

Big Tech and Semis: Laying Out Risks to the AI Trade

Key Takeaways

- We highlight our seven biggest risks/concerns that we see tied to the Big Tech/Semi theme, which has powered this bull market from the October 2022 lows.
- At the top of our list of concerns is the potential for excess compute as well as harsher than expected tariffs and/or export restrictions. We think the keys to the next major move in artificial intelligence (AI) stocks will depend on clarity from tariffs and MSFT commentary in April/May 2025.
- We see future capex increases moderating from hyperscalers, as return on investment (ROI) for AI spend comes under greater scrutiny.
- Despite risks, long-term investors should remain optimistic about AI prospects, with emerging use cases and shift toward Physical AI to drive AI monetization in the coming years.
- Share prices for AI semi plays have already fallen by 25% to 50%, while hyperscalers have seen declines of 15% to 25% off 52-week highs, which we believe discounts some near-term uncertainties outlined in this report.

Positive (+) or Negative (-) Implications
(-) Advanced Micro Devices Inc. (AMD)
(-) Alphabet Inc. (GOOGL)
(-) Amazon Inc. (AMZN)
(-) Broadcom Inc. (AVGO)
(-) Marvell Technology Inc. (MRVL)
(-) Meta Platforms Inc. (META)
(-) Micron Inc. (MU)
(-) Microsoft Corp. (MSFT)
(-) NVIDIA Corp. (NVDA)
(-) Oracle Corp. (ORCL)

Fundamental Context

Given relative underperformance within the Information Technology sector in the first quarter of 2025, we thought it would make sense to lay out the key risks to the AI Tech trade, which we remind investors has driven much of the stock market gains over the last two years. Although our CFRA base case doesn't call for a recession at this time, it is imperative to know that no theme or company is immune to an economic downturn and that bad timing can often lead to significant losses in the near term. Concerns about rising fixed costs, possible excess compute given planned supply increases/timing of demand, tariff implications, and the need for greater efficiencies post DeepSeek are mounting as economic conditions become less enticing. Still, we remain positive about the long-term growth prospects for AI and revenue potential that can be garnered across the Information Technology sector, however, we acknowledge that near-term risks are increasing given a host of uncertainties. Our intent in this piece is solely to lay out the greatest risks that we see to the AI trade.

1. **Business models for hyperscalers are shifting toward higher fixed costs.** If we were to see a notable negative change to the growth trajectory for the hyperscalers (recession driven would be a nightmare), then the higher fixed costs/depreciation expenses from infrastructure build outs/servers would be spread out over a lower revenue base or slower revenue growth rate. Although hyperscalers can't reverse prior investments that have already occurred, they can make the decision to scale back future purchases. In fact, we do expect hyperscalers to start easing up on the pace of infrastructure build outs

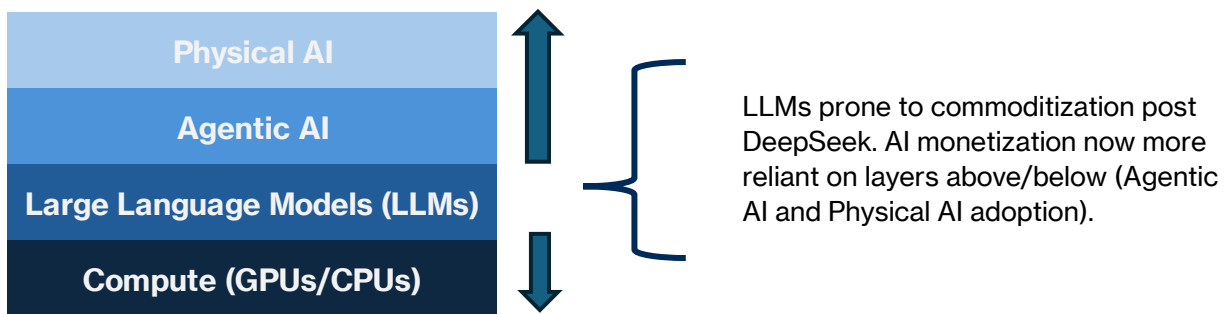
and focus a greater percentage of their spending on technology/server purchases given that this is more closely tied to revenue.

