

# Ted and Logan Webinars on High-Tech Industries

## Webinar 5

# Wrapping Up 2025 and Looking Ahead to 2026

Edward A. Snyder and Logan Bender

18 December 2025

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# Ted and Logan Webinars on High-Tech Industries

**Edward A. Snyder**



**Ted is the William S. Beinecke Professor of Economics and Management at the Yale School of Management.** He has applied IO frameworks to over thirty industries and product markets in the course of his academic and professional career. This set includes liquid crystal displays, video streaming, payment systems, pharmaceuticals, optical disk drives, and modem chips used in smartphones. He studied economics at the University of Chicago. He served as Dean of three business schools and founded the Global Network for Advanced Management.

**Logan Bender**



**Logan is a CFA charter holder and Yale MBA (specialization in asset management).** During his career as a global technology investor and research analyst at Putnam and First Analysis, Logan has specialized in high-tech industries including software, internet platforms, and semiconductors, with particular emphasis on the U.S. and China. Logan also has experience with venture investment focusing on series A and B stage investments in vertical SaaS, human capital technology, and other high growth differentiated software businesses.

# Agenda

1. Performance of Chinese and U.S. tech stocks
2. Current event: NVIDIA H200 chips to be sold to Chinese companies
3. What did we get right in 2025?
4. Big Issues in 2026
  - Is the U.S. experiencing an “AI bubble”?
  - Are China and the US moving towards divergent AI ecosystems or are they going to converge on one primary ecosystem?
  - Which country will be more supportive of AI development?
  - Which of the G2 economies is more vulnerable?
  - What will be the roles of public and private markets?
5. Questions for our audience

## Chinese tech stocks performed well, U.S. okay-ish

“Chinese tech stocks have massively outperformed their Nasdaq counterparts this year” (FT)

Company	% Change
Alibaba (NYSE: BABA)	75.8%
Baidu (NASDAQ: BIDU)	44.3%
TENCENT (0700.HK)	44.1%
Alphabet (NASDAQ: GOOG)	61.4%
Microsoft (NASDAQ: MSFT)	13.8%
Meta (NASDAQ: META)	9.7%
NVIDIA	23.6%
Amazon	0.5%
OpenAI	~\$750bn

YTD increase in stock value as of December 16 (end-of-day)

Source: Yahoo Finance; <https://www.ft.com/content/db286a0a-ca2d-4791-809e-c9a1ac73b8ad>

## What did we get right in 2025?

1. Record AI capex spend would continue
2. Valuations of Major Tech companies will increase
3. Correct to focus on the semiconductor industry
4. Correct to focus on G2
5. Rising Global Tensions continue to be a major influence on high-tech industries
6. TSMC is in a unique position
7. Need to pay attention to private markets

# Global Tensions

Trump plans 100% tariff on chips, unless companies build in US

Donald Trump orders US chip software suppliers to stop selling to China

Aug 07, 2025, 01:0

“Donald Trump blocks Taiwan’s President Lai Ching-te from New York stopover”

**Nvidia AI chips worth \$1bn smuggled to China after Trump export controls**

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**Taiwan detains TSMC staff for alleged theft of key technology trade secrets**

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**Trump administration pressed Dutch hard to cancel China chip-equipment sale - sources**

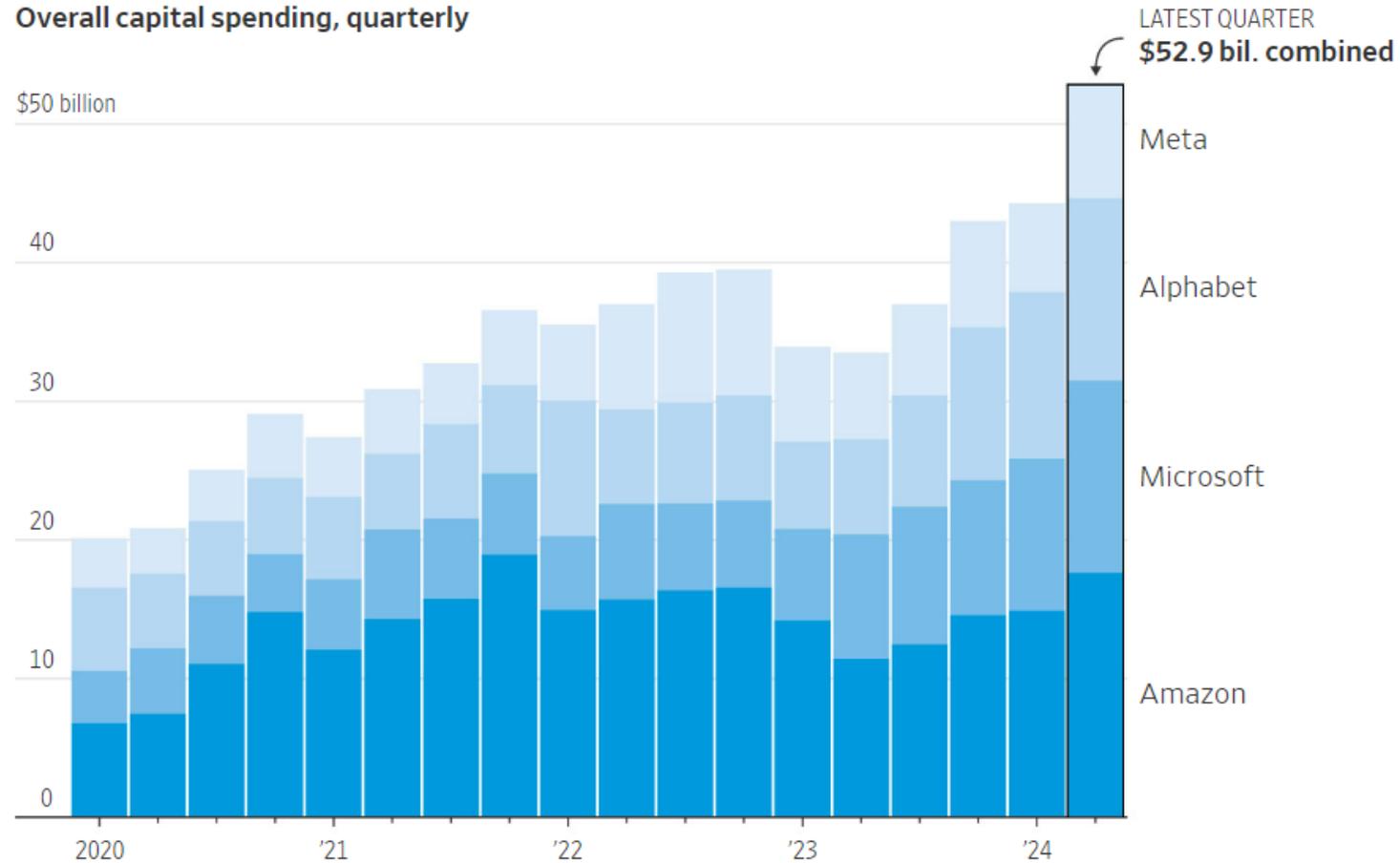
By Alexandra Alper, Toby Sterling and Stephen Nellis

Source: ...

# The AI Spending Spree, in Charts

Tech giants and investors are shoveling cash into artificial intelligence amid questions about whether it will pay off

