



June 28, 2023

**TWSE**

# Invest Taiwan, Asia's Treasure Island, From Semiconductors to Biotech

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# Taiwan Capital Market Overview

Yvette Hsu

Corporate Planning & Strategy Department

Taiwan Stock Exchange

June 15 , 2023

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# Advantages & Strengths

## Outstanding Returns

Stocks deliver excellent returns. Listed companies demonstrate excellent performances.

## Superb ESG Performances

Companies' ESG performances continue to improve, placing Taiwan's overall ESG rankings among the top in the weightings of sustainable indices in international emerging markets.

## Active Foreign Investors Participation

Highly favored by foreign investors. Their shareholdings remain at 40%.

## Enthusiastic Domestic Retail Investors

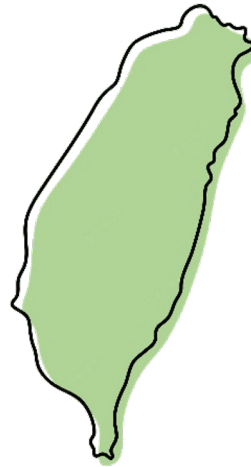
Domestic Retail Investors have increased significantly, leading to an increase in liquidity.

## Intact Industrial Clusters

Tech industry is of global importance with an intact supply chain. It accounts for nearly 60% of the total listed companies.

## Diversified Financial Instruments

Stocks, ETFs, ETNs, Warrants, Beneficiary Securities, and TDRs



# Global Securities Markets Comparison

	2020 Change(%)	2021 Change(%)	2022 Change(%)	As of June 5 , 2023 Change(%)
<b>TAIEX</b>	<b>22.8%</b>	<b>23.7%</b>	<b>-22.4%</b>	18.23%
DJIA	7.2%	18.7%	-8.8%	1.25%
N225	16.0%	4.9%	-9.4%	23.46%
CAC	-7.1%	28.9%	-9.5%	11.23%
DAX	3.5%	15.8%	-12.3%	14.65%
KOSPI	30.8%	3.6%	-24.9%	16.95%
SSEC	13.9%	4.8%	-15.1%	4.63%
FTSE	-14.3%	14.3%	0.9%	1.99%
HSI	-3.4%	-14.1%	-15.5%	-3.40%

- ✓ Taiwan's GDP growth reached **6.53%** in 2021. TAIEX has a growth of over 20% for three consecutive years from 2019 to 2021.
- ✓ Global stock markets declined in 2022 due to heated inflation, interest rate rises, and escalation of the Russia and Ukraine conflict.
- ✓ **As of June 5 , 2023, TAIEX rose by 18.23%.**

# Global Securities Market Comparison (Cont.)

Unit : USD\$ Trillion

	2022 Trade Value	2022 Year end Market Value
New York	30.0	22.8
NASDAQ	27.2	16.2
Shenzhen	19.0	4.7
Shanghai	14.3	6.7
Japan	5.9	5.4
Korea	3.0	1.6
Hong Kong	2.9	4.6
<b>Taiwan</b>	<b>1.9</b>	<b>1.4</b>
London	1.2	3.1
Singapore	0.2	0.6

✓ Total trading value of listed stocks reached **USD\$1.9 trillion** in 2022.

**Global Ranking: 12<sup>th</sup>**

✓ Total Market Cap. of listed stocks reached USD\$1.4 trillion in 2022.

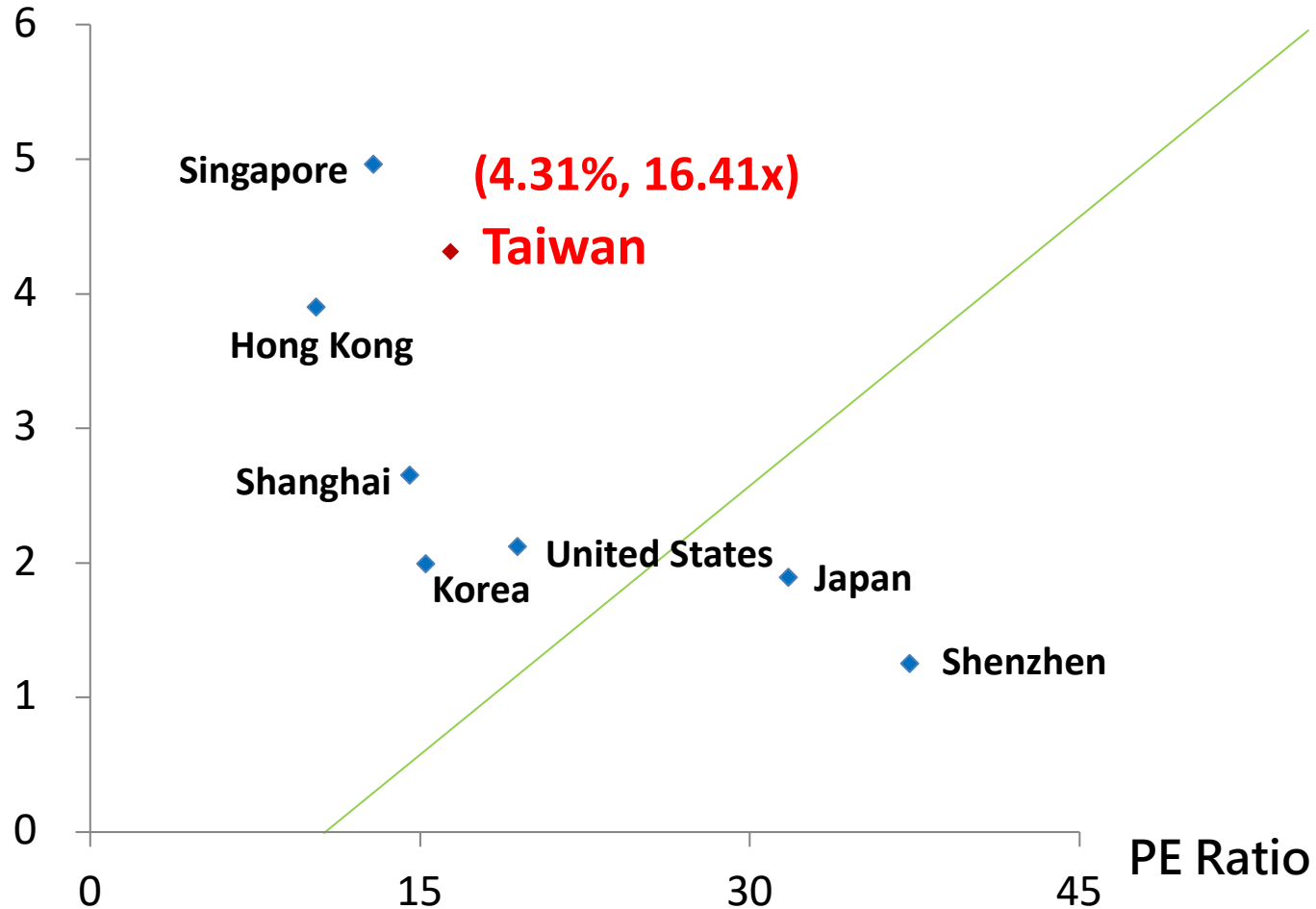
**Global Ranking: 17<sup>th</sup>**

Source : Monthly electronic trading statistics report by WFE

Note : TDR and TPEX are excluded in Taiwan.

# High Dividend Yield and Fair PE Ratio

## Dividend Yield



- **Yield: 4.31%**  
Stable and generous dividends distributions fascinate global and long-term investors.
- **PE Ratio: 16.41**  
Reasonable PE ratio not only attracts investors but fully shows the value of our capital market.

Note: Data as of June 5, 2023

Source: Bloomberg



# ESG Global Recognition



## ACGA CG Watch 2020

Taiwan ranked 4<sup>th</sup>

Following Australia, Hong Kong and Singapore.

## S&P Dow Jones Indices

A Division of S&P Global

## Dow Jones Sustainability Indices(DJSI)

Taiwan's weight ranked 1<sup>st</sup> in this EM Index.

Weight: 44.6%



FTSE4Good

## FTSE4Good Emerging Index

Taiwan's weight ranked 1<sup>st</sup> in this EM Index.

Weight: 29%



MSCI

## MSCI Emerging Markets ESG Leaders Index

Taiwan's weight ranked 2<sup>nd</sup> in this EM Index.

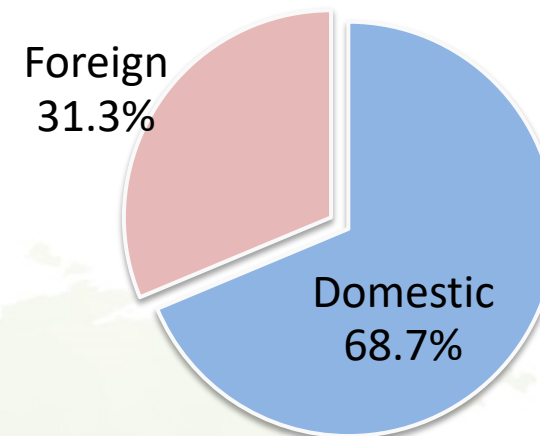
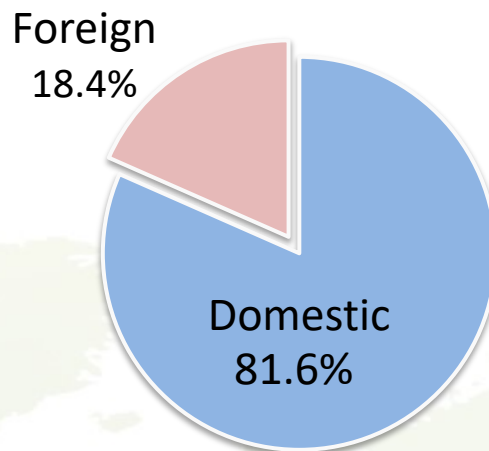
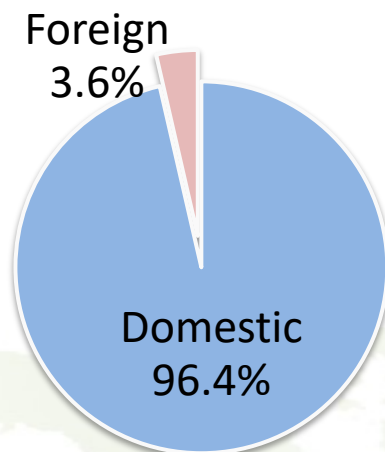
Weight: 20.68%

Note : Index weighting information is as of the end of April.

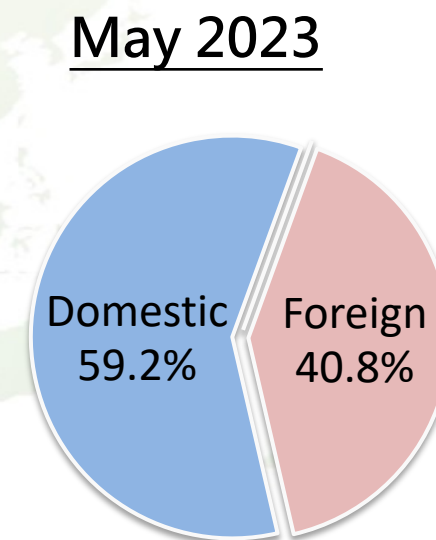
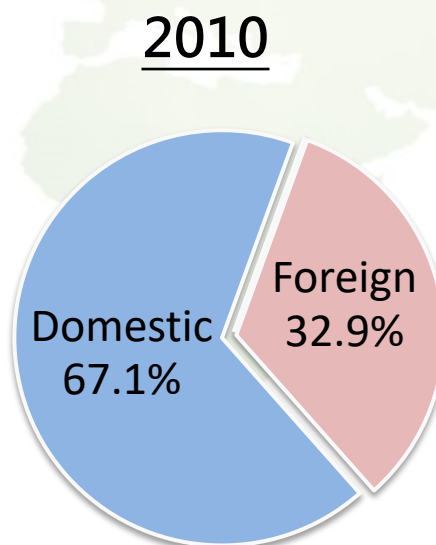
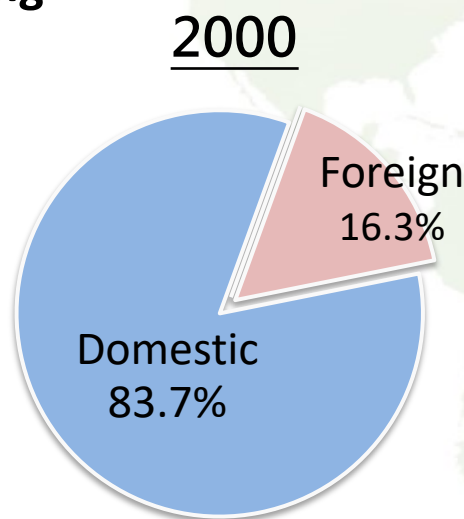
# Increasing Participation From Foreign Investors

➤ Foreign trading value and the percentage of foreign shareholdings is increasing.

