

August 9, 2026 08:23 PM GMT

Asia-Pacific Technology | Asia Pacific

Connecting Dots: HK investors' feedback on Asian semis

We have done three days of marketing in Hong Kong for Greater China Semis. We offer key observations within and across other tech sectors. We also present analysis of TSMC CoWoS implied power consumption (in GWs) .

Key Takeaways

- Some investors' interests are moving to "volume plays" if "price hike" momentum slows down.
- We recommend TSMC, ASE, ASM Pacific, MediaTek, Aspeed, Hygon, and Montage as our key OWs in Greater China semis.

Key observations:

1. The ROIC of AI capex is the most important thing to track for future hardware demand
2. While spending continues, how big the "memory cake" should be is a growing debate
3. The implied chip volume vs. electricity consumption (GW) was frequently asked about, suggesting that power supply remains a global bottleneck
4. Memory currently still attracts more attention than logic/computing semis
5. Within memory, we see a split in participation between momentum and value investors
6. What are key stocks to own, if investors' focus shifts from pricing hike to volume play?

Key analysis: TSMC CoWoS vs. GW consumption

- How significant is SpaceX's 8GW data center build in 2027?
- Global CSPs kept raising capex during C2Q26 earnings
- AI investments are paying off, according to CSPs' official comments
- What if memory could consume less of future cloud capex?

MORGAN STANLEY TAIWAN LIMITED+

Charlie Chan

Equity Analyst

Charlie.Chan@morganstanley.com

+886 2 2730-1725

MORGAN STANLEY ASIA LIMITED+

Andy Meng, CFA

Equity Analyst

Andy.Meng@morganstanley.com

+852 2239-7689

MORGAN STANLEY TAIWAN LIMITED+

Derrick Yang

Equity Analyst

Derrick.Yang@morganstanley.com

+886 2 2730-2862

Howard Kao

Equity Analyst

Howard.Kao@morganstanley.com

+886 2 2730-2989

MORGAN STANLEY MUFG SECURITIES CO., LTD. +

Yoshihito Hasegawa

Equity Analyst

Yoshihito.Hasegawa@morganstanleymufg.com

+81 3 6836-8910

Shoji Sato

Equity Analyst

Shoji.Sato@morganstanleymufg.com

+81 3 6836-8404

MORGAN STANLEY & CO. INTERNATIONAL PLC+

Shawn Kim

Equity Analyst

Shawn.Kim@morganstanley.com

+44 20 7677-1018

MORGAN STANLEY TAIWAN LIMITED+

Tiffany Yeh

Equity Analyst

Tiffany.Yeh@morganstanley.com

+886 2 7712-3032

Daniel Yen, CFA

Equity Analyst

Daniel.Yen@morganstanley.com

+886 2 2730-2863

MORGAN STANLEY ASIA LIMITED+

Daisy Dai, CFA

Equity Analyst

Daisy.Dai@morganstanley.com

+852 2848-7310

Ethan Jia

Research Associate

Ethan.Jia@morganstanley.com

+852 3963-2287



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.

Key observations on HK investors' positioning and interests

The ROIC of AI capex is the most important thing to track for future hardware demand

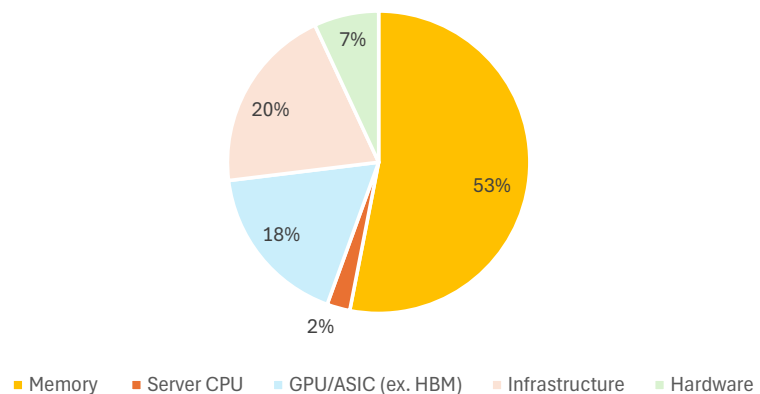
For Greater China Semis, our major underlying assumptions for AI semis come from cloud capex updates ([Exhibit 5](#)) and major CSPs' narratives on RoI ([Exhibit 2](#)). Some HK investors told us that they are tracking the ARR of LLM vendors, on a quarterly or even monthly basis, to make sure the revenue expansion is fast enough to cover the growing capex costs. We alluded to Brian Nowak's recent research: [Internet: The Paths to 25-50% GenAI ROIC \(27 Jul 2026\)](#). And from the recent rise in cloud capex budgets, AI revenue growth, as well as the positive narratives on CSPs' ROIC, we are not worried about overproduction of AI GPUs and ASICs in 2027 – our assessment of TSMC CoWoS capacity implies a 70%-80% Y/Y increase in chip output in 2027.