Overall capital spending, quarterly



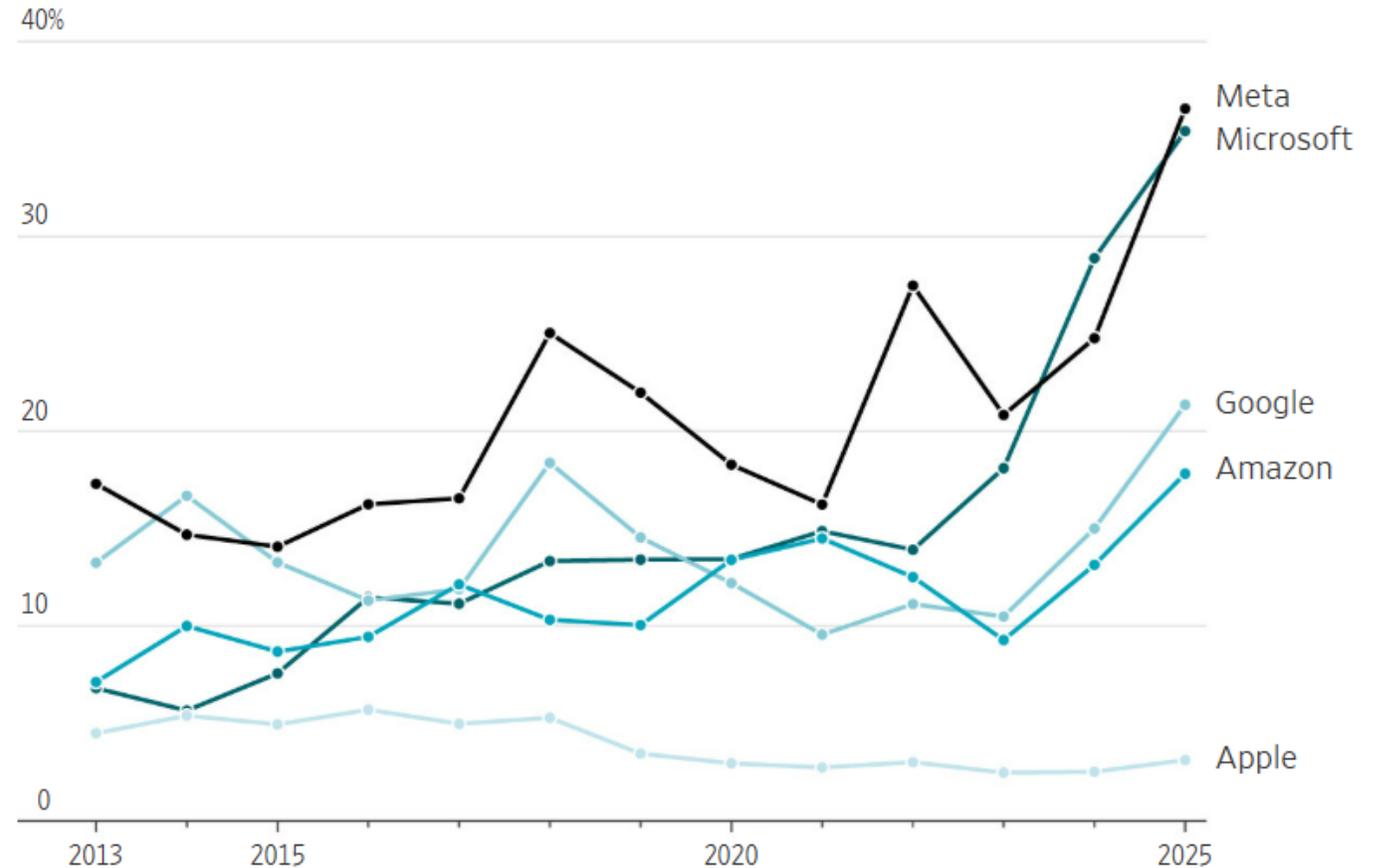
[Source: The Wall Street Journal](#)

# Record capital spend

US Tech Companies Are Investing 40%+ of Sales on Capital Expenditures Related to Semiconductors.

Inflection in 2023.  
Three record years of Capex by U.S. hyperscalers.

Capital expenditures as a percentage of sales, yearly



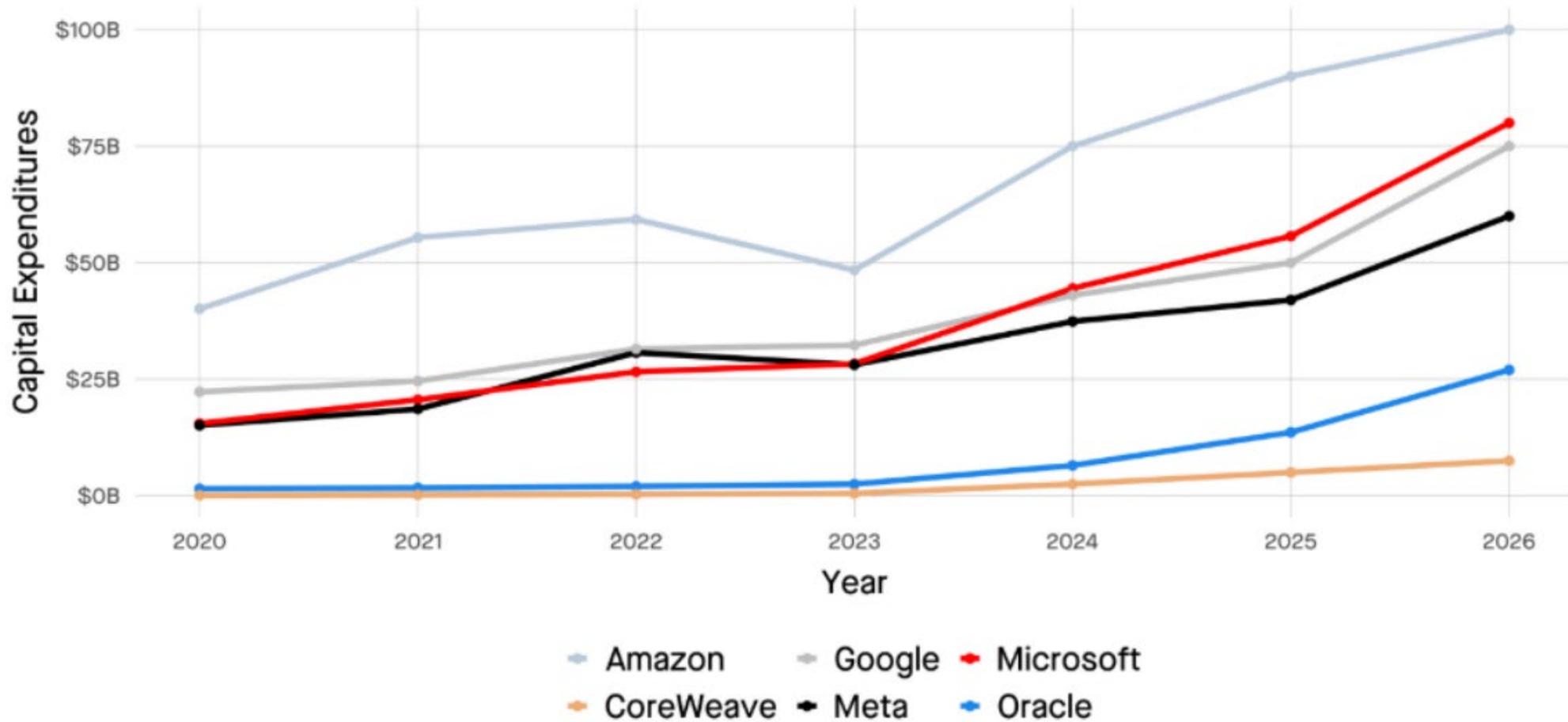
Note: 2025 shares based on estimated full-year expenditures and sales figures. Data are for calendar years. Sources: the companies (expenditures and sales through 2024); the companies and Visible Alpha (2025 estimates)

Source: the Wall Street Journal

# Data Center Spend

## Hyperscaler Capital Expenditures for Data Centers

2020-2025 actual, 2026 projected (AI infrastructure boom)



## **Trump Administration authorization of sales of NVIDIA H200 Chips to Chinese companies**

1. H200 chips are not NVIDIA's leading-edge semiconductors
2. But H200 chips are much more powerful than the H20, the NVIDIA chip that has been sold to Chinese companies
3. Significant shift from Biden Administration's 'containment' policy
4. U.S. will charge "export tax" of 25% on China-originated revenue
5. Huge boon for NVIDIA ... provided that Chinese companies are allowed to purchase them at scale

Source: Reuters, <https://www.reuters.com/world/china/us-open-up-exports-nvidia-h200-chips-china-semafor-reports-2025-12-08/>

# “US consensus”

## 1. Wall Street Journal (December 10)

“...the President give away one of America’s chief technological advantages to an adversary and its chief economic competitor”

“his confusing China policy”

“What is Mr. Trump getting from Beijing now besides better mood music before his planned visit to China in the spring?”

## 2. NYT (December 9)

“President Trump’s decision [...] has raised questions about whether he is prioritizing short-term economic gain over long-term American security interests.”

Source: <https://www.wsj.com/opinion/nvidia-chips-donald-trump-china-xi-jinping-artificial-intelligence-3c55080f>, <https://www.nytimes.com/2025/12/09/us/politics/trump-nvidia-ai-chips-china.html>

# Trump Administration's New Policy

1. “Consensus” in U.S. is negative. Many ask, why give China help?
2. But critical thinking is needed.