Trading  
Value



Shareholding  
Value



# Listed Companies Overview

**Listed Companies**  
**979**

**Local Enterprises**  
**902**

**Foreign Enterprises**  
**77**

Solid Foundation of Conventional & Financial Industry

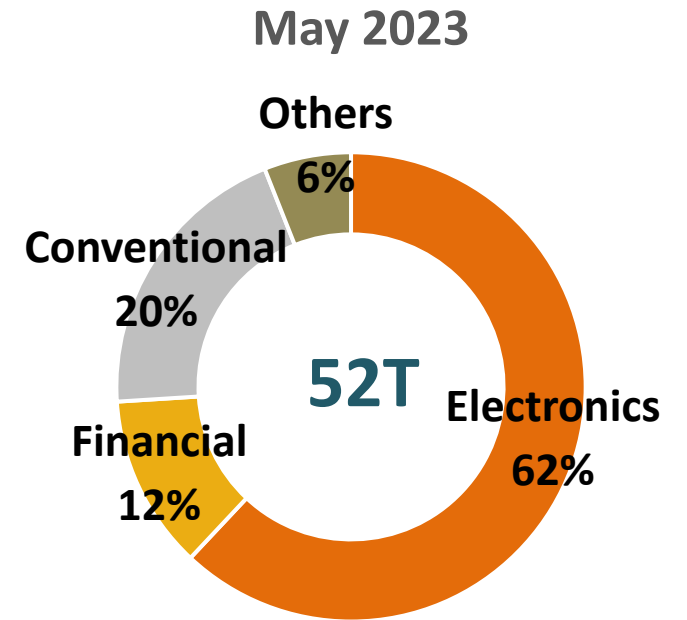
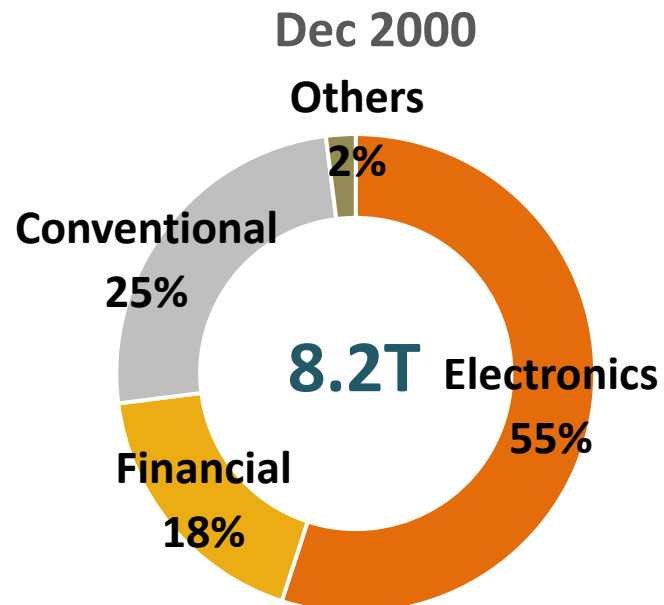
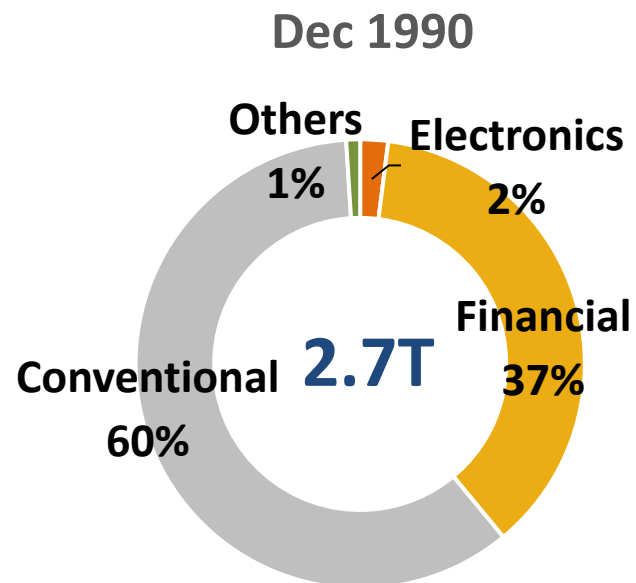


The rising Electronics Industry



Electronics Industry surging growth

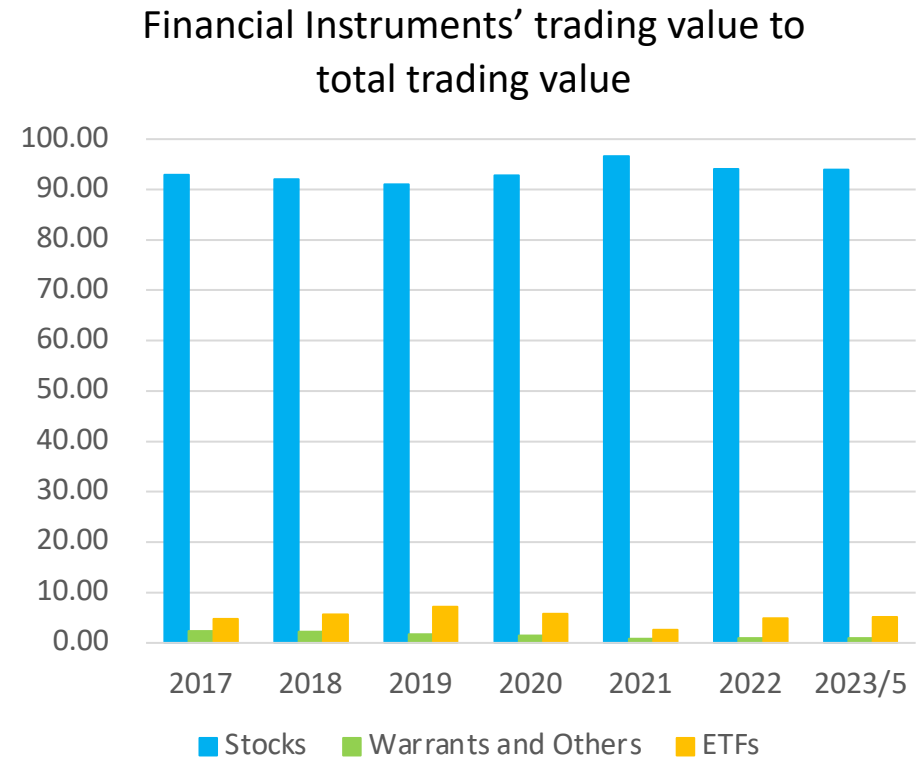
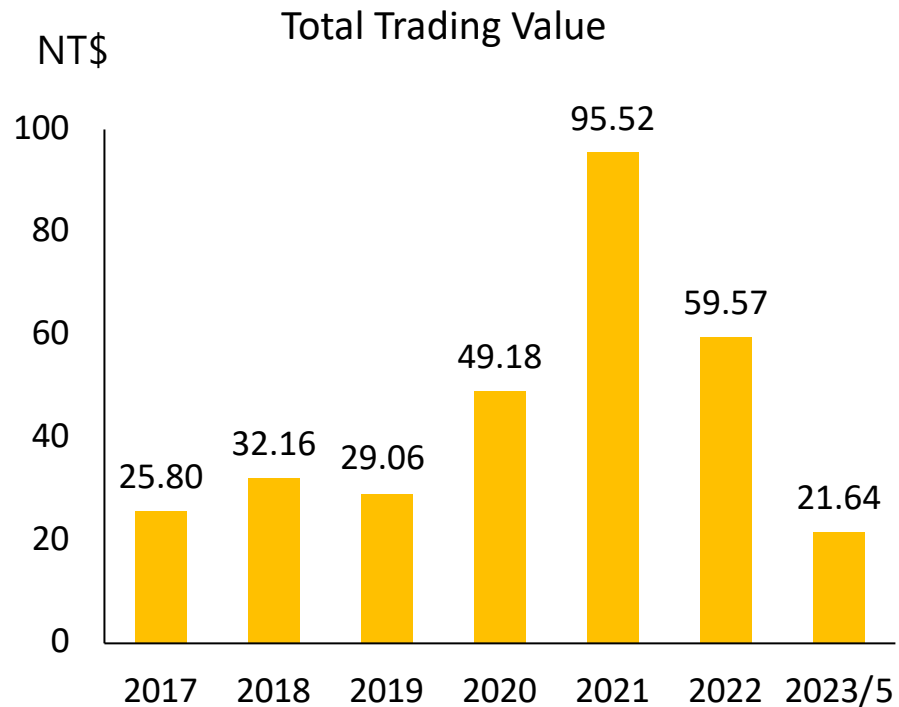
## Market Value



Note: The number of listed companies and market value is as of May, 2023.

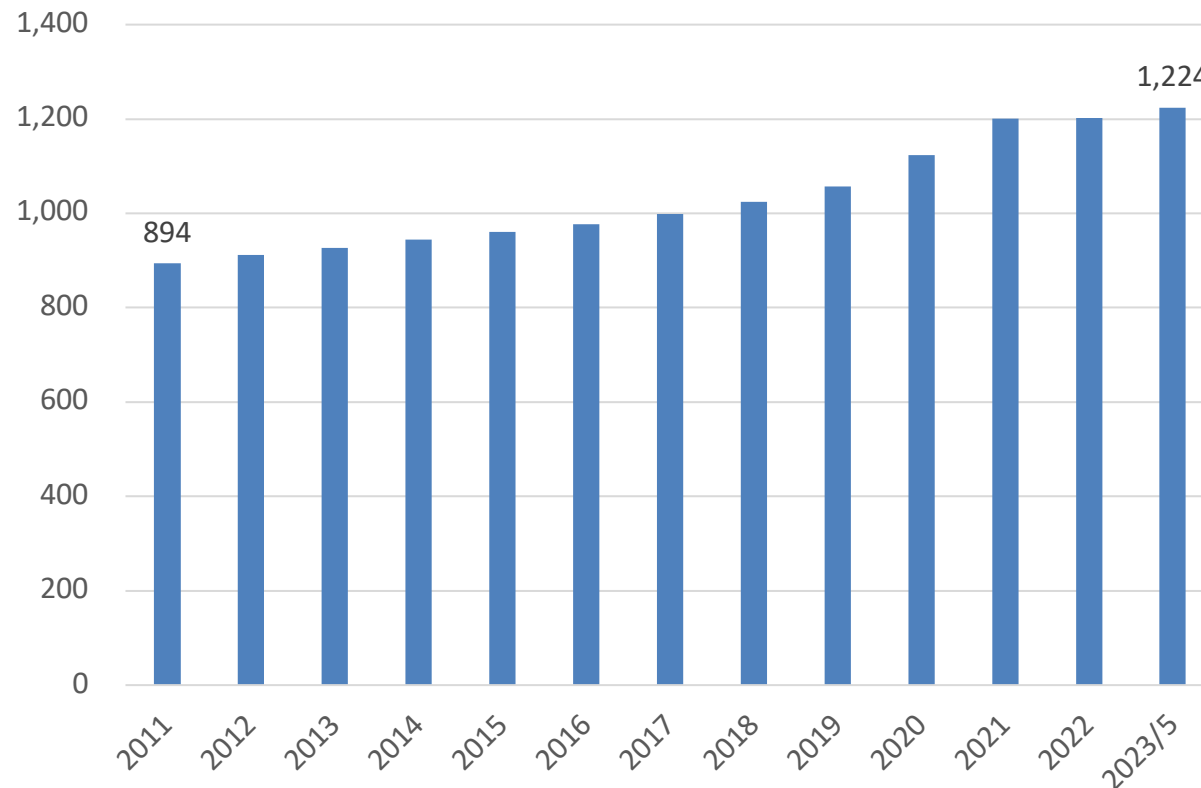
# Trading Overview

- Total trading value in 2022 reached NT\$59.6 trillion. Ranked 2<sup>nd</sup> in TWSE history.
- As of the end of May, total trading value reached NT\$21.64 trillion.
- Stock trading value contributes to over 90% of the total trading value. ETFs ranked 2<sup>nd</sup>, with an average around 5.15% in the last five years.



# Expanding Participation from Local Retail Investors

- The number of newly-opened accounts reached **0.52 million** in 2022.
- Total number of accounts opened reached **12.24 million** as of May 2023, surpassing more than half of Taiwan's population.
- Account openings to total population from 20 to 30 year-olds increased from 5% in 2016 to **45%** as of May 2023.





