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Published on March 28, 2025

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Impact of China's High-Tech Fund

Assessing investment trends in China and the fund's key risks and opportunities in the country's private markets

PitchBook is a Morningstar company providing the most comprehensive, most accurate, and hard-to-find data for professionals doing business in the private markets.

Key takeaways

- Amid economic uncertainty and an escalating tech rivalry between China and the US, China's VC activity has weakened significantly in recent years, with private investment declining across key deep-tech sectors. Against this backdrop, the high-tech fund—a state VC guidance fund—was introduced in March 2025 to revitalize innovation and sustain China's push for technological self-sufficiency. By injecting 1 trillion yuan (roughly $138 billion) over 20 years, the fund aims to counteract declining private capital flows and strengthen China's high-tech VC ecosystem.

- The fund will allocate capital across multiple sectors, but its impact will vary. In AI & ML, the fund is expected to reinvigorate weakened VC investment. While investment will also rise in semiconductors, the fund risks crowding out private capital in the sector. Quantum computing and hydrogen energy, however, remain highly state driven, making it difficult for VC to participate.

- Past state investment programs suggest that government-linked firms may be favored, limiting opportunities for private market investors. If the high-tech fund follows a similar pattern, capital misallocation and restricted private market participation could become key risks.

- Ultimately, the fund's success will depend on how it integrates private capital. If structured effectively, it could stabilize China's deep-tech VC ecosystem. However, if state-backed firms dominate funding flows, private investors may remain cautious, limiting the fund's long-term impact on innovation and market growth.

China's strategic push for high-tech leadership

China launches new fund to support high-tech industries

China's ambition to become a global leader in emerging technology has never been more urgent. In March 2025, the Chinese government unveiled a state-backed VC guidance fund to accelerate innovation in critical industries such as artificial intelligence & machine learning (AI & ML), quantum computing, 6G, semiconductors, and clean energy. With an estimated 1 trillion yuan (roughly $138 billion) in capital deployment over 20 years, this "high-tech fund" aims to strengthen China's technological independence at a time when geopolitical tensions, economic challenges, and shifting private market dynamics are reshaping global investment flows.

While China has long relied on state influence to drive technological progress, it is worth asking if the high-tech fund will stimulate private market growth or reinforce state dominance and crowd out independent investment. After all, the effectiveness of similar funding mechanisms has been mixed. Previous industrial policies, such as the China Integrated Circuit Industry Investment Fund (also known as the "Big Fund") introduced in 2014, and various AI investment programs have successfully expanded domestic capacity in strategic sectors but often at the expense of private sector participation and efficient capital allocation. The high-tech fund builds on these past efforts, but its structure and execution will determine whether it creates new opportunities for VC and PE investors or follows past patterns of government-driven capital misallocation.

Past policies in the tech sector

Policy	Year(s) introduced	Objective	Key impact areas
Made in China 2025	2015	Establish China as a leader in high-tech industries and reduce its reliance on nondomestic technology.	AI, semiconductors, robotics, clean energy
China Integrated Circuit Industry Investment Fund (Big Fund)	2014 (Fund I), 2019 (Fund II), 2024 (Fund III)	Reach China's national goal of achieving self-sufficiency in the semiconductor industry.	Semiconductor manufacturing, chip design
New Generation AI Development Plan	2017	Develop world-class AI capabilities, including large language models and industrial AI.	AI research, large-scale AI models, industrial AI application
14th Five-Year Plan	2021	Strengthen China's economy.	Technological self-sufficiency, green and renewable energy transition, digital economy and infrastructure

Sources: The People's Republic of China State Council, Caixin Global, Stanford University, Center for Security and Emerging Technology • Geography: China • As of March 14, 2025

Why this fund, and why now?

Economic challenges and geopolitical pressures have intensified China's drive for technological self-sufficiency. The country has faced a challenging economic environment with rising labor costs and decreased productivity putting pressure on its past reliance on low-cost manufacturing. Additionally, rising trade restrictions from the US, especially under the second Trump administration, have cut off China's access to critical technologies such as AI chips and semiconductor manufacturing equipment, prompting a significant shift in its industrial policy.

As global competition in high technology escalates, China has prioritized dominance in AI, semiconductors, quantum computing, and clean energy to maintain strategic autonomy and reinforce its economy. The semiconductor industry, crucial for AI and defense systems, has become a focal point as China seeks to establish an independent supply chain, especially in light of US restrictions on advanced chip access. Despite challenges, China's AI sector has rapidly advanced, led by homegrown companies such as DeepSeek, Baidu, and SenseTime.

