Mirae Asset Capital (China)

Introduction Material

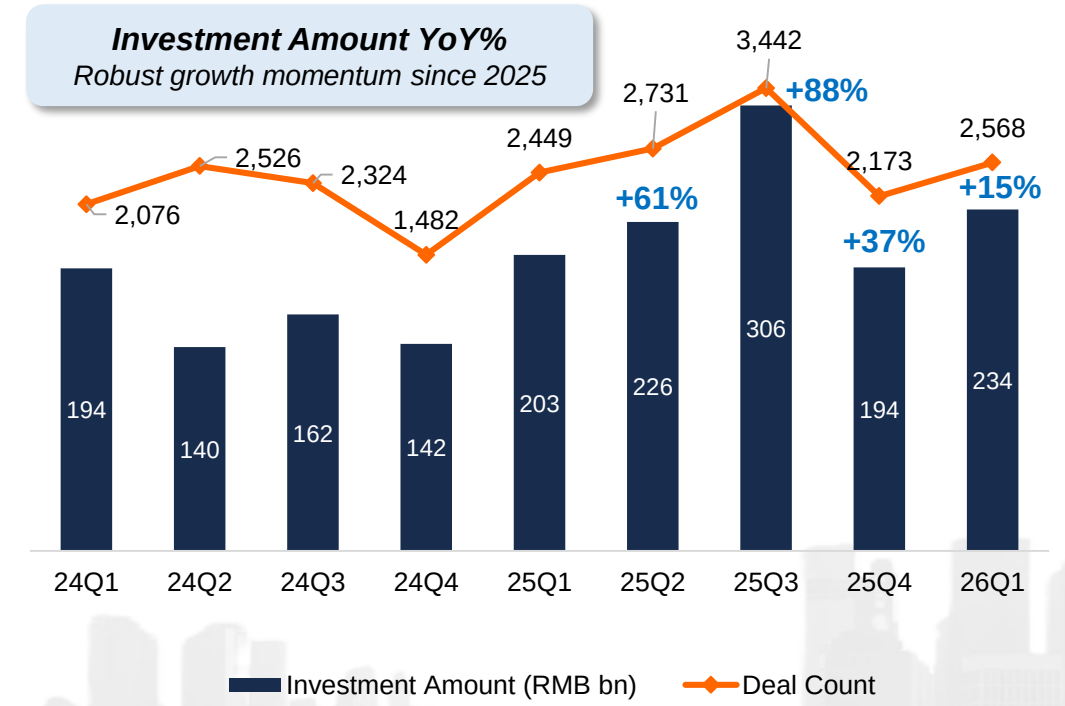
MIRAE ASSET
Capital (China)

Table of Contents

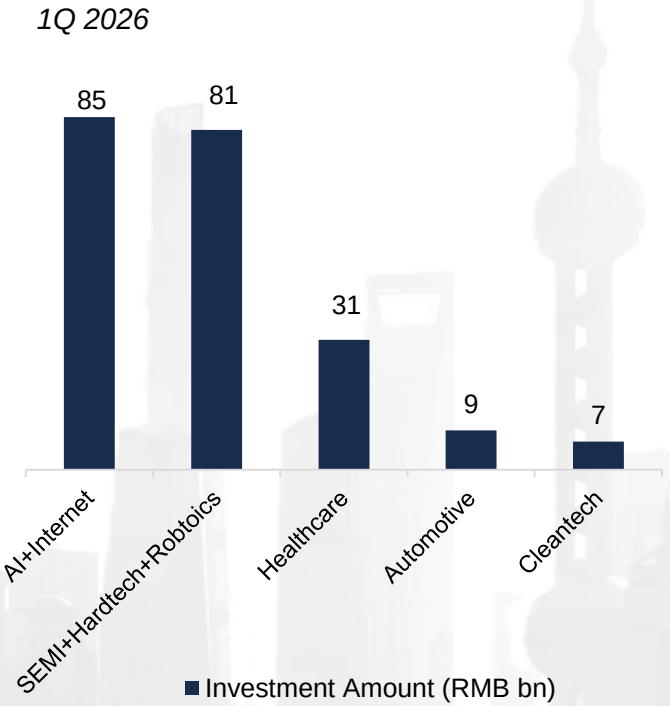
China PE/VC Investment is Accelerating, with Deal Value Surging 88% YoY and Sustaining Momentum into 2026

- The China PE/VC investments continued stable increase in 1Q 2026, with a total of **2,568** investments made with total deal value of **RMB 234.4 (USD 34.0bn)**
- **Semiconductor, Robotics and AI** are well positioned as the most favored sector for PE/VC investors

Investment Amount and Deal Count



Sector Breakdown



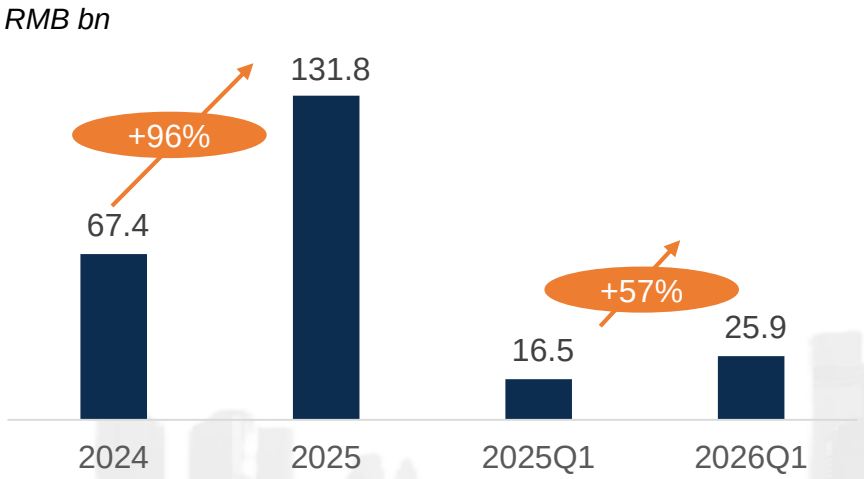
Source: Zero2IPO

China Equity Markets are Delivering Strong Returns

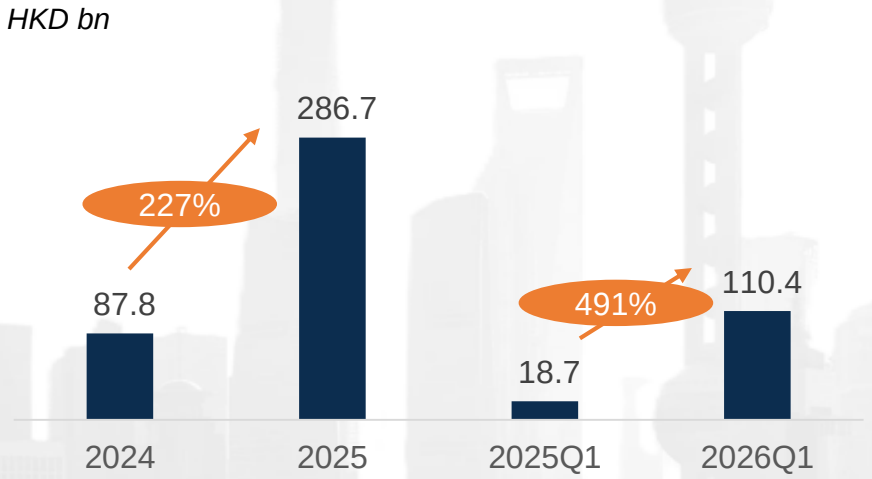
- A-share and Hong Kong equity markets have entered a robust phase, evidenced by improving investor sentiment, robust performance in tech sectors, and a clear rebound in primary market activity
- Strong gains in the STAR-50, ChiNext and Hang Seng Tech indices highlight the strength of onshore innovation-driven equities, while the sharp increase in IPO fundraising in both A-share and Hong Kong markets points to a broader reopening of capital market momentum

