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# Off the Books

*How the AI Boom Became a Credit Cycle—and Who Will Hold the Loss*


ROBERTO BALBINO

Founder & Chief Executive Officer, FINTECH SCB LLC


U.S. 10-year Treasury par yield, daily, January 2, 2025 to October 28, 2026: 4.57% to 5.05% (source: U.S. Treasury)




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KEY FINDINGS

# The Argument in Eleven Points

01 **The AI boom is a technology cycle financed as a credit cycle.** In 2026 to date, capital expenditure exceeded operating cash flow at Alphabet, Amazon and Oracle. The reported debt of the five largest spenders rose from about $226 billion at the end of 2024 to about $496 billion.

02 **The larger balance sheet is the one that is not reported.** Leases signed but not yet commenced, mostly for data centers, total about $1.2 trillion across the five, about 2.4 times their latest reported debt. At Microsoft, the strongest of them, they are more than eight times its debt at the same date.

03 **Four instruments keep AI obligations off balance sheets:** leases not yet commenced, joint-venture bonds backed by residual value guarantees, vehicles that own the chips, and vendor backstops. Meta's maximum exposure to its unconsolidated data-center ventures reached $68.4 billion; Nvidia has disclosed guarantees of up to $108.5 billion.

04 **Keeping debt off the balance sheet has a price, and it is rising.** Meta's Hyperion vehicle paid 6.581 percent in October 2025, against a reported 5.5 percent on a comparable Meta bond. Its El Paso vehicle paid 7.534 percent in July 2026; measured against the 10-year Treasury, its premium was about 30 basis points wider. Secondary-market yields on the Hyperion bonds reached 7.55 percent in September.

05 **Contracted demand is concentrated in customers who must raise capital to pay.** Microsoft's commercial backlog grew 84 percent in the year to June 2026, and 25 percent excluding OpenAI. OpenAI's annualized revenue was reported at about $50 billion in October.

06 **The collateral ages faster than the debt.** The largest spenders depreciate servers over five and a half to six years, while Nvidia now releases a new generation of accelerators every year. Lenders secured on hardware are lending against the gap.

07 **The price of money came back, and the boom's contribution to growth makes it easier for the Fed to keep it high.** The 10-year Treasury yield reached 5.31 percent on October 5, 2026, its highest close since 2002. The Fed raised rates in September, and PCE inflation for September came in at 3.6 percent. Unlike in 2001, no rate cuts are cushioning the refinancing.

08 **By October the equity market had sorted AI by how it is financed.** From their 2026 highs to their October lows, CoreWeave fell 54 percent and Oracle 44 percent; Microsoft fell 4 percent. Daily semiconductor returns showed no significant link to daily yield changes, and in October chips fell while yields fell: the selling is consistent with doubts about the funding model rather than about duration.

09 **Bondholders have not been asked yet.** At the October trough the high-yield spread was 3.40 percent, below the 4.57 percent it reached in April 2025. Repricing has begun only at the edges, where CoreWeave's 2031 notes reached a yield of about 16 percent.

10 **The loss is being arranged in advance, and it falls on those who cannot leave.** U.S. life insurers held $85.2 billion of AI-ecosystem debt at mid-2026, up 24 percent in six months. Semi-liquid private credit funds limit withdrawals to about 5 percent a quarter. Bank loans to non-depository financial institutions, a category that includes private credit funds and BDCs, reached $2.1 trillion.

11 **The most likely outcome is a slow repricing, not a crash.** The telecom bust left the networks in use and holders of defaulted telecom bonds with about sixteen cents on the dollar. This Insight states in advance the four observations that would prove it wrong by the end of 2027.

INTRODUCTION

# The Wrong Question

*The debate over artificial intelligence is still framed as a stock-market question. The risk has already moved to a place where prices do not move every second and investors cannot leave at will.*

On the evening of October 21, 2026, Meta Platforms reported third-quarter revenue of $64.6 billion and negative free cash flow of $2.1 billion: the cash its operations generated no longer covered what it spent on servers, data centers and networks. It narrowed its estimate of 2026 capital expenditures to between $135 billion and $145 billion, and filed to create a new class of nonvoting shares that, it said, it may use to raise capital.[0.1] The next day the Nasdaq Composite fell 2.6 percent, its steepest decline since June, and the Philadelphia Semiconductor Index lost 6.7 percent in a single session.[0.2]

The commentary that followed asked the question it has asked since 2023. Is this the moment the AI bubble bursts?

I think it is the wrong question, and the cost of asking it is that we look in the wrong place for the damage.