Additionally, quantum technology has become a national priority, as these technologies can yield substantial military and economic benefits. China has reached significant milestones in quantum communication. The hydrogen energy sector is also a vital part of China's strategy to achieve carbon neutrality by 2060. Overall, China is committed to developing core technologies domestically to strengthen its global position.

More about the fund and its impact on private markets

The 1 trillion yuan (roughly $138 billion) high-tech fund unveiled in March 2025 by China's National Development and Reform Commission will have a broader scope than previous state investment programs that focused on a single industry, such as the Big Fund, which targeted chip manufacturing. Direct investment will be deployed into multiple strategic sectors, including AI & ML, quantum computing, semiconductors, hydrogen energy, and 6G.

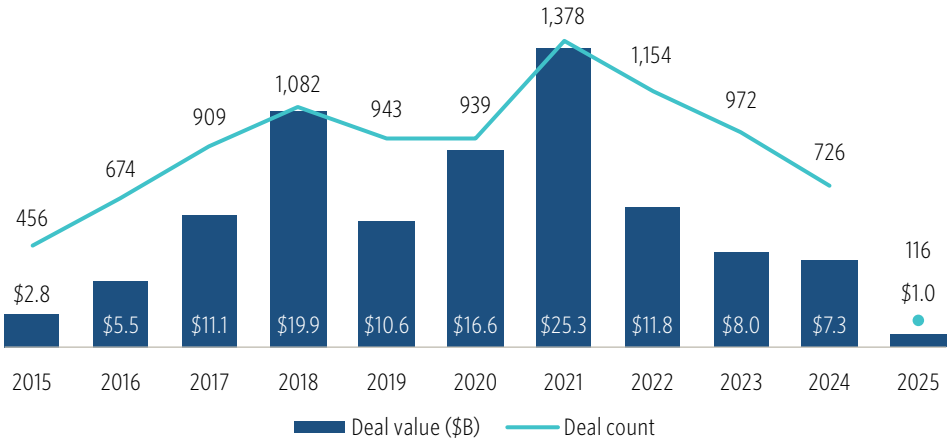
AI & ML

Private market investment in Chinese AI & ML companies surged between 2019 and 2021 but has since declined, aligning with the broader trend of slowing private market activity in China's high-tech sectors. This downturn was driven by economic uncertainty and regulatory tightening after 2022. Geopolitical factors, particularly US restrictions on AI chip exports, have further complicated the landscape, limiting access to critical semiconductor components and deterring nondomestic capital inflows.

Despite this slowdown, government-backed VC investment in AI & ML has grown recently. The proportion of government-backed AI & ML VC deal value relative to total AI & ML VC deal value has steadily increased over the years, reaching 24.1% in 2024—the highest annual proportion recorded. This indicates that the state is playing a larger role in sustaining AI & ML investment as private capital is pulled back, and the launch of the high-tech fund will build on this trajectory.

However, despite its growth, state-backed capital remains a minority share of total AI & ML funding. China's AI & ML ecosystem is still heavily dependent on private market participation, raising concerns about whether AI & ML startups that benefited from state funding can secure follow-on private investment in later stages.