While spending continues, how big the "memory cake" should be is a growing debate

Some investors even believe that if memory's portion of cloud capex budgets shifts to computing and networking chips, AI capex may generate more computing capacity. In our cloud capex 2027 breakdown analysis ([Exhibit 5](#)), memory accounts for 53% of the budget of US\$1.5tn, while computing (GPUs, ASICs, CPUs) accounts for 20%.

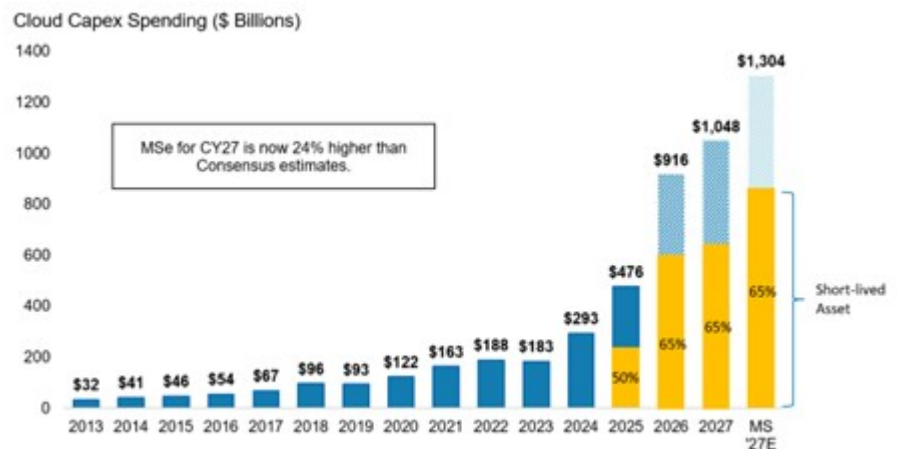
Exhibit 1: 2027 Cloud Capex Breakdown by Using US\$1.5 Trillion as the Total Budget (including sovereign AI)

2027 Cloud Capex Breakdown



Source: Morgan Stanley Research estimates

Exhibit 2: Morgan Stanley cloud capex tracker: we estimate nearly US\$1.3tn of cloud capex in 2027 (top 14 listed global CSPs; no sovereign AI)



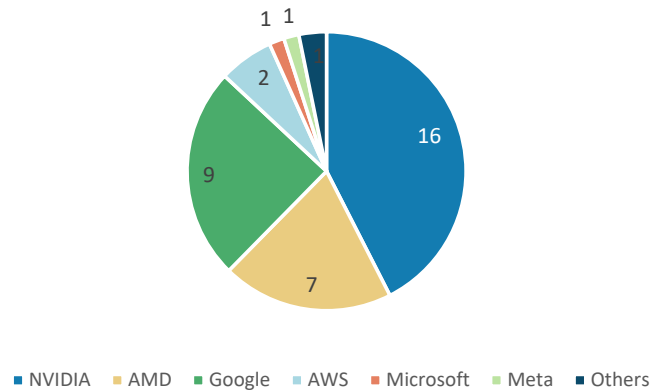
Source: Morgan Stanley Research estimates

The implied chip volume vs. electricity consumption (GW) was frequently asked about, suggesting that power supply remains a global bottleneck

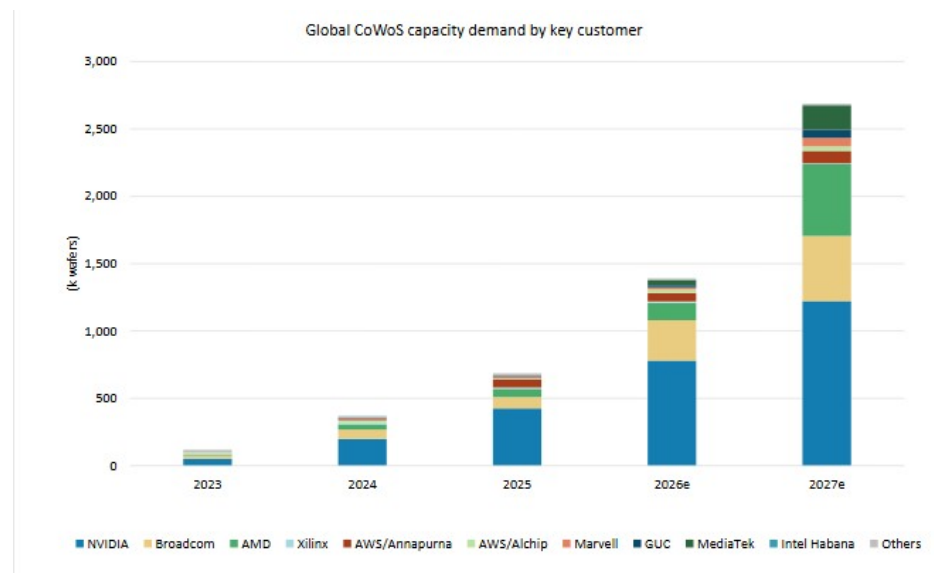
When we showed our 2027 CoWoS implied chip volume (around 19 mn units), investors were concerned about whether there would be sufficient electricity. If each GPU/ASIC's average TDP is 2kw, **it would mean that around 38GW of new electricity** would be needed. Looking at it the other way around, when SpaceX indicated that it would expand its capacity from 2GW by this year-end, to closer to 10GW as an ambitious target (see [SpaceX: Strong Beat/Outlook vs. Higher Capex](#)), we were also asked what that means to TSMC's CoWoS capacity consumption. Of note, Adam Jonas is only modeling in 3 GW of incremental computing – getting to 5 GW by year-end 2027. But just in a rough sense, the additional 8GW would mean around 4mn units of Rubin GPUs or 20% of the AI accelerators that TSMC produces in 2027. See [Exhibit 5](#) and [Exhibit 2](#) for detailed analysis.