STAR-50 (A-share)	ChiNext (A-share)	Hang Seng Tech (HK)
Jan-2025 to date[1]	*Jan-2025 to date[1]*	*Jan-2025 to date[1]*
+85.3%	***+96.0%***	***+16.4%***

A-share IPO market – Capital raised



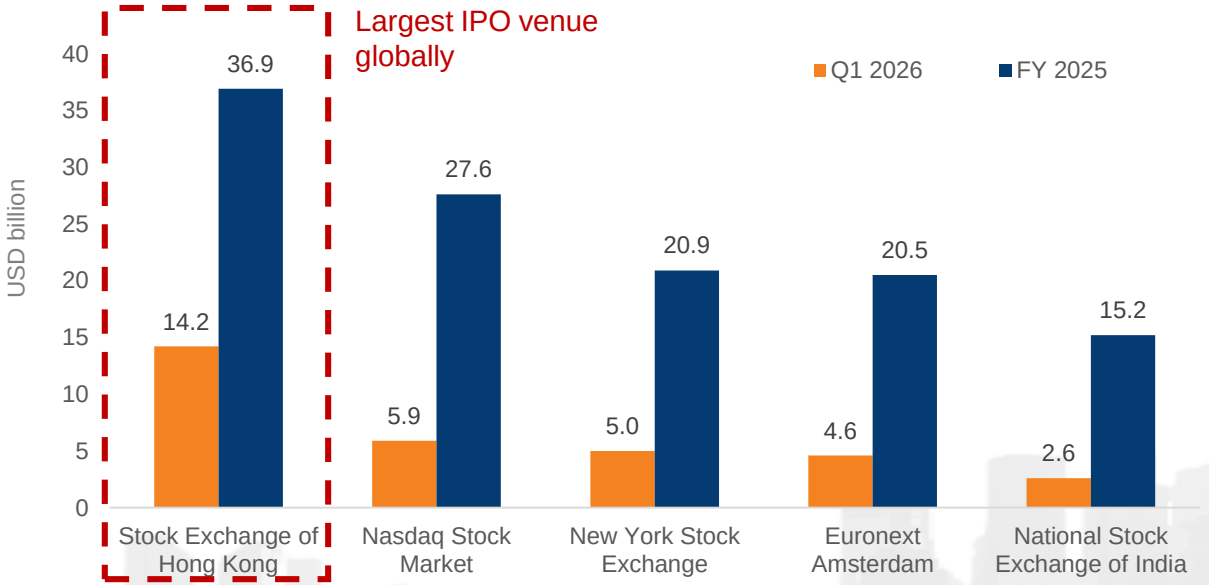
HK IPO market – Capital raised



Source: WIND. 1. From Jan 1, 2025 to May 13, 2026

HKEx is the Largest IPO Venue with Strong Post-IPO Return

HKEX 香港交易所



168

HKEx-listed IPOs since Jan 2025

~47.9%

Accumulated Return Since Listing

~85.8%

Tech-related Listing
Average Accumulated Gain

~74.7%

Large-Cap IPO[1]
Average Accumulated Return

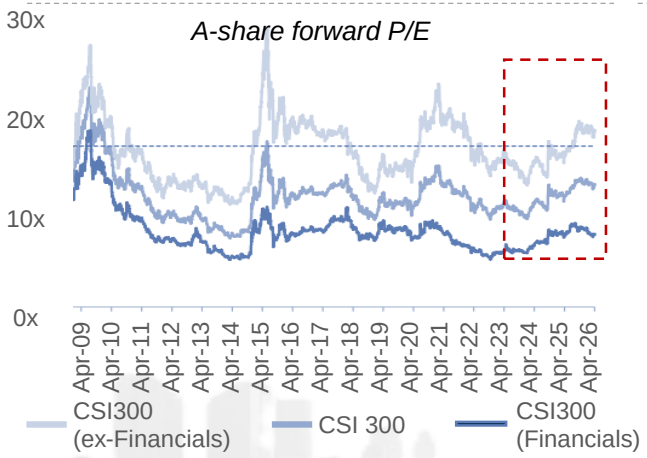
Source: Bloomberg and KPMG (including REIT deals and excluding SPAC deals), as of Mar 31, 2026. 1. Large-Cap: ≥HK$ 10bn market cap at listing

China's Policy Environment and Capital Ecosystem Provide Structural Tailwinds

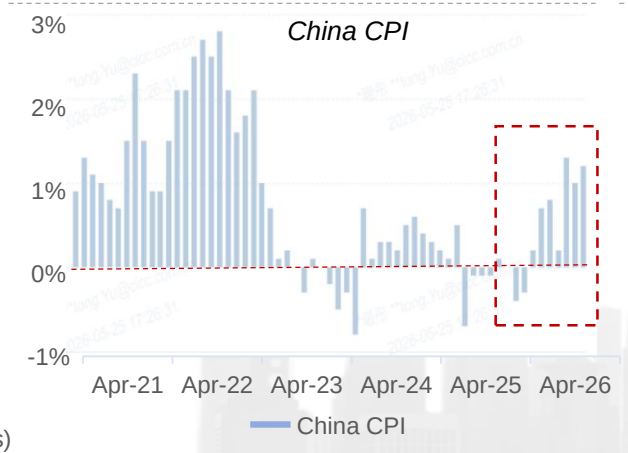
15th Five-Year Plan (FYP)

- **High technology** driven — Prioritizes new-quality productive forces and technology independence
- **25%** GDP contribution — …from new-quality productive forces by 2029
- **RMB 10tn** Total value — …of industrial cluster by 2030
- **Semi-conductor** — AI computing, data storage and transmission, core equipment
- **Robotics & digital economy** — AI automation, 5G infrastructure
- **Frontier technologies** — Quantum computing, biotech, space tech, controlled nuclear fusion

Upward re-valuation of China asset



CPI uptick evidences economy upturn



Sustained and solid economy recovery

Source: National statistics; Note: data by Mar 31st, 2026

Table of Contents

MAC China Overview

- Mirae Asset Capital (China), as Mirae Asset's private equity arm in the Greater China area, has established a leading presence in multiple core sectors in China, such as **AI, robotics, semiconductor, healthcare**, among others
- Since the inception in 2019, we have invested in over **35 target companies**, with over **US$ 400mn AUM**
- Focusing on China's robust **manufacturing capabilities** and **strong R&D**, we are dedicated to exploring the latest tech trends to capture investment opportunities
- Our exited positions[1] achieved **1.8x MOIC** and **36.6% IRR**, with total distribution of **US$ ~100mn** to LPs

Note: 1. Including XtalPi, Biortus, BioNTech, 4DMT, KeyMed, Pinecone, and Forest Cabin

MAC China Team Profile

Byung Ha Kim
Co-Chief Executive Officer
28-year experience

- Mirae Asset Global Investments HK
- Mirae Asset Economic Research Institute
- Mirae Asset Global Investments
- BA, Seoul National University

Jim Wang
Co-Chief Executive Officer
22-year experience

- Standard Chartered PE
- Olympus Capital
- Lehman Brothers
- International Finance Corp (IFC)
- MBA, University of Michigan
- MEcon & BEcon, University of International Business & Economics

SungWon Song
Executive Director
11-year experience

- Mirae Asset, New York
- PhD, The Ohio State University
- MA, Columbia University
- BSc, Korea University

Peter Zhai
Chief Compliance & Risk Officer
16-year experience

- China Merchants Securities Capital
- Value Partners
- First Capital
- Sealand Innovation Capital
- King & Wood Mallesons
- Durham University

Tony Hu
16-year experience

- GAC Capital
- Huatai Futures
- State University of New York at Buffalo
- Guangdong University of Finance & Economics