2. **Lower revised expectations for cloud and/or digital ad revenue.** A downward growth outlook to either of these trends, the main sources of revenue among Big Tech, would force hyperscalers to revisit their budgets as profitability/free cash flow would take a hit. We would highlight that both were hurt in 2022, with cloud decelerating faster than expected post-pandemic and digital ad revenue forecasts ratcheted down due to iOS ad tracking changes and Russia-Ukraine implications, causing Big Tech to revisit and reduce prior headcount additions. This time it is a little different as the problem is higher capex spending rather than higher headcount additions (fixed versus variable), but Big Tech has historically made the right call when it comes to operational efficiencies, looking at the best interest of shareholders.
3. **Tariffs/export restrictions a double whammy for the Tech space.** Ultimately, while we view cloud and digital ad trends as among the two strongest secular stories in tech and the broader stock market, revenue in these categories is still dictated by macro factors/enterprise spending. Budgets/spending from enterprises could take a turn for the worse (e.g., lagging tariff impact), but it's important to note that given AI is still the biggest opportunity for enterprises and is seen as leading to massive productivity improvements, spending in this area should hold up better than other areas in a downturn. On the cost side, increasing costs to manufacture chips among other components for servers on rising tariffs will ultimately get passed on all the way to the hyperscaler, which means lower server unit purchases. It also appears that the Trump administration will be harsher with export restrictions, at least initially, which could impact the revenue potential for chipmakers in regions like China. We note that this week the U.S. added dozens of Chinese companies to a trade blacklist over national security concerns. Although Tech companies like NVDA and MSFT have asked President Trump to roll back greater chip export restrictions set to take effect in May, we note inherent risks if they go into effect on global demand for AI chips. The Biden administration, in its final days, imposed limits on third countries buying cutting-edge American chips, hoping to prevent those chips from making their way to China.
4. **Excess computing capacity.** At the end of the day, compute is a commodity just like oil and natural gas. If we see a massive inflow of compute supply into the market that isn't met with higher demand, it will create an imbalance that one would imagine would have a negative impact on the pricing of GPUs. It ultimately does come down to the timing of whether new AI workloads come online fast enough to absorb added capacity. Much speculation is brewing in the markets about Microsoft walking away from data center leases and whether that's due to a change in its partnership with OpenAI (MSFT walking away from the business and OpenAI focusing on Stargate) or if it's an indication that too much capacity is being built - we do hope to get more clarity on its Mar-Q call in late April. Not only would excess capacity ultimately come to hurt the likes of NVDA as GPU purchases would get digested, but it would push out the timeline of AI monetization for hyperscalers as the ROI wouldn't be as attractive (long term the lower prices will stimulate AI adoption based on Jevons paradox). Not to mention, GPU inventories would potentially have to be repriced lower in this event. That said, we would highlight that demand for compute remains extremely robust, while Jensen Huang has claimed that future reasoning models will command more than 100x the compute than traditional large language models (LLMs; Huang spent a great deal of time demonstrating this at GTC). And with the price to use LLMs coming down post DeepSeek and the emergence of more reasoning models, the need for more compute is going to continue to go up considerably.
5. **Spending efficiencies seem increasingly likely from Big Tech.** We do think that hyperscalers are unlikely to increase budgets in 2025 after earlier announcements this year (something they did

repeatedly last year), as they look for ways to better manage rising fixed costs. When we are gauging capex spending, we look at it through three tiers: 1. Infrastructure build, 2. Technology advancements, and 3. Maintenance spending. The first tier hyperscalers are likely to take their foot off the gas is on the infrastructure build/data center side of things as that now represents an increasingly larger percentage of their budgets (we estimate about 40% of budgets for the likes of MSFT/GOOGL; well above historical trends). By doing this and focusing more on the technology advancement side, hyperscalers can better ramp near term AI revenue (sales tied to GPU/CPU renting) and improve ROI metrics. In addition, we highlighted earlier this year that we expect Big Tech spending to decelerate toward a single-digit growth pace in 2026 after a 30% plus projected increase in 2025 and a 40% plus rise in 2024. Although server spend should hold up well, growth rates will clearly deteriorate, and tariff implications could pull back server unit sales. Importantly, the tech ecosystem is truly global and connected, so any deviation to customer spending plans has a domino effect across the AI supply chain ecosystem if those efficiencies aren't picked up by greater spending from other customers/enterprises/AI factories. Jensen Huang has stated that he sees the enterprise space eventually eclipsing hyperscalers as the biggest spenders of AI, offering a more diverse customer base.