Exhibit 3: 2027 GPU/ASIC chip-implied power consumption - 38GW in total

2027 GPU/ASIC total power consumption (GW)



Source: Morgan Stanley Research estimates

Exhibit 4: Global CoWoS consumption into 2027 - around 2mn units of CoWoS wafers to produce 19mn units of AI GPU/ASIC in 2027

Source: Morgan Stanley Research estimates

Memory currently still attracts more attention than logic/computing semis

HK investors were still more interested in the memory stocks than the logic foundries, such as TSMC, ASE, and MediaTek. We believe it is because of more positioning with more volatility in memory stocks. Some investors even stated a belief that **"if memory stocks don't work, logic foundries like TSMC also can't work."** Historically, the logic semi and memory cycles were indeed concurrent, if they shared the same end demand. However, we can sense that this time around, there are memory-specific debates. For example, by sharing the same AI infrastructure, memory is facing more "spec change." For example, we were cross-checked about the Rubin Ultra's HBM spec change and the new Apple iPhone's DRAM density being reduced from 12GB to 9GB. It seems that investors are trying to

figure out whether those spec changes have been caused by shortage or customers' intent to save costs.

Within memory, we see a split in participation between momentum and value investors

In our Asian Tech strategist Shawn Kim's report [Asia Technology: Memory – A Small Wrinkle \(6 Aug 2026\)](#), he focused on the memory trade vs. valuation support. "The sharpest correction in the memory industry to date appears to have ended, shifting focus to buybacks as the next catalyst." We do think that **momentum investors in HK are more conservative on the memory stock price rebound** – they are focusing on secondary derivatives (eg. DRAM price Y/Y change), earnings estimate revision breadth, and spot market trend. For example, when we gave our view about **potential price moderation in Chinese consumer NAND modules into 4Q26**, some investors were concerned that it may affect contract prices in 2027.

However, another camp of memory investors really appreciates the potential cash returns from memory companies. They are willing to use P/E multiples to evaluate the stocks and buy on recent dips.

What are key stocks to own, if investors' focus shifts from pricing hike to volume play?

We are still bullish on commodity semis such as DRAM/NAND and MLCC. However, some momentum investors expect consolidation. Instead, they turned their focus back to **volume plays or business models, technology that can also add value or increase the efficiency of AI infrastructure.**

Key OWs in logic/compute

- We think TSMC's wafer business and ASE's packaging (along with ABF substrates) are the key concepts of volume plays. Otherwise, we continue to like the ASIC story (saving on budgets if successfully executed) and keep **MediaTek as our Top Pick**.
- We also pushed the agentic AI enablers **CPU proxies in Greater China semis**, including Aspeed (server BMC), Hygon (Chinese CPU), GUC (Google Arm-based CPU), and ASE (AMD server CPU).

Our calls in niche memories

- Within niche memory, we prefer DDR4 DRAM (OW Nanya Tech and Winbond) to NAND module makers (EW Phison and Longsys).

Stocks to avoid

- We also suggest avoiding low-end commodity players that may not be able to hike prices successfully – for example, GWC (EW rated) in raw wafers and Silergy (UW rated) in consumer analog.

Key analysis: TSMC CoWoS vs. GW consumption

How significant is SpaceX's 8GW data center build in 2027?

During its earnings call on August 4, SpaceX announced an exclusive commitment to build its future computing capacity on Nvidia's Vera Rubin architecture. The scale is unprecedented: 2 gigawatts (GW) of installed computing by 2026, scaling to around 10 GW by 2027.

If realized, this would represent a substantial expansion in SpaceX's computing footprint and could support increasingly computing-intensive AI workloads across its businesses. The buildout would also create another sizable demand vector for NVIDIA accelerators and the broader AI infrastructure supply chain, including memory, logic wafer supply, networking, power, etc.

