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Mandarin Sound Bites | Asia Pacific

亚洲科技行业：NAND——重大升级

虽然现在去估算AI对存储芯片市场的影响还为时尚早，但我们已经能够清晰地看到AI数据中心因为存储容量和耗电量的需求为NAND带来的新的增长动力。



This audio/video report is made available for convenience only and is based on the referenced research report(s) Asia Technology: NAND – Time For A Major Upgrade (15 Apr 2024). In the event of any discrepancy between the content in this report and the referenced research report(s), the content in the referenced research report(s) will prevail.

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韩国科技行业
Asia Pacific
行业观点 **Attractive**





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Valuation Methodology and Risks

SK hynix (000660.KS)

Base case, residual income model. We assume a cost of equity of 10.5% (4% risk-free rate, 6.5% risk premium, 1.0 beta) and a terminal growth rate of 5%.

Risks to Upside

- DRAM and NAND pricing increases more than expected.
- AI-induced demand for HBM, DRAM and NAND by hyperscalers stronger than expected.
- Edge AI memory content growth accelerates.

Risks to Downside

- End demand may turn weaker than expected.
- Rising competition for DDR5 may result in overspending on the supply side.
- Inventories remain elevated at cloud and Chinese smartphone customers.

Tokyo Electron (8035.T)

P/E is calculated using the average forward P/E based on next-FY estimates during the previous cycle recovery phase (August 2019 to May 2022), which is 20.0x, and adjusting for an additional average 1.5% of annual sales growth if a 35% share of etchers is achieved by 2035 brings this to 28.5x. Our EPS estimate base year is F3/26 (¥1,616.2).

Risks to Upside

- Surpassing expectations, smartphone demand recovers, driving semiconductor demand. Manufacturers invest in flash memory and adopt cryo-etching equipment for mass production

Risks to Downside

- US-China trade tensions restrict export of semiconductor manufacturing equipment to China, competitors release competitive cryo-etcher products, reduction of coater developer market with dry resist technology adoption.

群联 (8299.TWO)

Base case, residual income model. Key assumptions: a cost of equity of 9.0%, a medium-term growth rate of 6.5%, payout ratio of 40%, and a terminal growth rate of 4.0%.

Risks to Upside

- Faster-than-expected eMMC controller IC outsourcing rate
- Faster SSD market growth
- Market share gain in ultrabooks and SSDs

Risks to Downside

- Weaker-than expected NAND demand
- Milder impact on global NAND supply
- Non-acceptance of price hikes on NAND modules

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(as of March 31, 2024)

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1458	38%	319	44%	22%	639	40%
Equal-weight/Hold	1730	45%	328	46%	19%	722	45%
Not-Rated/Hold	2	0%	0	0%	0%	1	0%
Underweight/Sell	625	16%	70	10%	11%	232	15%
Total	3,815		717			1594	

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

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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.

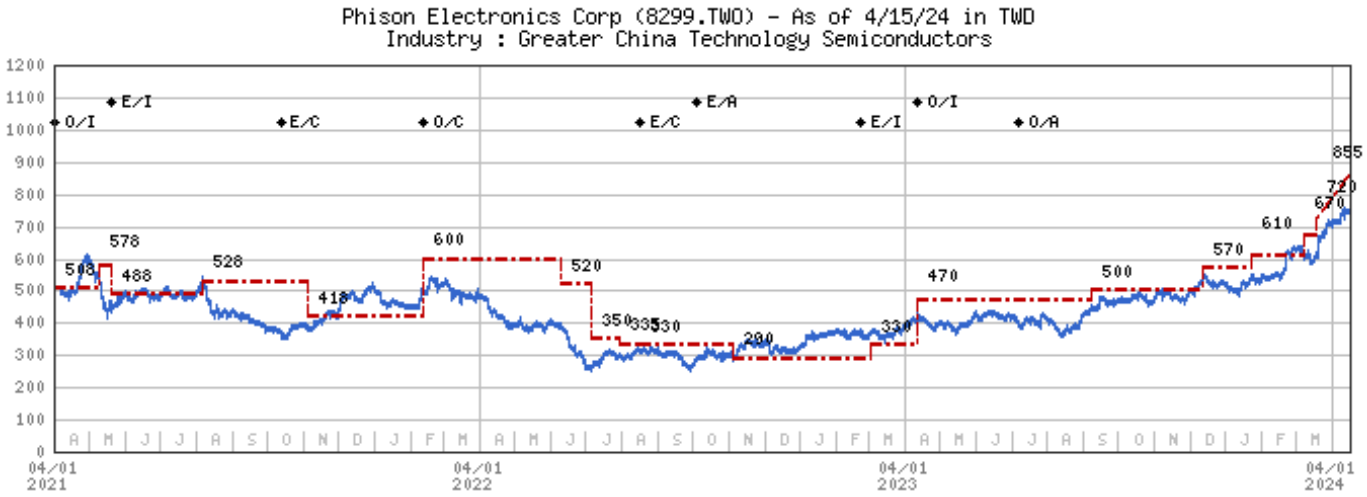
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Stock Price, Price Target and Rating History (See Rating Definitions)