A bubble, in the way the word is used in financial journalism, is an equity event. Prices rise beyond what future cash flows can justify, and at some point they fall. The people who bought late lose money. The people who sold early keep their gains. It is painful, and in the case of the dot-com crash it was very painful, but it is also, in a narrow sense, orderly. A shareholder in Nvidia or Meta can sell at 9:31 on any trading morning. The loss is recognized immediately, by the person who chose the risk, at a price that everyone can see.

That is not where the AI build-out is now being financed.

Between 2024 and 2026 the marginal dollar spent on AI infrastructure stopped coming from the operating cash flow of the largest technology companies and started coming from credit: investment-grade bonds issued at record scale, leases signed for data centers that have not yet been built, project companies that hold the buildings while the tenant keeps the debt off its own balance sheet, loans secured by graphics processors, and backstops written by chip vendors to make their customers' borrowing possible. In August 2026 Nvidia announced memoranda of understanding with Apollo, BlackRock, Blackstone, Brookfield, Goldman Sachs and KKR to establish financing platforms intended to mobilize more than $500 billion of third-

party capital for AI computing infrastructure, and its chief executive said Nvidia would have the option to backstop up to $125 billion of the deals.[0.3] The supplier of the machine is now also a guarantor of the debt that buys the machine.

The holders of these claims do not behave like shareholders. A life insurer that bought a twenty-year data-center bond to match its annuity liabilities is not going to sell it at 9:31 tomorrow morning, and could not sell much of it without moving the price against itself. A private credit fund that limits redemptions to five percent of assets per quarter is designed precisely so that its investors cannot leave quickly. A pension fund holding the senior tranche of a lease-backed vehicle values that position with a model, not a screen. These are institutions built to wait. In normal times that patience is a virtue. In a credit cycle it is the mechanism through which losses are allocated to the people least able to see them coming.

*Equity markets reprice risk in public, every second. Credit markets allocate losses in private, years later. The AI boom is being argued about in the first and financed in the second.*

This Insight makes one argument and follows it through. The artificial-intelligence boom is a technology cycle that has been financed as a credit cycle. Its outcome for savers will be decided less by whether AI works than by who has lent against it, on what terms, against what collateral, and with what ability to leave. Credit cycles do not end with a repricing. They end with an allocation: someone absorbs the gap between what was promised and what the assets produce. The question this Insight asks is who that someone is likely to be.

## What this Insight does not argue

It does not argue that artificial intelligence is a fad. The technology is producing measurable gains in specific settings, and the usage numbers reported by its providers are real. In *Principles of Political Economy* I accepted the productivity J-curve: the possibility that a general-purpose technology depresses measured performance while organizations invest in the processes and skills needed to use it, before returns appear.[0.4] I still accept it. On October 17, 2026, I wrote on Substack that the J-curve can also become an all-purpose excuse, and that patience needs milestones.[0.5] This Insight adds a harder point. Debt does not follow a J-curve. It follows a schedule. A coupon is due on a date, a lease payment is due on a date, and a loan secured by chips comes due whether or not the chips have found their productive use.

It does not predict a crash on a date. Forecasting the timing of a credit event is a way of being wrong with confidence. Chapter 9 sets out three paths to 2028, the indicators that would distinguish them, and the evidence that would prove this argument wrong. I state those tests in advance because an argument that cannot lose is not an argument.

It does not argue that the borrowers are weak. The strongest objection to everything that follows is that the companies at the center of the build-out—Microsoft, Alphabet, Amazon, Meta and Oracle—are among the most profitable and best-capitalized enterprises in history, and that this is what distinguishes 2026 from the telecommunications collapse of 2001. Chapter 8 makes that case as strongly as I can make it. My answer is that the strength of the tenant does not travel automatically to the lender. Much of the new debt sits in vehicles whose claim on the tenant is a lease with a term, a residual value guarantee with conditions, or a purchase commitment that can be renegotiated. The tenant's balance sheet is strong partly because the debt is somewhere else.

## Why a finance director's view

I spent a meaningful part of my career inside the finance functions of companies that build and operate networks, at Fastweb and at Colt Telecom. Telecommunications teaches a lesson that equity analysts tend to learn late. A network can be a good asset and a bad investment at the same time. The fiber laid across the United States and Europe around 2000 was used for the next quarter century; much of the capital that paid for it was lost, and much of that loss fell on creditors and on the suppliers that had financed their own customers. Chapter 7 returns to that history with the numbers, because the analogy is used loosely in both directions and deserves precision.

The finance director's habit is to ask three questions of any large commitment. Where does the cash come from? What has been promised, to whom, and when? And if the forecast is wrong, whose account absorbs the difference? Those questions are not exotic. They are the questions that the AI debate, conducted mostly in the language of valuations, has been slow to ask. On October 24, 2026, writing about the growth of private credit, I put the point this way: time does not manufacture repayment capacity.[0.6] An institution that can wait is protected from forced selling. It is not protected from an asset that never produces the cash it was financed to produce.