If we assume that all of the 8GW of computing will be Vera Rubin in 2027, it would suggest around 400k of CoWoS wafer demand, accounting for close to half of Nvidia Rubin's CoWoS booking in 2027. According to our latest CoWoS forecast, we are expecting around 38GW of computing power to be produced from TSMC, while SpaceX's 8GW plan could account for around 20% of total GPU/ASIC production.

Exhibit 5: Announced power deployment implications for TSMC

GPU/ASIC Vendor	Announced Power Deployment Implication for TSMC				
	NVIDIA (Top US AI firm)	AMD (Top US AI firm)	Broadcom	AWS (Top US AI firm)	Nvidia (SpaceX)
Power Deployed (GW)	10	6	3.5	2	8
Rack name	Vera Rubin NVL144	Helios	TPU	Trainium3 UltraServers	Vera Rubin NVL144
Power consumption per Rack (kW)	220	220	63	144	220
Rack Number (k units)	45	27	56	14	36
Chip Name	Rubin GPU	MI455 GPU	TPUv7 (Ironwood) TPUv8i (Sunfish)	Trainium3 (4)	Rubin GPU
Chip Volume (k units)	3,273	1,964	3,571	2,000	2,618
Life Cycle for the project	3	3	5	8	1
Implied life-cycle CoWoS Volume (k wafers)	409	166	260	118	409
Implied life-cycle 2/3nm wafer Volume (k wafers)	260	95	190	107	208
2027 annual CoWoS demand (k wafers)	136	55	52	15	409

Source: Company Data, Morgan Stanley Research estimates

Global CSPs kept raising capex during C2Q26 earnings

CSP capex continues to move higher as hyperscalers lean into AI infrastructure buildout amid sustained demand and ongoing capacity constraints. Recent guidance revisions from Amazon, Alphabet, and Meta point to a higher-for-longer investment cycle, while Microsoft's underlying infrastructure spending remains elevated despite accounting-related changes in reported capex.

The key investor debate is increasingly shifting from whether AI demand is real to whether incremental returns can keep pace with the magnitude of capital deployment. For now, management commentary suggests that confidence remains high, with capacity largely being absorbed as it comes online, but the rising spending profile raises the bar for future cloud growth, AI monetization, and free cash flow conversion.

AI investments are paying off, according to CSPs' official comments

During those CSPs' earnings calls, commentary continued to support the view that rising AI capex is increasingly underwritten **by visible monetization rather than purely speculative demand**. Below are key comments from those CSPs.

Meta: Mark Zuckerberg said “these AI investments are paying off” in the core ads business. More importantly for the forward ROI debate, he argued that there should be “a significantly higher margin on selling intelligence rather than selling compute directly. But think that **there's a big opportunity obviously to sell compute as well**” and “quite optimistic to see meaningful growth in all of these areas.”

Google: On the capex/ROI question, CFO Anat Ashkenazi said the objective is to “invest as long as we see an attractive return on that investment.” CEO Pichai added that Alphabet has become **more bullish on the AI opportunity over the past year**, citing stronger consumer, enterprise and developer momentum.

Amazon: Amazon disclosed that AWS's AI revenue run-rate is now above US\$25bn and growing at triple-digit rates YoY, after rising significantly QoQ. Amazon also said that AI and traditional/core AWS workloads are increasingly reinforcing each other's growth.

Microsoft:- CFO Amy Hood said, “Customer demand continues to exceed available capacity” and that incremental Azure capacity was “**quickly monetized.**”

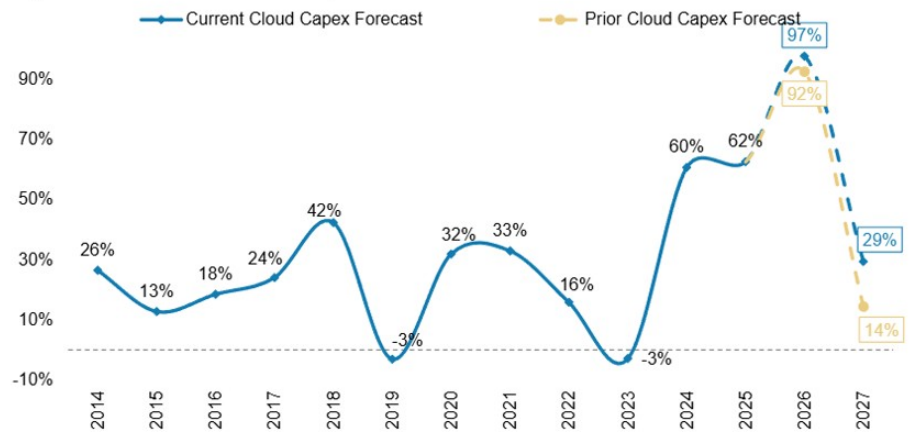
Exhibit 6: Consensus CY27 capex just increased by 70%+ (or ~\$500bn) YTD, which makes us believe that as long as the qualitative commentary on cloud spending stays robust, there likely will be further increases in CY27 capex