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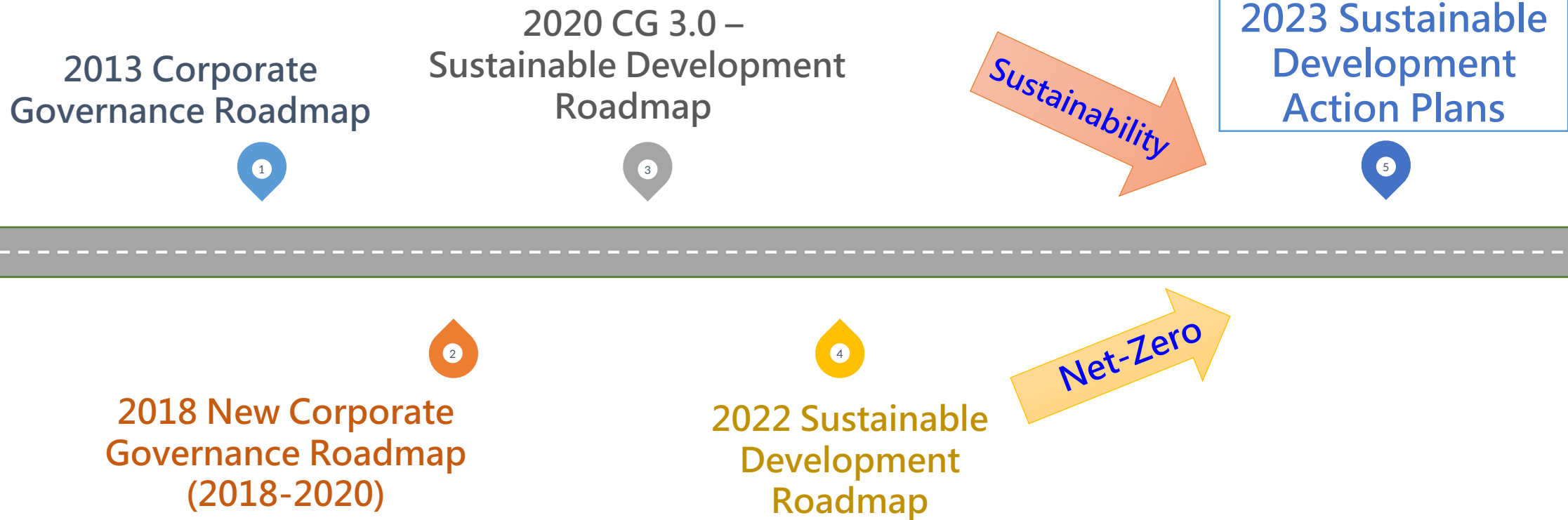
**Taiwan Stock Exchange**

# **Progress and Prospects of ESG in Taiwan's Capital Market**

**Claire Lin**  
**Corporate Governance Department**  
**Taiwan Stock Exchange**

## Achievements of the Corporate Governance Roadmap

- ✓ Establishment of the Corporate Governance Center in 2013
- ✓ Initiation of CG Evaluation in 2014, incorporating "Corporate Responsibility" aspect
- ✓ Mandatory ESG disclosure since 2015; half companies publish CSR reports in 2023
- ✓ Promotion of stewardship principles since 2016 to foster stakeholder dialogue
- ✓ Establishment of independent directors, CG officers and audit committees



# ESG Progress in Taiwan

## Active disclosure of Sustainability Reports and quality reporting

- In 2022, 51% of listed companies issued sustainability reports and almost 68% were assured by 3rd parties.
- Starting from 2023, companies with capital of over 2 bn NTD are required to prepare sustainability reports.

## Introduction of global reporting standards

- TCFD: require all companies to identify 9 climate-related information.
- SASB: companies from 14 industries to disclose industrial-specific indicators.

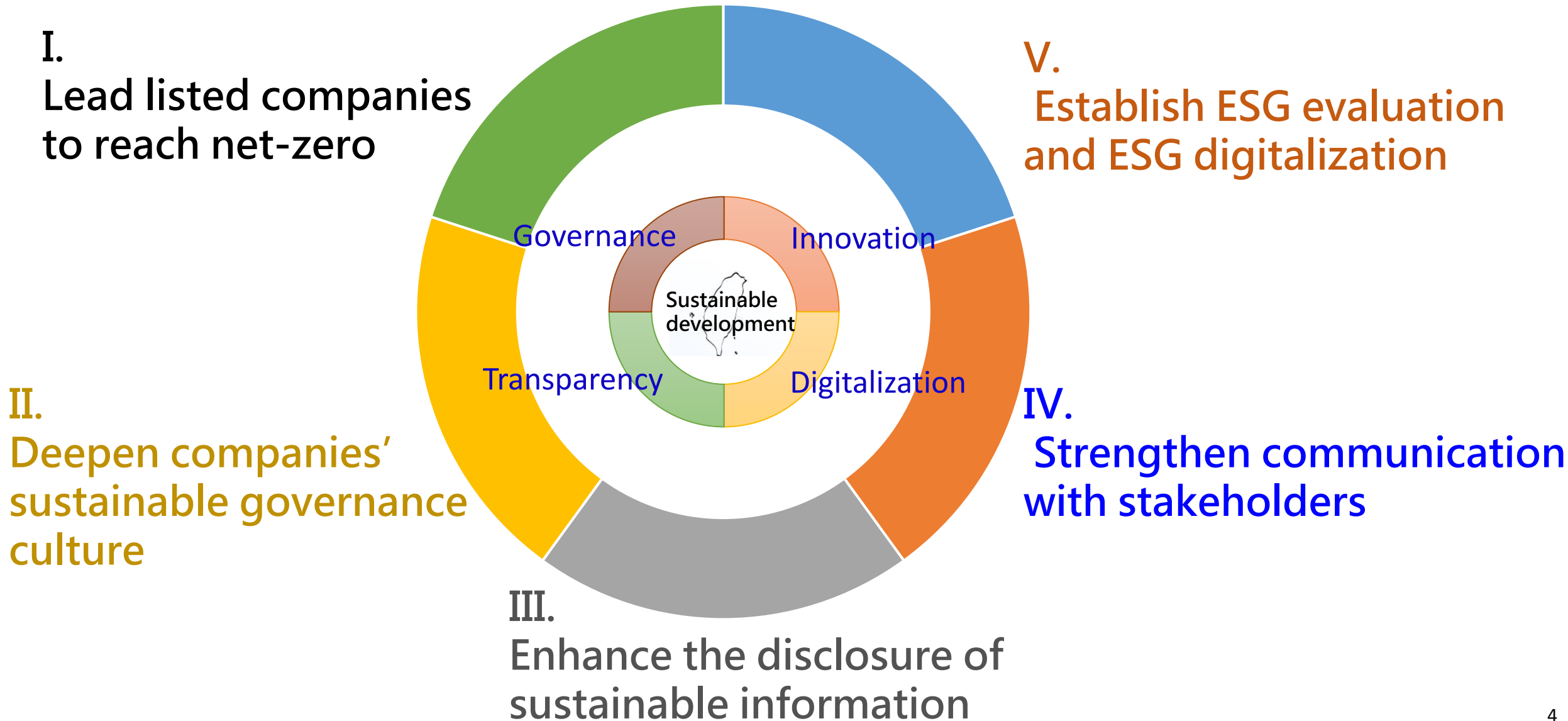
## ESG Information Disclosure Section (MOPS)

- Integrate 29 key quantitative ESG indicators from all listed companies
- Effective June 2022 on the TWSE's Market Observation Post system.

## GHG disclosure and assurance

- Phased approach, starting with the largest companies from 2023
- All listed companies must disclose GHG emission by 2027; data should be assured by 2029.

# FSC 2023 Sustainable Development Action Plans





# Key Initiatives of the Action Plans

## Disclose GHG and carbon reduction targets, strategies, and action plans

- All listed companies should disclose **carbon reduction targets, strategies, and specific action plans by 2028**.
- Encourage Scope 3 GHG disclosure

## Establish carbon trading platform

- In collaboration of Environmental Protection Administration and supported by National Development Fund
- **Carbon consulting and international carbon credit trading services**
- Expected to be **launched in July 2023**

## Enhance Sustainability Disclosure

- By 2025, all listed companies should publish **sustainability reports in accordance with SASB**
- Establish sustainability standards committee in 2023 to plan for **future alignment with ISSB standards**

## Strengthen Corporate Governance Structure

- **Gender diversity:** By 2024, all listed companies are required to appoint **at least one director of a different gender**
- **Independent directors:** By 2027, the number of independent directors of listed companies should be no less than **one-third of board seats**



# Building ESG ecosystem

Adopting ESG strength to thrive the competitiveness of the capital market

## ESG Platform

- TWSE ESG InfoHub
- Construct and expand ESG database
- Automated ESG report production

## Carbon Trading Platform

- Plan to set up a carbon trading platform
- Provide domestic and international carbon credit trading and consulting services.

## Diversity of ESG Products

- Sustainability Index/Bonds/Futures
- ETF/ETN

## Talent Cultivation

- ESG education for board of directors
- Training courses for employees



## ESG Evaluation

- Gradually transition from current CG Evaluation to ESG Evaluation

## Carbon Verification and Assurance

- Organize seminars and advocacy activities
- Supervise the implementation of board of directors

## Sustainable Actions

- Participate in Initiatives
- Sustainable development actions

## Investor Relations

- Integrate info query services according to investor needs
- Strengthen communication with foreign institutional investors

# ESG Platform and ESG evaluation

## TWSE ESG InfoHub

- One-stop display and enquiry platform for ESG information in TWSE listed companies
- Contents include: market highlight, key ESG indicators, ESG product information, and ESG related rules, events and resources
- **Expected to be launched on July 3**

## Expansion of ESG database

- Expand the current 29 indicators in the ESG database, taking into account TCFD and SASB frameworks, as well as the ISSB standards.

## ESG evaluation

- Gradually transform the current “corporate governance evaluation” into an “ESG Evaluation.”
- Increasingly include environmental and social factors, taking into account global ESG rating criteria and the expansion of the ESG database

## Automated ESG Report Production Platform

- Simplify the input process for companies and avoid repetition.
- Automatically generate ESG reports based on designated ESG indicators and subjects.
- Consistency and comparability for investors
- Trial runs of the ESG reports begin in 2024.





