NOMURA

Global Memory

Global Markets Research
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EQUITY: MEMORY

Is data center unprofitable? No, it is very profitable

OP surges first, FCF follows with a time lag, and big techs have options to reassure FCF-sensitive investors

Big tech shares fell sharply last week due to two concerns: (1) that AI is eroding legacy businesses, and (2) FCF has turned negative (although this has been well anticipated) despite rapid profit growth and might get more negative. We think the first is in fact a reason why big tech companies cannot cut investment, which, in our view, is not bad for semiconductors. The second would be a problem for big tech CFOs, whether they could resolve the issue with a range of financing tools such as operating leases, joint ventures and securitization of future cash flows, in our view. It is not a variable that changes semiconductor demand or the value of semiconductor companies. In our opinion, the market's reaction to semiconductor stocks is overdone.

Two reasons for the sell-off

The October sell-off reflects two overlapping concerns, in our view: AI cannibalizing legacy business, and negative FCF. Alphabet (GOOGL US, Not rated) fell 12% on 29 October, which is its largest single-day drop since its public listing (*link*).

- **AI cannibalizing legacy businesses:** Alphabet's search advertising growth slowed to 12% in 3Q, a five-quarter low, which media attributed to AI Mode in Search (*link*). Meta's (META US, Not rated) AI agent *Muse*, launched on 8 September, handles shopping and bookings on users' behalf and carries no ads. Amazon's (AMZN US, Not rated) decision to block Muse shows that agents can bypass existing shopping and ad funnels. Each company's AI now threatens the others' legacy businesses.
- **Negative FCF, borrowing and new share issuance:** Four big techs and Oracle (ORCL US, Not rated) have raised USD326bn of bonds in 2026, about three times the amount of 2025, according to S&P Global Market Intelligence. In 3Q, Alphabet issued USD28.7bn of bonds and USD12.4bn of stocks through an at-the-market program.

The first concern is why investment cannot stop. In our view, the only way to defend the legacy business is to build AI competitiveness, so slowing investment is hard. That is, if anything, good news for semiconductors. The second concern is understandable for short-term investors, but treating a timing gap as an AI profitability problem is an overreaction, in our view.

Why big tech must invest early

1. **Performance scales with inference compute, not just training.** Reasoning models and agents use far more tokens per answer, and post-training reinforcement learning is compute-intensive. Without enough compute, even a good model cannot be sold in volume.
2. **Revenue is capped by capacity, not demand.** Backlogs stand at USD560.8bn for Google Cloud (end-September), about USD496bn for AWS (part of Amazon) (end-June) and USD677bn of commercial remaining performance obligations for Microsoft (MSFT US, Not rated) (end-September, +73%) (*Stock Titan*). Microsoft said 3Q capex fell short of its USD50bn plan because third-party capacity was delayed.
3. **Customers are data.** Customer usage feeds the next model, and once enterprises wire workflows, data and agents into one model, switching becomes hard. Customers might try several models at first but are likely to settle on one or two.

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The next three years of compute build-out are therefore likely to set a market structure, in our view. For a company that slows investment, the cost shows up less in near-term FCF than in its later market position.

Profit and cashflow diverge: common in growth industries, a classic J-curve

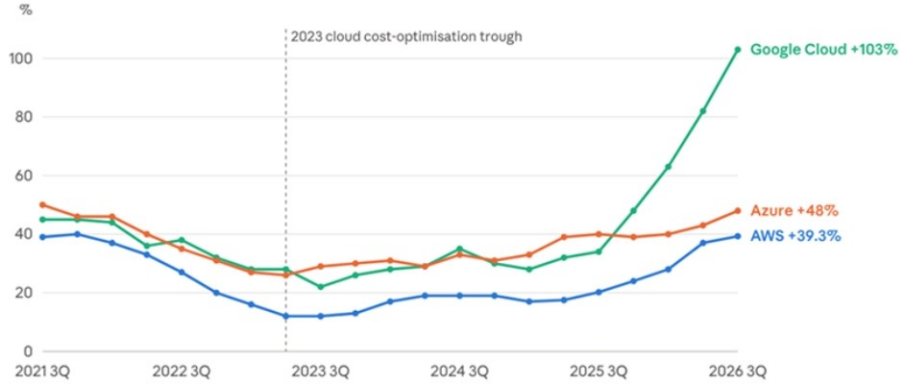
Current investment is highly profitable and lifts future growth; we believe the negative FCF comes from the lag in payback. Cloud operating margins are rising even as capex surges: in 3Q AWS reached 38.7% (vs. 34.6% a year earlier) and Google Cloud 36.2% (vs. 23.7%) (*link*).

Some media are misreading: reading negative FCF as 'not making money' confuses profit with cash. Big tech companies' operating income is surging. In our view, the negative FCF is simply a result of time gap from paying cash today for equipment that will generate future revenue.