NVIDIA is not just a hardware company

NVIDIA is central to AI ecosystem

Chinese companies are making huge complementary investments

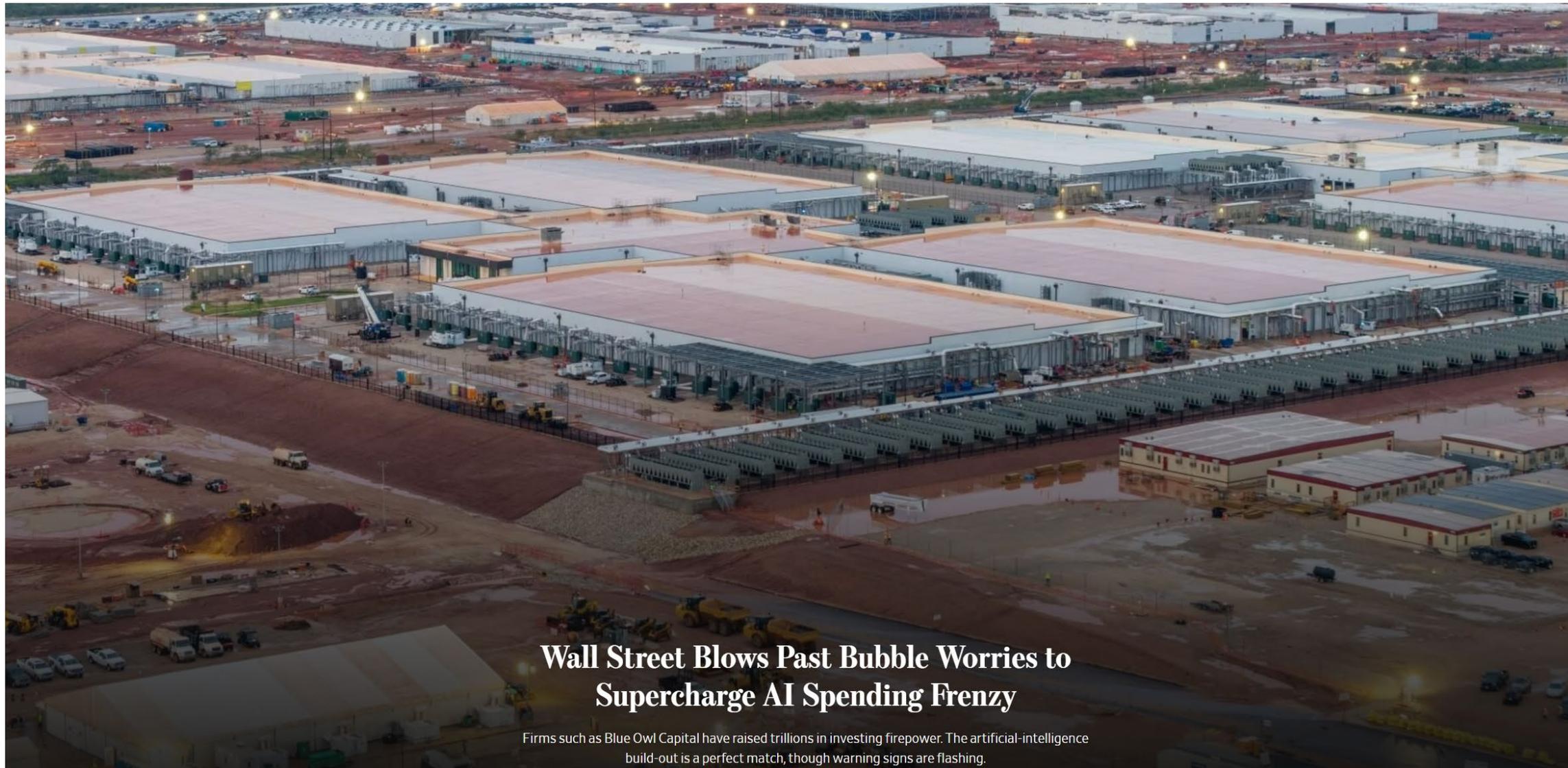
3. Given the ecosystem implications, it is not surprising that Beijing will control sales of H200 chips to Chinese companies

Source: Reuters, <https://www.reuters.com/world/china/china-cautions-tech-firms-over-nvidia-h20-ai-chip-purchases-sources-say-2025-08-12/>

## Big Issues in 2026

1. Is the U.S. experiencing an “AI bubble”?
2. Are China and the US moving towards divergent AI ecosystems or are they going to converge on one primary ecosystem?
3. Which country will be more supportive of AI development?
4. Which of the G2 economies is more vulnerable?
5. What will be the roles of public and private markets?

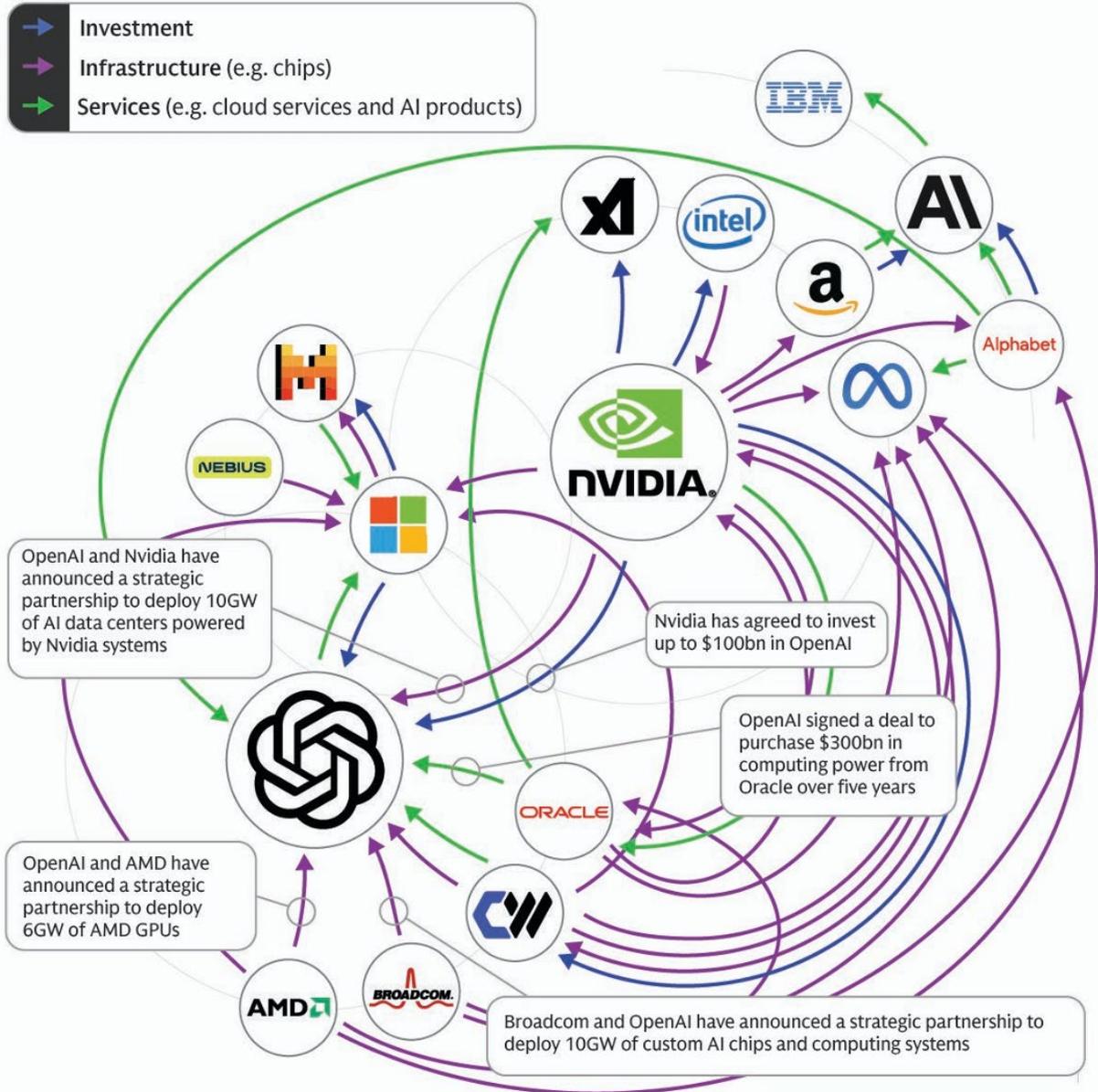
# Is the U.S. experiencing an “AI bubble”?



## Wall Street Blows Past Bubble Worries to Supercharge AI Spending Frenzy

Firms such as Blue Owl Capital have raised trillions in investing firepower. The artificial-intelligence build-out is a perfect match, though warning signs are flashing.