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Stock Rating History: 4/1/19 : E/C; 5/21/19 : O/C; 9/5/19 : O/I; 12/4/19 : O/A; 4/23/20 : O/I; 5/20/21 : E/I; 10/12/21 : E/C; 2/11/22 : O/C; 8/16/22 : E/C; 10/4/22 : E/A; 2/22/23 : E/I; 4/11/23 : O/I; 7/7/23 : O/A

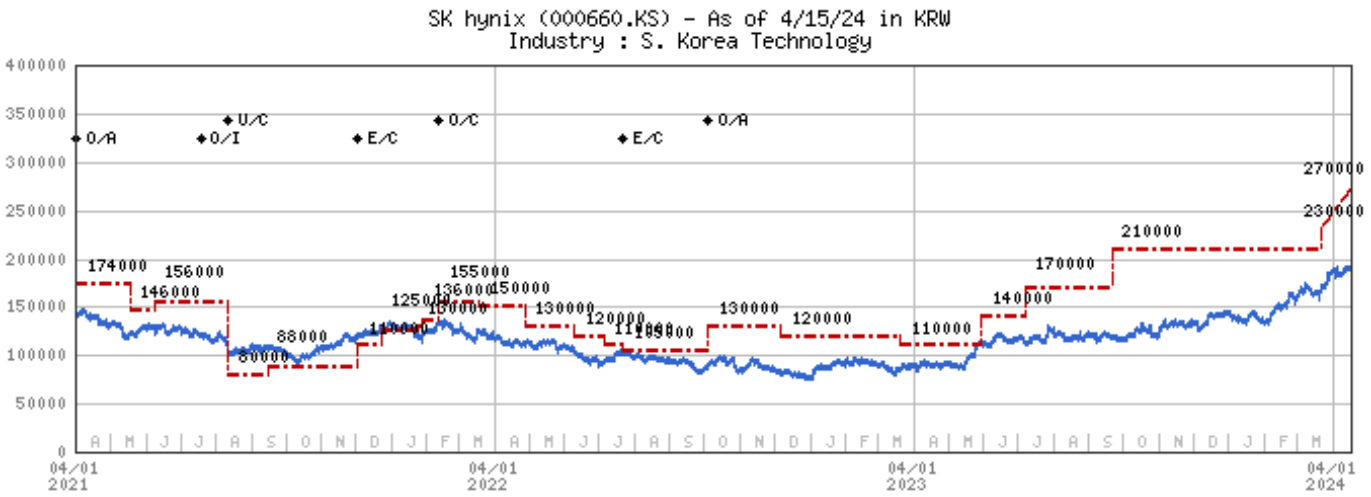
Price Target History: 3/27/19 : 269; 5/21/19 : 306; 6/27/19 : 319; 7/30/19 : 359; 1/8/20 : 388; 3/20/20 : 298; 5/13/20 : 310; 7/8/20 : 349; 10/22/20 : 360; 11/12/20 : 380; 2/16/21 : 460; 2/25/21 : 508; 5/10/21 : 578; 5/20/21 : 488; 8/6/21 : 528; 11/5/21 : 418; 2/11/22 : 600; 6/10/22 : 520; 7/5/22 : 350; 7/30/22 : 335; 8/16/22 : 330; 11/4/22 : 290; 3/2/23 : 330; 4/11/23 : 470; 9/8/23 : 500; 12/13/23 : 570; 1/23/24 : 610; 3/8/24 : 670; 3/19/24 : 720; 4/16/24 : 855