Yueli Guan
11-year experience

- CITIC PE
- Bain & Company
- University of North Carolina
- Peking University

Shawn Sun
10-year experience

- Deutsche Bank
- Columbia University
- The University of Hong Kong

Liyingzi Zhou
10-year experience

- IDG Capital
- Johns Hopkins University
- Brandeis University

Harvey Guan
5-year experience

- Legend Capital
- CMC Capital
- Peking University

Mingjiu Wang
5-year experience

- Tsingsong Capital
- Peking Union Medical College, Tsinghua University
- Shanghai Jiao Tong University

Roy Fang
4-year experience

- China International Capital Corporation
- New York University

Ida Hu
Compliance Manager
5-year experience

- PricewaterhouseCoopers (PwC)
- University of Oslo
- Beijing Foreign Studies University

Well-Recognized for Prominent Presence in China

- In less than 7 years, MAC China has established itself as one of the most active and recognized foreign PE funds in China, highly acknowledged by institutional investors, peer funds, industry experts, target companies and portfolio companies
- We are proudly ranked **Top 20 Best Foreign PE Funds** in China in 2025, **1 of only 5 international funds** alongside KKR, Temasek, Warburg Pincus, and Morgan Stanley, and **the only Korean fund among them**

Awards and recognitions from prestigious institutions

Chinese Venture
2020 Annual
China Rising Stars

Top 10

CV Awards
2024 Best
Foreign Venture Capital
in China
Top 30

CV Awards
2025 Best
Foreign Private Equity
in China
Top 20

China Bridge
2022 Best China
Semiconductor
Investment
Top 10 – VastAI
&
Most Spotlighted
Investment
Top 20 – Inceptio

China Bridge
2022 Most Promising
Institution in China
Healthcare Investment

CV Awards
2024 Best China
Healthcare Investment

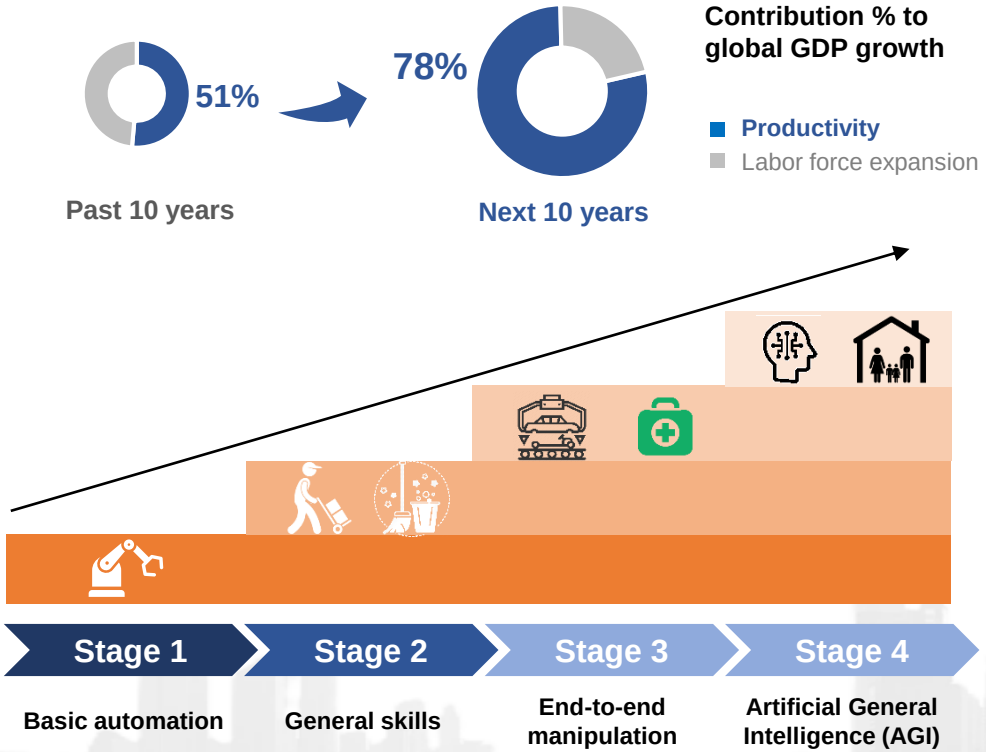
Top 10

Table of Contents

Investment Strategy – Robotics

- **Productivity** is the primary growth driver to industrial output and to reshape the competitive landscape
- **Focus on 1) AI robotics products**, including innovative humanoid robots and robotics models; **2) critical components** such as sensors, modules and mechanical components

Robotics drives productivity



Source: The Conference Board Total Economic Database, United Nations, AutoLab

Focus on AI robotics and supply chain

AI robotics

- Humanoid robots
- AI and robotic models

Robotics

Supply chain

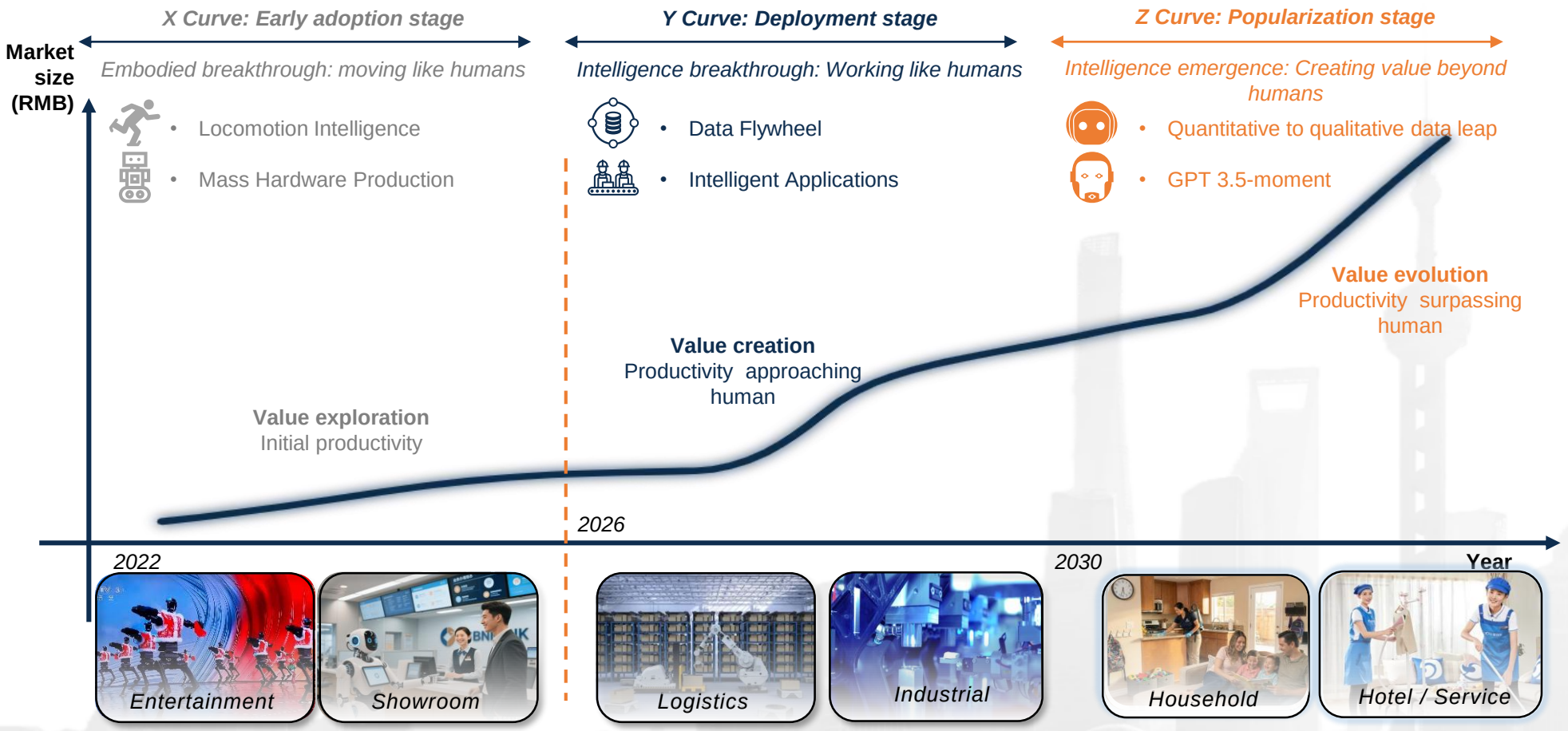
Critical components

- Dexterous hands
- Sensors, chips & modules
- Core mechanical components

Investment Strategy – Robotics

- **Humanoid** is entering the **deployment stage**, with massive pilot and penetration across scenarios