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# TWSE Trading Mechanism

Rob Sung

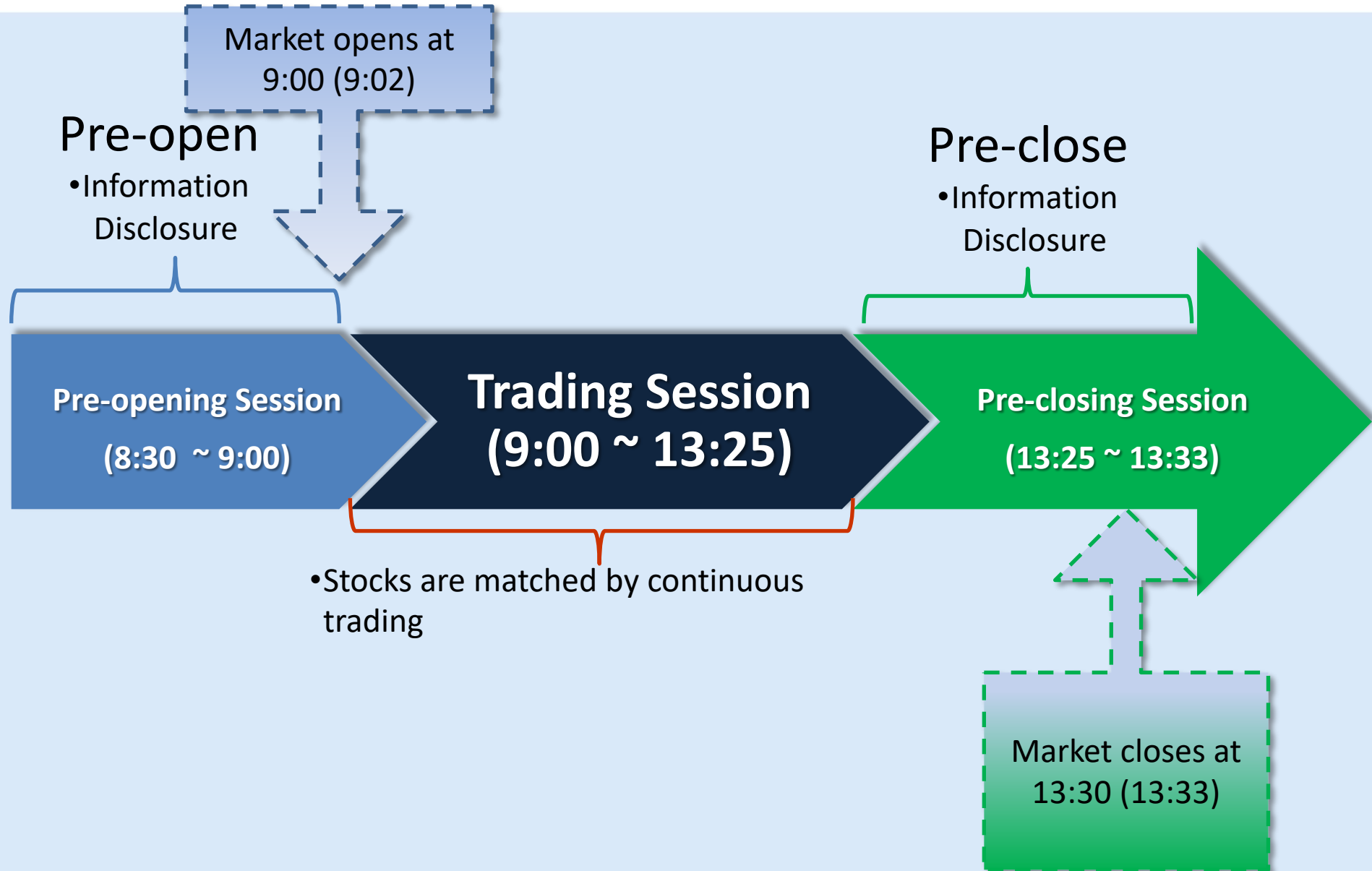
1310@twse.com.tw

Trading Department

Jun. 2023

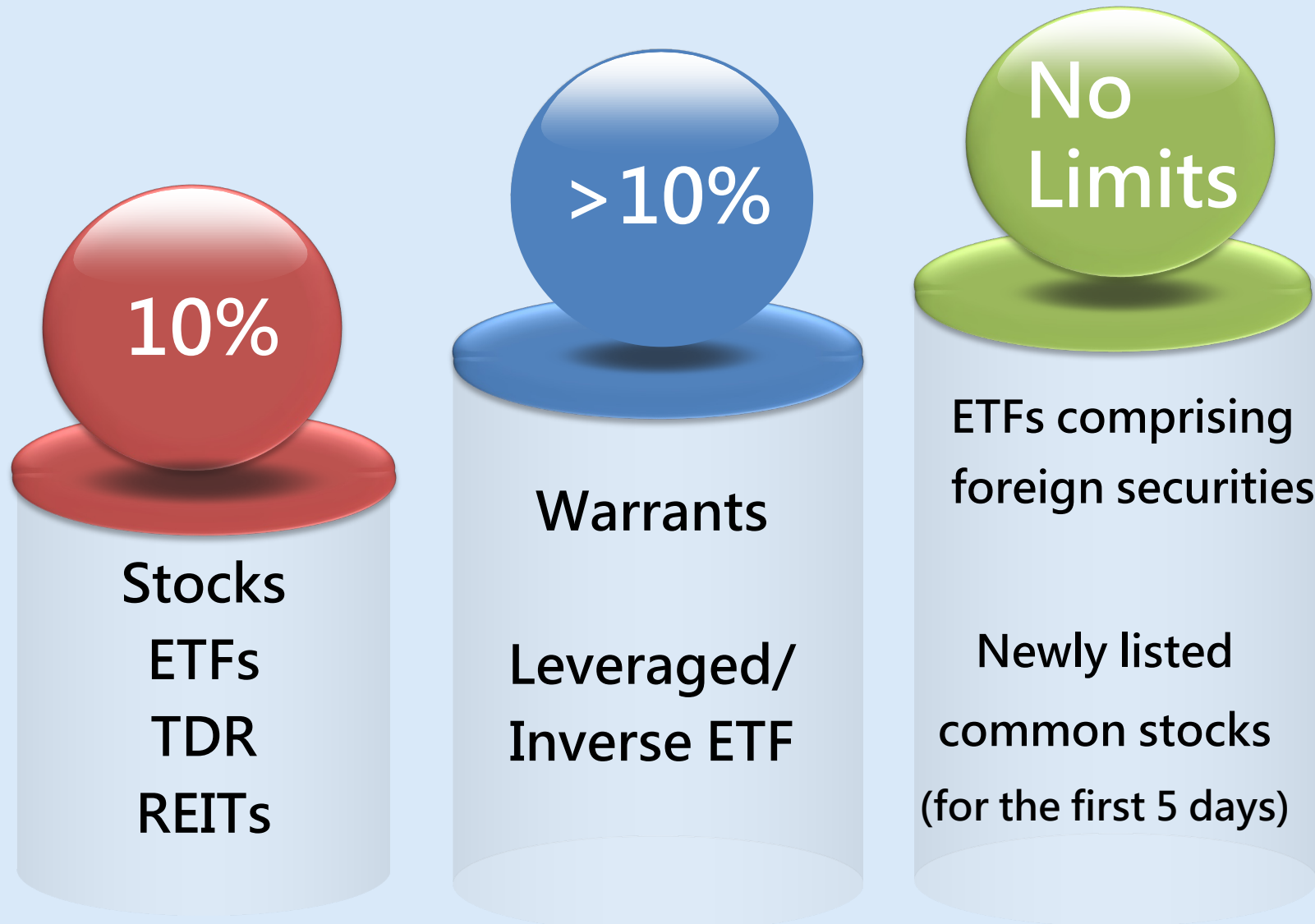
企業籌資更便捷 大眾投資更穩當 · 企業資訊更透明 交易機制更公正 金融商品更多元

# REGULAR TRADING SESSION





# Daily Price Fluctuation Limit



# TICK SIZE

Price Range	Stocks/TDRs	Warrants	ETFs/REITs
0.01 ≤ P < 5	0.01	0.01	0.01
5 ≤ P < 10		0.05	
10 ≤ P < 50	0.05	0.10	
50 ≤ P < 100	0.10	0.50	0.05
100 ≤ P < 500	0.50	1.00	
500 ≤ P < 1,000	1.00	5.00	
1,000 and above	5.00		

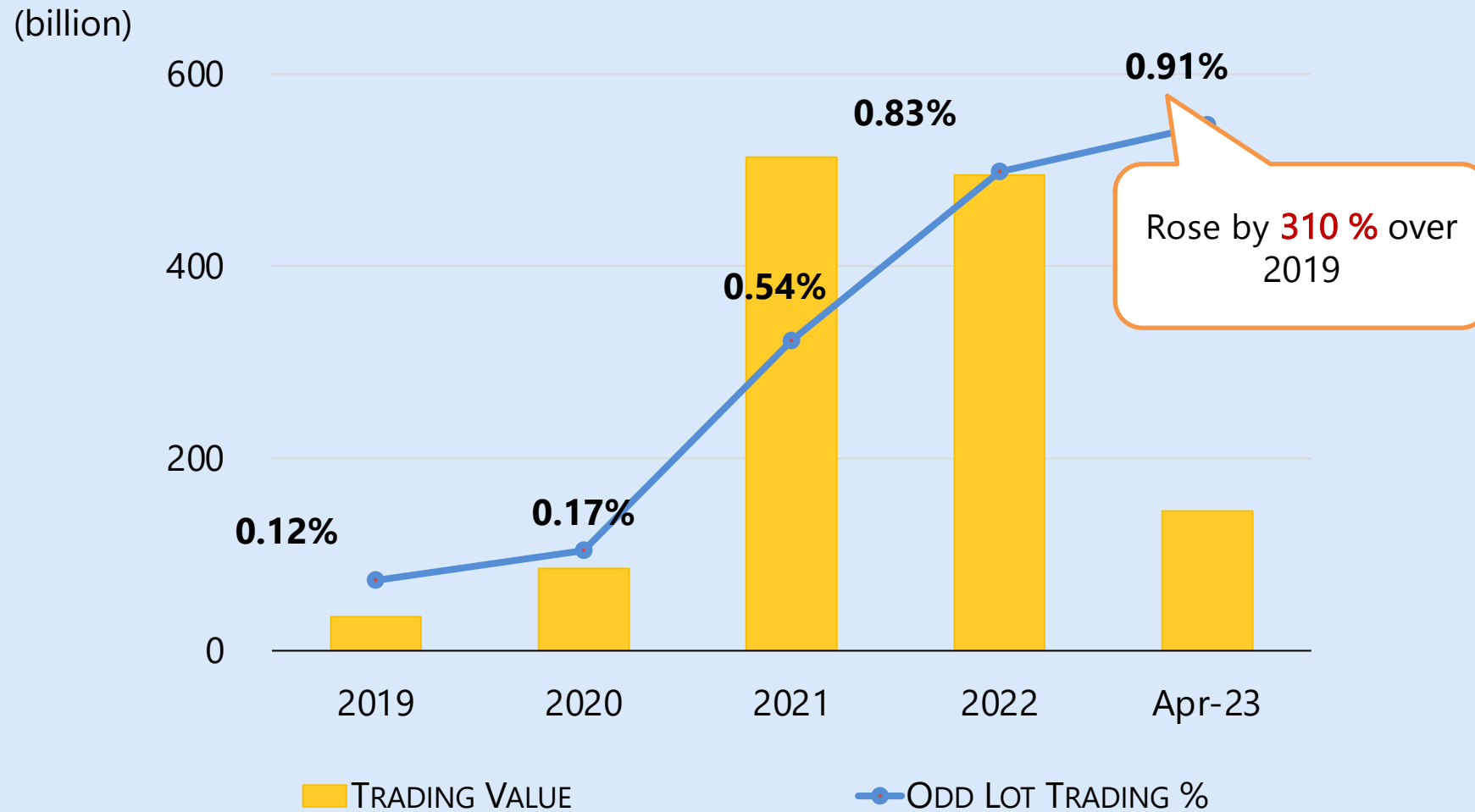
# ORDER TYPE

	Price	Duration	New	Applicable session
1	Limit order	ROD		Opening and closing session, continuous trading session, during intra-day volatility interruption
2	Limit order	IOC	NEW	Continuous trading session
3	Limit order	FOK	NEW	Continuous trading session
4	Market order	ROD	NEW	Continuous trading session
5	Market order	IOC	NEW	Continuous trading session
6	Market order	FOK	NEW	Continuous trading session

# OTHER TRADING TYPES

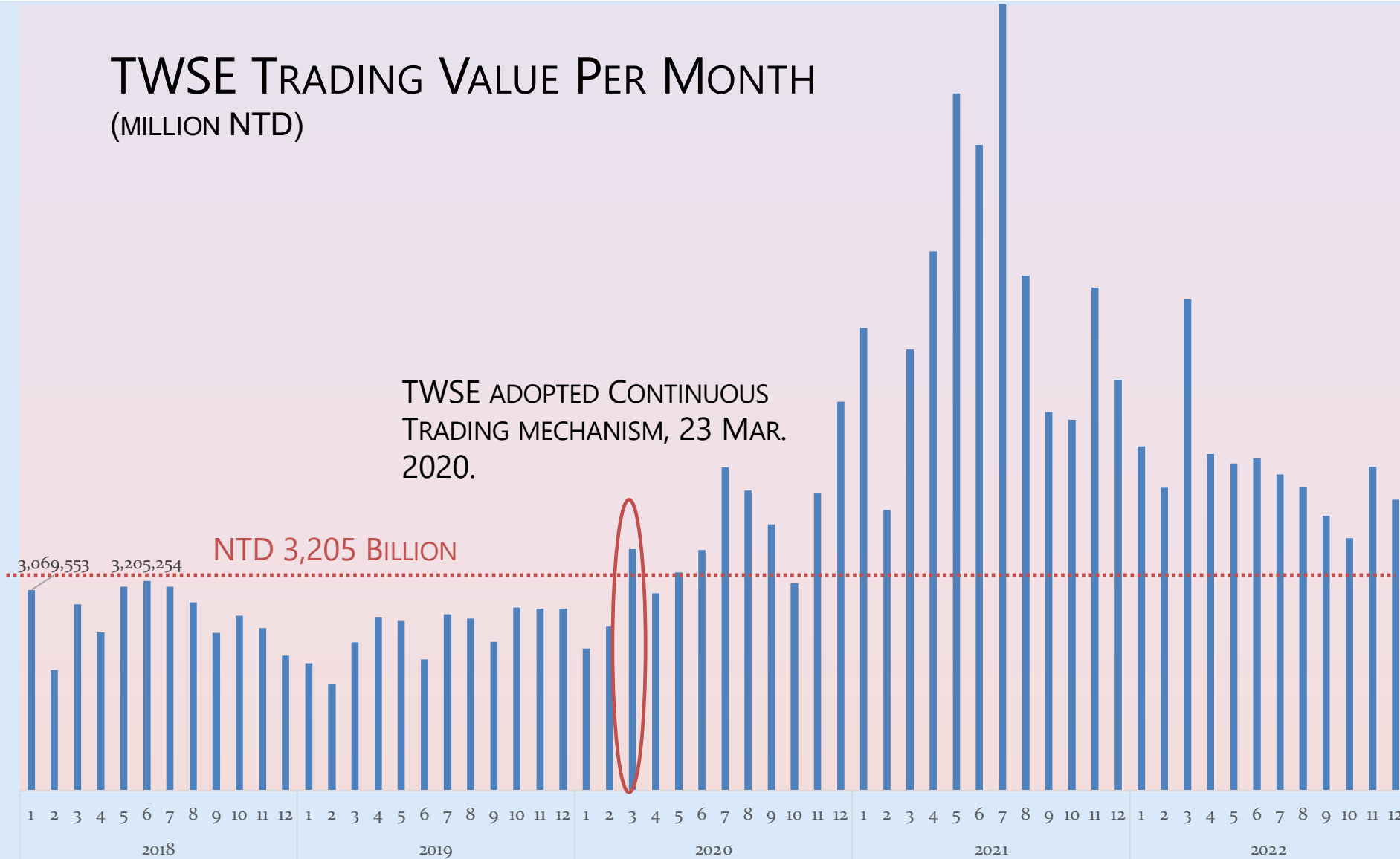
Other Trading Types	Trading Periods
After-hour Fixed Price Trading	14:00~14:30
Odd-lot Trading	09:00~14:30
Block Trading	08:00~08:30
	09:00~17:00
Auction	15:00~16:00
Tender Offer	15:00~16:00

# ODD LOT TRADING



# TRANSITION TO CONTINUOUS TRADING

## TWSE TRADING VALUE PER MONTH (MILLION NTD)





Thank you



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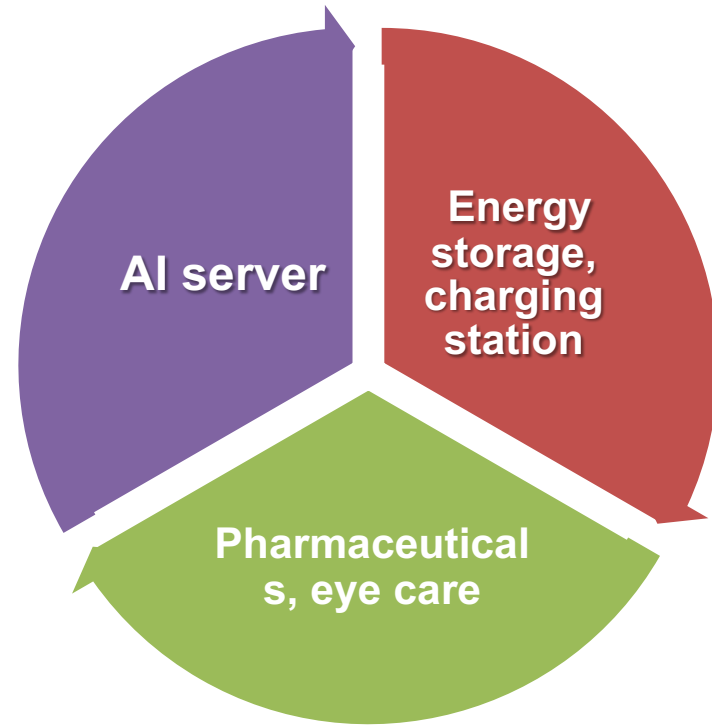
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# Taiwan's Distinct Trending Sectors