- 6. **Monetization of AI could take longer than expected.** Clearly what investors are struggling with as it pertains to the AI trade is that capex is so elevated relative to where revenue resides (e.g., MSFT annual run rate at \$13 billion compared to annual capex run rate at \$80 billion-plus). And given the potential race to the bottom in terms of pricing for LLMs, all the attention on AI monetization falls a level below and above the LLM chain. Essentially, the focus will be to monetize AI revenue at the compute level and as AI Agents gain steam and we slowly migrate to a Physical AI world. While almost nobody will question the long-term potential of AI Agents and Physical AI, the timing/magnitude of when this revenue will be scaled is unknown. If hyperscalers feel as though the adoption of AI agents are taking place at a slower than anticipated pace, we think this increases the likelihood that certain projects get pushed out, which would also be a negative for AI oriented chipmakers.

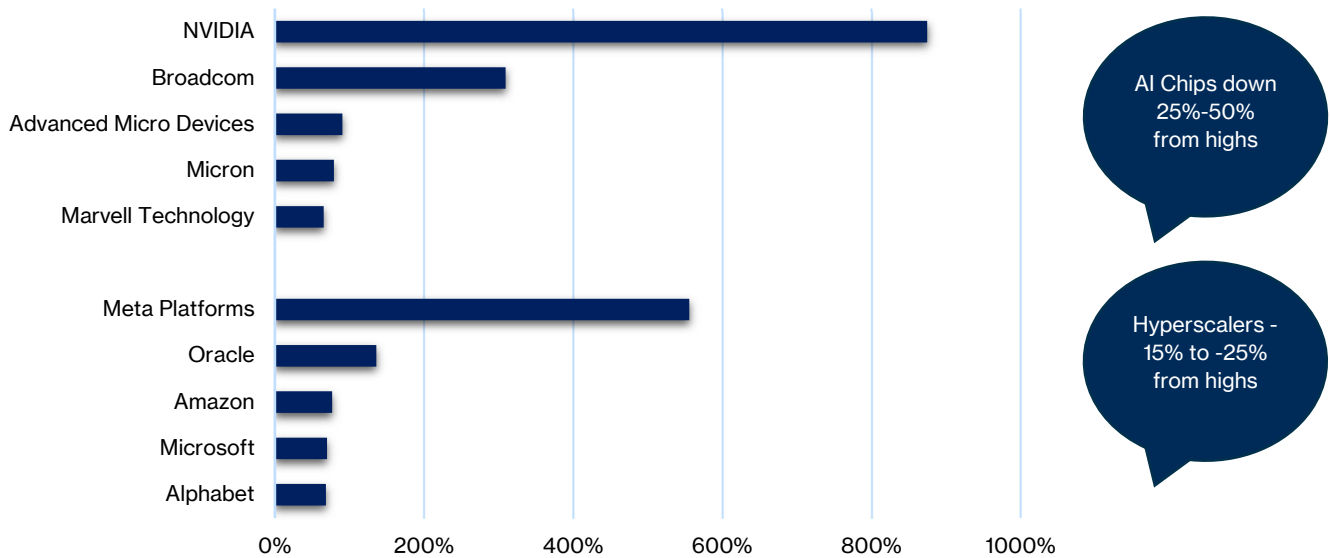
Figure 1: The Layers of AI



Source: CFRA.

- 7. **Enormous gains in the last two years have led to profit taking and sector rotation as sentiment goes sour.** While this is a trend one can argue has been taking place since last summer, massive gains in many portfolios have led to outsized positions that are being reallocated. Although NVDA is the biggest culprit, still up more than 8x from the October 2022 lows, one could argue that Big Tech and semiconductor positions have grown well above the threshold levels for many buy-side investors. Fund managers will often ride these winners in good times but during times of uncertainty, like now, profits will be taken.