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)
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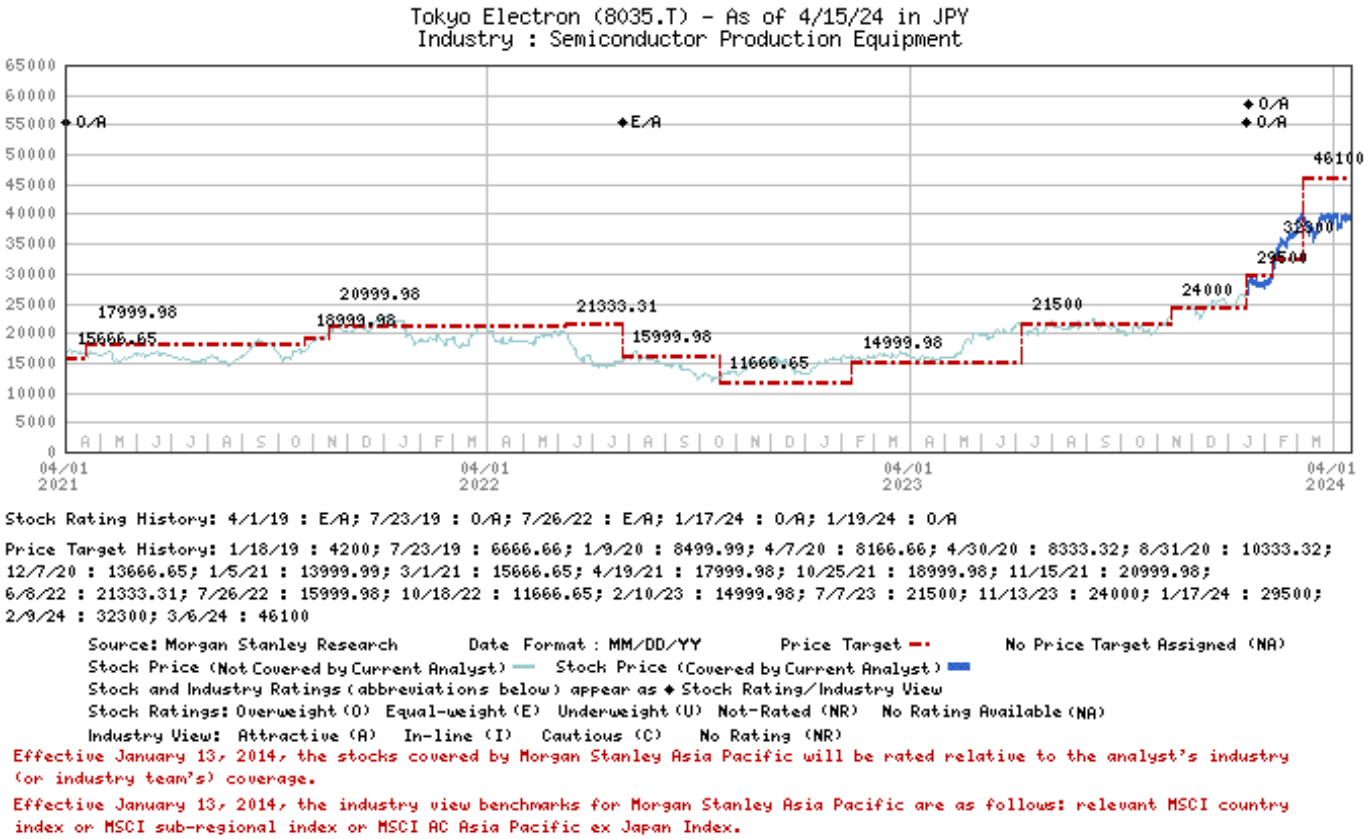
Price Target History: 3/3/19 : 60000; 4/25/19 : 70000; 6/4/19 : 61000; 7/25/19 : 70000; 7/30/19 : 85000; 8/16/19 : 80000; 9/10/19 : 81000; 11/18/19 : 95000; 1/14/20 : 115000; 2/26/20 : 120000; 3/19/20 : 110000; 8/21/20 : 93000; 10/23/20 : 100000; 12/2/20 : 160000; 1/12/21 : 170000; 2/25/21 : 174000; 5/18/21 : 146000; 6/8/21 : 156000; 8/12/21 : 80000; 9/15/21 : 88000; 12/3/21 : 110000; 12/23/21 : 125000; 1/24/22 : 130000; 1/28/22 : 136000; 2/11/22 : 155000; 3/18/22 : 150000; 4/27/22 : 130000; 6/10/22 : 120000; 7/5/22 : 110000; 7/22/22 : 105000; 10/4/22 : 130000; 12/7/22 : 120000; 3/21/23 : 110000; 5/30/23 : 140000; 7/7/23 : 170000; 9/21/23 : 210000; 3/22/24 : 230000; 4/16/24 : 270000

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

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INDUSTRY COVERAGE: S. Korea Technology