The growth curve of humanoid

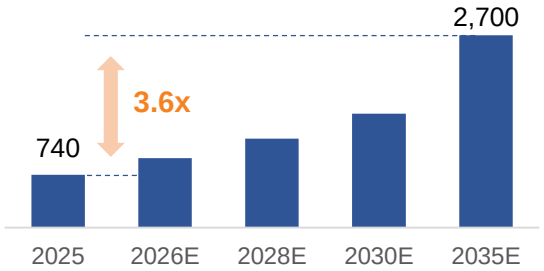


Investment Strategy – Semiconductor

- **Semiconductor** is the backbone that powers every link in the AI value chain and is set for significant growth
- Our investment focus targets two high-conviction segments: **datacenter** chips driving AI compute, and **edge AI** silicon powering the next wave of intelligent devices

Decade of sustained growth in the semiconductor sector

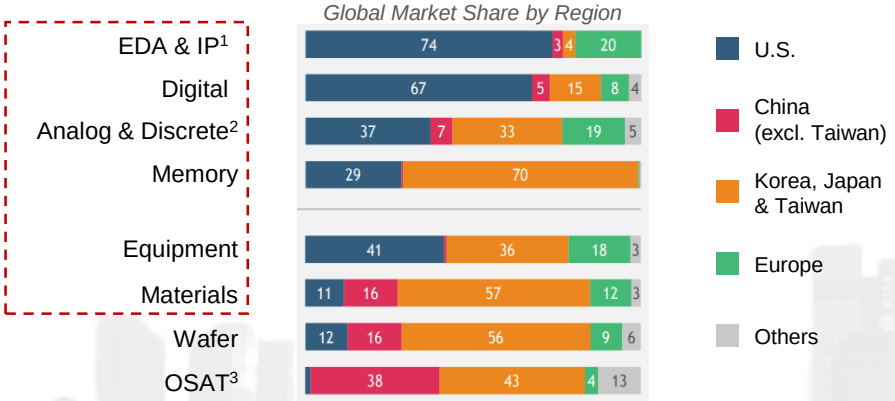
($ bn)



Growth drivers:

- Dual growth engines from logic & memory
- Surge of AI demand surges & edge computing
- Connectivity trend

With structural opportunities in core segments



Focus on high-value chip design opportunities

Datacenters

- GPU, TPU
- Compute-in-memory (CIM) for bandwidth & power efficiency

Edge AI

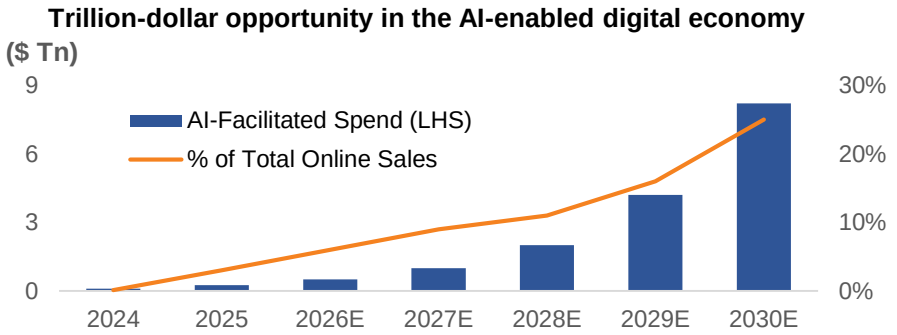
- Robotic computing platform
- Autonomous driving chips

Source: BCG, SIA. 1. Electronic Design Automation (EDA), Intellectual Property (IP). 2. Discrete components, analog IC, and others. 3. Outsourced Semiconductor Assembly and Test

Investment Strategy – AI & Applications

- **AI applications:** We look for platforms in key domains with defensive moats that can rapidly scale in large markets, such as agentic AI, autonomous mobility, personalized e-commerce and AI drug discovery
- **Models & infrastructure:** We look for 1) next-generation AI models in multi-modal and 3D realms, 2) cloud-native acceleration and fine-tuning platforms that drive cost-effective scalability and customizability of large-scale AI deployments, and 3) silicon-level connectivity innovations that cuts latency and power consumption for real-time inferencing

AI triggers the next longstanding technology wave



Agentic / Application layer

- Transition from Copilots to Full-Stack Autonomy
- Hyper-Personalization and Ambient Intelligence

Model layer

- Emergence of Multi-Modal Reasoning
- Pivot from sheer parameter scaling toward "mixture-of-experts" (MoE) and domain-specific distillation

Focus on AI applications and AI-enabled industries

AI applications

- Agentic AI and workflow automation
- Autonomous driving solutions
- E-commerce, branding & marketing
- AI biotech & drug discovery

Applications

Upstream

Models & infrastructure

- Multi-modal models (text-to-video, 3D generation)
- Cloud acceleration and model fine-tuning
- Silicon-level connectivity

Source: Allianz Global Investors, ARK, company disclosure

Diversified Exit Strategies

- Diversified exit strategies through IPO and secondary transactions

- China A-share IPO
- HK and overseas IPO

- Secondary sales to financial investors
- Secondary sales to strategic investors

World's largest IPO financing market

HKEX 香港交易所

✓ **US$ 37bn**
IPO proceeds (2025)

✓ **234%** YoY

China assets deliver outstanding post-IPO performance

Z.AI — SEHK: 2513 — **+6.32x** since IPO in Jan 26

Insilico Medicine — SEHK: 3696 — **4.99x**[1] MOIC of MAC China

MEITAX 沐曦 — SHSE: 688802 — **+7.34x** since IPO in Dec 25

LIGHTELLIGENCE 曦智科技 — SEHK: 1879 — **+3.09x** since IPO in Apr 26

Active participation from overseas investors

- Active overseas investor participation, supported by well-established and standardized exit channels

CATL 宁德时代 — *Hong Kong IPO*

RBC · MIRAE ASSET · UBS · OAKTREE · Kuwait Investment Authority

MINIMAX — *Hong Kong IPO*

ADIA · MIRAE ASSET · PRUDENTIAL · ASPEX MANAGEMENT

LIGHTELLIGENCE 曦智科技 — *Hong Kong IPO*

Fidelity INVESTMENTS · MIRAE ASSET · GIC · BLACKROCK · Schroders

Source: Deloitte, as of May 13th, 2026; 1. MOIC of MAC China as of Mar 31st, 2026

Table of Contents

MAC China's Track Record in AI and Deep Tech Sectors

MAC China – AI & Deep Tech Portfolio

瀚博半导体 Vastai Technologies
High-performance AI inference GPU

赢彻科技 Inceptio
Autonomous trucking solution provider

AGIBOT
Humanoid robots

EDGE MEDICAL 精锋医疗
Surgical robots

XtalPi 晶泰科技
AI & Quantum physics-powered CXO

Insilico Medicine
AI-driven drug discovery

芯华章 X-EPIC
EDA & AI Cloud Simulation

Genspark
AI Agent & Workspace

US$ 113mn
Investment amount

80%
Completed IPOs or subsequent financings

Follow-on investors include **Sequoia, Warburg Pincus, Nvidia, Legend Capital, China State Council-backed funds**