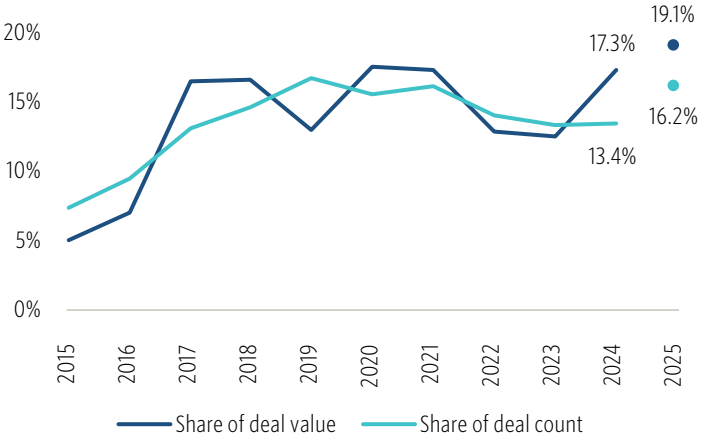
AI & ML VC deal activity



Source: PitchBook • Geography: China • As of March 14, 2025

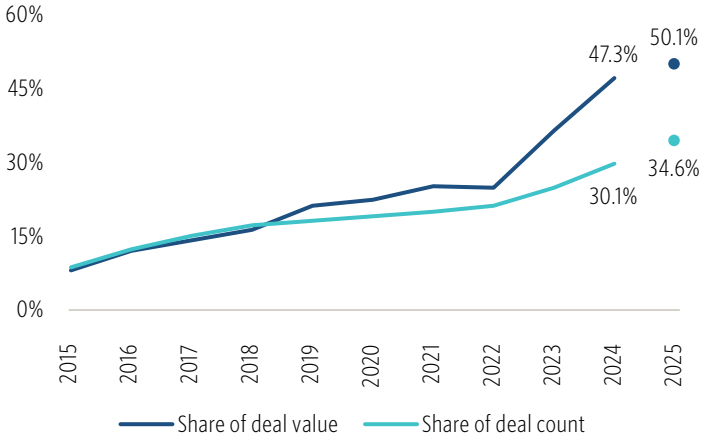
Meanwhile, China's AI & ML investment continues to lag investment in the US, particularly in generative AI and foundation models, where investment soared in the US in 2023 and 2024. The surge in US AI & ML funding has been driven by strong VC interest, major corporate investments (such as Microsoft's multibillion-dollar backing of OpenAI), and deep capital markets that facilitate aggressive fundraising rounds. In contrast, China has struggled to attract similar levels of sustained private investment, as global investors remain cautious due to macroeconomic conditions and geopolitical risks.

AI & ML VC deal activity as a share of all China VC deal activity



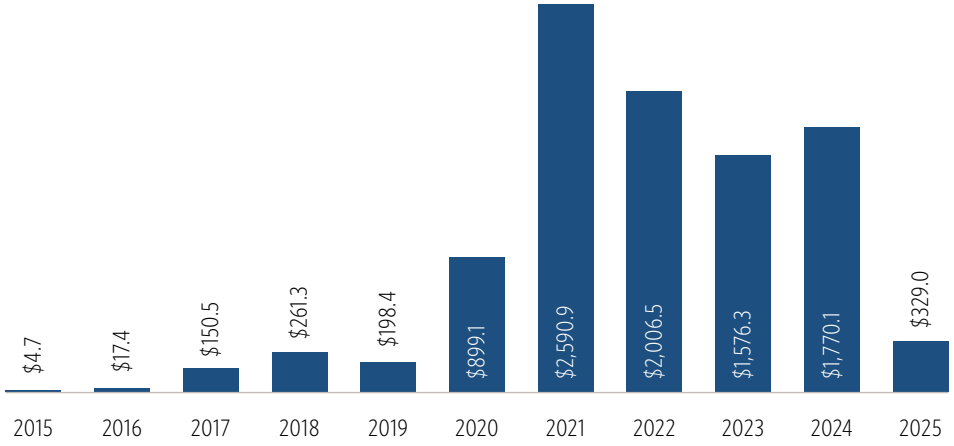
Source: PitchBook • Geography: China • As of March 14, 2025

AI & ML VC deal activity as a share of all US VC deal activity



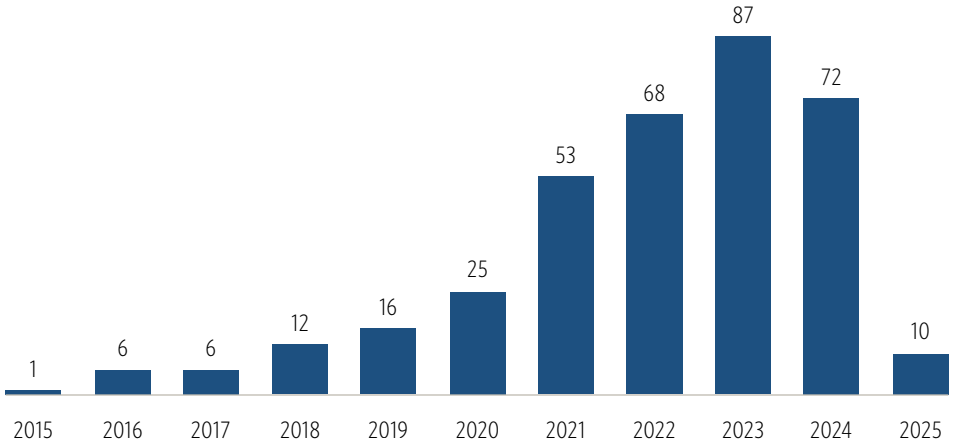
Source: PitchBook • Geography: US • As of March 14, 2025