Company	Current CY27 Capex	CY27 Capex Pre-2Q Earnings	CY27 Capex Beginning of 2026	CY26 Capex Beginning of 2026	% Change vs. Pre-4Q Earnings	\$ Change vs. Pre-4Q Earnings	% Change vs. Beginning of 2026	\$ Change vs. Beginning of 2026
Google	\$297.3	\$256.9	\$129.4	\$114.3	15.7%	\$40.4	129.8%	\$167.9
Amazon	\$253.7	\$231.5	\$160.5	\$145.4	9.6%	\$22.2	58.1%	\$93.3
Microsoft	\$204.4	\$198.2	\$120.1	\$107.4	3.1%	\$6.2	70.2%	\$84.3
Meta Platforms	\$206.9	\$171.5	\$122.0	\$109.0	20.6%	\$35.4	69.6%	\$84.9
Alibaba	\$21.5	\$21.4	\$18.5	\$17.8	0.4%	\$0.1	16.4%	\$3.0
Tencent	\$21.6	\$21.5	\$15.6	\$14.1	0.4%	\$0.1	39.1%	\$6.1
Baidu	\$2.4	\$2.3	\$1.6	\$1.6	2.2%	\$0.1	46.2%	\$0.7
CoreWeave*	\$39.9	\$39.3	\$22.3	\$26.7	1.6%	\$0.6	79.0%	\$17.6
Nebius	\$26.4	\$26.5	\$15.4	\$11.5	(0.4%)	(\$0.1)	71.7%	\$11.0
IREN	\$6.3	\$6.5	\$5.3	\$5.1	(4.5%)	(\$0.3)	18.7%	\$1.0
Tesla	\$22.7	\$21.2	\$12.2	\$11.1	7.2%	\$1.5	85.5%	\$10.5
Apple	\$14.2	\$13.7	\$15.3	\$14.4	3.2%	\$0.4	(7.2%)	-\$1.1
IBM	\$1.5	\$1.6	\$1.6	\$1.6	(6.6%)	(\$0.1)	(7.0%)	-\$0.1
Oracle	\$97.4	\$92.2	\$64.3	\$53.2	5.7%	\$5.3	51.4%	\$33.1
Total	\$1,216.1	\$1,104.3	\$703.9	\$633.2	10.1%	\$111.8	72.8%	\$512.2
Total ex-Amazon	\$962.4	\$872.8	\$543.5	\$487.8	10.3%	\$89.5	77.1%	\$418.9

Source: Company data, FactSet, Morgan Stanley Research. Note: Using 5/13/2025 CRVW estimates for 'beginning of 2025' and 'a year ago' as CRVW went public in March 2025.

Exhibit 7: Following US hyperscalers' C2Q26 earnings, our cloud capex tracker is now pointing to 29% Y/Y in 2027, up 15 points from the prior forecast of +14% Y/Y about a month ago

Top 14 Cloud Providers: Cloud Capex Y/Y Growth



Source: Company data, FactSet, Morgan Stanley US Research. Note: Cloud capex includes capex from Alphabet, Amazon, Microsoft, Meta Platforms, Alibaba, Tencent, Baidu, CoreWeave, Nebius, IREN, Tesla, Apple, IBM, and Oracle. We started to include NVIS from 2023, and CRWW/IREN from 2024.

What if memory could consume less of future cloud capex?

Assuming 2027 global cloud capex from major CSPs reaches US\$1.5trn, we expect the mix to remain heavily skewed toward memory and accelerated-computing infrastructure, underscoring the increasingly hardware-intensive nature of AI investment. Memory represents the largest component at >50% of total spending in our view, reflecting the growing importance of HBM and other high-bandwidth memory technologies with high ASP driven by severe supply shortage.

GPU/ASIC spending excluding HBM accounts for 15–20%, while infrastructure contributes 20%, highlighting substantial investment in data center buildout, power, cooling, and networking. Although current server CPU exposure remains relatively low, we believe it will also enjoy rapid growth in the following years given strong agentic AI demand.

However, the current capex mix is heavily influenced by elevated memory pricing. If memory prices normalize from current levels, we believe CSPs could reallocate a greater share of budgets toward GPUs/ASICs and server CPUs, allowing the **same overall capex envelope to support more computing capacity**. In this scenario, lower memory costs could effectively improve the purchasing power of cloud capex and potentially accelerate deployment of incremental AI computing.

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: Charlie Chan; Daisy Dai, CFA; Yoshihito Hasegawa; Howard Kao; Shawn Kim; Andy Meng, CFA; Shoji Sato; Derrick Yang; Tiffany Yeh; Daniel Yen, CFA.