## The road map

Chapter 1 follows the money: how capital expenditure at the five largest spenders outgrew the cash their businesses generate, and how the difference was filled. Chapter 2 maps the instruments that keep AI obligations off balance sheets, from leases not yet commenced to project vehicles and vendor backstops. Chapter 3 examines circularity: suppliers that finance customers, customers whose revenue depends on the same suppliers, and the danger of counting the

same demand twice. Chapter 4 looks at the collateral, which ages faster than the debt secured on it. Chapter 5 explains why the return of a positive real interest rate, an oil shock and a Federal Reserve that raised rates in September 2026 change the arithmetic of everything that came before. Chapter 6 identifies who holds the claims. Chapter 7 reads the telecom bust closely. Chapter 8 argues against this Insight. Chapter 9 sets out three paths to 2028 and the tests that would separate them. Chapter 10 translates the argument into decisions for savers, entrepreneurs, investors and policymakers, and lists the indicators I will track.

Market data run to the close of October 28, 2026, and economic releases to the morning of October 29. It was the week in which the Federal Reserve held rates with two members voting for an increase, the 10-year Treasury yield closed above 5 percent, and Microsoft and Alphabet reported their results, a week after Meta. Every figure carries a source and a date in the notes. Where an estimate is a third party's, it is attributed as such. Where an example is my own construction, it says so.

The question is not whether the AI boom is a bubble. The question is who is holding the paper.

CHAPTER 1

# From Cash to Credit

*For two years the five largest spenders on AI paid for it mostly out of their own operating cash. In 2026 the cash ran out at the margin, and the difference began to be borrowed.*

On October 28, 2026, Alphabet told investors that its free cash flow for the third quarter had been negative $9.1 billion. The company had generated $42.3 billion of cash from operations and spent $51.4 billion on property and equipment, about two thirds of it on servers and networking. Its chief financial officer said she expected capital expenditure to rise significantly again in 2027.[1.1] Four months earlier Alphabet had raised about $49.6 billion of new equity, through an underwritten share sale and a mandatory convertible preferred issue; the year before, it had spent $45.7 billion buying its own shares back.[1.2] Its long-term debt, $10.9 billion at the end of 2024, stood at $125.1 billion.[1.3]

Alphabet is not a weak company. It held $265 billion of cash and marketable securities at the end of September, and its cloud revenue more than doubled in the quarter. That is exactly what makes its third quarter informative. When one of the strongest generators of cash in the technology industry finances part of its investment with equity and debt, the investment has outgrown the business that was supposed to pay for it.

**0.41x → 0.96x**
Capital expenditure as a multiple of operating cash flow, five largest spenders, 2023 to first half of 2026

**$79.7bn → $14.3bn**
Operating cash flow minus capital expenditure, first half of 2025 versus first half of 2026

**$226bn → $496bn**
Reported debt of the five, end-2024 to latest quarter

**$1.2tn**
Leases signed but not yet commenced, five companies, latest filings

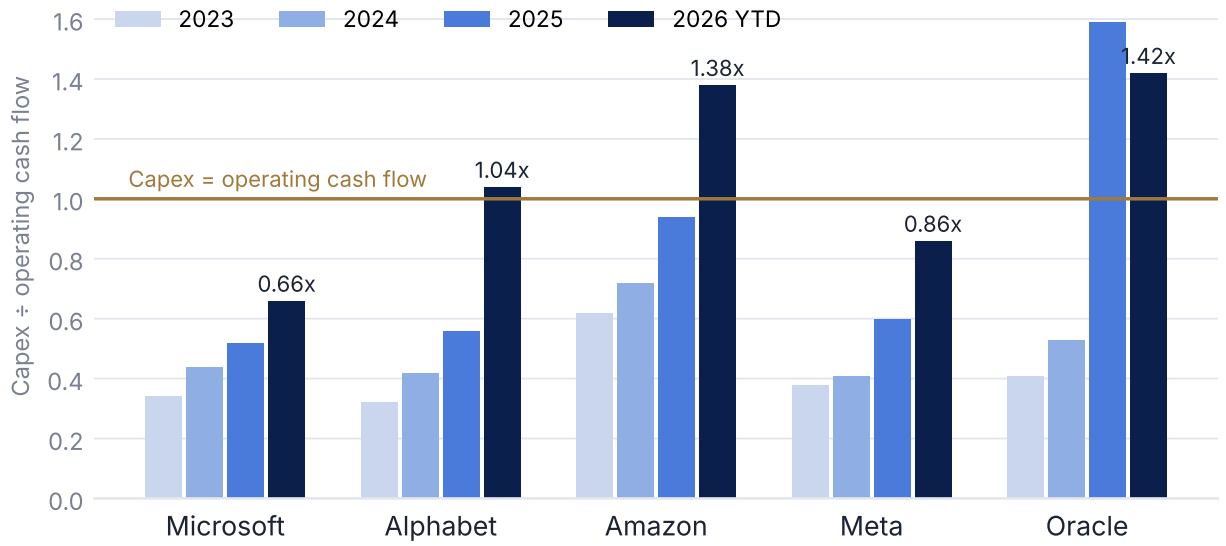
## The arithmetic of the last three years