Figure 2: AI Semiconductor and Hyperscaler Performance Since October 2022 Lows



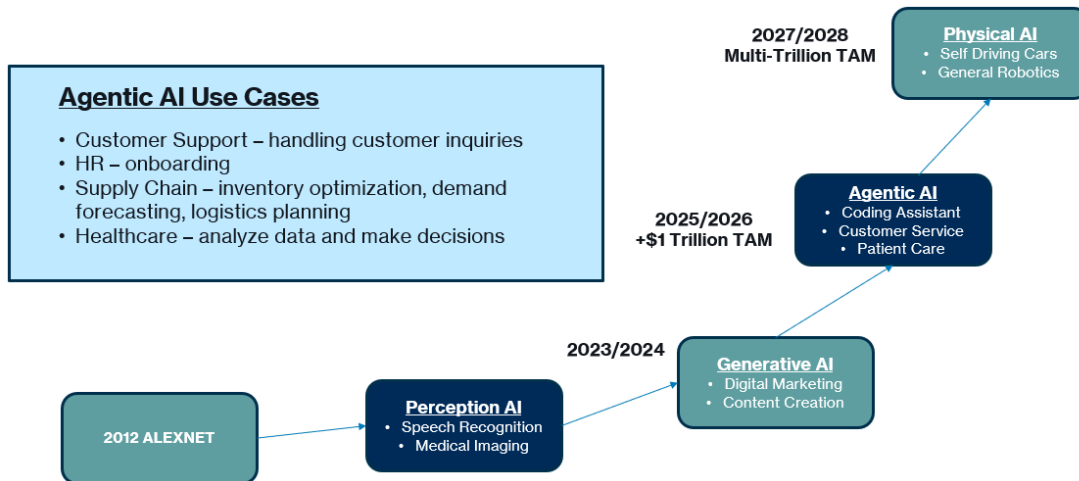
Source: S&P Global Market Intelligence.

Despite risks, long-term investors should remain optimistic about AI prospects. Although being a tactical investor can reap significant rewards if you are on the right side of things, we believe AI is in the early innings of a long bull-market that will take over a decade to play out. And while it's anyone's guess as to whether the time to load up or get out is now, we have been big believers in not getting too cute with secular growth trends. Case in point was the mobility revolution, which many believe started when AAPL launched its first iPhone in 2007. While investors had to sit with massive losses during the initial years, patient investors reaped massive gains as mobility led to a decade-plus bull market across tech, with beneficiaries including AAPL itself, select chipmakers, streaming companies, and social media companies among other areas.

This piece is not intended to provide insights into why to stay bullish on the AI Tech theme long term, but those that are concerned should be reassured by the following points below:

- **An AI war in the clouds**, along with healthy free cash flow generation, will limit any sizeable negative downward revision to spending, in our view.
- **Secular themes are intact** with legs to run whether they are tied to AI, cloud, or digital ad spend.
- **Scaling AI has just begun.** Most enterprise AI projects remain in their infancy, with companies set to move from testing to production mode in the coming quarters and years.
- **Disruptive use cases for AI will occur.** We see AI Agents and Physical AI driving a massive expansion of the AI addressable market, but timing remains the question mark. In any event, we see more use cases emerging in the coming quarters as more advanced reasoning models tied to AI Agents are deployed across enterprises given the potential productivity improvements they offer (e.g., customer service agents, AI engineers). In fact, we are already seeing examples of this take place from companies like Salesforce (over 80% of internal service calls are handled by Agents) and Pinterest (over 15% of coding done by AI).
- **Data growth is accelerating as AI adoption rises.** A trend that will only require more compute in the future as a larger number of enterprises integrate greater reasoning models and AI Agents that will increase data exponentially over the next decade. In fact, Huang recently commented stating that he believes we will get to the point where annual data will get so big that the amount of data we will generate each year will surpass all data created in the last 4.5 billion years of the earth's existence.

Figure 3: The Progression of the AI Ecosystem – Agentic AI the Next Phase



Source: CFRA, NVIDIA.