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/conflictolicies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

As of July 31, 2026, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: ACM Research Inc, Advanced Micro-Fabrication Equipment Inc, Advanced Wireless Semiconductor Co, Alchip Technologies Ltd, AllRing Tech Co., AP Memory Technology Corp, ASE Technology Holding Co. Ltd., ASMPT Ltd, Aspeed Technology, Cambricon Technology Corporation, Fadu Inc, GigaDevice Semiconductor Beijing Inc, GlobalWafers Co Ltd, Gudeng Precision, Hangzhou Silan Microelectronics Co. Ltd., Hua Hong Semiconductor Ltd, Isu Petasys Co. Ltd., King Yuan Electronics Co Ltd, Leeno Industrial Inc., LG Display, LG Innotek, Macronix International Co Ltd, MediaTek, Montage Technology Co Ltd, NAURA Technology Group Co Ltd, Nuvoton Technology Corporation, Phison Electronics Corp, Powerchip Semiconductor Manufacturing Co, Samsung Electro-Mechanics, SG Micro Corp., Shanghai Fudan Microelectronics, Silergy Corp., Silicon Motion, SK hynix, SK Square Co Ltd., StarPower Semiconductor Ltd, TSMC, UMC, Vanguard International Semiconductor, WIN Semiconductors Corp, Winbond Electronics Corp, WinWay Technology Co Ltd, Wonik IPS Co Ltd, WPG Holdings, WT Microelectronics Co. Ltd.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Alchip Technologies Ltd, Iluvatar CoreX Semiconductor Co., Ltd., LG Electronics, Montage Technology Co Ltd, Powerchip Semiconductor Manufacturing Co, Samsung Electronics, SK hynix.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from ASMPT Ltd, Iluvatar CoreX Semiconductor Co., Ltd., LG Electronics, Montage Technology Co Ltd, Powerchip Semiconductor Manufacturing Co, Samsung Electronics, SK hynix.

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Advanced Micro-Fabrication Equipment Inc, Alchip Technologies Ltd, AP Memory Technology Corp, ASE Technology Holding Co. Ltd., ASMedia Technology Inc, ASMPT Ltd, Aspeed Technology, Espressif Systems, GigaDevice Semiconductor Beijing Inc, GlobalWafers Co Ltd, Gudeng Precision, HD Hyundai Electric Co Ltd, Himax Technologies Inc, Hua Hong Semiconductor Ltd, Iluvatar CoreX Semiconductor Co., Ltd., Innoscience, King Yuan Electronics Co Ltd, LG Display, LG Electronics, Macronix International Co Ltd, MediaTek, MetaX Integrated Circuits, Montage Technology Co Ltd, Novatek, Phison Electronics Corp, Powerchip Semiconductor Manufacturing Co, Realtek Semiconductor, Samsung Electronics, SG Micro Corp., Shenzhen Longsys Electronics Co Ltd, SICC Co Ltd, Silergy Corp., Silicon Motion, SK hynix, SK Square Co Ltd., TSMC, UMC, Universal Scientific Ind. (Shanghai), Vanguard International Semiconductor, Winbond Electronics Corp, WinWay Technology Co Ltd, WPG Holdings, WT Microelectronics Co. Ltd.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from ASE Technology Holding Co. Ltd., King Yuan Electronics Co Ltd, MediaTek, Nanya Technology Corp., Novatek, Nuvoton Technology Corporation, Realtek Semiconductor, Samsung Electronics, Silicon Motion, SMIC, TSMC, UMC, Universal Scientific Ind. (Shanghai), Winbond Electronics Corp, WT Microelectronics Co. Ltd..

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: Advanced Micro-Fabrication Equipment Inc, Alchip Technologies Ltd, AP Memory Technology Corp, ASE Technology Holding Co. Ltd., ASMedia Technology Inc, ASMPT Ltd, Aspeed Technology, Espressif Systems, GigaDevice Semiconductor Beijing Inc, GlobalWafers Co Ltd, Gudeng Precision, HD Hyundai Electric Co Ltd, Himax Technologies Inc, Hua Hong Semiconductor Ltd, Iluvatar CoreX Semiconductor Co., Ltd., Innoscience, King Yuan Electronics Co Ltd, LG Display, LG Electronics, Macronix International Co Ltd, MediaTek, MetaX Integrated Circuits, Montage Technology Co Ltd, Novatek, Phison Electronics Corp, Powerchip Semiconductor Manufacturing Co, Realtek Semiconductor, Samsung Electronics, SG Micro Corp., Shenzhen Longsys Electronics Co Ltd, SICC Co Ltd, Silergy Corp., Silicon Motion, SK hynix, SK Square Co Ltd., TSMC, UMC, Universal Scientific Ind. (Shanghai), Vanguard International Semiconductor, Winbond Electronics Corp, WinWay Technology Co Ltd, WPG Holdings, WT Microelectronics 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: ASE Technology Holding Co. Ltd., Iluvatar CoreX Semiconductor Co., Ltd., King Yuan Electronics Co Ltd, MediaTek, Montage

Technology Co Ltd, Nanya Technology Corp., Novatek, Nuvoton Technology Corporation, Realtek Semiconductor, Samsung Electronics, Silicon Motion, SK hynix, SMIC, TSMC, UMC, Universal Scientific Ind. (Shanghai), Winbond Electronics Corp, WT Microelectronics Co. Ltd.

