (http://www.morganstanley.com/terms.html). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html). Please use the provided link to review the Terms and Conditions and Most Important Terms and Conditions for Morgan Stanley India Company Private Limited (https://www.morganstanley.com/assets/pdfs/about-us-global-offices/india/Terms_and_conditions.pdf) and the following link to review the audit report (https://ny.matrix.ms.com/eqr/research/webapp/researchdocs/MSICPL_Morgan_Stanley_Research_Audit_Report.pdf).
If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.
Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.
The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.
The "Important Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.
With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.
Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.
Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.
To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

Certain information in Morgan Stanley Research was sourced by employees of the Shanghai Representative Office of Morgan Stanley Asia Limited for the use of Morgan Stanley Asia Limited. Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V which is regulated by Comision Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Bank Asia Limited; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Bank Asia Limited, Singapore Branch (Registration number T14FC0118J); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited having Corporate Identification No (CIN) U22990MH1998PTC115305, regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105); Stock Broker (SEBI Stock Broker Registration No. INZ000244438), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-567-2021) having registered office at Altimus, Level 39 & 40, Pandurang Budhkar Marg, Worli, Mumbai 400018, India; Telephone no. +91-22-61181000; Compliance Officer Details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: tejarshi.hardas@morganstanley.com; Grievance officer details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: msic-compliance@morganstanley.com. Morgan Stanley India Company Private Limited (MSICPL) may use AI tools in providing research services. All recommendations contained herein are made by the duly qualified research analysts; in Germany and the European Economic Area where required by Morgan Stanley Europe S.E., authorised and regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin) under the reference number 149169; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, disseminates in the UK research that it has prepared, and research which has been prepared by any of its affiliates, only to persons who (i) are investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Order"); (ii) are persons who are high net worth entities falling within Article 49(2)(a) to (d) of the Order; or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000, as amended) may otherwise lawfully be communicated or caused to be communicated. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and A2X (Pty) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. Morgan Stanley Research is disseminated in Canada by Morgan Stanley Canada Limited and Morgan Stanley Wealth Management Canada Inc., members of the Canadian Investment Regulatory Organization (CIRO). The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

Morgan Stanley Hong Kong Securities Limited is the liquidity provider/market maker for securities of AAC Technologies Holdings, BYD Electronics, FIT Hon Teng Ltd, Hon Hai Precision, Kingboard Laminates Holdings Ltd., Lenovo, Lens Technology, Luxshare Precision Industry Co., Ltd., Sunny Optical, Xiaomi Corp, Yangtze Optical Fibre and Cable JSC Ltd, Zhongji Innolight Co Ltd, ZTE Corporation listed on the Stock Exchange of Hong Kong Limited. An updated list can be found on HKEx website: http://www.hkex.com.hk.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA) or by Morgan Stanley & Co. International plc (ADGM Branch), regulated by the Financial Services Regulatory Authority Abu Dhabi (the FSRA), and is directed at Professional Clients only, as defined by the DFSA or the FSRA, respectively. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria of a Professional Client. A distribution of the different MS Research ratings or recommendations, in percentage terms for Investments in each sector covered, is available upon request from your sales representative.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

The issuers and/or fixed income products recommended or discussed in certain fixed income research reports may not be continuously followed. Accordingly, investors should regard those fixed income research reports as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or individual fixed income products.

Morgan Stanley may hold, from time to time, material financial and commercial interests regarding the company subject to the Research report.

Registration granted by SEBI and certification from the National Institute of Securities Markets (NISM) in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

References to any prediction market or event contract do not constitute an offer, solicitation, recommendation, or endorsement to participate in any such market or contract. Morgan Stanley Research may not be distributed or made available in any jurisdiction where such distribution would be unlawful or otherwise prohibited by applicable law.

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

Stock Ratings are subject to change. Please see latest research for each company.
* Historical prices are not split adjusted.

© 2026 Morgan Stanley