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# Taiwan's distinct trending sectors

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## Selection Criteria used to identify high-potential sectors:

- Sectors for which SinoPac projects >20% CAGR (2023-2025)
- Sectors in which Taiwanese firms provide leadership and have significant weightings within their respective supply chains
- Sectors in which Taiwanese firms have substantial business opportunities in Europe, the US, and Japan

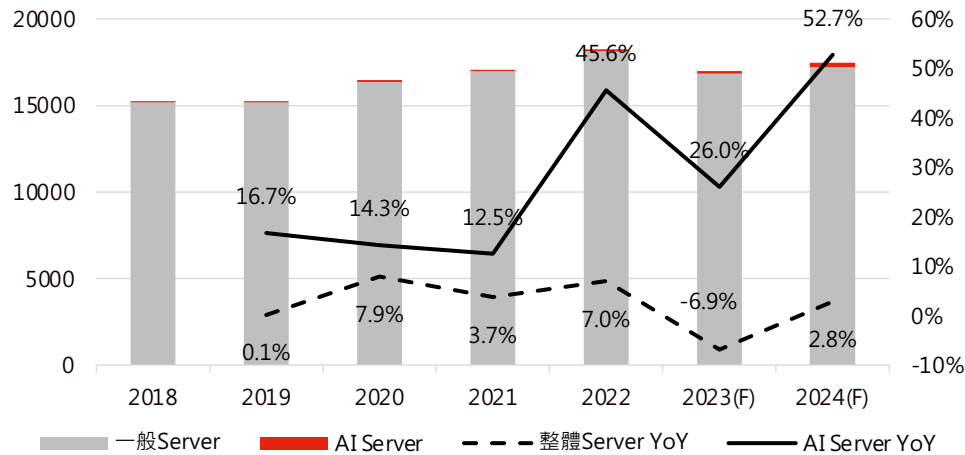
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# AI Server Supply Chain

# AI server sales as % of total server sales will soar in 2022-2024

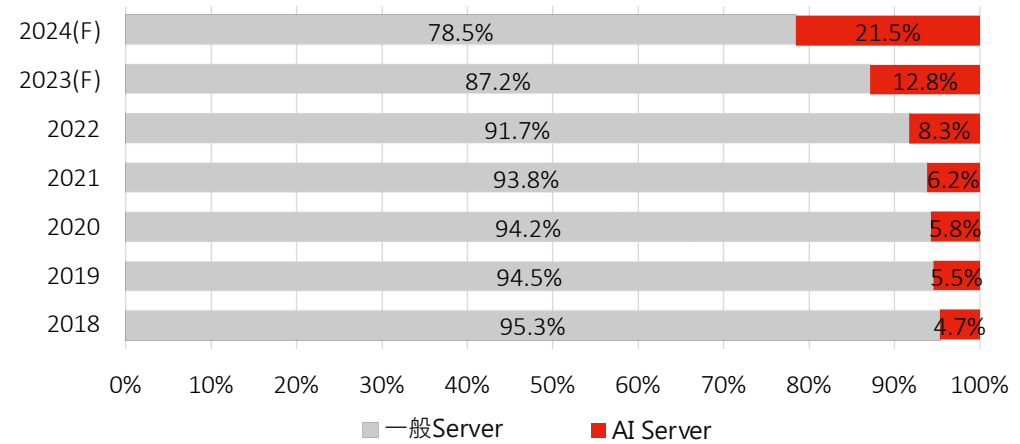
- SinoPac cut its 2023 server shipment estimate to 16.82mn units (-6.9% YoY) due to destocking in 1H23 and delayed MP of AMD's new platform to 2H23 from 1H23.
- AI server demand has been energized by the frenzy over ChatGPT and AI Generated Content (AIGC). SinoPac projects AI server shipment to surge 26% YoY to 165K units in 2023.
- SinoPac projects AI server shipment to soar 52.7% YoY in 2024 thanks to TSMC's CoWoS capacity expansion. SinoPac projects shipment of non-AI servers to rise by 2.8% YoY, as CSP's server capex will prioritize AI units.
- Nvidia's H100 GPU (to be launched in 2H23) is 2x more expensive than A100. SinoPac believes the H100 will propel the AI server weighting to 21.5% of total server sales in 2024. As it only represents 1.4% of total server shipment, AI server's value per unit is dozens of times that of a regular server.

Global server shipment estimates



Source: Digitimes; SinoPac

AI as % of overall servers continues to rise



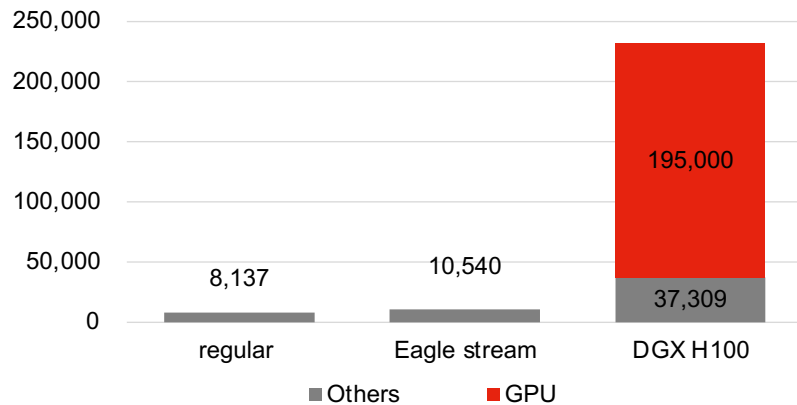
Source: Digitimes; SinoPac



# AI server's unit value: using Nvidia's DGX H100 as example

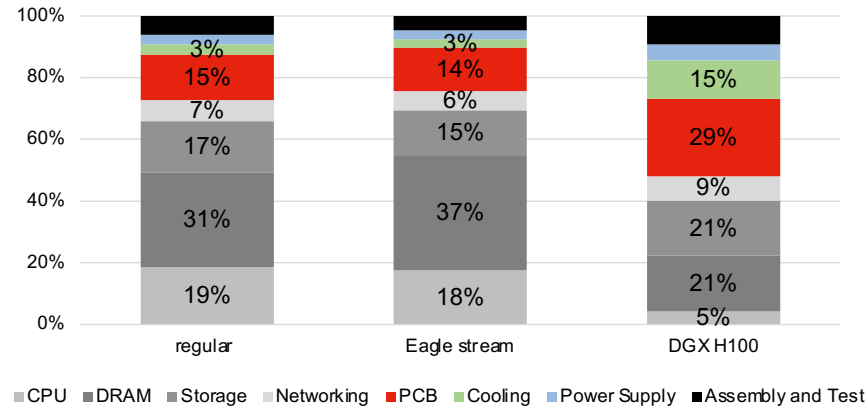
- With 8 GPUs, DGX H100's cost value hit US\$232,309, 28.5x that of a regular server. Outside of the GPUs, individual component costs (storage, networking, PCB, cooling, power supply) and assembly are 3-10% higher with the DGX H100 than a regular server. The CPU costs are similar because the CPU counts are the same and memory increase is small.
- Since most of an AI server's value gain come from the GPU array, the following should benefit:
  - ✓ Foundries offering CoWoS service
  - ✓ Vapor chamber producers: High power makes 3D VC necessary, which has a value (US\$90-100) 2-3 times that of regular ones.
  - ✓ Substrate makers: Mainboard PCB layer count will increase 50%+ to meet high speed transmission demand. CCL value will increase by 15-20% with the spec upgrade.
  - ✓ Back-end assembly service providers

Server ASP estimate by type (US\$)



Source: Semianalysis; SinoPac

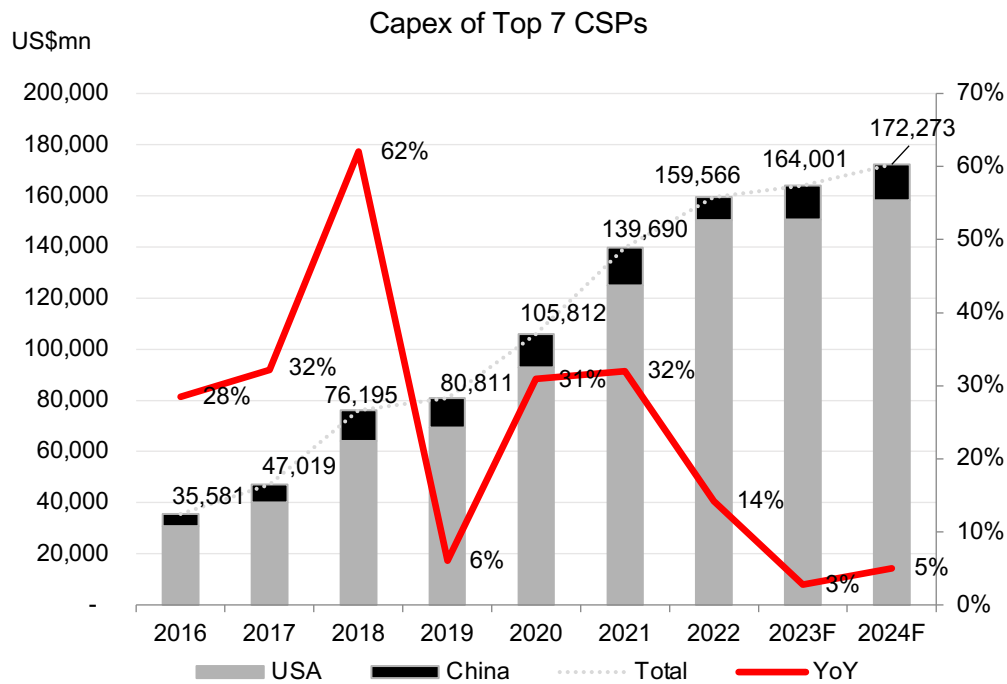
Server cost structure (excluding GPU)



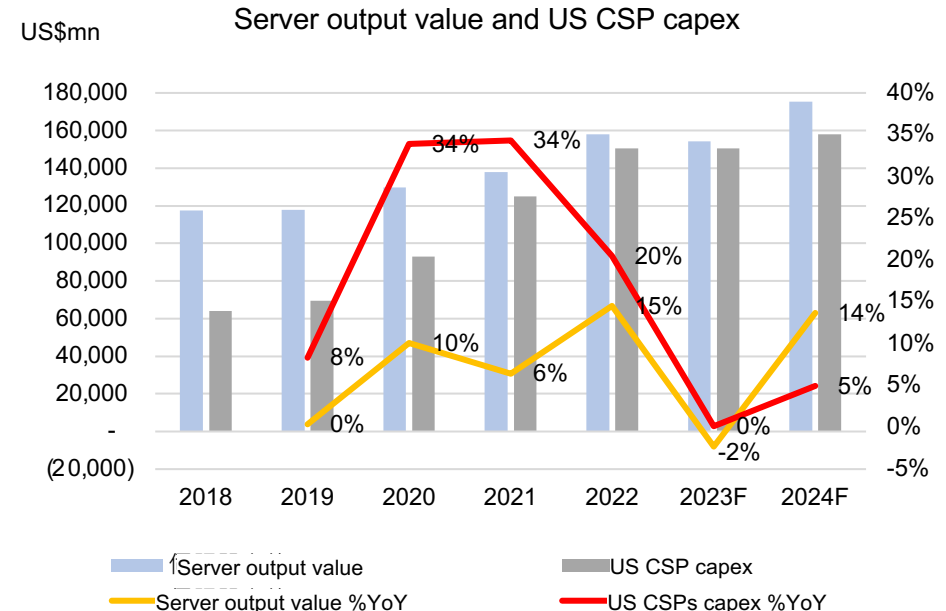
Source: Semianalysis; SinoPac

# US CSPs are driving growth

- Capex of the top 4 US-based CSPs accounts for 90% of the industry's total and has been a key server growth driver in recent years.
- SinoPac estimates AI servers will spearhead a 14% growth of the overall server market in 2024. Given that AI development is still in the early stage, the US top 4 CSPs will cap capex hikes at 5% YoY in 2024 (Bloomberg estimate). SinoPac believes capex of the top 4's in 2024 is a key metric to watch, along with development of specialized cloud service providers.