3Q cloud revenue accelerated for all three providers listed below, and margins rose with it. The combined 3Q cloud revenue of the three providers was about USD110bn, up about 56% y-y. Google's cloud revenue rose 103% y-y in 3Q, and as surging investment converts into revenue, the others' revenue and operating income should surge as well.

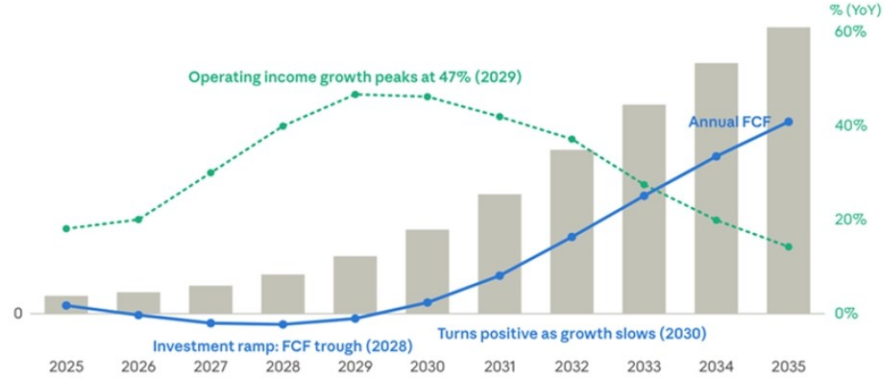
- **AWS:** Revenue of USD46.0bn (+39%), its fastest growth since 2021, with a 38.7% operating margin. It is growing close to 40% again at nearly three times the size.
- **Azure:** +48% (Microsoft, FY1Q27). Microsoft said capex fell short of plan because of third-party capacity delays, showing growth is constrained by capacity rather than demand.
- **Google Cloud:** Revenue of USD30.7bn (+103%), operating margin 36.2% (23.7% a year earlier). It includes TPU system sales, so its growth is not directly comparable with the other two. Backlog is USD560.8bn.

Fig. 1: Big tech's y-y cloud revenue growth trend



Note: Azure data is based on "Azure and other cloud services" from the company's earnings data; Google Cloud revenue includes Workspace and TPU system sales.
Source: Company data, Nomura research

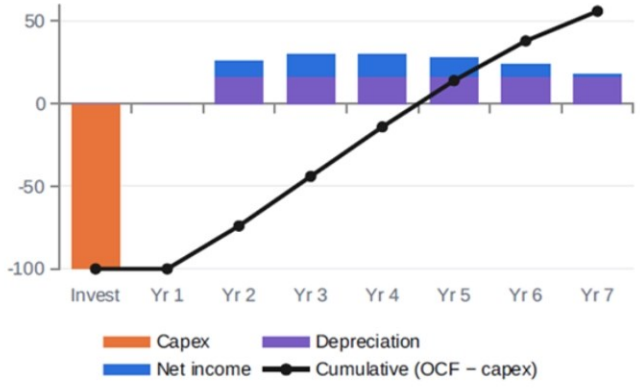
Fig. 2: Big techs' operating income keeps rising, while FCF traces a J-curve



Note: Based on combined earnings of four big techs (Alphabet, Meta, Amazon, Microsoft); 2025 figures are actual; 2026 figure is based on actual and company guidance; 2027 and onward is based on our estimates.
Source: Company data, Nomura estimates

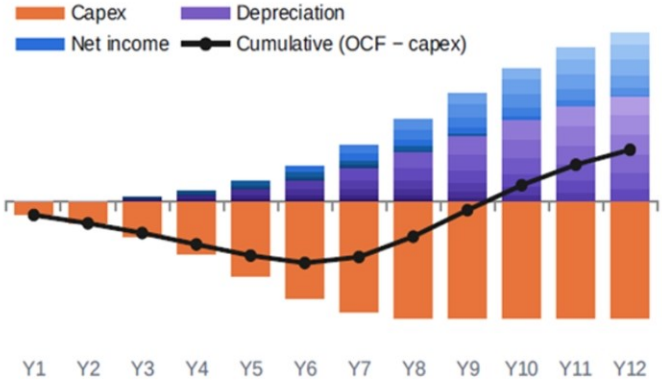
- **Profit and cash timing:** Capex leaves as cash in the year it is spent, while depreciation and revenue arrive 5-20 years after the assets go live. So while investment is accelerating, FCF can be negative even as operating income grows.
- **Investment growth sets when FCF turns positive:** If investment grows faster than cohorts pay back, negative FCF widens; once investment growth slows, installed capacity throws off cash and FCF rises quickly. If shares fall on negative FCF, we believe it offers a prime opportunity for long-term investors.
- **Caution:** The timing of the FCF trough and turn, and the slope afterwards, move with assumptions on investment growth, pricing and utilisation.