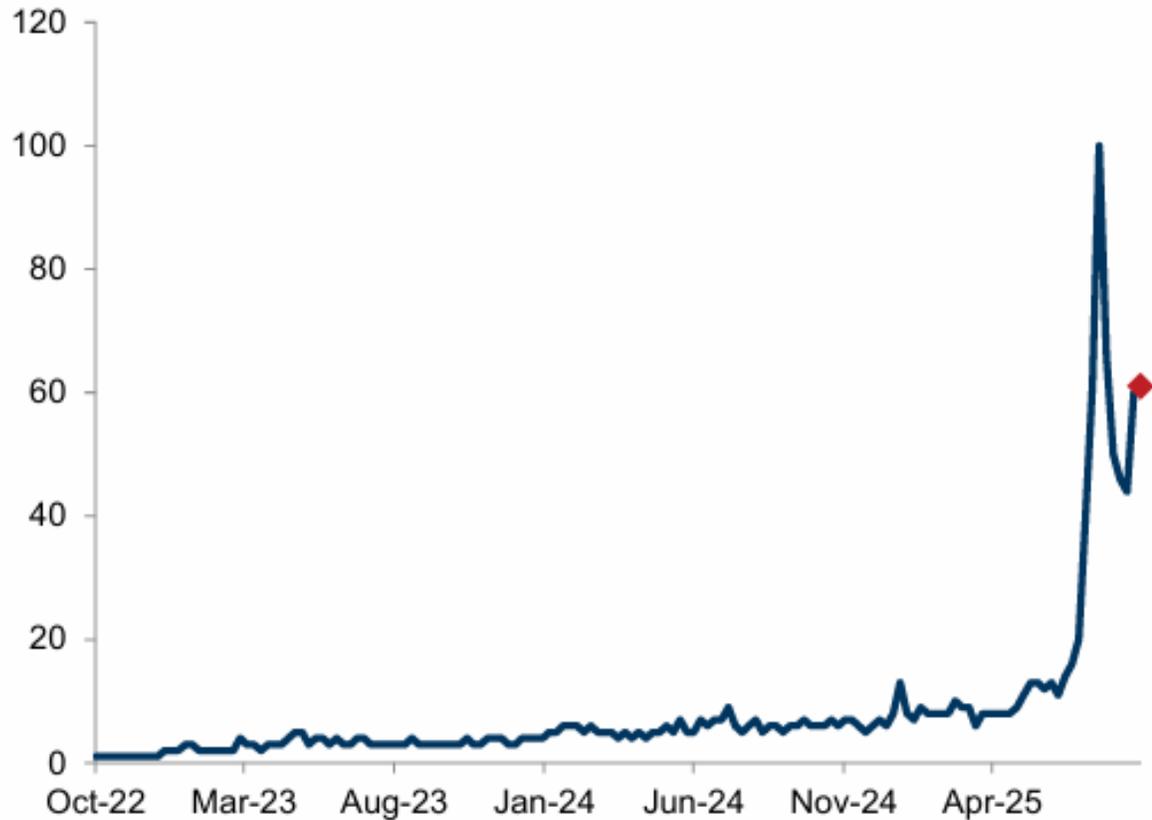
# Increasingly circular ecosystem



- Lane convergence expanded!
- Like the Mag 7 with converging lanes, large private market companies are now shaping the narrative, and subsequent investor decisions in the public space!
- Is this strategic interdependence or artificial increase in value?
- Does circularity reduce risk?

## Investors are worried

Google searches of “AI bubble”

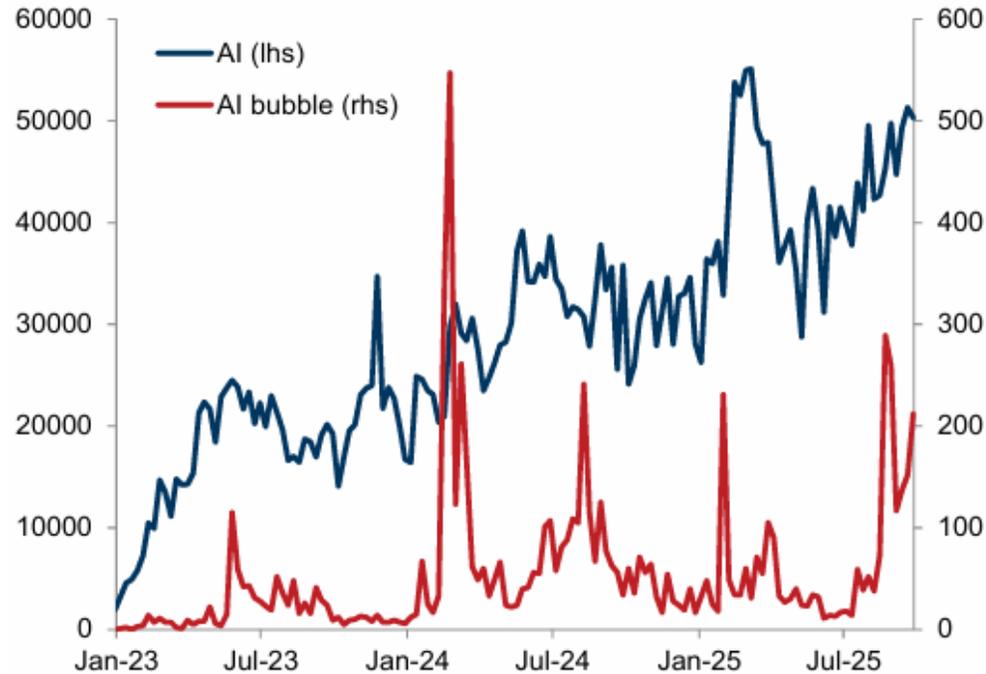


Source: Google, Goldman Sachs GIR.

- Google searches for “AI bubble” have declined from their August peak, but have ticked up in recent weeks ...

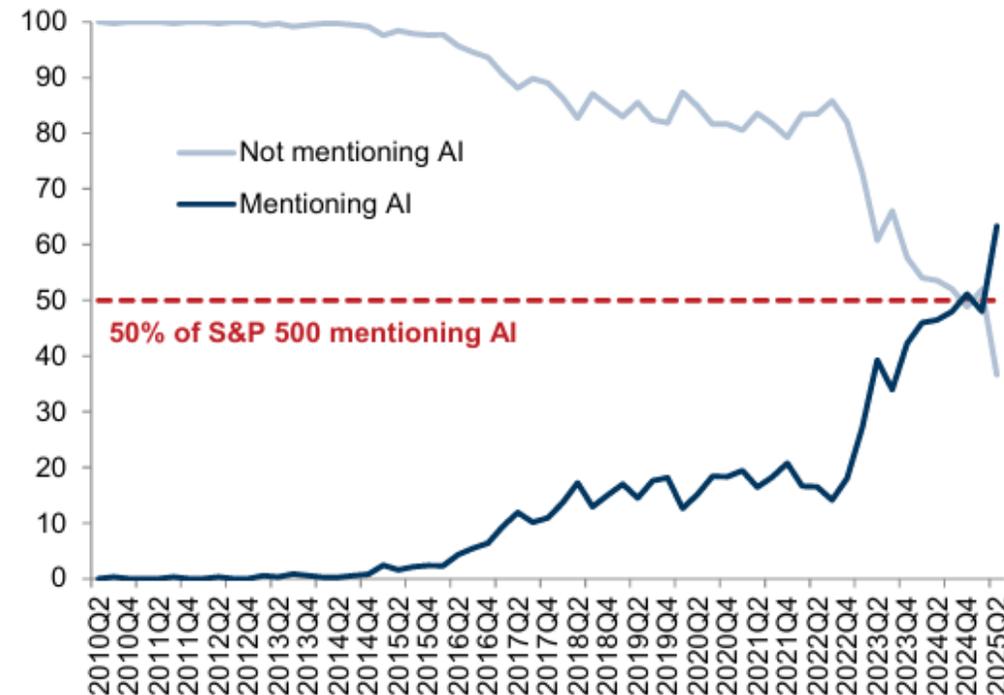
# The AI Bubble is a major theme for investors

“AI” and “AI bubble” mentions in news on Bloomberg terminals, count



Source: Bloomberg, Goldman Sachs GIR.

Share of S&P 500 companies mentioning AI in earnings calls, %

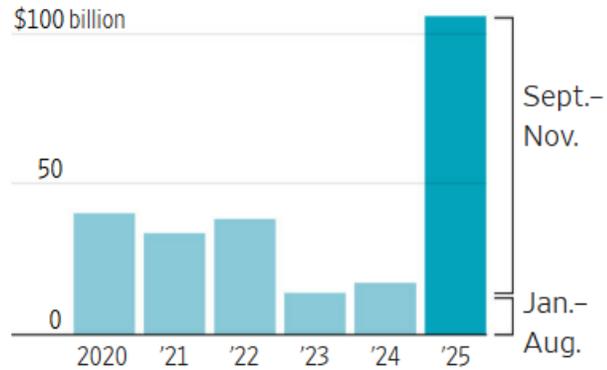


Source: LSEG, Goldman Sachs GIR.

# U.S. Big Tech Needs Capital

- Bond issuance and private credit increasing at scale

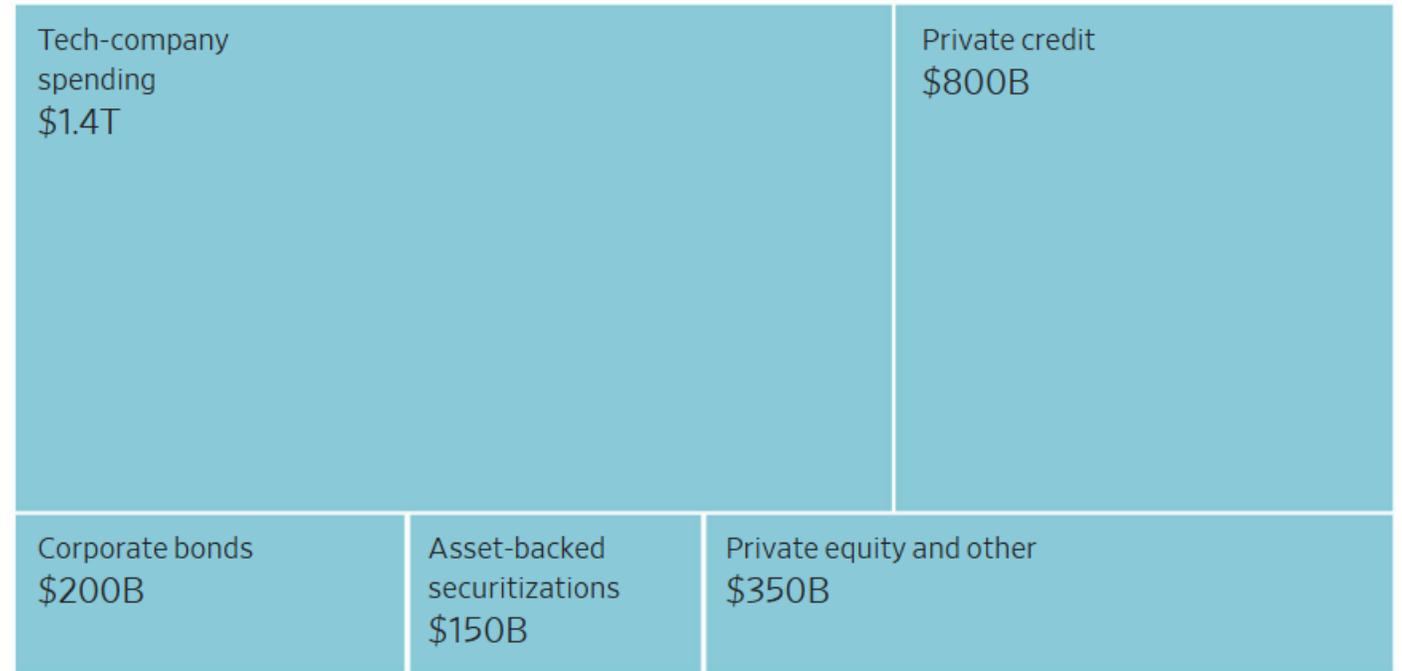
**Bond issuance by big AI tech companies**