Source: Bloomberg; SinoPac



Source: Bloomberg; SinoPac

# AI server beneficiaries

Sub-sector	Ticker	Company	EPS			Theme
			2022	2023F	2024F	
IP	3343 TT	GUC	27.69	32.64	37.53	HPC IP beneficiary
	3661 TT	Alchip	25.69	47.33	58.14	HPC IP beneficiary
Foundry	2330 TT	TSMC	31.38	22.05	27.27	Exclusive provider of H100 CoWoS service
Testing	2449 TT	KYEC	5.59	4.37	5.10	HPC back-end testing has upside potential
Cooling	3653 TT	Jentech Precision	19.54	17.85	25.03	VC benefited from GPU count increase
	3017 TT	AVC	11.78	12.73	14.89	Increased AI server power necessitates enhanced cooling performance
	3324 TT	Auras	14.68	13.57	15.03	Increased AI server power necessitates enhanced cooling performance
ABF	3037 TT	Unimicron	19.44	9.27	17.51	Increased AI server power necessitates enhanced cooling performance
CCL	2383 TT	Elite Material	14.86	11.50	15.62	CCL spec upgrade for high-speed transmission
	6274 TT	Taiwan Union	4.69	4.52	7.85	CCL spec upgrade for high-speed transmission
PCB	2368 TT	GCE	9.28	7.08	10.59	PCB layer count increase for high-speed transmission
Assembly	2376 TT	Gigabyte	10.29	10.23	13.26	AI Server value 20x higher than regular sever
	2382 TT	Quanta	7.51	8.02	9.29	AI Server value 20x higher than regular sever

Source: SinoPac Estimates

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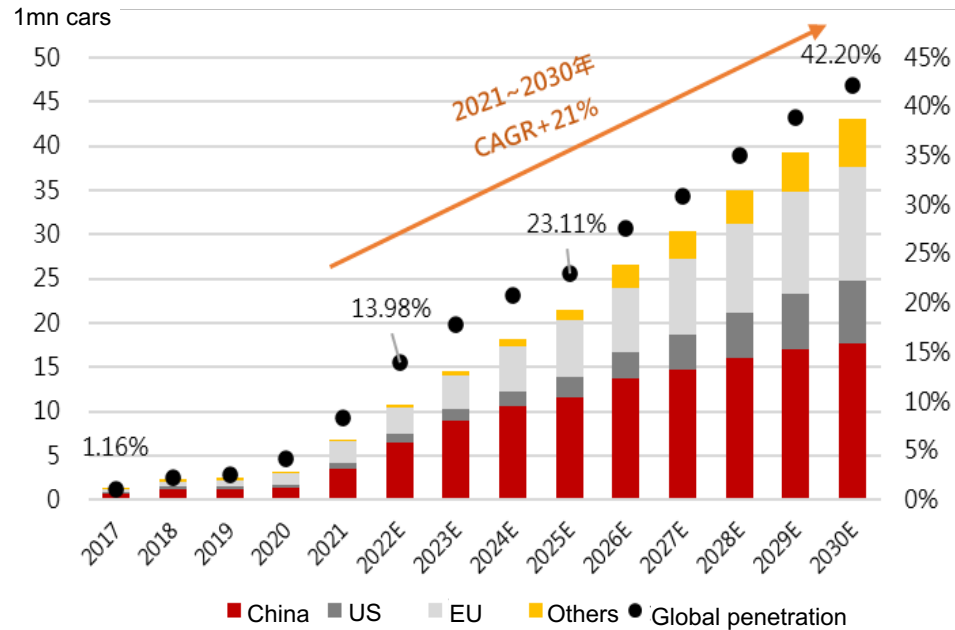
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## Charging Station – Explosive Growth

# Charging station installations to rise exponentially

- Rising EV sales
- Declining ratio of EVs to chargers
- Supportive gov't policies, including subsidies (Table 1)
- Public units will account for the majority of installations

Fig.1: Global EV sales will breach 20mn units in 2025F



Source: Marklines; SinoPac forecasts

Table 1: Government supports for EV charging stations

	US	UK	Germany	China
<b>Investment</b>	US\$7.5bn	US\$2bn	US\$6.6bn	-
<b>Eligibilities/Provisions</b>	<p>55% of the component cost must be domestically made by 2024</p> <p>Must support CCS standard</p> <p>Focus on stations &gt;150kW</p>	<p>Provides funding to the installation of EV charge point infrastructure for business and individuals, including individuals who own or rent a flat</p> <p>Up to £350 for individuals, or up to 75% for business</p>	<p>€900 for residents, and €45,000 for companies</p> <p>Mainly for IEC 62196 Type 2 and CCS fast charging</p>	<p>Beijing: up to 30%</p> <p>Shanghai: 30%</p> <p>Up to RMB 600/kW for DC charger</p> <p>Up to RMB 300/kW for AC charger</p> <p>Shenzhen: Up to RMB 600/kW for DC</p> <p>Up to RMB 300/kW for AC</p>

Source: Public information

# Spec Comparison – AC vs. DC chargers

- AC chargers have lower power output and slower charging speed. They are more commonly used in home EV chargers.
- DC chargers are fast chargers, equipped with modules that convert AC power into DC before feeding it into the car's battery.
- Expanding public DC fast charging infrastructure is a national priority in many countries.

	AC Level 1	AC Level 2	DC Fast charging Level 3
<b>Charger Type</b>	Alternating Current, on board	Alternating Current, on board	Direct Current, off board
<b>Voltage</b>	120V	208V, 240V	200-1,000V
<b>Current</b>	12A~16A	≤80A	--
<b>Max Power</b>	1.92 kW	19.2 kW (typically 7-19 kW)	50-350kKW
<b>Range Per Hour (RPH)</b>	2-5 mile	10-80mile	180-240 mile
<b>Used in</b>	Home	Home, Public locations	Large charging stations
<b>Installation Cost</b>	US\$300 or gift from automakers	US\$500-800	US\$9,000-15,000
<b>Typical locations</b>	Travel charger, home charger	Highest proportion, the most common charger type	Public locations

Source: SAE International; SinoPac

# Installations will surge in China, US, EU in 2024-2025

## Public EV charging infrastructure in China, US, EU in 2021-2025F

Number of Chargers / Year	2021	2022	2023F	2024F	2025F
<b>China</b>					
Chargers in operation (10k units)	115	180	296	451	647
New chargers (10k units)		65	116	155	197
YoY			78.40%	33.50%	27.10%
DC chargers in operation (10k units)	46.9	76.1	131.1	205.1	302.3
Value of new DC chargers (NT\$bn)		57.86	121.28	179.53	257.25
<b>United States</b>					
Chargers in operation (10k units)	11	19	31	52	85
New chargers (10k units)		7	12	21	33
YoY					
DC chargers in operation (10k units)	2.2	4.7	8.4	14.8	26.9
Value of new DC chargers (NT\$bn)		132.3	222	384	726
<b>Europe</b>					
Chargers in operation (10k units)	36	55	86	134	201
New chargers (10k units)		19	32	48	67
YoY			66.30%	51.90%	38.80%
DC chargers in operation (10k units)	4.9	8.2	18.8	40.8	77.4
Value of new DC chargers (NT\$bn)		174.6	636	1320	2196
<b>Total</b>					
	2021	2022	2023F	2024F	2025F
Chargers in operation (10k units)	162	253	413	636	933
DC chargers in operation (10k units)	54	89	158	261	407
Value of new DC chargers (NT\$bn)		365	979	1,884	3,179

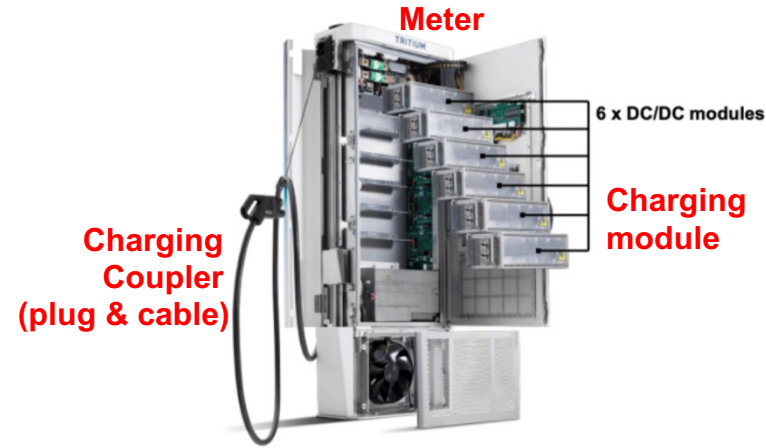
Source: EVCIPA, IEA, SinoPac forecasts

- Our estimates are based on government policies, the number of EVs registered, the ratio of EV vs. chargers, and the ratio of AC vs. DC chargers.
- For 2025, we estimate the installed base of public chargers in the three major markets will double from 4.13mn units in 2023 to 9.33mn units in 2025, including 4.06mn DC chargers (~50%). The output value of DC chargers will soar from NT\$207.1bn in 2023 to NT\$549.5bn in 2025F.

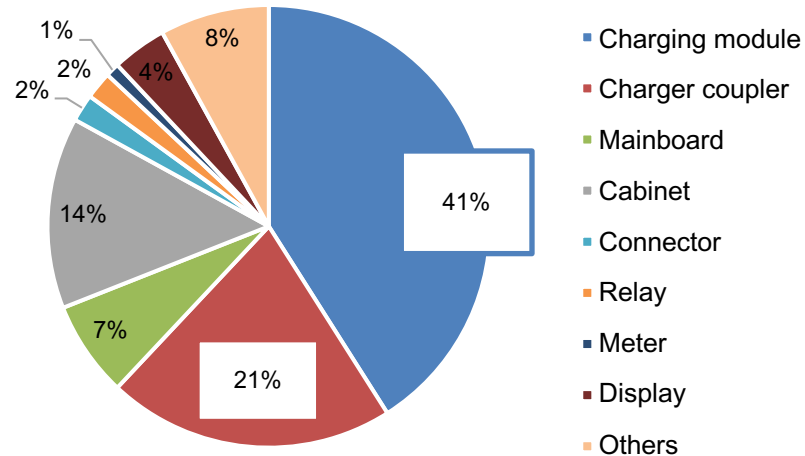


# Charging module, the largest cost of a DC charger

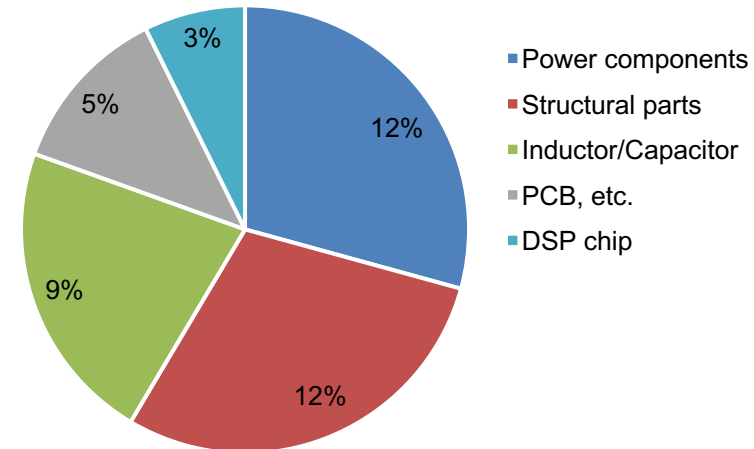
- DC charger cost breakdown by component: Charging Module (41%), Charging Coupler (21%), Cabinet (14%), Mainboard (7%)
- In the charging module, power components (12% of overall cost, including IGBT, SiC, etc.) are the core parts for power conversion and circuit control.
- Cost breakdown for EV charger installation: Equipment (93%), Setup (4%), Labor (3%)



Cost breakdown for 180kW DC charger



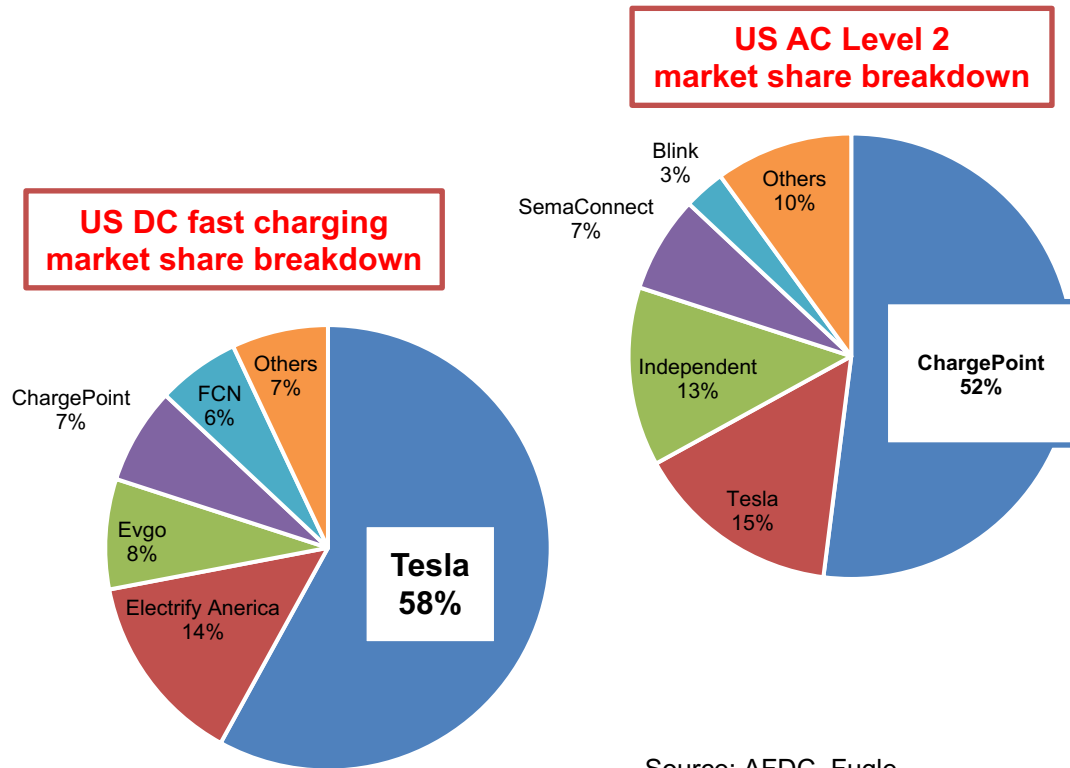
Cost breakdown for Charging module (41%)