AI & ML VC deal value ($M) with government investor participation



Source: PitchBook • Geography: China • As of March 14, 2025

AI & ML VC deal count with government investor participation



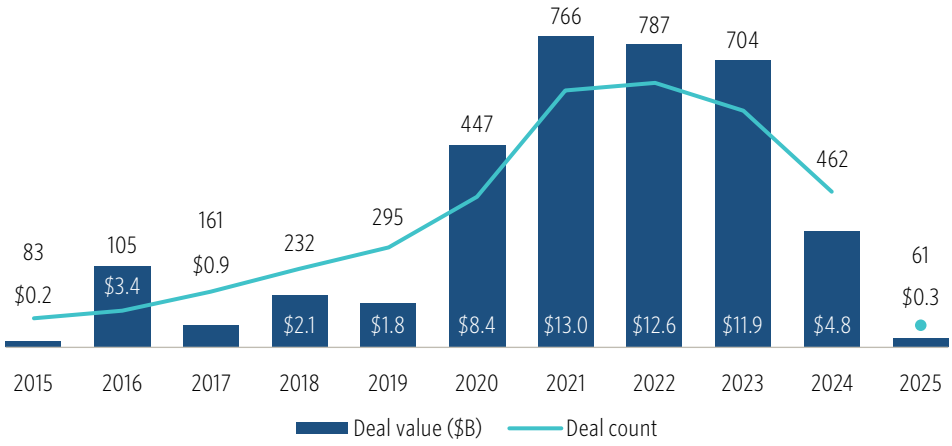
Source: PitchBook • Geography: China • As of March 14, 2025

This growing gap in AI & ML investment between China and the US highlights the need for stronger state intervention. By targeting AI & ML, semiconductors, and computing power under a single framework, the fund reflects the increasing overlap between AI & ML development and China's self-sufficiency efforts in advanced computing. Given that private AI & ML investment remains volatile, the high-tech fund is expected to serve as a stabilizing force, ensuring that China can continue advancing its AI & ML sector despite global headwinds and rising US dominance in AI & ML investment.

Semiconductors

Private market investment in China's semiconductor sector surged between 2020 and 2022 but has declined sharply since 2023, aligning with the broader slowdown in private capital participation across deep-tech sectors. However, as seen within AI & ML VC investment, the number of semiconductor VC deals with government involvement has been rising. This shift aligns with China's broader industrial policy where state-led capital is increasingly filling the gaps left by retreating private and nondomestic investors.

Semiconductor VC deal activity



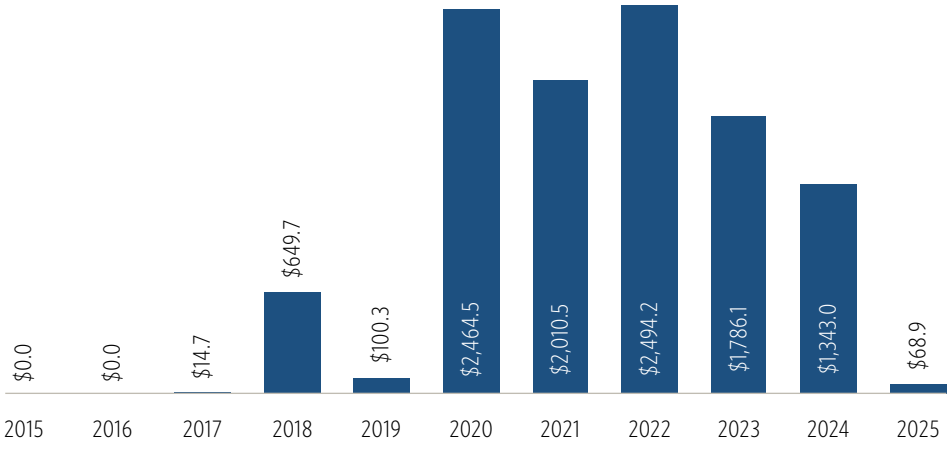
Source: PitchBook • Geography: China • As of March 14, 2025

Despite government activity, growth in semiconductor investment in China remains sluggish compared with global semiconductor leaders. The US has maintained its dominance in advanced semiconductor research & development, benefiting from strong VC backing, deep capital markets, and corporate investment in next-generation computing technologies. Meanwhile, Taiwan and South Korea lead the global semiconductor fabrication market, with TSMC and Samsung commanding the most advanced semiconductor production capabilities.