The five companies examined in this Insight—Microsoft, Alphabet, Amazon, Meta and Oracle—spent $154 billion on property and equipment in calendar 2023, $239 billion in 2024 and $412 billion in 2025. Their combined operating cash flow grew too, from $377 billion to $603 billion, but more slowly. Capital expenditure rose 2.67 times in two years; operating cash flow rose 1.60 times.[1.4]

Expressed as a single ratio, capital expenditure absorbed 41 percent of operating cash flow in 2023, 50 percent in 2024 and 68 percent in 2025. In the first half of 2026, measured on a like-for-like basis, it absorbed 96 percent. Operating cash flow minus capital expenditure fell from $79.7 billion in the first half of 2025 to $14.3 billion in the first half of 2026—and that figure does not yet deduct the principal on finance leases or the cash returned to shareholders.[1.4]

**Figure 1.1 · The build outgrew the business**

Capital expenditure as a multiple of operating cash flow, by company, calendar years

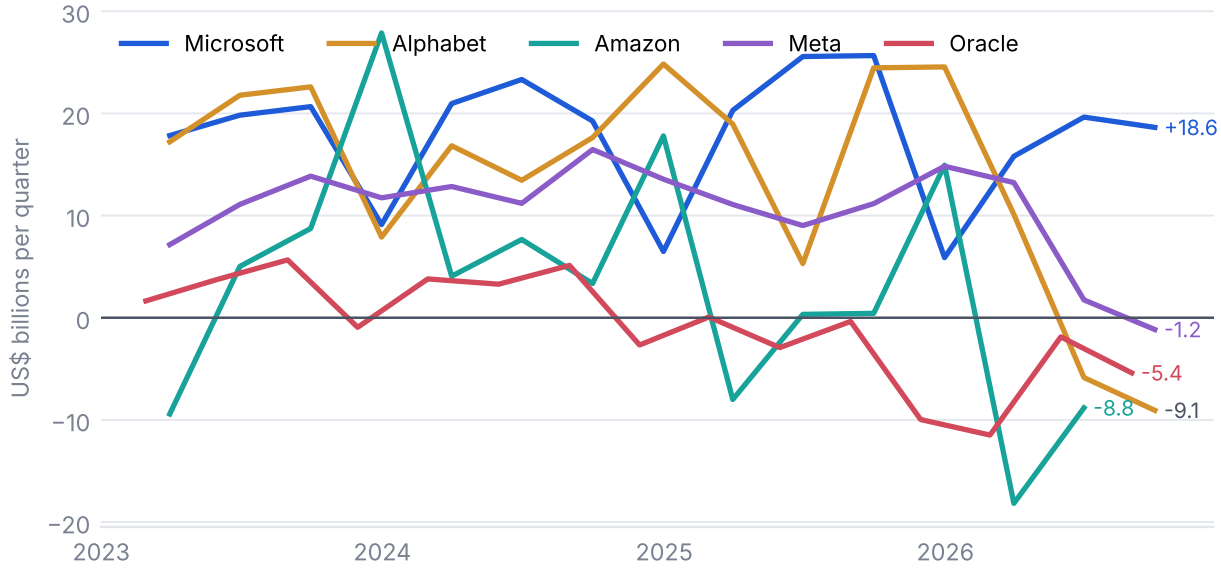



Source: company Forms 10-K and 10-Q (SEC XBRL data retrieved via Financial Modeling Prep and Alpha Vantage, cross-checked against filings). Capital expenditure is cash purchases of property and equipment, excluding finance leases; Amazon on a gross basis, before proceeds from property sales and incentives. 2026 covers January–September for Microsoft, Alphabet and Meta; January–June for Amazon; quarters ended February–August for Oracle. Calculations by FINTECH SCB.