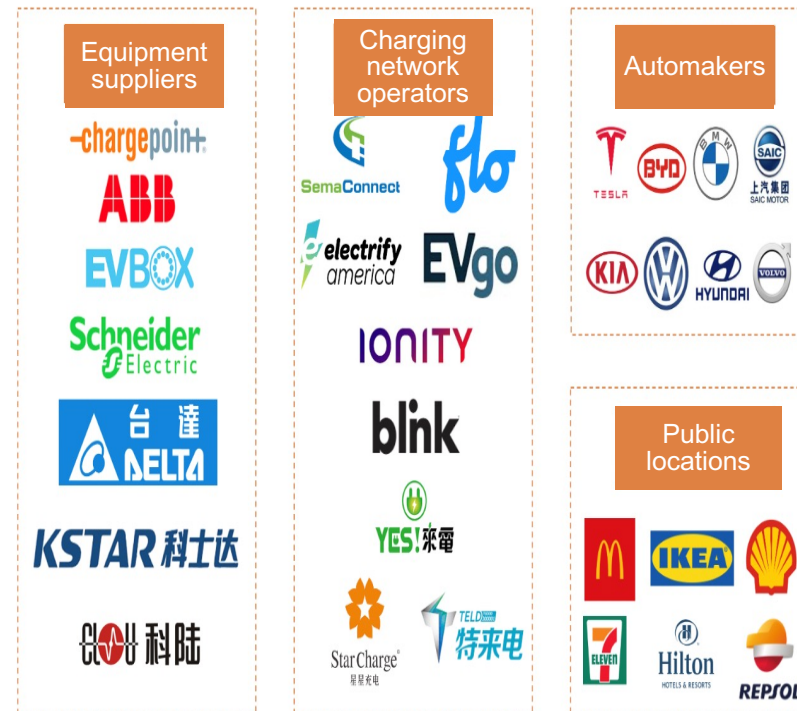
Source: Research houses, Green Car Congress; SinoPac

# Major categories of CPOs

- Major EV Charge Point Operators (CPOs) include charging network operators, automakers, and public locations (restaurants, stores, malls, hotels, etc.)
- CPO leaders in the US by market share – ChargePoint (52%) in AC Level 2 charger, Tesla (58.2%) in DC charger.
- Three categories of CPOs in China: 1) State-owned enterprises: State Grid Corporation of China, Sinopec, China National Petroleum Corporation, China Southern Power Grid; 2) NEV makers: NIO, Tesla; 3) Specialized CPOs: StarCharge, TELD, NAAS, etc.



Source: AFDC, Fugle



# Rising demand for energy storage

- Taiwan government aims to generate 15.1% of its energy from renewables by 2025. Coupled with power dispatch issues in recent years, energy storage solutions have received a lot of attention.
- In addition to chargers, business opportunities related to grids include power sales and energy storage.
- Delta's "Intelligent Sustainable Connecting Hub" demonstrates technology benefits for offices, financial services, and energy management.
- Many energy storage solution providers have tapped into the EV charger market.



Source: Taiwan Cement, HD Renewable Energy, J&V Energy; SinoPac

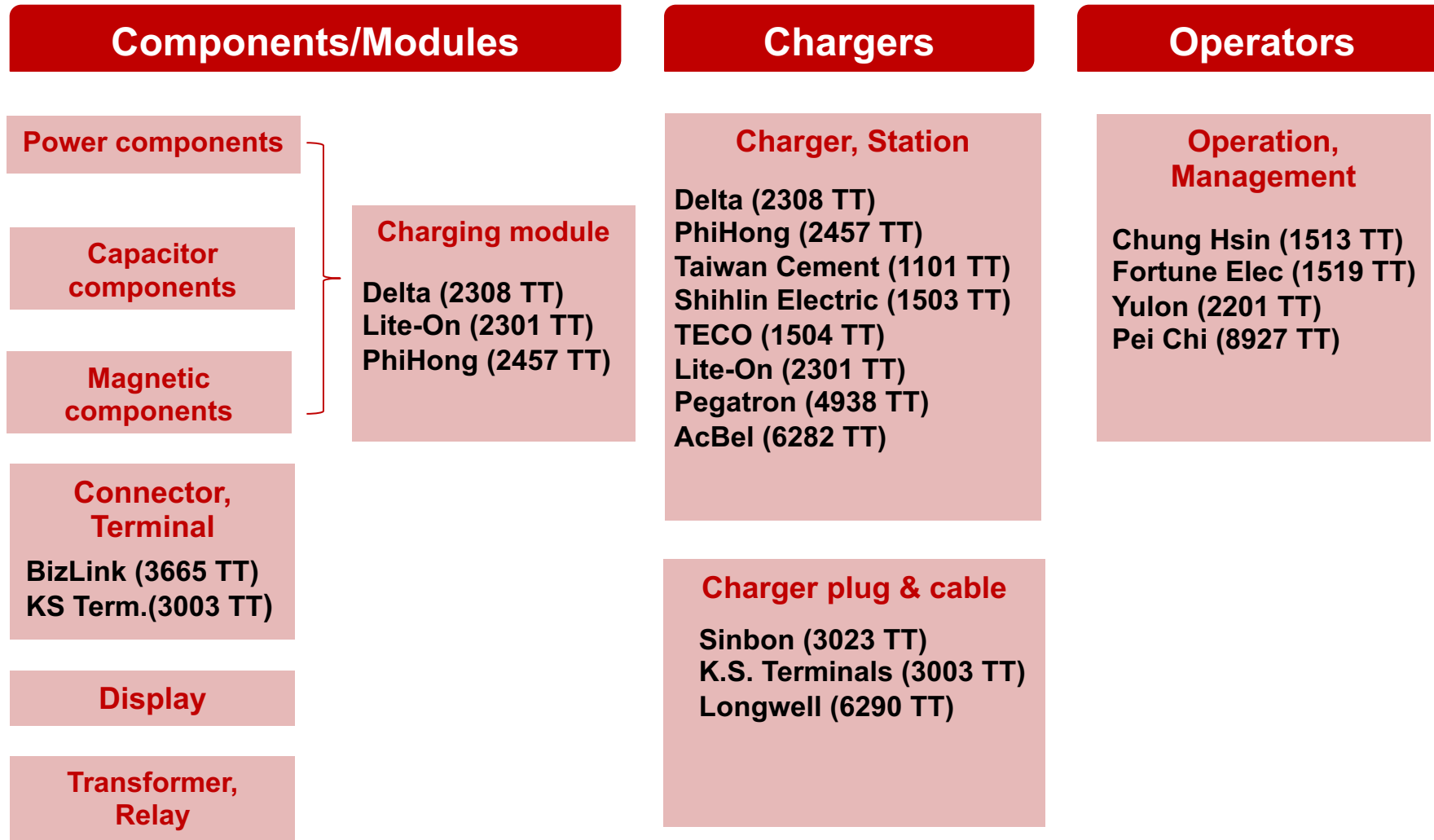
- Aggressive deployment in Taiwan's 6 major cities
- Aiming to supply self-generated electricity
- Picking the right locations based on people's daily lives

STAR CHARGER set up its first station in Shin Kong Life Tower with 5 chargers (17kW) installed, targeting the shoppers in the department store.

In TaiSugar's Smart Green Energy Recycling Residential Park, STAR Charger installed 2 fast chargers (30kW) and 2 slow chargers (7kW).

J&V Energy is the **first** one setting up a **small energy storage system** in a convenience store, planning to deploy the system in more **convenience stores, office buildings, and residences**.

# EV Charger supply chain



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# EV Charger supply chain

Sub-sector	Ticker	Company	EPS			Theme
			2022	2023F	2024F	
Charging module	2301 TT	Lite-On	5.99	6.02	6.6	Growing demand for chargers from US/European clients
	2308 TT	Delta	12.58	13.79	14.93	Growing demand for chargers from US/European clients
	2457 TT	PhiHong	0.19	2.4	4.5	Growing demand for chargers from US/European clients
	6282 TT	AcBel	1.21	1.74	2.99	Growing demand for chargers from US/European clients
Energy storage	6873 TT	HD Renweable	7.65	11.78	19	Growing demand for energy storage
	6869 TT	J&V Energy	4.02	6.01	7.2	Growing demand for energy storage
Charging Coupler (plug & cable)	3023 TT	Sinbon	11.88	14.01	15.5	Charging plug
	3665 TT	BizLink	20.4	24.32	29.9	Charging coupler, Energy storage connector
	3003 TT	K.S. Terminals	5.75	4.64	5.61	Charging coupler, Energy storage connector
	6290 TT	Longwell	5.5	5.11	6.22	Charging cable
Operation / Management	1503 TT	Shihlin Electric	3.86	4.89	5.63	Shilin Elec. partnered with eTreego to set up a JV, which provides cloud-based smart charging service, to capture the estimated NT\$20bn market in Taiwan based on the government's plan for EV charging infrastructure. In addition, eTreego has delivered samples to US clients for testing.
	1513 TT	Chung-Hsin	5.11	6.23	7.53	Chung-Hsin's parking management segment aims to set up 200 fast chargers in three years. Rising EV penetration should catalyze growth of the segment.
	1519 TT	Fortune Electric	3.21	4.2	5.62	Fortune's wholly owned EVALUE generates sales from charging products (chargers), engineering, and operation (charging fee). Rising EV penetration should catalyze growth of the segment.

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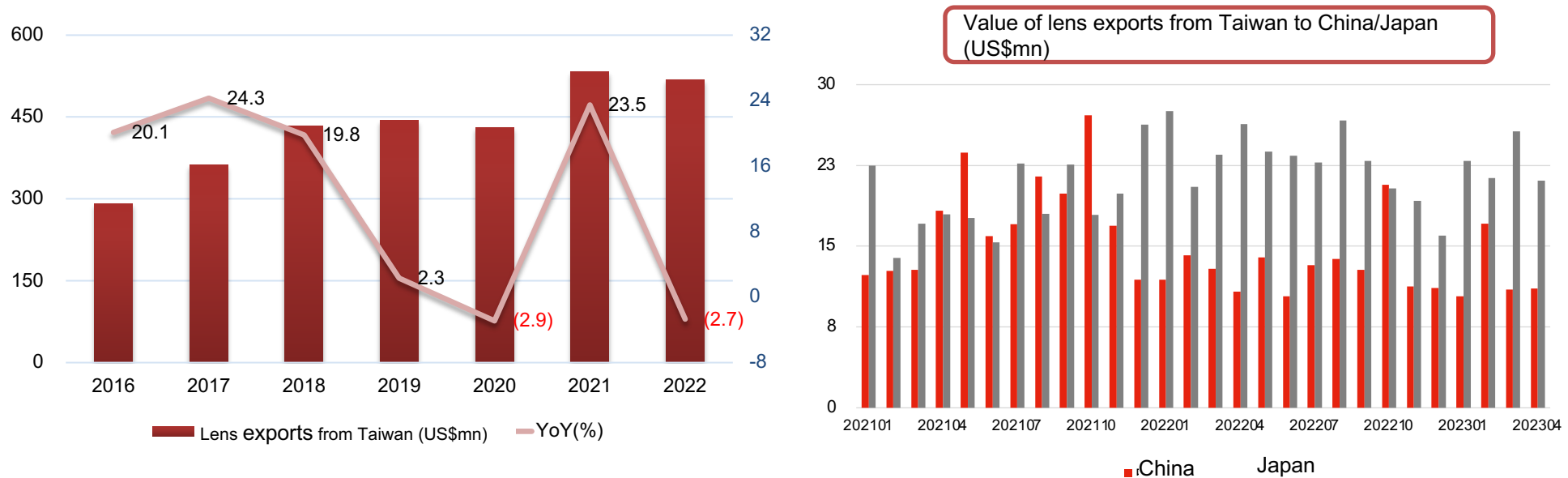
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## High Potential in Eye Care, Pharmaceutical



# Taiwan's contact lens exports to Japan are solid, those to China bear watching

- Affected by COVID-19 and destocking by brands/distributors, Taiwan's contact lens exports dipped YoY in 2020 and 2022. Export value in JAN-APR 2023 fell 5.1% YoY.
- China and Japan are the two major overseas markets, respectively accounting for 43.2%/43.5%, 52.7%/30.3%, and 29.5%/54.2% of Taiwan's lens exports in 2021, 2022, and JAN-APR 2023.
- Exports to Japan are solid. China story is mixed: brands are restocking again, but the sales rebound is insignificant given high channel inventory and consumers' shift to durable consumer products while daily contact lenses constitute a major part of Taiwan's contact lens exports.