Note: Data include Alphabet, Amazon.com, Meta Platforms, Microsoft and Oracle. Issuance for 2025 is through Nov. 13.  
Source: Bank of America

**Projected global spending on data centers by financing source, 2025-28**

TOTAL: \$2.9 TRILLION



Source: Morgan Stanley Research

## **Will unlocking the economic value of AI justify the unprecedented capex investments?**

- Companies have substantial record cash flows and fortress balance sheets.
- The revenue and productivity potential is undeniable – but how far away?
- TAM expansion remains the most realistic narrative.

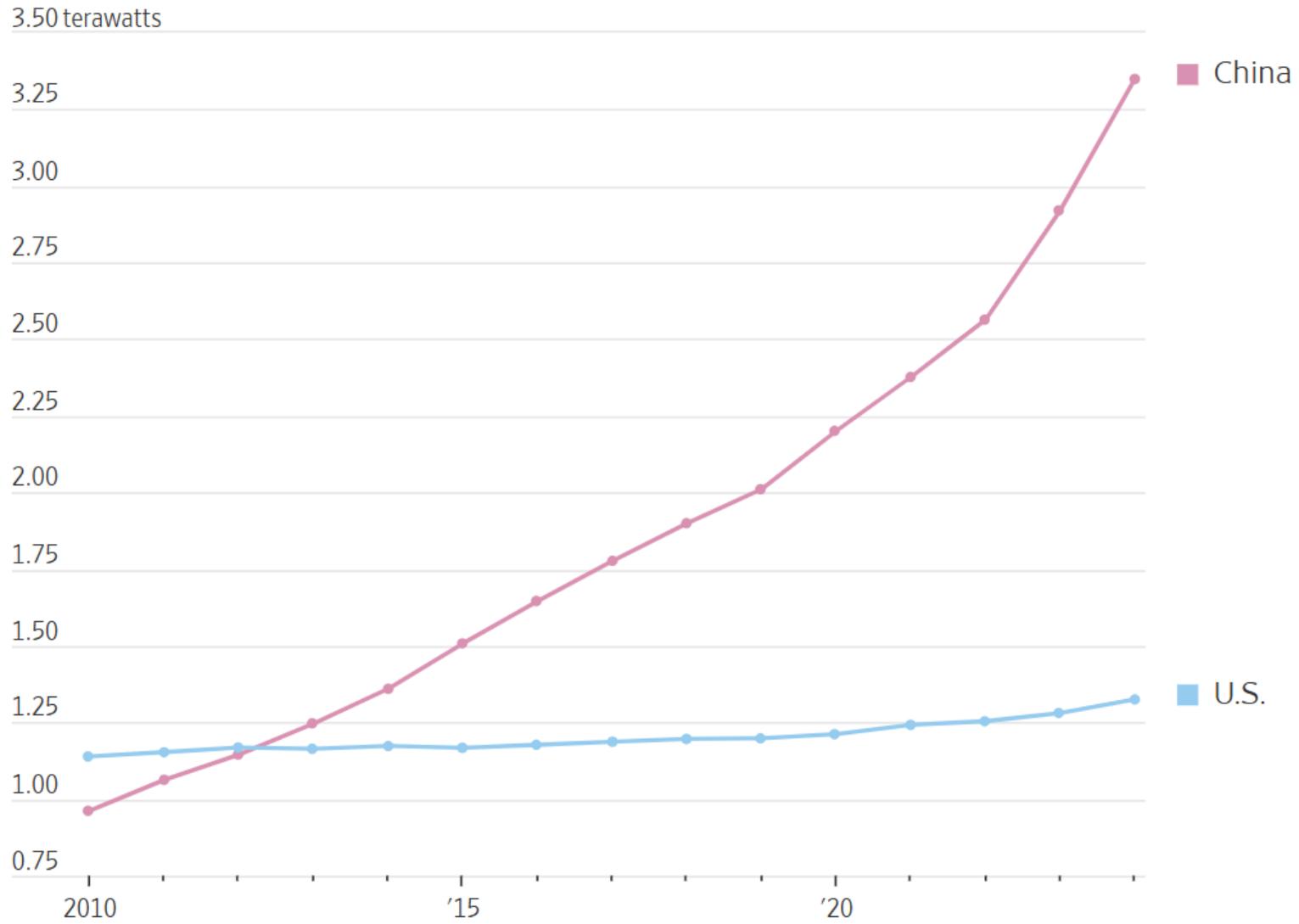
# **Are China and the U.S. moving towards divergent AI ecosystems? Or are they converging on one primary ecosystem?**

1. China more focused on applications
2. U.S. more focused on Generative AI and Superhuman intelligence

## Which country will be more supportive of AI development?

1. Huge amounts of capital flowing to AI in both economies
2. U.S. models are leading *but* most are proprietary (GPT, Anthropic, etc.)
3. “China is way ahead on open source [models]” (Jensen Huang, December 3)  
enables proliferation, refining
3. U.S. more limited by energy – U.S. backlash against higher energy prices

## Power-generation capacity



Source: Energy Information Administration (U.S.); National Bureau of Statistics (China)

## Which of the G2 Economies is more vulnerable?

1. China has huge and growing manufacturing advantage given success in applying AI
2. China's vulnerabilities are public debt, property crisis, and weak consumer demand.
3. U.S. leads in Generative AI and high-end semiconductors
4. U.S. policy appears chaotic

## What will be the roles of public and private markets?

1. Leading AI firms in the U.S. are private (OpenAI, Anthropic); they've been able to attract massive capital (hundreds of billions) without going public
2. Private AI 'giants' influencing government, large public companies in the U.S.
3. In China, public companies (Alibaba, Baidu, Tencent) appear to be on the rise
4. But important firms (e.g. DeepSeek) remain private

## Insights and conclusions

1. G2 remains the proper focus
2. The semiconductors industry is the most important industry in the world
3. Chinese and U.S. policy regarding tech ecosystems will influence ‘the course of history’
4. Pay attention to “AI bubble”
5. 2026 IPO window is wide open, but private markets will continue to play a central role.
6. Private market and public market investment and interdependence are driving narratives and valuations
7. Capex boom will continue – the fear of over investment is viewed as far less risky than underinvestment.

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Survey for the Audience (2 minutes)

Q&A

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- Thanks to 960 Alumni, Yale Center Beijing, Global Network for Advanced Management, Yale SOM Alumni Office, and to Yale SOM IT

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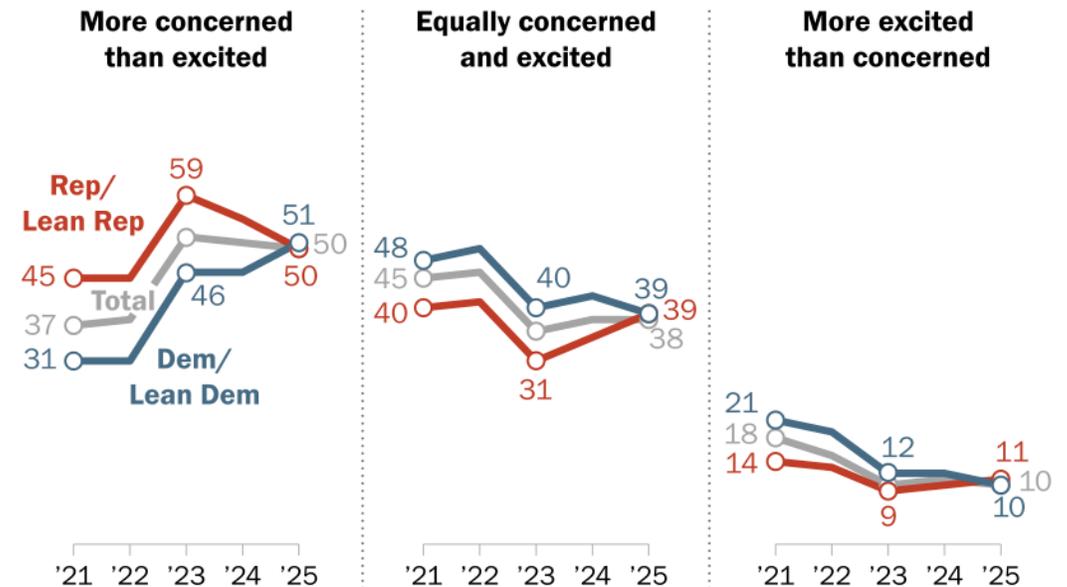
## Appendix

# Political support for AI in the United States

1. Energy demands for AI are staggering but supply is limited -> consumers may experience higher electricity
2. Fears of job disappearing
3. Will there be a public backlash?