The aggregate hides a ranking that matters for the rest of this Insight. Microsoft remains the exception: in the quarter ended September 30, 2026, it generated $58.0 billion of operating cash and spent $39.4 billion, leaving $18.6 billion of free cash flow, and it still carries the highest credit rating available to a corporation.[1.5] Meta generated $32.8 billion and spent $33.9 billion; after principal payments on finance leases, its free cash flow was negative $2.1 billion.[1.6] Amazon, whose third-quarter results were due after the close on October 29, had spent $27.0 billion more than its operating cash flow in the first half of the year, on a gross basis.[1.7] Oracle, in the quarter ended August 31, 2026, generated $23.1 billion of operating cash, a figure that, its management said, included the collection of customer prepayments, and spent $28.5 billion.[1.8]

**Figure 1.2 · Free cash flow crosses zero**

Operating cash flow minus capital expenditure, quarterly, US$ billions




Source: company Forms 10-Q and 10-K (SEC XBRL via Financial Modeling Prep and Alpha Vantage). Oracle quarters are placed in the calendar quarter in which they end. Amazon's third quarter of 2026 was not reported at the research cutoff. Calculations by FINTECH SCB; company-defined free cash flow can differ (Meta, for example, also deducts finance-lease principal).

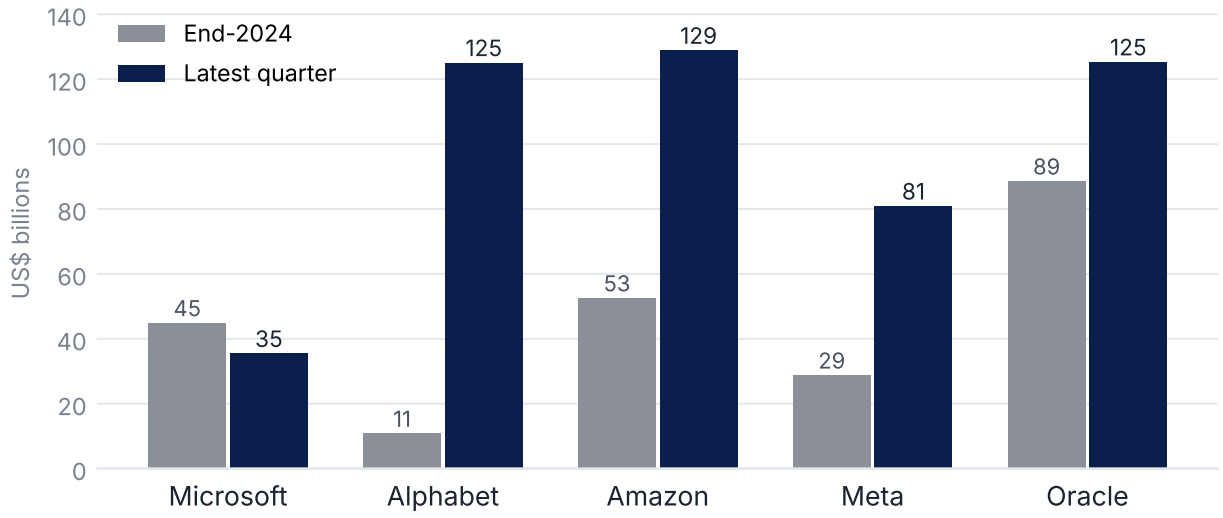
## What filled the gap

Companies whose capital spending exceeds their cash generation have three ways to close the gap: draw down cash, issue equity or borrow. The five have done all three, but mostly the third.

Reported debt of the five rose from about $226 billion at the end of 2024 to about $496 billion at their latest balance sheets, an increase of $270 billion in less than two years.[1.9] Alphabet's long-term debt rose more than elevenfold. Amazon's nearly doubled in six months, from $65.6 billion at the end of 2025 to $128.9 billion at the end of June 2026.[1.7] Meta's rose from $28.8 billion to $80.9 billion, including $25 billion of notes sold in May 2026 in six series with coupons of 4.55 to 6.45 percent.[1.6] Oracle's borrowings peaked at $134.6 billion in February 2026, after a $25 billion bond issue, and stood at $125.3 billion at the end of August, a quarter in which it also raised $19.9 billion of equity through an at-the-market program.[1.8]

**Figure 1.3 · The borrowing began**

Reported debt excluding leases, US$ billions, end-2024 and latest quarter




Source: company Forms 10-K and 10-Q. Long-term debt for Amazon and Alphabet; current plus long-term borrowings for the others. Latest quarter: September 30, 2026 (Microsoft, Alphabet, Meta), June 30, 2026 (Amazon), August 31, 2026 (Oracle); Oracle end-2024 value is at November 30, 2024. Excludes operating and finance lease liabilities.