China, by contrast, continues to struggle with sustained private investment in the semiconductor sector as geopolitical risks, US sanctions, and regulatory intervention create a highly uncertain market environment. While state funding has increased, it is unclear whether China can achieve semiconductor self-sufficiency without strong private market participation. The long-term viability of government-led investment strategies remains in question, particularly in areas that require large-scale private capital involvement for innovation and commercialization.

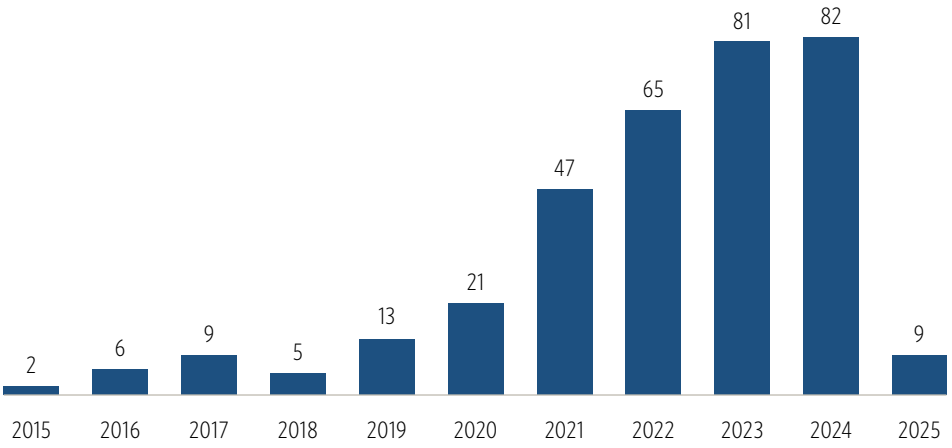
The high-tech fund is expected to provide long-term capital to strategic industries, including semiconductors. This comes at a critical moment when private investment in semiconductor startups is declining and state-backed VC deals are taking on a larger role. However, whether the fund will revitalize private sector participation or reinforce state control over the industry remains to be seen.

Semiconductor VC deal value ($M) with government investor participation



Source: PitchBook • Geography: China • As of March 14, 2025

Semiconductor VC deal count with government investor participation



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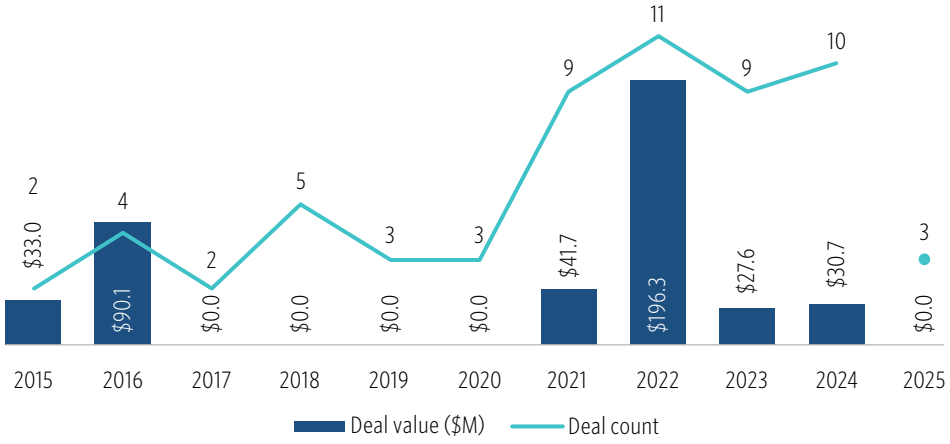
Quantum computing

In China, VC deal activity in quantum computing has been relatively muted, with an average of only six deals annually over the past decade. This reflects the highly state-driven nature of the sector; unlike AI & ML or semiconductors, where private firms have opportunities to commercialize innovations, quantum development is still largely concentrated within government-backed research institutes, state-owned enterprises (SOEs), and military-affiliated entities.

The absence of a vibrant startup ecosystem in quantum computing is unsurprising. Unlike AI & ML or semiconductor development, quantum computing development does not lend itself to conventional VC-backed startup models. The field requires large-scale, capital-intensive infrastructure, including superconducting labs,

Quantum computing VC deal activity



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specialized quantum hardware, and government-funded research initiatives. As a result, most funding in quantum computing is channeled through government grants rather than private VC investment.