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 July 31, 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.

Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1529	42%	442	47%	29%	750	43%
Equal-weight/Hold	1582	43%	396	42%	25%	773	44%
Not-Rated/Hold	3	0%	1	0%	33%	1	0%
Underweight/Sell	560	15%	97	10%	17%	217	12%
Total	3,674		936			1741	

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.

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 Comisión 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 T14FC0118); 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 Canada by Morgan Stanley Canada Limited; 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 14-9169; 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. 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 ASMP Ltd, GigaDevice Semiconductor Beijing Inc, Hua Hong Semiconductor Ltd, Montage Technology Co Ltd 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 following companies do business in countries which are generally subject to comprehensive sanctions programs administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC") and by other countries and multi-national bodies: Samsung Electronics.

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.

INDUSTRY COVERAGE: S. Korea Technology

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/07/2026)
Ryan Kim		
Fadu Inc (440110.KQ)	O (09/21/2025)	W57,100

Hanmi Semiconductor Co. Ltd. (042700.KS)	E (07/22/2026)	W192,300
HD Hyundai Electric Co Ltd (267260.KS)	O (03/25/2025)	W762,000
Isu Petasys Co. Ltd. (007660.KS)	O (02/03/2025)	W82,300
Leeno Industrial Inc. (058470.KQ)	O (04/03/2025)	W65,700
Lotte Energy Materials Corp (020150.KS)	U (04/03/2025)	W30,600
LS Electric (010120.KS)	O (01/22/2026)	W201,000
SK Square Co Ltd. (402340.KS)	O (05/06/2026)	W939,000
Wonik IPS Co Ltd (240810.KQ)	O (08/08/2025)	W88,300
Shawn Kim		
LG Display (034220.KS)	E (06/11/2025)	W9,770
LG Electronics (066570.KS)	E (04/07/2025)	W185,000
LG Innotek (011070.KS)	E (03/12/2025)	W552,000
Samsung Electro-Mechanics (009150.KS)	O (07/31/2025)	W1,278,000
Samsung Electronics (005935.KS)	O (11/18/2019)	W170,100
Samsung Electronics (005930.KS)	O (11/18/2019)	W231,000
SK hynix (000660.KS)	O (09/21/2025)	W1,422,000

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.

INDUSTRY COVERAGE: Greater China Technology Semiconductors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/07/2026)
Charlie Chan		
ACM Research Inc (ACMR.O)	O (03/07/2023)	US\$83.80
Advanced Micro-Fabrication Equipment Inc (688012.SS)	O (11/06/2023)	Rmb367.65
Advanced Wireless Semiconductor Co (8086.TWO)	U (07/14/2025)	NT\$111.50
Alchip Technologies Ltd (3661.TW)	O (05/14/2021)	NT\$3,715.00
ASE Technology Holding Co. Ltd. (3711.TW)	O (09/15/2024)	NT\$585.00
Cambricon Technology Corporation (688256.SS)	O (04/27/2026)	Rmb1,199.93
Global Unichip Corp (3443.TW)	O (06/24/2026)	NT\$4,545.00
GlobalWafers Co Ltd (6488.TWO)	E (05/19/2026)	NT\$872.00
Gudeng Precision (3680.TWO)	O (11/25/2025)	NT\$438.50
Hua Hong Semiconductor Ltd (1347.HK)	E (03/12/2026)	HK\$141.20
Iluvatar CoreX Semiconductor Co., Ltd. (9903.HK)	O (04/27/2026)	HK\$478.40
King Yuan Electronics Co Ltd (2449.TW)	O (03/03/2023)	NT\$242.00
Maxscend Microelectronics Co Ltd (300782.SZ)	U (01/11/2021)	Rmb78.02
MediaTek (2454.TW)	O (11/28/2025)	NT\$3,900.00
MetaX Integrated Circuits (688802.SS)	E (04/27/2026)	Rmb729.08
Nanya Technology Corp. (2408.TW)	O (05/28/2026)	NT\$457.00
NAURA Technology Group Co Ltd (002371.SZ)	O (11/06/2023)	Rmb751.99
OmniVision Integrated Circuits Group Inc (603501.SS)	E (11/17/2025)	Rmb89.76
Phison Electronics Corp (8299.TWO)	E (02/25/2026)	NT\$2,020.00
SG Micro Corp. (300661.SZ)	E (11/03/2025)	Rmb111.68
Silergy Corp. (6415.TW)	U (05/19/2026)	NT\$441.50
SMIC (0981.HK)	O (10/21/2025)	HK\$66.90
TSMC (2330.TW)	O (02/07/2022)	NT\$2,370.00
UMC (2303.TW)	O (05/19/2026)	NT\$116.00
Vanguard International Semiconductor (5347.TWO)	E (01/14/2026)	NT\$143.50
WIN Semiconductors Corp (3105.TWO)	U (07/14/2025)	NT\$366.00
Daisy Dai, CFA		
ASMPT Ltd (0522.HK)	O (07/24/2025)	HK\$161.60
China Resources Microelectronics Limited (688396.SS)	U (03/02/2026)	Rmb61.21
Empyrean Technology Co Ltd (301269.SZ)	E (01/17/2025)	Rmb94.69
Hangzhou Silan Microelectronics Co. Ltd. (600460.SS)	U (08/25/2025)	Rmb32.55
Hygon Information Technology Co., Ltd. (688041.SS)	O (07/03/2026)	Rmb295.75