- **Valuations partly discount near-term risks.** Semiconductor valuations for AI-oriented companies now hover close to market multiples based on 2026 expectations, while multiples for many of the hyperscalers have compressed by 20% or more in most instances since last summer. Although finding a bottom in multiples is extremely difficult given they are partly based on sentiment as well as discounting potential risks ahead, we note that several names now trade toward the bottom half of their historical ranges. Again, for investors willing to sit through the near-term volatility and are believers in the opportunity ahead for AI, the reset in valuations appears to be providing investors with good long-term value.

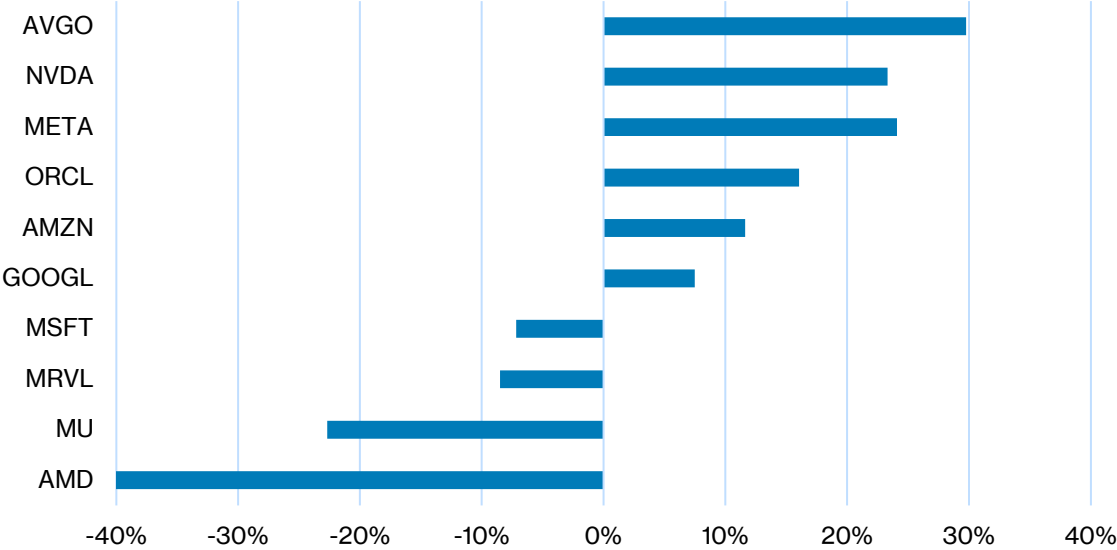
Figure 4: Valuations for Select AI Semiconductor and Hyperscaler Companies

AI Semiconductors					
Company Name	10YR Fwd Avg.	5YR Fwd Avg.	2025	2026	2027
Advanced Micro Devices, Inc.	45.1x	36.6x	22.8x	17.1x	14.1x
Broadcom Inc.	16.2x	19.2x	25.0x	20.8x	17.2x
Marvell Technology, Inc.	26.7x	33.5x	23.1x	17.6x	14.0x
Micron Technology, Inc.	18.6x	18.7x	12.1x	7.7x	6.9x
NVIDIA Corporation	36.0x	42.7x	24.6x	19.4x	16.7x

Hyperscalers					
Company Name	10YR Fwd Avg.	5YR Fwd Avg.	2025	2026	2027
Alphabet Inc.	23.8x	23.9x	18.1x	15.8x	13.7x
Amazon.com, Inc.	89.2x	64.3x	31.7x	26.5x	21.2x
Meta Platforms, Inc.	25.4x	22.8x	23.8x	20.7x	17.9x
Microsoft Corporation	26.8x	30.9x	28.3x	24.4x	20.8x
Oracle Corporation	16.3x	18.0x	23.5x	20.0x	16.0x

Source: CFRA, S&P Global Market Intelligence (as of 3/27/2025).

Relative Performance (One-Year Return)



Source: S&P Global Market Intelligence (3/27/2024 to 3/27/2025).

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Style: Notes - Positive implications: CFRA sees an improvement in company fundamentals, which could include (but are not limited to) improved pricing, strengthening backlog, market share gains, cost improvements, a more favorable regulatory environment, or improving demographic trends, over the next 12 months.

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