## Similar shares of Republicans and Democrats now say AI's increased use in daily life makes them feel more concerned than excited

% of U.S. adults who say that, overall, the increased use of artificial intelligence (AI) in daily life makes them feel ...



Note: Respondents who did not give an answer are not shown.  
Source: Survey of U.S. adults conducted June 9-15, 2025.

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# Leading private market companies

## Coding platforms have exploded recently

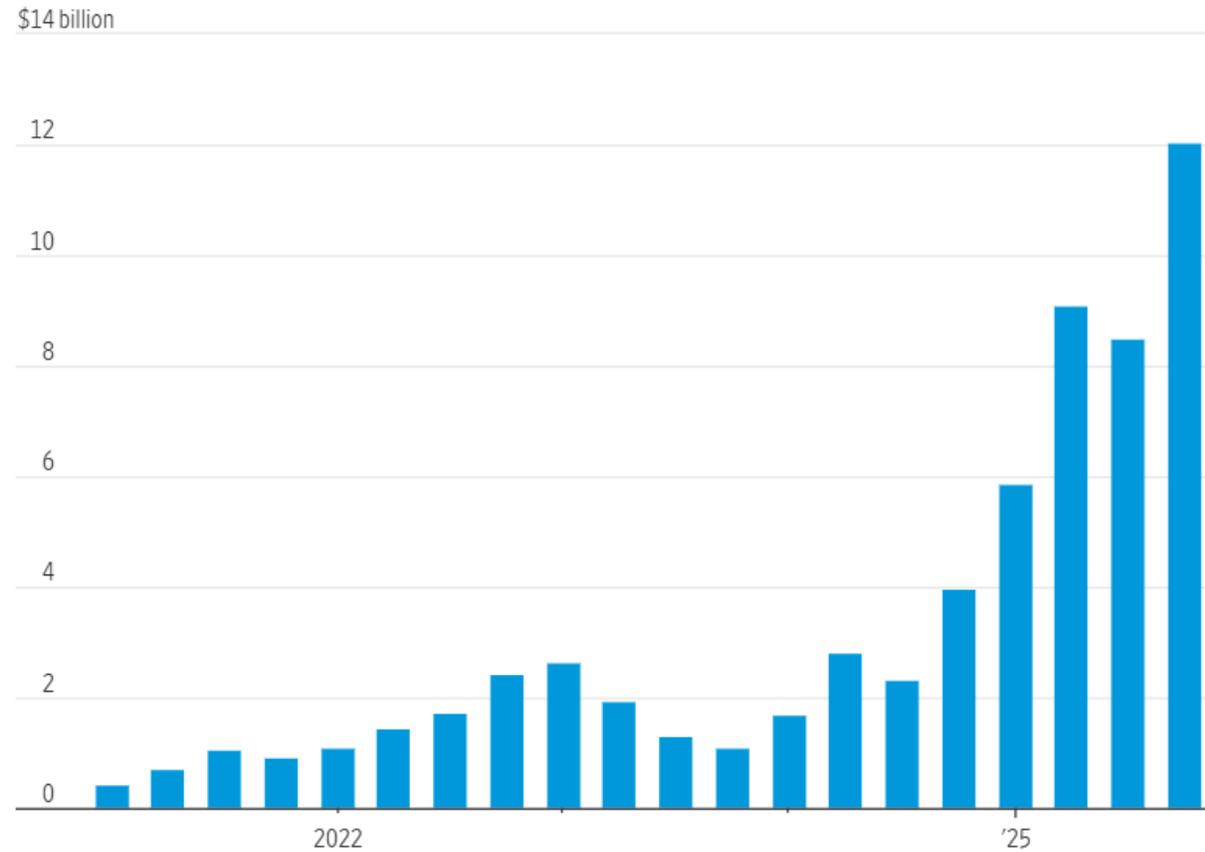
Company	Valuation	What They Automate
Anysphere (Cursor)	~\$29.3B	AI coding assistant; end-to-end code generation
Replit	~\$3B	AI agents that write, test, fix code
Lovable	~\$1.8B–\$6B	Full apps from natural language prompts
Serval	~\$1B	Automates IT scripting & operations tasks
Anything (vibe coder)	~\$100M early stage	Prompt → code transformation tools

- Companies commanding high valuations supports demand this theory.

# Data Center Spend

Oracle said late Wednesday it expects full-year outlays on capital investment to hit \$50 billion, up \$15 billion from an earlier forecast. Here's a look at how capex has surged:

## Oracle's quarterly capital expenditure

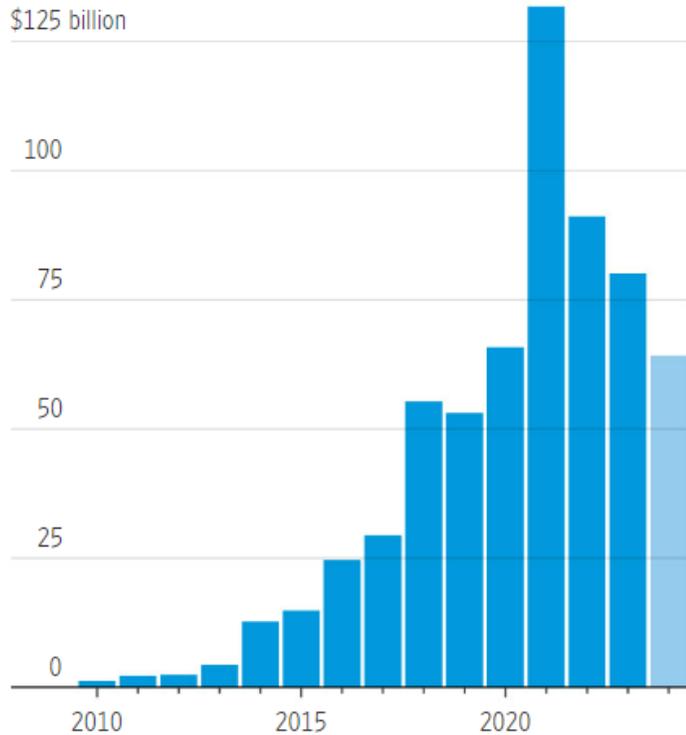


Source: S&P Global Market Intelligence

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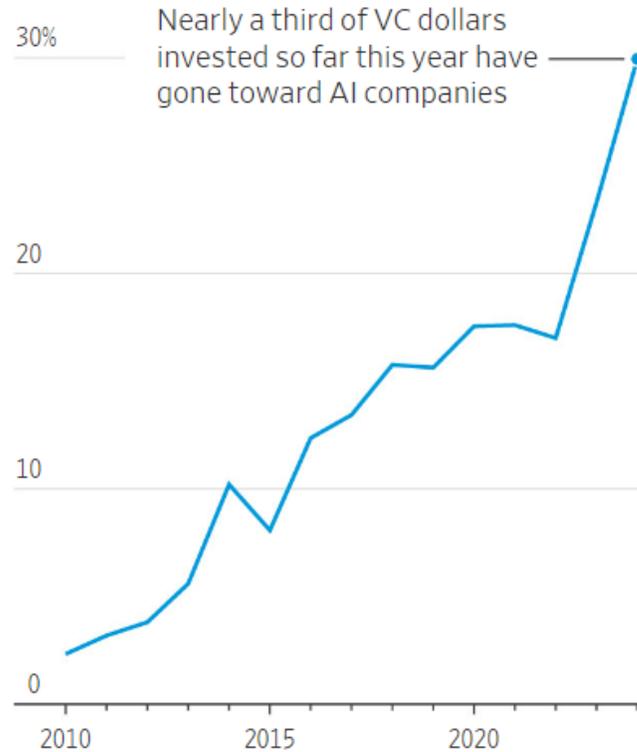
# Current events – AI – Valuation vs Revenue

Venture-capital investment in artificial intelligence startups...



Note: 2024 data as of Aug. 27  
Source: PitchBook

...as a share of total VC deal value each year



Capital deployment vs realized revenue – Still unclear...

At its annual AI summit in March, the venture firm Sequoia Capital estimated that the industry sank around \$50 billion into the state-of-the-art Nvidia chips needed to train language models. By contrast, generative AI startups brought in \$3 billion in revenue.