Innoscence (2577.HK)	E (10/13/2025)	HK\$44.92
JCET Group Co Ltd (600584.SS)	E (01/16/2026)	Rmb77.75
Shanghai Fudan Microelectronics (1385.HK)	O (03/07/2025)	HK\$26.98
SICC Co Ltd (688234.SS)	O (03/20/2026)	Rmb102.49
StarPower Semiconductor Ltd (603290.SS)	E (05/14/2026)	Rmb88.53
Unigroup Guoxin Microelectronics Co Ltd (002049.SZ)	U (01/10/2023)	Rmb67.22
Universal Scientific Ind. (Shanghai) (601231.SS)	O (11/05/2025)	Rmb27.61
Yangjie Technology (300373.SZ)	O (06/10/2022)	Rmb96.93
Daniel Yen, CFA		
AP Memory Technology Corp (6531.TW)	O (07/11/2025)	NT\$951.00
ASMedia Technology Inc (5269.TW)	U (10/03/2025)	NT\$1,400.00
Aspeed Technology (5274.TWO)	O (06/09/2025)	NT\$16,345.00
Egis Technology Inc (6462.TWO)	E (01/28/2026)	NT\$99.60
Elan Microelectronics Corp (2458.TW)	O (10/03/2025)	NT\$141.50
Espressif Systems (688018.SS)	O (05/15/2023)	Rmb112.06
GigaDevice Semiconductor Beijing Inc (603986.SS)	O (05/15/2025)	Rmb417.05
Macronix International Co Ltd (2337.TW)	O (09/18/2025)	NT\$121.50
Montage Technology Co Ltd (6809.HK)	O (03/18/2026)	HK\$269.20
Montage Technology Co Ltd (688008.SS)	O (03/18/2026)	Rmb215.52
Novatek (3034.TW)	U (02/04/2026)	NT\$542.00
Nuvoton Technology Corporation (4919.TW)	U (11/10/2025)	NT\$120.00
Parade Technologies Ltd (4966.TWO)	O (05/27/2026)	NT\$598.00
Powerchip Semiconductor Manufacturing Co (6770.TW)	O (10/27/2025)	NT\$65.50
Realtek Semiconductor (2379.TW)	E (01/30/2026)	NT\$750.00
Shenzhen Goodix Technology Co Ltd (603160.SS)	U (07/14/2025)	Rmb52.09
Winbond Electronics Corp (2344.TW)	O (05/28/2026)	NT\$163.50
WPG Holdings (3702.TW)	O (03/16/2026)	NT\$122.50
WT Microelectronics Co. Ltd. (3036.TW)	O (01/27/2026)	NT\$211.50
Duan Liu		
Dosilicon Co Ltd (688110.SS)	U (09/06/2024)	Rmb115.98
Shenzhen Longsys Electronics Co Ltd (301308.SZ)	E (02/25/2026)	Rmb386.60
Tiffany Yeh		
AllRing Tech Co. (6187.TWO)	O (09/23/2025)	NT\$1,130.00
FOCI Fiber Optic Communications Inc (3363.TWO)	O (01/15/2025)	NT\$582.00
Himax Technologies Inc (HIMX.O)	E (02/04/2026)	US\$14.61
Hon Precision (7769.TW)	O (04/17/2026)	NT\$6,320.00
MPI Corporation (6223.TWO)	O (04/17/2026)	NT\$6,100.00
Silicon Motion (SIMO.O)	O (05/06/2024)	US\$256.12
WinWay Technology Co Ltd (6515.TW)	O (04/17/2026)	NT\$6,760.00

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.