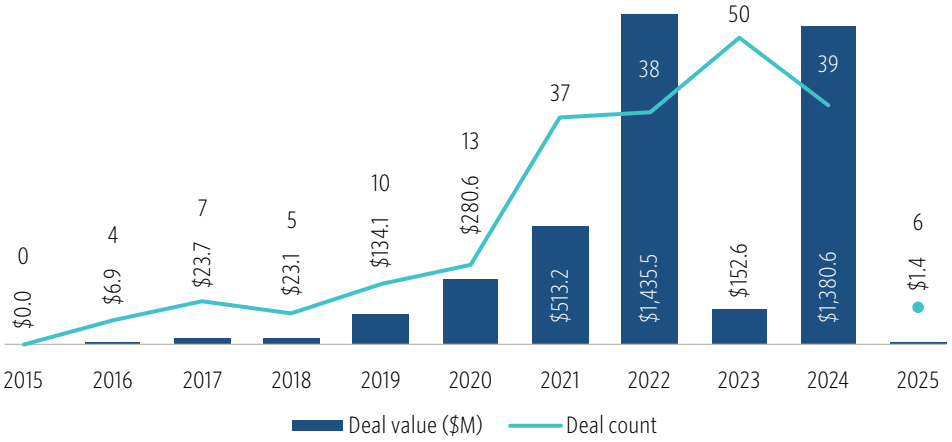
While the high-tech fund is designed to funnel state capital into strategic technology sectors, its impact on private market participation in quantum computing remains uncertain. Due to the state-driven nature of quantum research, additional government funding is more likely to strengthen existing SOE and military-affiliated projects rather than open the sector to independent private firms. Unless specific incentives for private sector involvement are introduced, quantum computing is expected to remain largely outside the scope of traditional VC investment.

Hydrogen energy

The hydrogen sector in China has also been muted, recording 19 VC deals per year over the past decade. The sector's heavy reliance on government funding and its large-scale infrastructure projects have limited private VC involvement. Nevertheless, the sustained VC deal count in the sector suggests that investor interest has not disappeared entirely; rather, capital deployment may be shifting toward smaller-scale, technology-driven hydrogen applications that offer more near-term commercial potential.

As with quantum computing, the high-tech fund's impact on private market participation in hydrogen energy remains unclear. The fund could have a more tangible impact on private investment trends in the hydrogen energy sector. If structured to support commercialization efforts, it could accelerate investment in smaller-scale hydrogen technologies, attracting more private capital into fuel cells, electrolyzers, and related innovations.

Hydrogen energy VC deal activity



Source: PitchBook • Geography: China • As of March 14, 2025

As China rolls out the high-tech fund, private investors must carefully evaluate the implications for each sector. While the fund's primary goal is to accelerate state-backed technological advancements, it will inevitably create new opportunities and challenges for private market participants. Industries such as quantum computing will likely remain heavily state dominated, while other areas, such as AI & ML and hydrogen energy, could see an influx of private capital if structured correctly.

Potential sector-level impacts of the high-tech fund

Sector	Current VC trends	Outlook with the high-tech fund	Opportunities for private investors
AI & ML	Private VC deals slowed after 2022, but the proportion of government-backed VC deals increased.	The high-tech fund will spur further investments in AI amid rising geopolitical tensions.	Private investors may benefit from co-investment opportunities, particularly in AI software, vertical AI applications (such as AI for healthcare or robotics), and AI chip startups.
Semiconductors	Private VC deals slowed after 2022, but the number of government-backed VC deals increased.	The high-tech fund will spur further investments in semiconductors amid rising geopolitical tensions, but caution must be taken to ensure that benefits are spread evenly across SOEs and private firms.	Private investors should focus on subsectors with less direct state control, such as fabless chip designs and semiconductor software.
Quantum computing	The sector sees extremely limited VC activity.	Additional state funding will likely strengthen existing SOE and military-affiliated quantum projects, reinforcing state dominance rather than expanding private sector participation.	There are limited opportunities in quantum computing due to the state-driven nature of the sector. Opportunities may arise in adjacent fields, such as quantum encryption and cybersecurity solutions, though they are likely to materialize only over the long term.
Hydrogen energy	VC deal count is low, though it has increased sharply since 2019.	The high-tech fund could accelerate commercialization efforts, particularly in fuel cells, hydrogen production, and storage technologies. However, large-scale infrastructure remains dominated by SOEs.	Smaller-scale projects such as emerging-technology-driven hydrogen applications may see more private investment participation.