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/15/2024)
Ryan Kim		
Duk San Neolux Co Ltd (213420.KQ)	E (01/12/2023)	W38,800
Ecopro BM (247540.KQ)	U (03/20/2023)	W228,000
Fadu Inc (440110.KQ)	E (11/09/2023)	W19,830
L&F Co Ltd (066970.KS)	O (02/22/2024)	W151,000
Lotte Energy Materials Corp (020150.KS)	E (04/10/2024)	W43,350
POSCO FUTURE M (003670.KS)	O (06/12/2023)	W264,000
SK IE Technology (361610.KS)	E (02/02/2024)	W62,700
Solus Advanced Materials Co Ltd (336370.KS)	U (10/31/2022)	W17,800
Wonik IPS Co Ltd (240810.KQ)	O (09/07/2020)	W38,900
Shawn Kim		
LG Display (034220.KS)	O (01/08/2024)	W10,000
LG Electronics (066570.KS)	O (01/04/2022)	W92,500
LG Innotek (011070.KS)	E (07/19/2021)	W196,700
Samsung Electro-Mechanics (009150.KS)	O (11/09/2022)	W152,000
Samsung Electronics (005935.KS)	O (11/18/2019)	W67,800
Samsung Electronics (005930.KS)	O (11/18/2019)	W82,200
Samsung SDI (006400.KS)	E (10/26/2021)	W394,000
Samsung SDS (018260.KS)	U (01/06/2022)	W147,900
Seoul Semiconductor (046890.KQ)	U (04/04/2018)	W9,630
SK hynix (000660.KS)	O (10/04/2022)	W188,200

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* (04/15/2024)
Charlie Chan		
ACM Research Inc (ACMR.O)	O (03/07/2023)	US$28.21

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Advanced Micro-Fabrication Equipment Inc (688012.SS)	O (11/06/2023)	Rmb146.49
Alchip Technologies Ltd (3661.TW)	O (05/14/2021)	NT$2,755.00
Andes Technology Corp (6533.TW)	O (08/04/2022)	NT$406.50
ASE Technology Holding Co. Ltd. (3711.TW)	O (07/07/2023)	NT$160.00
Jiangsu Changjiang Electronics Tech (600584.SS)	E (07/07/2023)	Rmb25.74
Maxscend Microelectronics Co Ltd (300782.SZ)	U (01/11/2021)	Rmb93.10
MediaTek (2454.TW)	O (09/12/2023)	NT$1,110.00
Nanya Technology Corp. (2408.TW)	U (11/06/2023)	NT$70.00
Phison Electronics Corp (8299.TWO)	O (04/11/2023)	NT$741.00
Silergy Corp. (6415.TW)	U (05/20/2021)	NT$396.50
SMIC (0981.HK)	U (02/22/2023)	HK$14.52
TSMC (2330.TW)	O (02/07/2022)	NT$806.00
UMC (2303.TW)	O (09/14/2020)	NT$51.60
Universal Scientific Ind. (Shanghai) (601231.SS)	O (08/04/2015)	Rmb13.74
Vanguard International Semiconductor (5347.TWO)	U (09/21/2022)	NT$84.90
Will Semiconductor Co Ltd Shanghai (603501.SS)	O (07/07/2023)	Rmb96.29
WIN Semiconductors Corp (3105.TWO)	E (12/04/2023)	NT$147.00
Daisy Dai, CFA		
Empyrean Technology Co Ltd (301269.SZ)	O (06/26/2023)	Rmb81.57
Hangzhou Silan Microelectronics Co. Ltd. (600460.SS)	E (04/09/2024)	Rmb18.69
Shanghai Anlogic Infotech Co Ltd (688107.SS)	U (01/25/2024)	Rmb22.76
Shanghai Fudan Microelectronics (1385.HK)	E (10/18/2022)	HK$9.72
Suzhou Everbright Photonics (688048.SS)	U (11/30/2023)	Rmb36.18
Unigroup Guoxin Microelectronics Co Ltd (002049.SZ)	U (01/10/2023)	Rmb60.53
Yangjie Technology (300373.SZ)	O (06/10/2022)	Rmb36.37
Zhejiang Tony Electronic Co Ltd (603595.SS)	U (09/18/2023)	Rmb19.62
Daniel Yen, CFA		
3Peak (688536.SS)	U (11/01/2022)	Rmb91.20
AP Memory Technology Corp (6531.TW)	O (09/04/2023)	NT$376.50
ASMedia Technology Inc (5269.TW)	O (01/23/2024)	NT$2,195.00
Aspeed Technology (5274.TWO)	O (11/08/2023)	NT$3,115.00
Bestechnic Shanghai Co Ltd (688608.SS)	E (03/28/2024)	Rmb117.50
Chipsea Technologies Shenzhen Corp (688595.SS)	U (05/15/2023)	Rmb27.37
Egis Technology Inc (6462.TWO)	E (03/26/2024)	NT$243.00
Espressif Systems (688018.SS)	O (05/15/2023)	Rmb93.45
GigaDevice Semiconductor Beijing Inc (603986.SS)	E (08/14/2023)	Rmb73.20
Macronix International Co Ltd (2337.TW)	U (10/19/2021)	NT$26.70
Montage Technology Co Ltd (688008.SS)	O (11/08/2023)	Rmb49.05
Novatek (3034.TW)	O (03/18/2024)	NT$618.00
Nuvoton Technology Corporation (4919.TW)	O (07/19/2021)	NT$129.00
Parade Technologies Ltd (4966.TWO)	O (01/23/2024)	NT$862.00
Realtek Semiconductor (2379.TW)	O (02/22/2023)	NT$561.00
Shenzhen Goodix Technology Co Ltd (603160.SS)	O (11/09/2023)	Rmb56.75
Sino Wealth Electronic (300327.SZ)	E (03/18/2024)	Rmb20.20
Winbond Electronics Corp (2344.TW)	O (03/02/2023)	NT$26.65
WPG Holdings (3702.TW)	E (11/16/2023)	NT$91.10
Dylan Liu		
ASMPT Ltd (0522.HK)	O (06/12/2023)	HK$105.70
Chipbond Technology Corp (6147.TWO)	U (02/05/2024)	NT$77.80
Faraday Technology Corp (3035.TW)	O (04/06/2023)	NT$312.50
Global Unichip Corp (3443.TW)	O (04/01/2024)	NT$1,160.00
King Yuan Electronics Co Ltd (2449.TW)	O (03/03/2023)	NT$104.50
M31 Technology Corp (6643.TWO)	O (06/26/2023)	NT$1,220.00
VeriSilicon Microelectronics Shanghai (688521.SS)	E (04/06/2023)	Rmb31.17
Ray Wu, CFA		