The bond market absorbed it without visible strain, at first. Bloomberg data reported in October 2026 put AI-related issuance in the global high-grade market above $300 billion in 2026 to date, nearly three times the total for 2025.[1.10] Pimco estimated in September that AI-related issuers accounted for about a quarter of U.S. dollar non-financial corporate issuance, against less than 13 percent in 2025 and about 4 percent in 2024.[1.11] The Bank of England observed in July that the five hyperscalers made up about 3 percent of U.S. investment-grade debt outstanding at the end of 2025 but more than 15 percent of issuance in the first months of 2026; the IMF put their share of global investment-grade issuance at 10 percent, against less than 1 percent in 2024.[1.12]

Equity followed. Alphabet sold shares and mandatory convertible preferred stock. Oracle issued mandatory convertible preferred and completed its at-the-market program. Meta, whose founder controls the company through high-vote shares, filed in October to create a new class of nonvoting stock that it said it may use for capital raising, among other purposes; its chief financial officer said there were no specific financing plans to announce.[1.13] Buybacks, the signature of the cash-rich technology company for a decade, stopped at two of the five: Alphabet has repurchased no shares since the end of the first quarter of 2026, and Meta none in 2026 after $26.2 billion in 2025.[1.14]

## The guidance says it continues

The companies' own guidance points to more of the same. For calendar 2026 Alphabet expects capital expenditure of $195 billion to $205 billion, Amazon about $220 billion in cash capital expenditure, and Meta $135 billion to $145 billion including finance-lease principal. In July, Microsoft guided to about $175 billion for calendar 2026. Oracle guided to $90 billion to $95 billion for its fiscal year ending May 2027, with no more than $70 billion of it in net cash.[1.15] Taken together, the five are planning to spend on the order of $800 billion in a single year. S&P Global Ratings, in a report in September 2026 that also included SpaceX, projected combined capital spending for the six largest spenders of about $1.3 trillion in 2027, nearly triple the level of two years earlier, and wrote that the credit quality of hyperscalers is gradually weakening.[1.16]

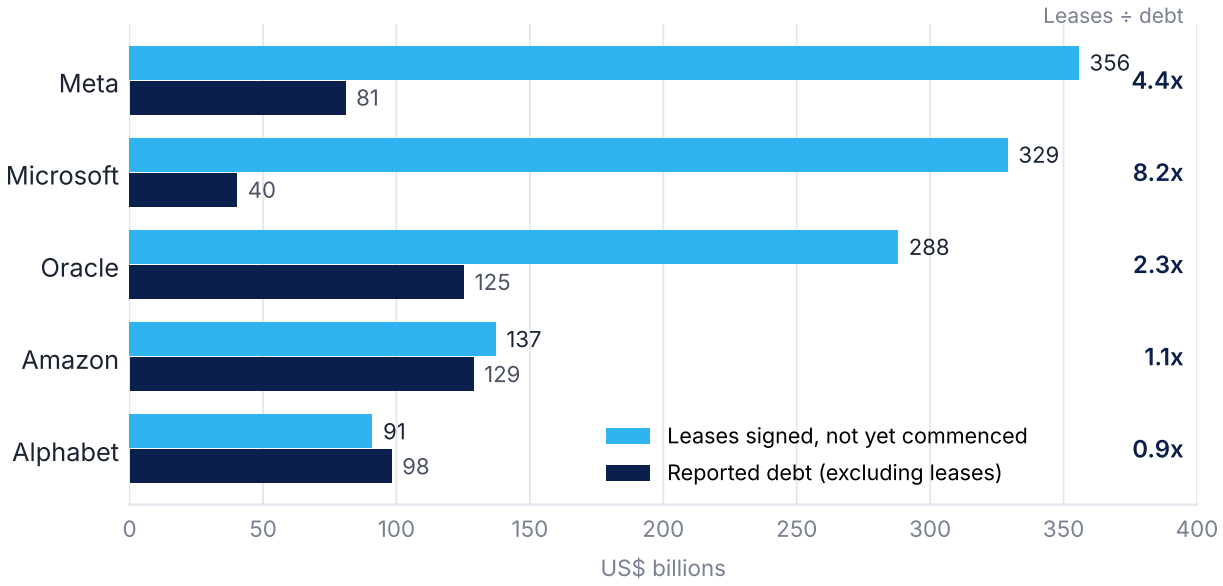
Microsoft's guidance contains a detail that illustrates the theme of this Insight in miniature. In July 2026 the company lowered its expectation for calendar 2026 capital expenditure from about $190 billion to about $175 billion. Its chief financial officer explained that the change reflected accounting, not lower spending: Microsoft had extended the useful life of its data centers from fifteen to twenty-five years, which would cause future data-center leases to be classified as operating rather than finance leases. Finance leases, she said, are included in capital expenditures while operating leases are not.[1.17] The buildings will be built either way. What changes is the line on which their cost is reported.