29.2%
IRR

0.63x
DPI

Note: as of Mar 31st, 2026

MAC China Track Record – Technology

AGIBOT

Industry: Humanoid Robot
Stage: Growth

瀚博半导体 Vastai Technologies

Industry: AI Chips
Stage: Growth

XtalPi 晶泰科技

HK Listed (Exited)

Industry: AI + Robotics
Stage: Growth

Genspark

Industry: AI Agent
Stage: Growth

EDGE MEDICAL 精锋医疗

HK Listed

Industry: Surgical Robots
Stage: Growth

Insilico Medicine

HK Listed

Industry: AI + Drug R&D
Stage: Growth

赢彻科技 Inceptio

Industry: Autonomous Driving
Stage: Growth

芯华章 X-EPIC

Industry: Semiconductor EDA
Stage: Growth

通嘉科技 GRAND HITEK

Industry: Semiconductor Vacuum Systems
Stage: Growth

MAC China Track Record – Healthcare & Consumer

BIONTECH

US Listed (Exited)

Industry: mRNA Therapy
Stage: Growth

康诺亚 KeyMed Biosciences

HK Listed (Exited)

Industry: Monoclonal Antibody
Stage: Growth

TL 苏州韬略

Industry: Small Molecule Drugs
Stage: Growth

普康 PUKANG

Industry: GLP-1 Upstream
Stage: Growth

LARONDE

Industry: RNA Therapeutics
Stage: Growth

BIORTUS

Trade sale (Exited)

Industry: CRO Platform
Stage: Growth

ZSM 珍视明药业

Industry: Consumer Healthcare
Stage: Growth

DEARER

Industry: Consumer Healthcare
Stage: Growth

林清轩

HK Listed (Exited)

Industry: High-End Skincare
Stage: Growth

Case Study – AgiBot

A leading AI humanoid robotic company

Business Highlights

- Founded in 2023, AgiBot is a leading AI humanoid robotic company
- Founded by former Huawei group vice president and president of wireless and computing product line, Company puts together 20+ years' world-class AI experience, as well as extensive supply chain and customers resources
- World's largest scale of real-world data collection system and facility, and leads global top foundation model performance and success rate

Recent Developments

Business developments

- Achieved mass production of 5,000 humanoid robots in 2025
- Rolled out the 10,000th unit of humanoid robots in Mar 2026

Post-investment value-add

- Facilitated business cooperation with LG, and enabled AgiBot to obtain product validation in LG's actual application scenarios
- "New Standard" filming and C-level interview
- Co-launched the "Hong Kong Embodied AI Innovation and Entrepreneurship Investment Initiative", led by AgiBot

Investment Overview

Company	AGIBOT
Sector	• Humanoid Robotics
Investment	• $7.5mn
Latest Valuation	• RMB 27bn ($4.0bn)
Current MOIC	• 1.7x

Capital Markets & Exit Strategy

Key shareholders	• Hillhouse, Sequoia China (HongShan), Lanchi, CDH, MPCi, Co-stone, MiraclePlus (formerly Y Combinator China)
Exit strategy	• HK IPO in 2026, exit in 2027

Case Study – Insilico Medicine (SEHK:3696)

A leading AI biotech in the global market

Business Highlights

- Founded in 2014, Insilico Medicine is a leading player in AI small molecular drug discovery
- The Company's platform enables fast and diverse pipeline development, attracting multiple deals from global pharmaceutical companies
- Achieved revenue of $56mn in 2025, including $25mn from drug discovery, $24mn from pipeline development, and $5mn from software solutions

Investment Overview

Company	Insilico Medicine
Sector	• AI Biotech
Investment	• $8.0mn
Market Cap	• HKD 46.3bn ($5.9bn)
Total MOIC	• 6.9x[1]

Recent Developments

Business developments

- Nominates First Preclinical Candidate in the UAE
- $2.75bn AI-driven drug development partnership to accelerate the discovery and commercialization of novel therapeutics with Eli Lilly

Post-investment value-add

- Introduced Mirae Group's global resources

Capital Markets & Exit Strategy

Key shareholders	• Lilly Ventures, Wuxi AppTec, Hillhouse, Hongshan (Sequoia China),Temasek, CPE, OrbiMed, Fosun Pharma, Qiming Ventures, Prosperity7
Exit strategy	• HK IPO in 2025, exit in 2026

Note: market data as of Mar 31st, 2026

Case Study – XtalPi (SEHK:2228)

A global leader in AI drug design as next-generation CRO[1]

Business Highlights

- Founded in 2015, XtalPi is a leading AI Drug CRO[1] company
- The Company has developed the world's first full-process platform for enterprise AI, quantum chemistry, cloud computing, and automated robotics to provide various scenario-specific solutions
- In terms of commercialization, the Company recorded RMB 803mn in revenue in 2025, >200% growth from 2024 and achieved breakeven for the first time

Investment Overview

Company	XtalPi 晶泰科技
Sector	• AI Robotics and Science
Investment	• $11.0mn
Latest Valuation	• HKD 48.4bn ($6.2bn)
Total MOIC	• 2.5x

Recent Developments

Business developments

- $345mn multi-target collaboration & platform licensing deal with Eli Lilly
- $51mn licensing deal with DoveTree

Post-investment value-add

- Introduced 23 potential foreign clients to help XtalPi expand its global business

Capital Markets & Exit Strategy

Key shareholders	• Tencent, Hongshan (Sequoia China), Shunwei, Google, Softbank, SIG, China Life, OrbiMed, 5Y, CICC
Exit strategy	• HK IPO in 2024, exited in 2025

Note: market data as of Mar 31st, 2026; 1. Clinical Research Organization

Case Study – VastAI

Leading high-performance chip design company in China

Business Highlights

- Founded in 2018, VastAI Technologies (“VastAI”) is a leading high-performance chip design company in China
- VastAI’s SV100 AI inference chip delivers superior power efficiency, ultra-low latency and massive video codec capacity for AI inference, outperforming Nvidia in cost and density for edge and cloud video scenarios
- The company mainly serves top-tier internet enterprises, hyperscale data centers, and live-streaming platforms.

Investment Overview

Company	瀚博半导体 Vastai Technologies
Sector	• Semiconductor
Investment	• $10mn
Latest Valuation	• RMB 16.3bn ($2.3bn)
Current MOIC	• 1.25x

Recent Developments

Business developments

- Cloud rendering business have been in mass shipment to all major Chinese customers, including ByteDance, Alibaba, Tencent, China Unicom, Baidu

Post-investment value-add

- Introduced Mirae Group’s global resources
- Arranged roadshow meetings with strategic partners