Nvidia [+ Add to myFT](#)

# Why Nvidia investors are spooked by Chinese AI upstart DeepSeek

Short sellers profit as US chipmaker loses nearly \$600bn in market value on Monday

19 hours ago - Business

## Nvidia shares plunge as DeepSeek promises new AI path

 Nathan Bomey



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## How China's DeepSeek Outsmarted America

AI startup developed a top system by relying on inexperienced engineers and a loophole in U.S. export controls

# DeepSeek

## Forbes

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BREAKING

## Biggest Market Loss In History: Nvidia Stock Sheds Nearly \$600 Billion As DeepSeek Shakes AI Darling

Derek Saul Forbes Staff  
*Derek Saul has covered markets for the Forbes news team since 2021.*

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Updated Jan 27, 2025, 04:12pm EST

## The New York Times

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## Nvidia Reels After China's A.I. Breakthrough

The tech industry has had an insatiable appetite for Nvidia's chips over the last two years. But the feast may be over sooner than many had expected.

## FINANCIAL TIMES

US COMPANIES TECH MARKETS CLIMATE OPINION LEX WORK & CAREERS LIFE & ARTS HTSI

UPDATED 14 HOURS AGO

## DeepSeek sell-off - as it happened: Nvidia notches record \$589bn market cap wipeout; Trump calls Chinese start-up's model a 'wake-up call'

Welcome to the FT's live coverage of global financial markets, as China's DeepSeek raises questions about the future of AI investment

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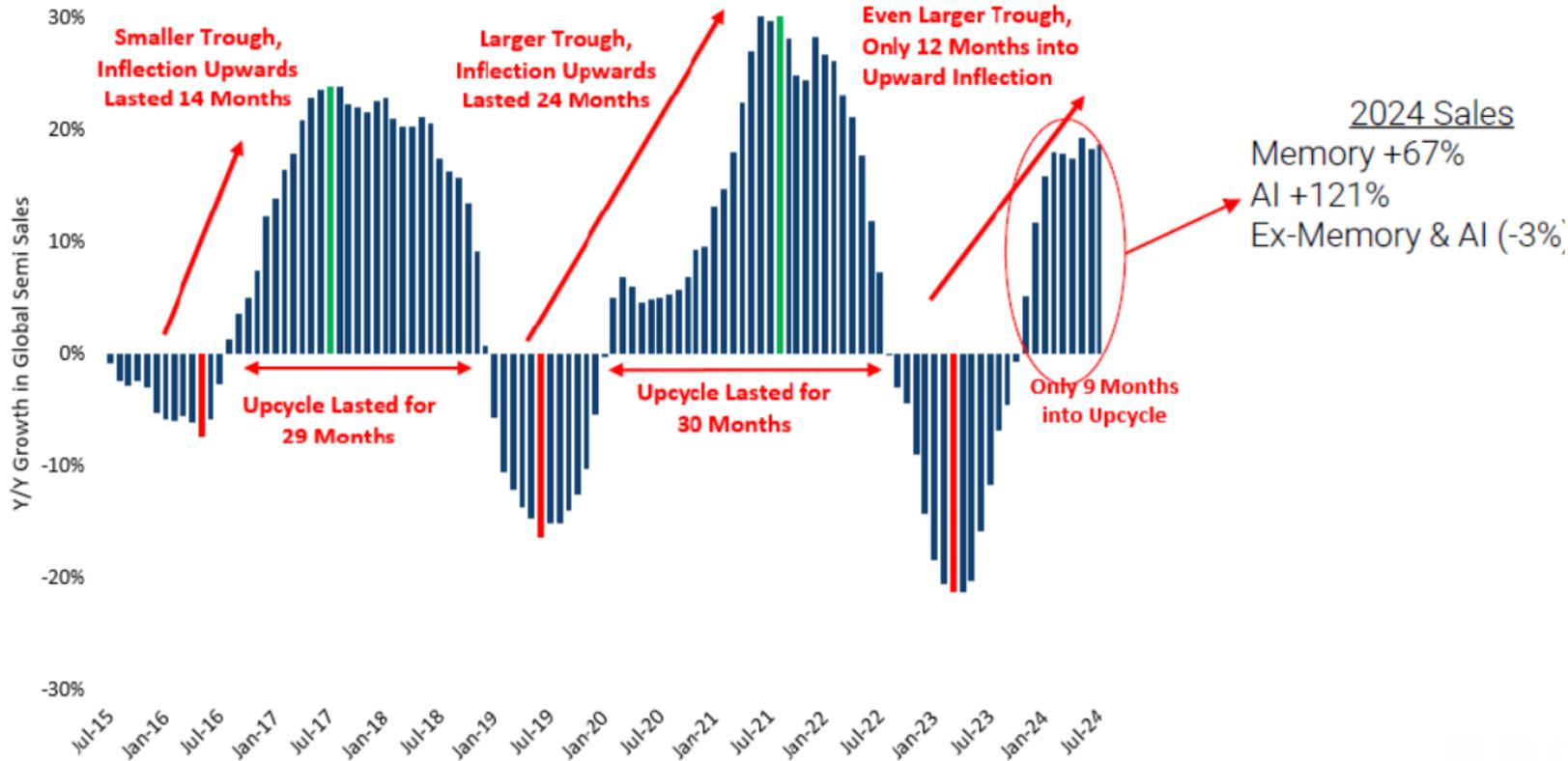
## Stock Market News, Jan. 27, 2025: Nvidia Stock Sinks in AI Rout Sparked by China's DeepSeek

Tech-heavy Nasdaq Composite falls more than 3%

Last Updated: Jan. 27, 2025 at 7:05 PM EST

# Cyclicality of Semis

Figure 6: Cycle Analysis Suggests It Is Still Early



Regardless of the AI backdrop – Semis behave in cycles

Are we still early in the cycle? Is it a supercycle?



## Despite volatility – valuations continue to climb

- Nvidia still the crucible of the AI boom.

TECH

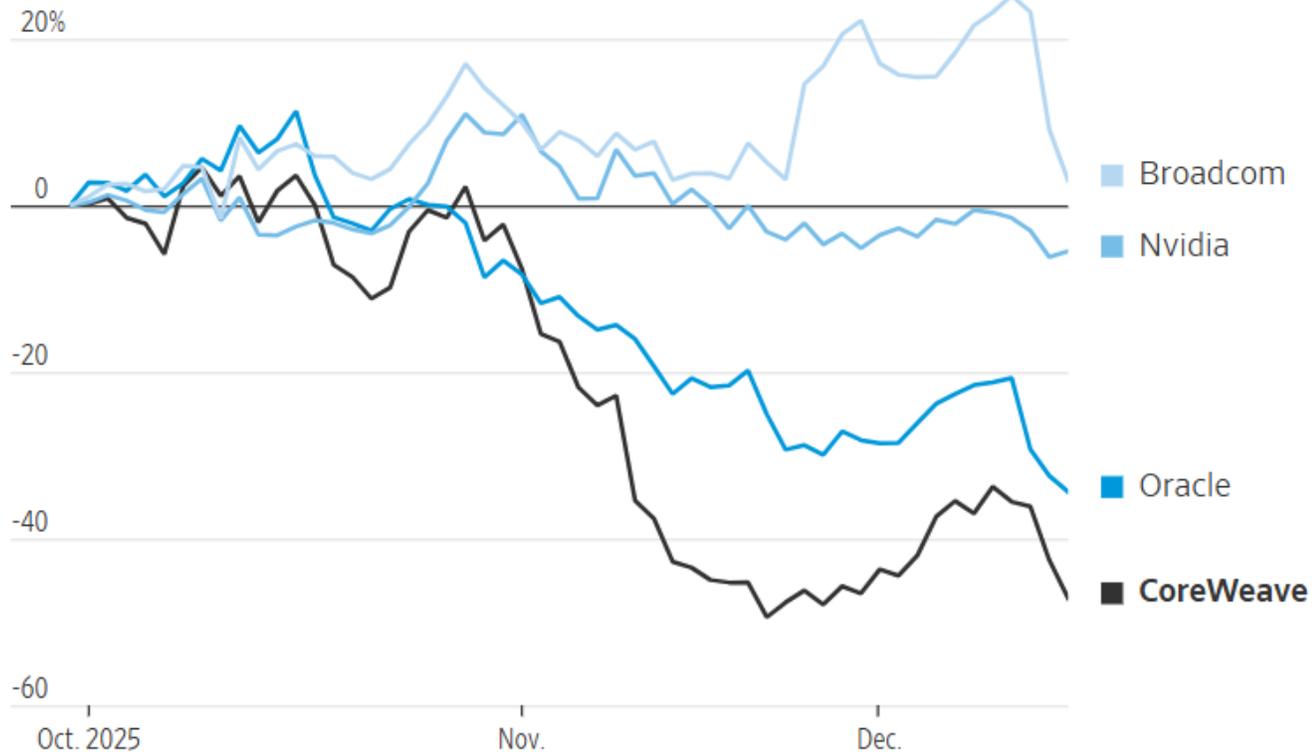
# Nvidia becomes first company to reach \$5 trillion valuation, fueled by AI boom

PUBLISHED WED, OCT 29 2025•5:02 AM EDT | UPDATED WED, OCT 29 2025•4:04 PM EDT



# Market volatility has shaken investor confidence

Share-price performance since the end of September



Source: FactSet

- The analyst community is increasingly split on sustainability of public company valuations.
- We have seen drawdowns in leading high tech firms due to project delays etc.
- What does 2026 look like?