## Where the obligations went

Reported debt is the visible part of the financing. The larger part is commitments that have been signed but do not yet appear on the balance sheet. The most important category is leases for data centers that have not yet been delivered. At the latest dates for which the lease notes could be read, Meta reported about $355.7 billion of leases not yet commenced, Microsoft $329.1 billion, Oracle $288 billion, Amazon $137.2 billion and Alphabet about $91 billion: in total roughly $1.2 trillion, or about 2.4 times the five companies' latest reported debt.[1.18] Microsoft, the strongest of the five, has the highest ratio of all: at June 30, 2026, its leases not yet commenced were more than eight times its reported debt. Purchase commitments, mostly long-term supply agreements for chips, servers, cloud capacity, content and power, add about $1.39 trillion at the four companies whose figures could be verified (Amazon's could not), led by Alphabet's $707 billion.[1.18]

**Figure 1.4 · The larger balance sheet**

Reported debt and leases signed but not yet commenced, US$ billions, at the same date for each company




Source: Meta Form 10-Q (September 30, 2026); Oracle Form 10-Q (August 31, 2026); Amazon and Alphabet Forms 10-Q (June 30, 2026); Microsoft Form 10-K (June 30, 2026), lease figure as reported from the filing by Bloomberg Government. Debt and leases are measured at the same date for each company, so Microsoft and Alphabet debt here is at June 30, 2026, and differs from Figure 1.3. Dates differ across companies.

None of these commitments is hidden; all are disclosed in notes to the financial statements. But they are not debt in the accounts, they are not counted in most leverage ratios, and they are not the obligations the companies' own bondholders lend against. They are the obligations that other people's bondholders lend against. Chapter 2 follows that path.

## The neocloud end of the spectrum

At the other end of the spectrum sit the specialized operators that rent accelerators to AI developers. CoreWeave is the largest. In the second quarter of 2026 it reported revenue of $2.6 billion and interest expense of $640 million, equal to about a quarter of revenue; it guided to interest expense of $860 million to $940 million for the third quarter. Its debt, excluding $16.5 billion of lease obligations, had risen from $7.9 billion at the end of 2024 to $35.1 billion. Its capital expenditure in the first half of 2026 was 3.85 times its operating cash flow. Its contracted backlog of $104.2 billion is, in effect, the collateral for all of it.[1.19]

CoreWeave is not representative of the hyperscalers, and it would be misleading to suggest that their finances resemble its. It is relevant because it shows where the AI build-out's financing model ends when the borrower has no other business to fall back on, and because hyperscalers have been among its largest customers (Microsoft was the largest in its earlier filings,

and a Meta contract backs its highest-rated facility) and so among the supports of its debt. In October 2026 its five-year credit default swaps traded above 1,000 basis points, a level that implies a substantial probability of default.[1.20]

## From cash to credit

The change documented in this chapter is easy to state. Until 2025, the AI build-out was financed mainly by the operating cash flow of some of the most profitable companies ever to exist. In 2026 it began to be financed by borrowing—on balance sheets, through new equity and, above all, through commitments that sit outside them. The companies' strength is real. But strength is not the same as self-sufficiency, and a build-out that no longer pays for itself has to be paid for by someone. The rest of this Insight is about who that someone is.

CHAPTER 2

# The Architecture of Off-Balance-Sheet Compute

*Four instruments let a company use a data center or a rack of accelerators without carrying the debt that paid for it. Three of them move an obligation from a strong balance sheet to a weaker one and leave the option to leave with the strong one; the fourth ties a strong supplier's balance sheet to a weak customer's credit.*

On October 22, 2026, Meta filed its quarterly report with the Securities and Exchange Commission. Most readers went to the income statement. The more revealing number sat in a note on variable interest entities. At September 30, 2026, Meta's maximum exposure to loss from its unconsolidated data-center ventures in Louisiana and Texas was $68.4 billion, up from $45.95 billion nine months earlier. Of that amount, $41.5 billion consisted of residual value guarantees: promises to cover a shortfall in the value of the buildings if Meta stops leasing them. In its annual report Meta had explained why the guarantees do not appear as a liability on its balance sheet. The payments, it said, are not probable.[2.1]

That sentence is the hinge of this chapter. It is almost certainly true today. It is also the kind of judgment that changes only when it no longer matters, because the circumstances in which a residual value guarantee becomes probable are the circumstances in which the asset it guarantees has lost value. Meta's auditor identified the consolidation judgment as a critical audit matter.[2.2] The company is not hiding anything; the exposure is disclosed, in a footnote, in the format the accounting rules require. The question is what kind of claim the people on the other side of these structures actually hold.