Fig. 3: Earnings, depreciation, and operating cashflow
For single cohort of investment



Note: "Cohort" means the assets invested in a given year; above chart is for an illustrative purpose to describe cashflow trend following an investment of 100, and does not describe any specific company's investment or return.
Source: Nomura estimates

Fig. 4: Earnings, depreciation, and operating casfhlow
Cumulative of multiple investment cohorts throughout years



Note: Above chart is for an illustrative purpose to describe cashflows when investments for multiple cohorts happen across multiple periods, and does not desrcive any specific company's investment or return.
Source: Nomura estimates

Big tech's four options

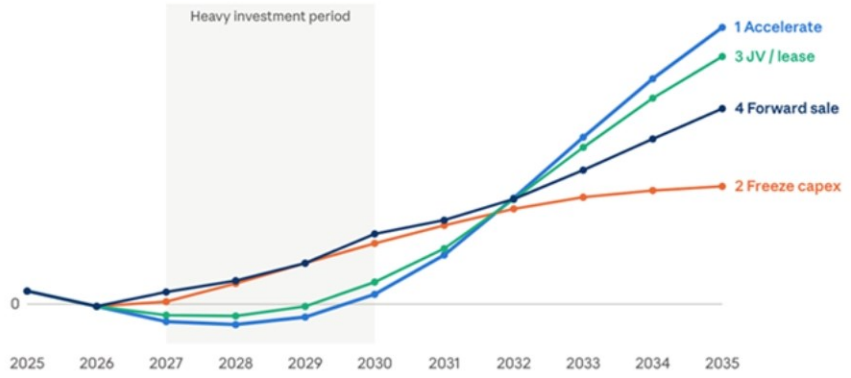
Big tech has four paths between investment and cash flow, in our view. We see a low probability of option 2 (a capex freeze, see the table below); it is more likely to keep the investment path of option 1 while adding the financing methods of options 3 or 4.

Fig. 5: Big tech's four options between AI investments and cashflow

Option	(1) Accelerate investment	(2) Freeze capex	(3) (1) + JV / lease	(4) (3) + forward sale of cash flows
What it is	Keep raising capex to meet demand	Hold capex at 2026 level from 2027	A JV builds buildings/ power infrastructure; big tech leases them	Sell the future cashflow of contracted enterprise customers now
Near-term FCF	More negative	Improves sharply at once	Less negative	Can turn positive
Long-term FCF/ revenue	Highest	Much lower	Slightly below (1) (lease payments)	Can turn positive
Market position	Secures lead	At risk	Same as in (1)	Same as in (1)
Balance sheet liabilities	Rise for 2-3 years	Little change	Lower than (1)	Depends on accounting
Rating agencies are likely to interpret as…	Higher debt	Neutral	Adds leases and guarantees to debt	Depends on the financing structure
Semiconductor demand	Up	Down	Same as in (1)	Same as in (1)
Our view on probability	Investment path maintained	Low	High (already underway)	Medium-High

Source: Nomura estimates

Fig. 6: Big tech's annual FCF by scenario
Scenario 2 and 4 lead in near-term; 1 and 3 lead later



Note: Above chart is for illustrative purpose and does not reflect actual figures/estimates.
Source: Nomura estimates

During the heavy investment years of 2027-2030F, options 2 and 4 would generate the highest FCF. Once investment growth slows, options 1 and 3, which do not give up growth, would generate the most.

- **Option 1, accelerate investment (current expectation):** Near-term negative FCF widens, but FCF rises quickly once investment growth slows. FCF duration simply lengthens, so a share-price fall might be an opportunity for long-term investors.
- **Option 2, freeze capex:** FCF improves immediately, but future revenue becomes much smaller. If a compute shortage pushes prices up, the Jevons paradox (cheaper compute driving more usage) also weakens. Negative for semiconductors, but unlikely, in our view, for the reasons mentioned above.
- **Option 3, JV and operating lease instead of finance lease:** The approach Meta used at Hyperion (*link 1* , *link 2* ; Meta 20%, Blue Owl (OWL US, Not rated)-managed funds 80%, USD27.3bn of SPV bonds rated A+ by S&P, four-year renewable operating leases with a residual value guarantee). Building investment drops out of cash capex, at the cost of lease payments over the following 20 years. Big tech companies improve cash flow, and institutional investors such as pension funds gain a stable, higher-yielding asset.
- **Option 4, partial monetization and forward sale of operating cash flows:** Big tech keeps the equipment, operations, customer relationships and mark-up, and sells only the guaranteed cash flows that enterprise customers must pay to long-term investors such as pension funds and insurers. Cash arrives when investment peaks, and the price is a discount cost paid later. Under both US GAAP and IFRS, it is likely to be recognized as a liability (*link*), but it raises cash without adding borrowings. Spinning off part of the assets and cash flows into a subsidiary and selling equity in it is another possibility.