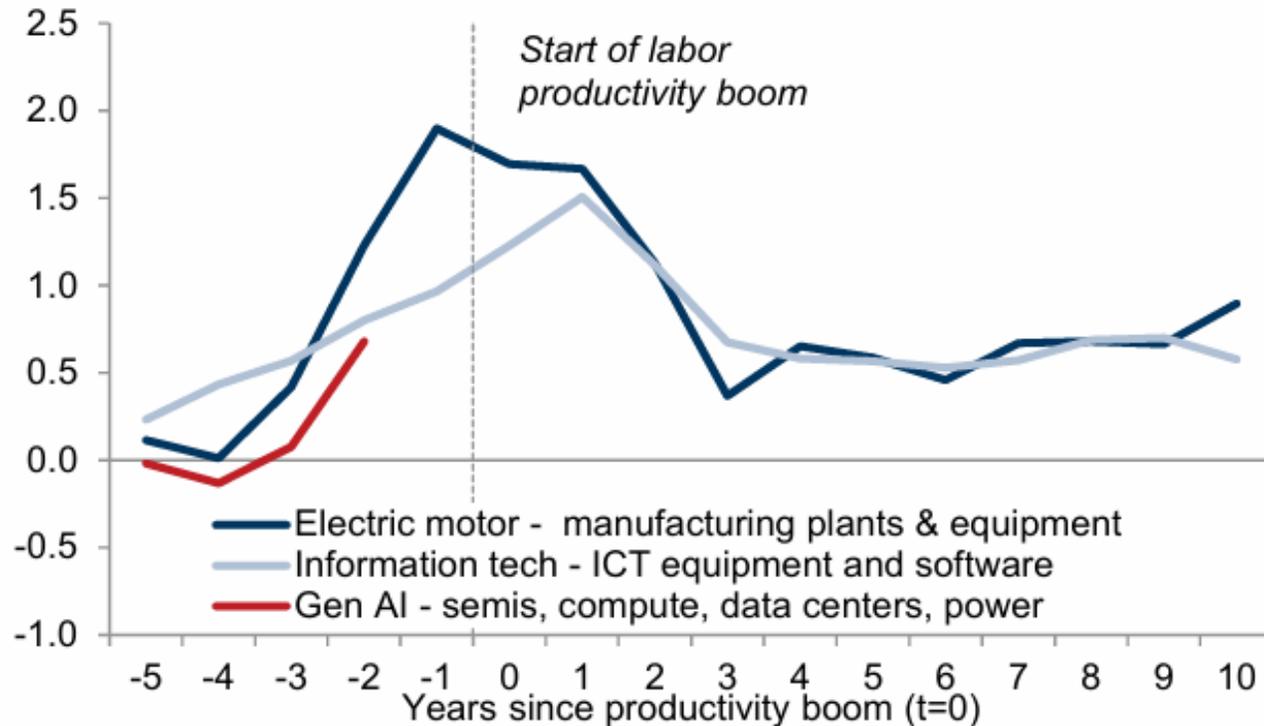
# Narratives *matter*

## Point

- Stories impact valuations - “Tell me the story...”
- Narratives are not a substitute for fundamental analysis, but we must recognize the influence and momentum they are capable of in regard to impacting valuation.
- Will the AI boom narrative continue into 2026? What supports this?

# Signs point to the beginning of a boom

Investment in general purpose technologies, share of GDP vs. pre-productivity boom level, pp



Source: Bureau of Economic Analysis, Goldman Sachs GIR.

- “We estimate a 15% gross uplift to economy-wide US labor productivity after full adoption, which we expect will realize over a 10-year period. Academic studies and company anecdotes support this, pointing to 25-30% average productivity gains following AI application deployment.” –GS Research team

# The Bitter Lesson

## Point

- 2019 Rich Sutton essay “The Bitter Lesson” Sutton’s core claim: methods that scale with computation inevitably outperform approaches built on human-crafted domain expertise.
- Brute force learning systems dominate. Systems that *learn* representations outperform those where we *design* representations.
- Long term – driven by compute scaling....
- Does the capex spending trend support Sutton’s claim?

# Baumol's cost disease

## Point

- When productivity can't rise in a labor-intensive field, its costs keep increasing because wages must match those in more productive sectors—even though output doesn't improve (or does slowly).
- What about AI? traditional coding output was tied to human developers whose productivity grew slowly, the cost of building software kept rising even as demand exploded—until AI tools broke that constraint by letting output scale with compute instead of labor.

## Assessment

Are we seeing Baumol's theory coming to SaaS?

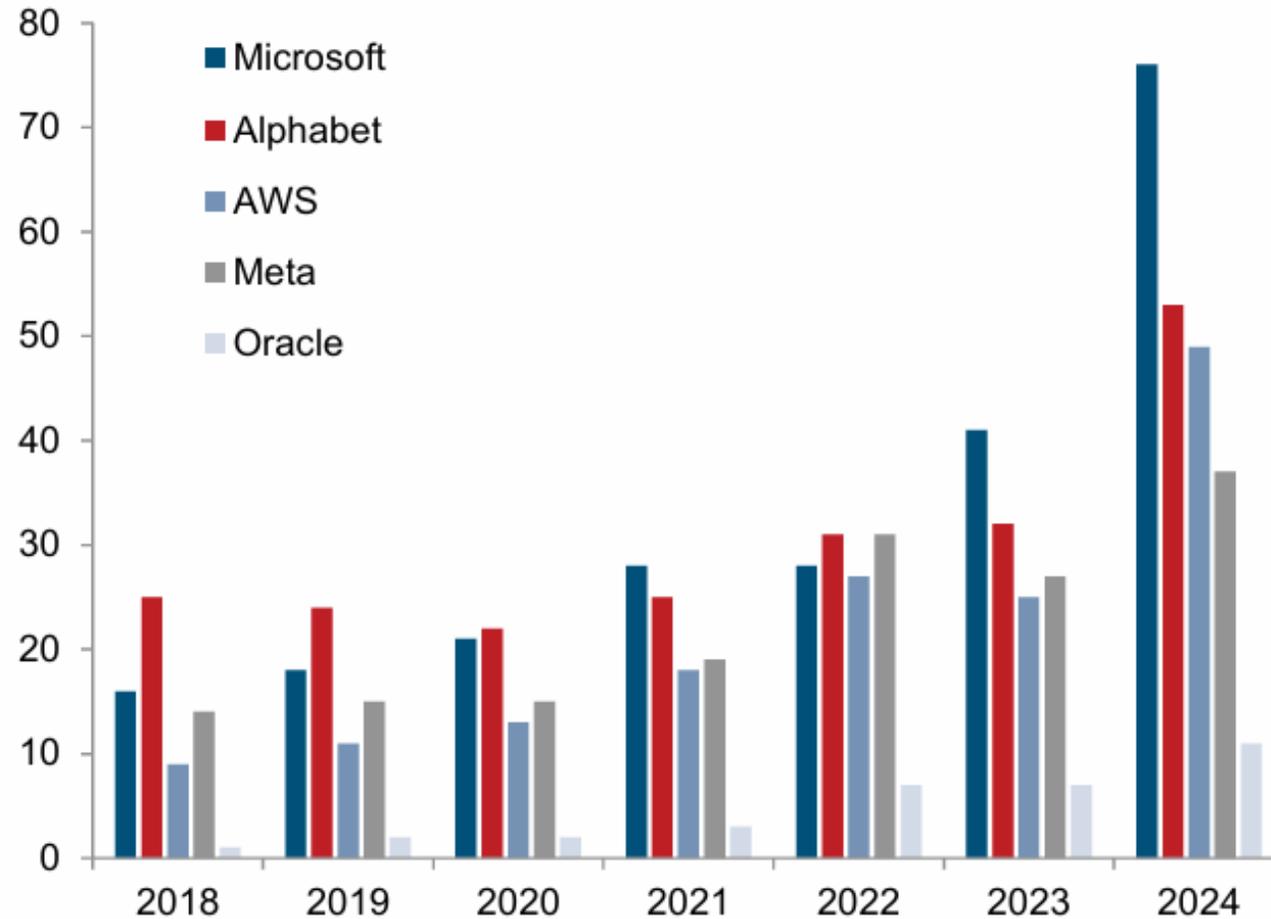
- Baumol's Cost Disease predicts rising costs in labor-intensive fields with limited productivity gains.
- Traditional software engineering historically matched this profile: human code throughput was the bottleneck.
- AI coding platforms (Cursor, Replit, Lovable, etc.) obliterate the labor constraint and unlock exponential productivity.

# Hardware still a strong investment Point

- ...To add another chart here

# Data Center Spend

AI infrastructure capex spend by company, \$bn



Source: Company data, Goldman Sachs GIR.