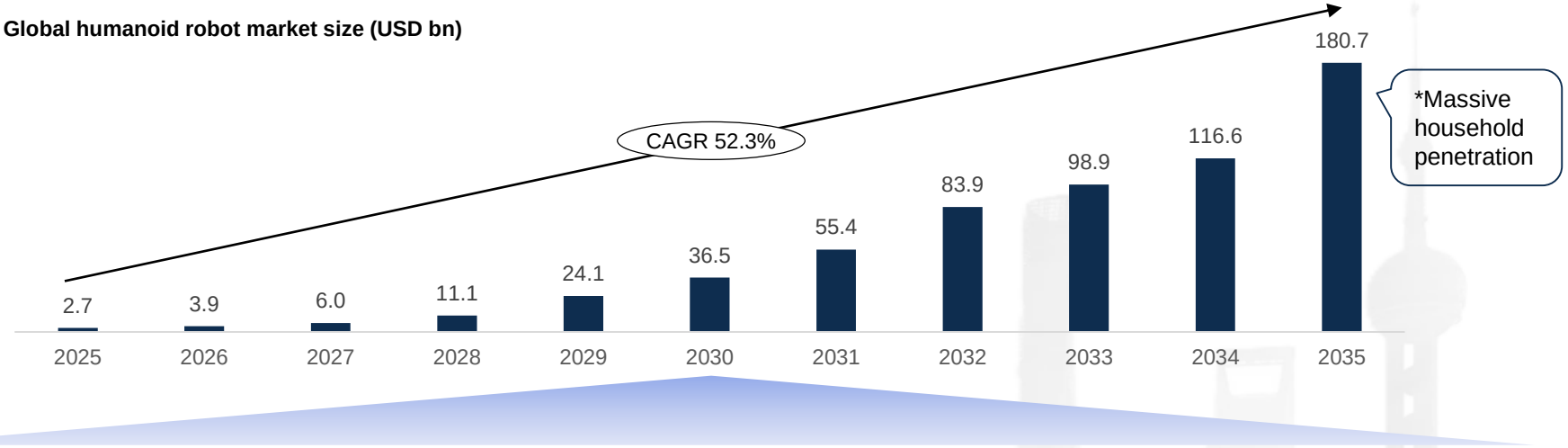
Capital Markets & Exit Strategy

Key shareholders	• Alibaba, Kuaishou, MediaTek, Matrix, 5Y, Zhen Partners, PICC, China Life, Ace Redpoint, China Merchants, E-Fund
Exit strategy	• HK IPO in 2027, exit in 2028

Table of Contents

A hundred billons global humanoid robot market enabled by recent leaps in AI and robotics technologies

- In 2025, the shipment of humanoid robots exceeded 17,000 units globally, a significant increase from 3,000 units in 2024. This growth was primarily driven by Chinese OEMs, led by Unitree and AGIBOT, benefiting from China's supportive policies, lower costs, and receptive customer base



Market pull – rising economic challenges around the globe

- (Qualified) labor shortages
- Shrinking working-age population
- Regionalization of supply chains
- Limited productivity gains
- Sticky inflation and rising cost pressure

Technology push – breakthroughs in core technologies

Software / AI

- Generative Artificial Intelligence (AI) and Large Language Models (LLMs) for robot interactions
- Complementary software models, incl. improved interfaces

Hardware / Robotics

- Next-gen actuators, batteries, and sensors
- Enhanced edge hardware tailored to AI use cases

Source: Deutsche Bank, Morgan Stanley, Roland Berger

Humanoid entering Y curve – deployment stage

The growth curve of humanoid

X Curve: Early adoption stage

Embodied breakthrough: moving like humans

- Locomotion Intelligence
- Mass Hardware Production

Y Curve: Deployment stage

Intelligence breakthrough: Working like humans

- Data Flywheel
- Intelligent Applications

Z Curve: Popularization stage

Intelligence emergence: Creating value beyond humans

- Quantitative to qualitative data leap
- GPT 3.5-moment

Market size (RMB)

1 trillion

100bn

10bn

Value exploration
Initial productivity

Value creation
Productivity approaching human

Value evolution
Productivity surpassing human

2022

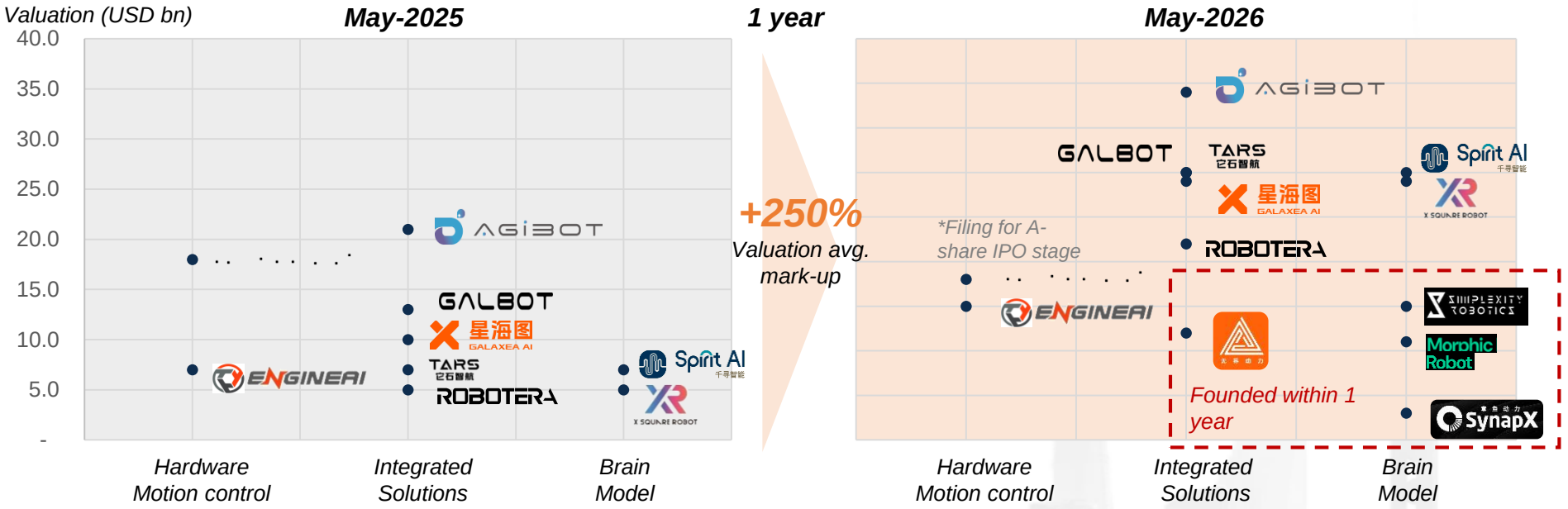
2026

2030

Year

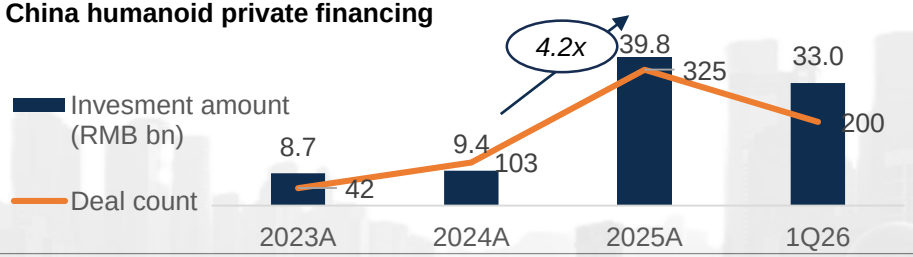
Ample and continuous capital injection & appeal

Upward rising of humanoid valuation



Continuous financing and strong capital appeal

China humanoid private financing



- **TARS 它石智航**
  - Latest round of financing: Apr 2026
  - Amount: USD 455mn (RMB 3.2bn)
- **GALBOT**
  - Latest round of financing: Mar 2026
  - Amount: RMB 2.5bn
- **AGIBOT**
  - Cash balance > RMB 2.0bn by 2025 year end

Proven industry inflection point with multi-scenario deployment

Major deployment scenario

Guide & Retail

- Fully autonomous
- Human-like service
- Personalized support

Service Kiosk

- Multimodal interaction
- Easy integration
- Low O&M cost

Security Patrol

- All-weather operation
- Arm-enabled tasks
- VLN navigation

AGIBOT **Deployment progress**

ANTA *Engagement and personalized guidance*

- Foot traffic: +20%
- Order conversion rate: 15%+

Hi 海底捞 *Customer engagement & queue ticketing*

- Foot traffic: +15%; targeting 15%
- 1 labor replaced: targeting 3 labors
- Implemented in 30+ stores

广州地铁 Guangzhou Metro *Component Loading/unloading*

- Cost reduction: 13%
- *Single entrance serves >4,000 ppl per day*

intel *Smart interaction and retail service*

- 24/7 hour operation
- *99% success rate*

Hotel service & cleaning

- Differentiated service in ceremonies
- Organic traffic and visitor

Proven industry inflection point with multi-scenario deployment (Cont')