Source: PitchBook • Geography: China • As of March 14, 2025

Comparing the high-tech fund with the Big Fund

While the high-tech fund is designed to propel China's most strategic industries, its impact on private markets will vary depending on how capital is allocated. To this end, China's previous large-scale state funds, such as the Integrated Circuit Industry Investment Fund (Big Fund), provide useful benchmarks for evaluating how the new high-tech fund might impact private markets. While these funds successfully scaled domestic industries, they also revealed key risks, such as the crowding out of private investment and capital misallocation.

China's Integrated Circuit Industry Investment Fund (Big Fund) is one of the most significant state-backed investment programs in the country's industrial policy. Launched in three phases over the past decade, the fund has injected hundreds of billions of yuan into China's semiconductor industry, supporting key chip manufacturers, research institutions, and equipment providers.

The Big Fund versus the high-tech fund

	Big Fund	High-tech fund
Primary focus	Semiconductor and chip industry	AI & ML, quantum technology, hydrogen energy, and other deep-tech fields
Key objectives	• Reduce reliance on nondomestic semiconductor technology. • Build a domestic semiconductor supply chain. • Support local chip manufacturing and design.	• Foster cutting-edge technology innovation. • Support the commercialization of early-stage deep-tech startups. • Strengthen China's position in global high-tech industries.

Source: PitchBook • Geography: China • As of March 14, 2025

The number of semiconductor deals in China spiked from 2019 to 2020, possibly a result of increased government support after the commencement of the fund's second phase. This could have been seen as a boost for private market investors; however, the fund's impact on private investment has also been contentious. Evidence suggests that the Big Fund's largest investments have gone mostly to SOEs or firms with strong state ties, reinforcing government control over the sector and limiting opportunities for independent private firms.

For example, a key beneficiary of the fund was Semiconductor Manufacturing International Corporation (SMIC), China's leading chip foundry. Over multiple fundings, SMIC, a partially state-owned firm, received at least $10 billion from the Big Fund. In the first phase of the Big Fund, SMIC signed an investment agreement under which the fund acquired 4.7 billion new shares at a subscription price of HKD 0.6593 per share. The gross proceeds were set to be used for SMIC's capital expenditure, debt repayment, and general corporate purposes.[1] In the second phase of the fund, in May 2020, the fund injected $2.3 billion into a wafer plant operated by SMIC to support advanced chip manufacturing.[2] While specific allocations

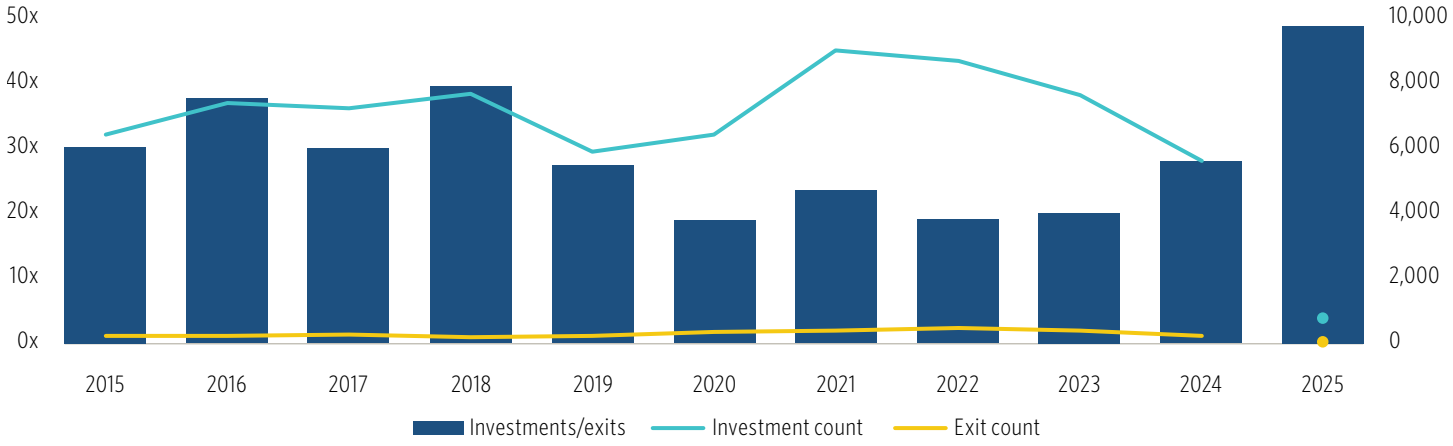
1: "SMIC Receives Investment From China Integrated Circuit Industry Investment Fund," SMIC, February 13, 2015.
2: "China Injects US$2.2 Billion Into Local Chip Maker SMIC," South China Morning Post, Bloomberg, May 17, 2020.

in the ongoing third phase have not been publicly disclosed, leading companies such as SMIC and Hua Hong Semiconductor Limited are anticipated to continue to receive support to enhance their manufacturing capabilities and technological advancements.[3] This pattern of large-scale state funding to SOEs and government-linked firms highlights a potential risk for private investors—as China directs more resources toward national champions, independent private firms may struggle to secure funding or scale without state backing.