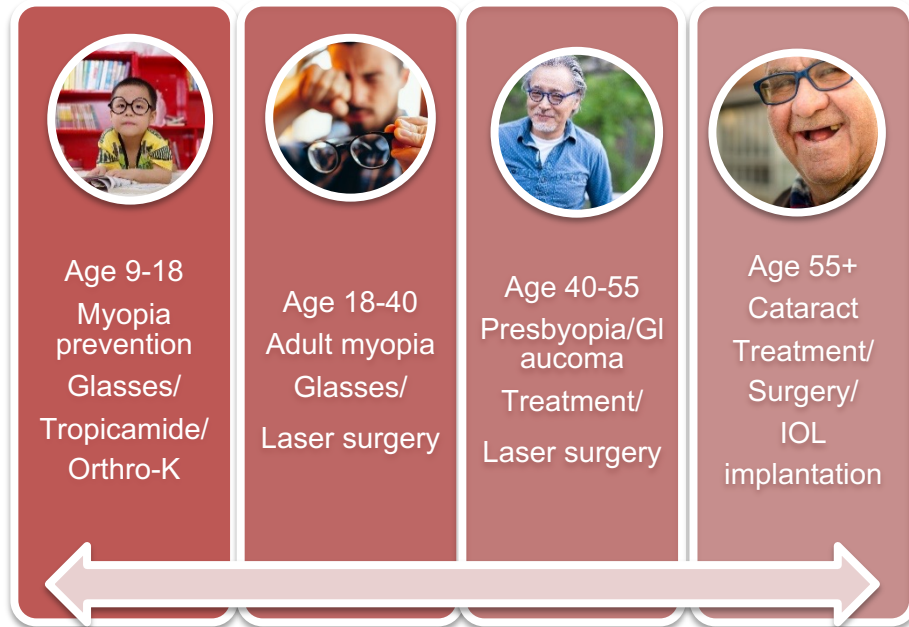


Source: Taiwan custom statistics of exports and imports; SinoPac

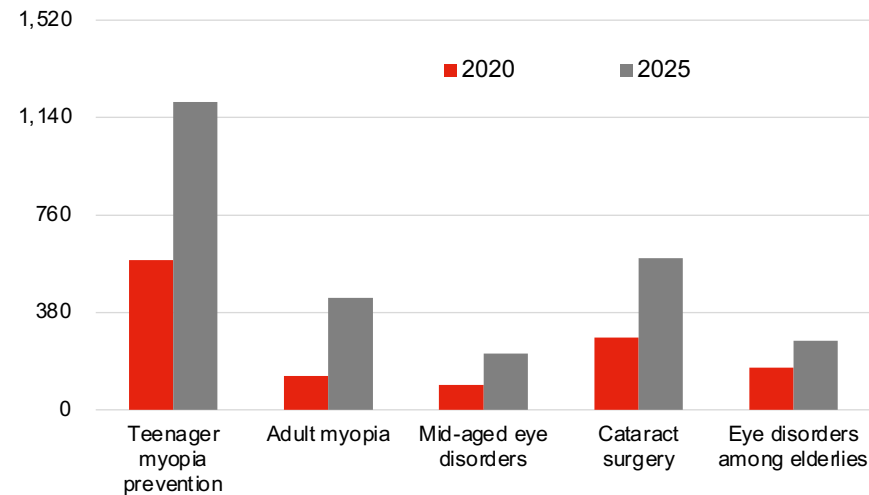


# Strong support from inelastic demand for eye treatments

- Eye treatment demand is broad-based and relatively inelastic.
- We forecast a CAGR growth of 17% (2022-2025) for the industry.



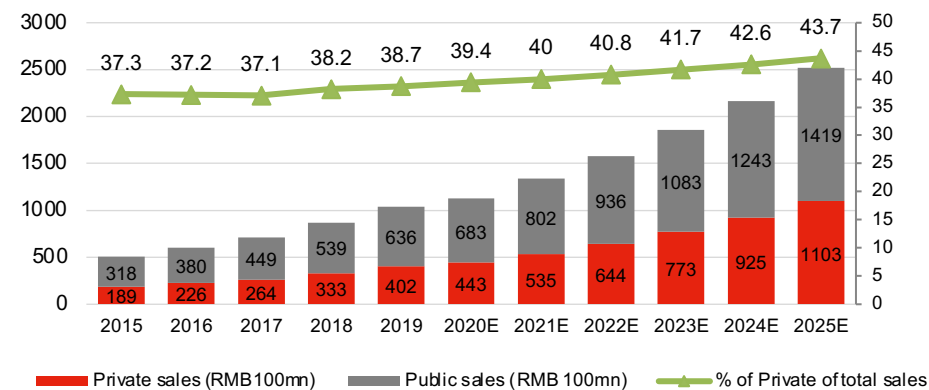
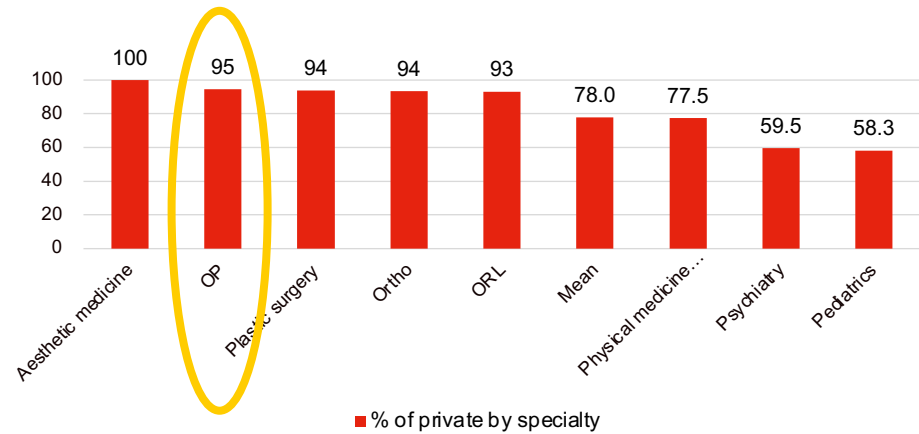
Eye treatment service market in China is estimated to grow to RMB271.7bn in 2025 with 16.7% CAGR in 2020-2025.



Source: CICG Global Institute; SinoPac

# China's addressable market for private eye treatment centers is largely untapped

- The private/public ratio for medical institutions by specialty is highest for aesthetic medicine, followed by ophthalmology.
- Private eye care clinics have high growth potential from gov't support, organic market growth.
- China's eye care clinics delivered impressive results in recent years despite the slow economy.

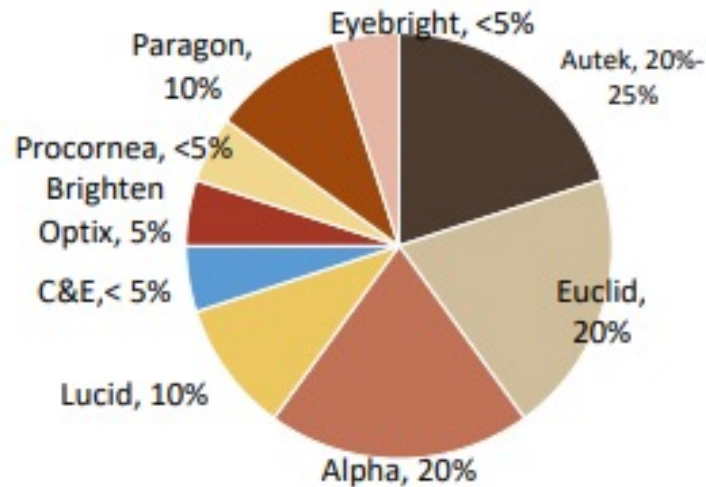
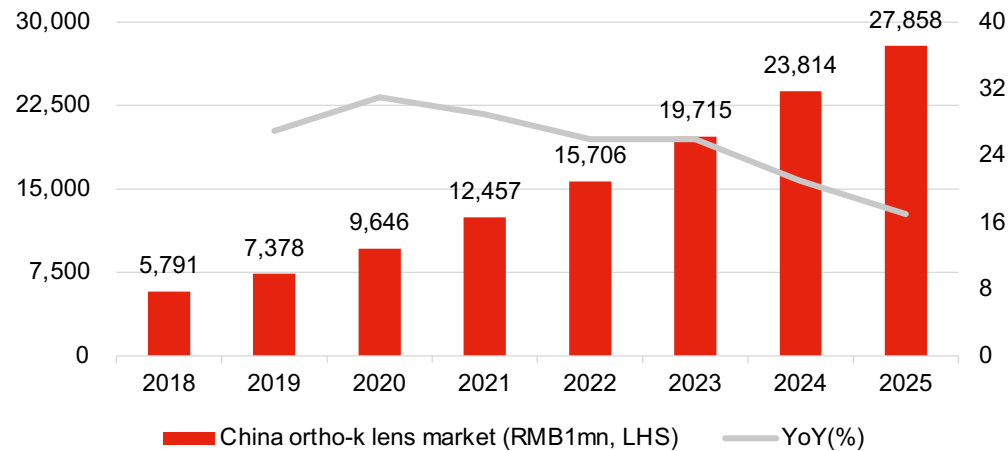


Company	Established	No. of medical institutions	Sales growth (2018-2021 CAGR/ 2022 YoY)
Aier Eye Hospital (300015 CH)	2003	723 eye hospitals and centers (610 in China/7 in HK/1 in US/93 in Europe/12 in Southeast Asia)	23.3%/12.5%
Huaxia Eye Hospital (301267 CH)	1997	50+ eye hospitals and 20+ optical centers throughout China	12.6%/N.A.
Liaoning He Eye Hospital (301103 CH)	1995	3 large eye hospitals, 30+branches and clinics, 50+ optical centers	16.2%/3.6%
Chengdu Bright Eye Hospital (301239 CH)	2003	20+ eye hospitals, 3 clinics	18.9%/5.5%
Chaoju Eye Care (2219 HK)	2005	Nearly 20 eye hospitals, 20+ optical centers	16.4%/6.5%
C-Mer Eye Care (3309 HK)	2012	Nearly 10 eye hospitals, nearly 20 eye care centers	34.2%/69.1%
Universal Vision (3218 TT)	1992	Taiwan: 27 eye care centers, 33 optical centers China: 11 eye care centers, 11 optical centers	246.4%/32.8%

Source: CICC Global Institute; Companies; SinoPac

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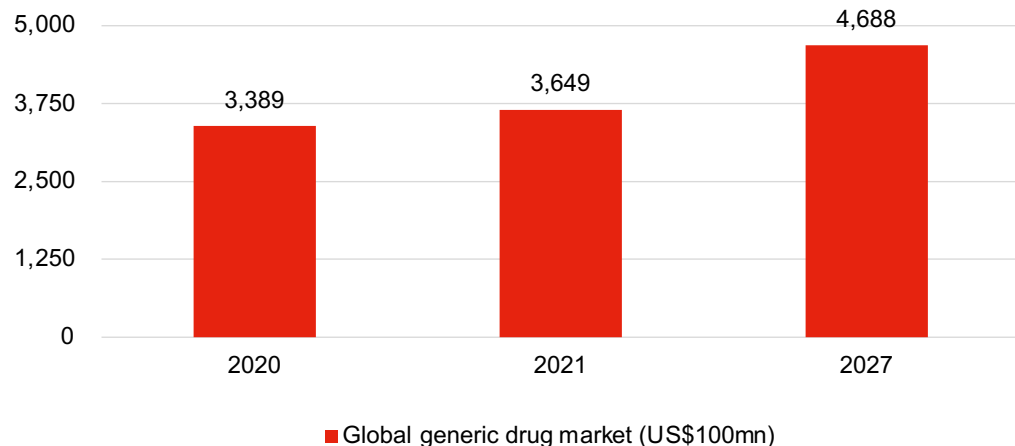
# All ortho-k lens makers can benefit from China's strong demand



Source: China's Ministry of Commerce, National Health Commission, and National Bureau of Statistics, UBS-S estimates, SinoPac

- China's ortho-k lens market value was about RMB 5.79bn in 2018. We see robust upside given the low adoption rate and gov't policy to reduce myopia among teenagers. We project a market size of RMB 27.86bn in 2025 (22% CAGR for 2021-2025), with the adoption rate rising from current 1.2% to 3.4% in 2025.
- There are 9 major ortho-k lens producers in the market. Taiwan producer Brighten Optix (6747 TT) captures a market share of around 5%. Given the tame head-to-head competition and overall growth potential of the market, all producers should benefit from the speedy demand growth.

# Generic drugs: supportive policies and patent expirations support steady growth



- Global generic market grew around 7.6% in 2021 and is expected to reach US\$468.8bn in 2027, a 2021-2027 CAGR of 4.3%.
- US, China, and Japan are sequentially the top 3 generic drug markets. Government policies in each of the three countries encourage the usage of generic drugs: the US encourages the usage of generic drugs and biosimilars to reduce medical spending, Japan aims to boost the generic usage rate to 80%, and China tries to lower medicine prices via bioequivalence test requirements and volume-based procurement.
- Several blockbuster drugs that generated >US\$1bn in annual sales each, including Revlimid, had their patents expire in 2022. Over the next five years, around US\$110bn worth of drugs will lose their patent protections. It represents a good opportunity for Taiwan generic drug producers to pursue ODM opportunities and explore the market.

No.	Country	2020		2016-2020	2021-2025
		Sales (US\$100mn)	Growth (%)	CAGR (%)	CAGR (%)
1	US	3,860	4.5	2.4	3.2
2	China	1,551	3.6	-0.01	4.4
3	Japan	1,081	4.1	3.1	2.8
4	Germany	760	5.7	5.2	4.3
5	UK	425	1	1.4	4.9

Source: Mordor Intelligence, Fitch Solutions, SinoPac

# Distinctive companies in the eye care and generic drug sector

Subsector	Company	Ticker (TT)	EPS			5-year P/E			Current
			2021	2022	2023	Lower end	medium	Higher end	
Contact lens	Pegavision	6491	17.84	22.03	24	13	23	41	15
	St.Shine	1565	18.8	20.22	14.23	11	15	22	17
Eye treatment	Universal	3218	7.82	10.64	13.69	11	28	46	29
	Brighten Optix	6747	9.87	10.56	11.7	15	23	34	19
Pharmaceutical	Lotus	1795	5.34	11.49	16.53	14	25	40	19
	Bora	6472	11.04	18.46	45.59	11	23	57	17

Source: Cmoney; SinoPac Estimates; Market Data at the JUN 1 market close

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