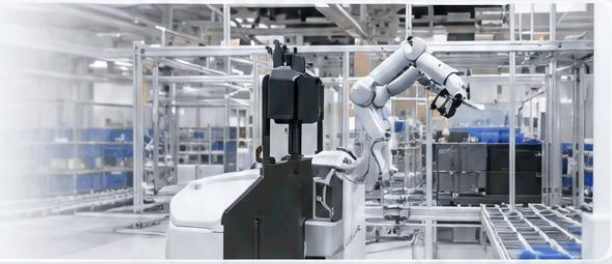
Major deployment scenario

Line Loading

- Flexible for mixed items
- Precise placement
- Fast deployment

Factory Handling

- Bin adaptive
- Multi-line transport
- MES & AGV ready



Smart Sorting

- Box, bag, odd-shape
- Shared scheduling
- 24/7 lights-out

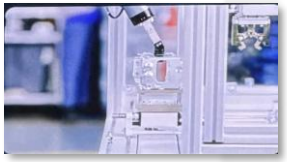
AGIBOT **Deployment progress**

LONGCHEER *Tablet & Mobile phone loading/unloading*

- Output: 5,700 units / day
- 7*24hr operation

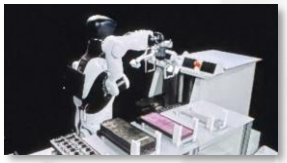
华天科技 HT-Tech *Chip testing Loading/unloading*

- Disk drop rate<0.001%
- *Chip testing: 1M units per day*



均胜电子 JOYSON ELECTRONICS *Component Loading/unloading*

- Success rate> 99.9%
- *Placement accuracy <1mm*



intel *Chip Tray handling*

- Disk drop rate<0.001%
- *Chip transfer: 100k / day*

DAMON *Logistics sorting & parcel feeding*

- 4.35sec per item (70% of human)
- *99% success rate*
- Reduces labor costs by 50%

Insights & deal review list – Robotic brain

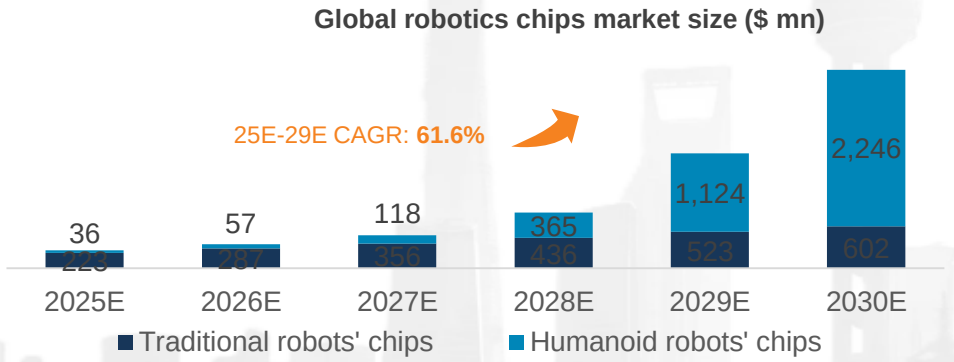
- A wave of startups is entering the **"robot brain"** space with large-model-centric approaches, claiming traditional robotics overweights hardware over intelligence—a narrative drawing strong capital market interest.
- The core logic of these enterprises is essentially a continuation of AI LLMsector, which merely extends the digital-world "model-as-a-service" paradigm; humanoid robots **are physical products**, and absent hardware, real-world data, and full-stack AI infrastructure, even superior algorithms cannot land in real physical scenarios.
- Our view: embodied intelligence is ultimately a **full-stack contest**, won by players combining (1) R&D and technology depth, (2) management vision and execution, and (3) commercialization and ecosystem build-out.

Company	Latest valuation	Revenue (2026E)
X Square Robot	RMB 20.0bn (USD 2.9bn)	RMB 100mn
Spirit AI	USD 2.0bn	RMB150mn
Simplexity Dynamics	USD 1.5bn	Pre-revenue
Anyverse Dynamics	RMB 8.0bn (USD 1.1bn)	RMB 60mn
Moqi	USD 1.0bn	Pre-revenue
SynapX	USD 300mn	Pre-revenue

Insights & deal review list – Computing platforms

- Robotics compute demand is shifting toward **higher-performance workloads**, driven by advancing model architectures (VLAs, world models) and the evolution from basic perception to multi-camera sensing, real-time control, and general-purpose humanoid intelligence.
- **Customer stickiness** to incumbent platforms is high, reflecting steep algorithm migration costs and deep embedded software ecosystem dependencies.
- **NVIDIA leads with 90%+ share** in humanoid robotics chips, while **demand for domestic** alternatives—as substitutes or complements—is rising rapidly.
- Our view: humanoid customers remain early-stage with no consensus on core technical roadmaps (VLAs, world models); near-term robotics chip revenues will stay anchored in scaled applications (vacuum cleaners, robotic mowers, etc.), with limited humanoid contribution over the next 12–24 months.

Company	Latest valuation	Revenue (2026E)
D-Robotics	USD 3.0bn	RMB 400mn
Rhino	RMB 10.0bn (USD 1.4bn)	RMB 300mn



Insights & deal review list – Dexterous hand

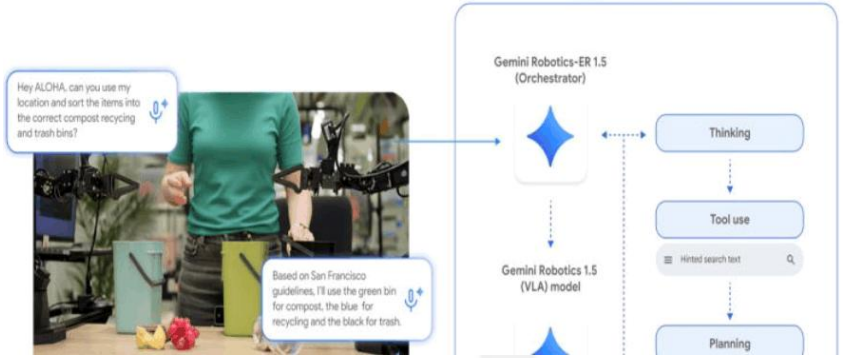
- Players pursue divergent approaches: some follow a **"Tier-1" hardware-centric path**, supplying standardized, robust, multi-functional hands while deprioritizing software and models; others position as full-stack operation solution providers, **integrating hardware** with advanced manipulation models and co-developing with humanoid OEMs on R&D and model training.
- To secure a strong position in the value chain, dexterous hand players must **engage end customers directly** and deliver the most complete solution possible—leading players such as Robot Era and Sharpa have already pivoted toward becoming full humanoid robot providers.
- Our view: positioning purely as a component supplier offers limited long-term upside—if dexterous hands prove critical to manipulation, top humanoid OEMs will internalize the capability, leaving pure third-party suppliers either displaced or relegated to contract manufacturing.