We also note that there is heavy state influence in China's semiconductor investment strategy. The third phase of the Big Fund has attracted 19 equity investors, the majority of which are state-owned financial institutions.[4] The Ministry of Finance leads the group, while other major stakeholders include China Development Bank Capital, Bank of China, and China Construction Bank.[5] With few private sector or nondomestic investors involved, the Big Fund remains a closed, government-driven strategy. This has raised concerns about bureaucratic inefficiencies, political favoritism, and limited private market participation.

Hence, while the Big Fund and high-tech fund are designed for different purposes, the case study of the semiconductor-focused fund highlights some key risks that could emerge in the high-tech fund's implementation. If the high-tech fund follows a similar allocation pattern, favoring SOEs and government-linked firms, it could reinforce state dominance in high-tech industries, limiting private investor participation. On the bright side, the high-tech fund is designed as a VC-focused guidance fund. This suggests that a greater portion of capital could flow into early-stage companies, potentially stimulating private investment rather than crowding it out. What will be crucial in determining the fund's success is whether the fund will encourage private capital through co-investment mechanisms and incentives for independent firms.

Private capital investment/exit ratio



Source: PitchBook • Geography: China • As of March 14, 2025

3: "China's 3rd Semiconductor 'Big Fund' Starts Spending $47bn War Chest," Nikkei Asia, Shunsuke Tabeta, January 7, 2025.
4: "Tech War: China Doubles Down on Semiconductor Self-Sufficiency Drive With US$47.5 Billion Big Fund III," South China Morning Post, Che Pan, May 27, 2024.
5: "China Sets Up Third Fund With $47.5 Billion to Boost Semiconductor Sector," Yahoo! Tech, Reuters, May 27, 2024.

Concluding thoughts

Beyond fund-specific risks, China's broader VC landscape is also fraught with risks that investors must navigate carefully. To begin with, the high-tech fund has been introduced at a time when VC activity in China is dwindling due to economic uncertainties and geopolitical tensions. Moving forward, various factors could exacerbate the situation. For one, investors must navigate a quickly shifting regulatory landscape that has weighed on sentiment. Rising geopolitical tensions and rivalry between the US and China have caused US firms to pull out of Chinese investments at an increasing rate. The result is reduced nondomestic VC participation, limiting the ability of Chinese startups to attract global funding and scale internationally.

Secondly, the lack of clear exit pathways will remain a concern for VC investors, and exit momentum has weakened significantly. As we have previously written, 2024 exit activity in China's VC market fell below pre-pandemic levels, reflecting mounting investor skepticism toward public markets. While the recent Two Sessions (Lianghui)—the annual meetings of the National People's Congress and the National Committee of the Chinese People's Political Consultative Conference—announced that existing restrictions on IPOs for loss-making tech firms will be eased, it will take time to assess the actual impact on market sentiment and listing activity. Until clearer improvements in IPO accessibility and secondary market liquidity emerge, exit challenges will likely continue to weaken private investor confidence.

Finally, economic risks will weigh on VC investments in China. While cyclical conditions, such as retail spending and industrial output, improved in the latest January-February economic data release, these figures do not yet support the case for a sustainable recovery. The economic uncertainties surrounding China could further dampen investor sentiment, as VC firms may take a more risk-averse approach, reducing early-stage investments in yet unproven deep-tech sectors that the high-tech fund will be targeting.

Ultimately, the success of China's high-tech fund will hinge not just on how much capital is deployed but also on how effectively it is allocated. For now, its impact remains to be seen. If structured thoughtfully—with mechanisms to attract private capital, support early-stage innovation, and offer viable exit pathways—the fund could serve as a critical stabilizer in a turbulent market. But without greater clarity on governance, transparency, and market-based incentives, there is a risk that the fund will follow the path of past state-led initiatives where domestic capacity increased while private investors were left on the sidelines.