Oracle's plan is not based on a single scenario. It keeps the investment path of option 1 (no capex freeze) and combines option 3 (leases/SPV), a variant of option 4 (customer prepayments), and a structure in which customers or third parties buy the hardware. It is a real-world example of our call that big tech will solve the cash problem through financing methods rather than by cutting investment.

Fig. 7: Oracle's AI investment and funding plan vs. our "four option"-based scenarios

Item	Details	vs. four options
Investment path	- Capex peaks in FY27-28 (Jun 2026-May 2028), and steps down from FY29 - FY27 gross capex of USD90-95bn (net cash capex no more than USD70bn)	Option 1 / Option 2 for longer-term
FCF turn	- FCF positive in 2H FY28 (Dec 2027-May 2028) - FY29 FCF of USD30bn or more	Option 1 (J-curve)
Long-term leases	- USD288bn of not-yet-commenced data center leases (15-19 years, mostly operating leases) - Developers build and Oracle leases	Option 3
Project SPV	- About USD18bn of bank loans + USD3bn of Blue Owl equity - Oracle reportedly bears the debt costs and power responsibility (Similar to Meta Hyperion, but with stronger guarantee-like support)	Option 3
Customer prepayments	- USD11.4bn received in 1Q FY27, with a significant financing component (future cash received upfront from customers, but not sold to investors)	Option 4 variant
Customer-proivded HW	- Part of the backlog is contracted with customers supplying their own GPUs - Customer buys the equipment (Same effect as our 20% retained / 80% sold idea)	New type
Vendor financing	Reduces upfront cash needs	A form of borrowing
Equity and debt	- USD20bn ATM equity program completed in 1Q FY27 - New capital raises through FY30 capped at USD20bn (USD10bn equity + USD10bn gross debt, excluding refinancing)	Equity funding
Leverage target	- Net debt (including operating/finance leases and vendor financing) - Adjusted EBITDA below 3.5x by FY29	Rating-agency view built in

Source: Company data, Nomura estimates

Big tech's financial capacity: borrowing rises, but it is not a burden, and many funding options exist

Even if FCF stays negative for several years as assumed under option 1, leverage should not move far outside its historical range, while equity grows quickly. The big four tech companies' equity was USD2.0tn at end-September 2026, and the companies are cutting shareholder returns, and in some cases issuing stock (Alphabet's USD12.4bn ATM issuance in 3Q).

- **(Point 1) historical range:** Big four's "(financial debt + operating leases) / equity" ratio was about 31% at end-2025 and about 42% at end-2022. We estimate that the peak will likely be at 2022 levels even through option 1 assumes negative-FCF years and falls quickly once FCF turns positive.
- **(Point 2) equity growth:** Rising profits and lower shareholder returns grow equity fast enough to absorb the extra borrowing. If returns continue, the ratio rises further.
- **(Point 3) funding cost:** Big tech companies still issue bonds at high-grade credit ratings, and the Hyperion SPV bonds are rated A+.

Memory risk if data centers are oversupplied? Unlikely for several years

The biggest risk, in our view, is a compute glut that leaves revenue per GW below expectations. Building and equipment depreciation is a fixed cost, so lower pricing hits profit directly.

- **Big Tech's response to partial data center oversupply:** (1) long-term supply contracts cushion price declines (see the backlogs mentioned above); (2) spare compute is redirected to model training, accelerating performance gains; and (3) capex growth is fine-tuned modestly. Point (2) works to re-stimulate demand through lower token prices and better performance. Overall, the impact on semiconductor demand is limited, we think.

- **Unexpected severe data-centre oversupply (very unlikely near term; possible in the long run):** Data center customers appear to procure about 80% of their total memory needs under LTAs with purchase obligations, and the rest outside LTAs. We estimate memory makers have about 50-70% of total volume locked into LTAs with a guaranteed minimum margin (we estimate operating margin of 60% or more). If LTA customers buy only their obligated volumes and cut purchases outside of LTAs (10-15% of total memory volume), some of that supply would ease severe shortages at other non-LTA customers, but non-LTA prices would stop rising and in the worst case could fall below protected LTA prices. Memory makers would then adjust capex plans or cut utilisation to find a new supply-demand balance. Their response is more flexible than in the past, and for memory makers, short-term profit and the bonuses of the employees who make decisions now matter more than short-term market share.
- **Signs of data-centre oversupply are still weak:** 3Q cloud growth accelerated (AWS +39%, Azure +48%, Google Cloud +103%), and Microsoft's capex fell short of plan because of third-party capacity delays. Indicators to watch: slowing cloud growth, GPU rental prices and backlog growth.



Appendix A-1

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