Company	Latest valuation	Revenue (2026E)
Robot Era	RMB 15.0bn (USD 2.1bn)	RMB 500mn
Sharpa	USD 3.5bn	RMB 300mn
Wuji	USD 1.6bn	RMB 300mn
AgiLink	RMB 7.0bn (USD 1.0bn)	RMB 400mn
Inspire Robots	RMB 6bn (USD 0.9bn)	RMB 350mn

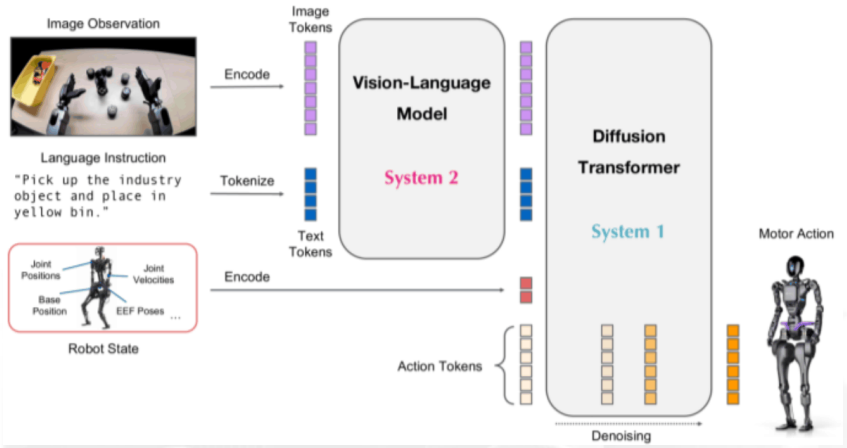
Brain: Architecture converging towards a dual-system VLA approach (Fast + Slow thinking)

- Humanoid robots are increasingly converging toward a two-timescale VLA architecture: a slow/reasoning model (semantic planning, language grounding) plus a fast/reactive controller (instinctual responses, high-rate motor execution)

Google Gemini Robotics 1.5: Embodied Reasoning (Orchestrator) + VLA (Actor)



Nvidia GR00T N1 foundation model: VLA model with a dual-system design



Brain: World Model emerging as the next-gen above/beside VLA

- World Model learns/predicts how the environment evolves and how actions change future states, rather than only mapping observation to next action
- VLA is primarily optimized to produce robot actions from observations + instructions; world models add explicit prediction/simulation of futures, which can improve planning, scenario coverage, and counterfactual reasoning

Cosmos Predict:
generate future states of dynamic environments

Input video: pouring water

Output video: what if I stop pouring? How will the water flow? Will it splash out?

Cosmos Transfer:
augment synthetic data to improve Sim2Real

Input video: synthetic with minimal details

Output video: high-fidelity 3D simulation across various environments and lighting conditions

Computing platform: NVIDIA continues to be dominant

- NVIDIA continues to be the dominant onboard processor due to performance, ecosystem, and ease-of-use

Company	Humanoid Platform	Architecture	Model Framework	Data Collection	Simulation / Training Platforms	Training Compute	Onboard Chips
Tesla	**Optimus**	End-to-End Multimodal VLA	Proprietary Multimodal Model	Teleoperation; transitioned to Simulation & Internet videos	Optimus Academy (Tesla's reality generator)	NVIDIA H100; adding in-house designed AI5	Transitioning to internally designed AI5
Boston Dynamics	**Atlas**	End-to-End VLA	Google Gemini Robotics + TRI LBM	Real-world data (Hyundai RMAC training center); Simulation	Leverage Nvidia Isaac	NVIDIA DGX	NVIDIA Jetson Thor
Figure AI	**Figure 02**	3-system VLA	Helix: 7B parameter pre-trained VLM (System 2) + 10M System 1 + 80M System 0	Human video	Leverage Nvidia Isaac	NVIDIA DGX	NVIDIA Jetson Thor
1X Technologies	**Neo**	VLA; transitioning to World Model	14B Generative Video Model + Inverse Dynamics Model (IDM)	Web scale video + 900h egocentric human video for mid training + 70h robot data for fine tuning	World model for generating video, without traditional physics-based simulators	NVIDIA DGX	NVIDIA Jetson Thor ("1X NEO Cortex")
Mentee Robotics	**MenteeBot**	Hybrid Modular (Perception + RL + LLM-based API)	VLM-based Perception + LLM-based high-level planner + proprietary transformers; flexibility to incorporate other models like World Model	Real2Sim2Real, heavily rely on simulation data	Leverage NVIDIA Isaac; private cloud enabled by NVIDIA RTX 6000 Ada	NVIDA DGX	Dual NVIDIA Jetson Orin; transitioning to Thor for future
Apptronik	**Apollo**	End-to-End VLA	Google Gemini Robotics (major partnership)	Teleoperation + Simulation	Leverage Nvidia Isaac	-	NVIDIA Jetson AGX Orin + Jetson Orin NX
Neura Robotics	**4NE-1**	Layered foundational model	Leverage Nvidia Isaac GR00T foundation models	Teleoperation + Simulation	Leverage Nvidia Isaac & Cosmos; "Neura Gyms" physical training center (working with Nvidia) ; Neuraverse synthetic data	-	NVIDIA Jetson Thor
Agility Robotics	**Digit**	Modular RL	Google Gemini Robotics (testing)	Teleoperation + Simulation	Leverage Nvidia Isaac	AWS EC2 G6 (NVIDIA L4 GPUs)	NVIDIA Jetson Thor
Unitree	**G1 / H1**	End-to-End VLA; exploring World Model	UnifoLM-VLA (based on Qwen2.5-VL-7B); UnifoLM-WMA	Teleoperation + Simulation	Leverage Nvidia Isaac	Distributed GPU Clusters	NVIDIA Jetson Orin NX / Intel Core i7/ Rockchip RK3588
AGIBOT	**G2**	Enhanced VLA-type model	ACoT-VLA, Genie Operator-1 (GO-1) = ViLLA (Vision-Language-Latent-Action) = VLM + MoE (Mixture of Experts)	Teleoperation (mostly real-world data from AgiBot World dataset) + Simulation	In-house Genie Sim 3.0 simulation platform (Nvidia Isaac Sim based)	NVIDIA DGX	NVIDIA Jetson Thor/ Rockchip RK3588

Hardware: Increasing dexterity and sensing against lower weight

Taking Tesla's Optimus V3 as an example:

- **Degree of freedom (DoF)**: For improved dexterity, Tesla could increase the DoF for the body to over 40, up from under 30 previously. Number of body actuators to increase from 28 to over 35, mainly due to increase in rotary actuators
- **Dexterous hand**: In addition to doubling the DoF to 22 per hand, Tesla could incorporate tactile sensing (namely electronic skin) with increased coverage from fingers to palms
- **Weight**: To reduce weight, Tesla V3 could adopt a titanium alloy and carbon fiber hybrid, as well as an aluminum-magnesium alloy for the skeleton
- **Battery**: Tesla could adopt a more powerful 3.2 kWh battery for V3, an increase from the previous 2.3 kWh
- **Compute**: Tesla could use the Dojo Edge chip for its V3 Optimus

Function	Change	Details
Degree of freedom (DoF)	More DoF for body	**Tesla Optimus V3** to increase body DoF from 28 to 45; number of actuators to **increase from 28 to 37**, mainly due to the increase in **rotary actuators** (20-23 units) whilst the number of linear actuators remains at about 14.
		Figure 03 launched in Oct 2025 comes with **35 DoF for body and 20 DoF per hand**. This compares to 28 DoF for body and16 DoF per hand for Figure 02 launched in Aug 2024.
		XPeng's IRON launched in Nov 2025 comes with **82 DoF**, including 22 DoF per hand.
Dexterous hand	More DoF for hand	**Tesla Optimus V3** to increase DoF from 11 per hand (6 active and 5 passive) to **22 per hand** (17 active and 5 passive).
	Sensing	**Tesla Optimus V3** to upgrade from basic force sensing to **multi-layer electronic skin**, with tactile feedback, capable of perceiving friction and weight. Coverage expands from fingers to palms.
	Design	**Tesla Optimus V3** to use **screw and tendo**n for motion transmission with actuators located at the forearm. This compares to using worm drive before.
		In addition to the **tendon-based** system, other commonly used solution is **screw-based** system. **Strain wave reducer-based** system, however, is rarely used.
Weight	Lighter material	**Tesla Optimus V3** to use **titanium** alloy and **carbon fiber** hybrid, **aluminum-magnesium alloy**, **PEEK** composite material and **ceramic balls** to replace traditional metal.
Battery	Longer duration	**Tesla Optimus V3** to improve battery to **3.2kWh** from 2.3kWh previously, and to increase voltage to 72v from 48v.
Compute	Stronger computing	**Tesla Optimus V3** to use one 5 nm Dojo Edge chip vs. two FSD chips before.