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Advanced Wireless Semiconductor Co (8086.TWO)	O (09/11/2023)	NT$137.00
China Resources Microelectronics Limited (688396.SS)	U (07/08/2022)	Rmb39.92
Episil Technologies Inc (3707.TWO)	O (06/05/2023)	NT$70.50
GlobalWafers Co Ltd (6488.TWO)	E (02/22/2023)	NT$545.00
Hua Hong Semiconductor Ltd (1347.HK)	E (11/10/2023)	HK$14.94
NAURA Technology Group Co Ltd (002371.SZ)	O (11/06/2023)	Rmb313.02
Powerchip Semiconductor Manufacturing Co (6770.TW)	U (07/12/2021)	NT$25.00
RichWave Technology Corp. (4968.TW)	U (03/02/2024)	NT$182.00
SG Micro Corp. (300661.SZ)	E (09/27/2022)	Rmb61.30
Shanghai Awinic Technology (688798.SS)	U (09/27/2022)	Rmb52.02
SICC Co Ltd (688234.SS)	O (09/18/2023)	Rmb46.52
Silicon Motion (SIMO.O)	E (08/12/2021)	US$73.84
StarPower Semiconductor Ltd (603290.SS)	O (03/01/2022)	Rmb145.43
Suzhou Novosense Microelectronics Co Ltd (688052.SS)	U (04/25/2023)	Rmb85.91
UPI Semiconductor Corp. (6719.TW)	E (04/18/2023)	NT$290.50
Wafer Works Corp (6182.TWO)	U (11/06/2023)	NT$40.10

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* Historical prices are not split adjusted.

INDUSTRY COVERAGE: Semiconductor Production Equipment

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/15/2024)
Tetsuya Wadaki		
Advantest (6857.T)	O (01/17/2024)	¥5,938
DISCO (6146.T)	O (07/07/2023)	¥55,200
Lasertec (6920.T)	E (03/05/2024)	¥42,180
Nikon (7731.T)	U (08/08/2023)	¥1,567
SCREEN Holdings (7735.T)	E (10/25/2021)	¥18,520
Tokyo Electron (8035.T)	O (01/17/2024)	¥39,290
Ulvac (6728.T)	E (01/17/2024)	¥10,060
Ushio (6925.T)	E (01/17/2024)	¥1,999

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