**$68.4bn**
Meta's maximum exposure to loss in unconsolidated data-center ventures, September 30, 2026

**$41.5bn**
of which residual value guarantees, with no liability recorded

**$108.5bn**
Nvidia's maximum guarantee exposure, of which $105bn for leases on behalf of an OpenAI affiliate

**$43bn**
Broadcom's maximum backstop on a $63bn chip-lease vehicle for Anthropic, October 2026

There are four ways to use AI infrastructure without owning the debt that built it. They are often discussed together under the heading of "creative financing." They deserve to be separated, because each allocates risk differently.

## 1. The lease not yet commenced

The simplest instrument is a lease signed today for a data center that will be delivered in two or three years. Under U.S. accounting rules, a lease appears on the balance sheet only when the tenant takes possession. Until then it is a commitment disclosed in the notes. The developer, meanwhile, borrows against the signed lease to build the facility.

The scale of these commitments is now large enough to change the picture of the tenants' leverage. Moody's estimated in February 2026 that the lease commitments of Alphabet, Amazon, Meta, Microsoft and Oracle had doubled to about $969 billion and warned that it foresaw a material increase in adjusted debt.[2.3] Morgan Stanley's accounting analysts, in August 2026, counted more than $3.1 trillion of off-balance-sheet commitments across the five largest spenders plus Nvidia and Broadcom, of which more than $2.7 trillion sat with the hyperscalers alone: roughly $1.1 trillion of leases signed but not yet commenced and $1.7 trillion of purchase commitments. That is about three years of their combined operating cash flow.[2.4] The figures disclosed in the companies' own filings, shown in Figure 1.4, are of the same order: about $1.2 trillion of leases not yet commenced at the latest balance sheets.

A lease not yet commenced is a real obligation, but it is a conditional one in practice. If the building is late, if power is not delivered, or if the tenant can argue that conditions precedent have not been met, the commitment can be delayed or renegotiated. In September 2026 Oracle sent Blue Owl a force majeure notice relating to Project Jupiter, a data-center campus in New Mexico built to serve OpenAI; according to Bloomberg, if a force majeure event on power commitments were agreed, Oracle could obtain a three-year delay on rent.[2.5] The roughly $18 billion of bank loans financing the project were being quoted by syndicate banks at 89 to 91 cents on the dollar.[2.6] The tenant's commitment was intact. The lenders' timetable was not.

## 2. The joint venture with a residual value guarantee

The second instrument is the one Meta used for Hyperion, its campus in Richland Parish, Louisiana. In October 2025 Meta formed a joint venture with funds managed by Blue Owl Capital. Blue Owl's funds own 80 percent, Meta 20 percent. The venture, through a vehicle named Beignet Investor LLC, sold $27.3 billion of senior secured amortizing notes with a coupon of 6.581 percent and a final maturity in May 2049, rated A+ by S&P Global, one notch below Meta itself. Pimco was the anchor investor.[2.7]

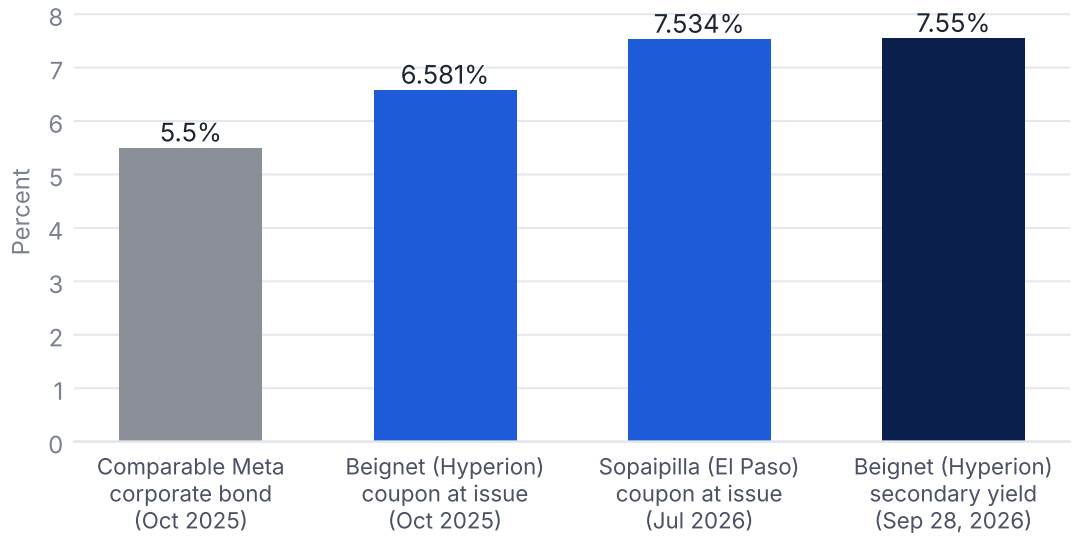
Meta leases the buildings under operating leases with an initial term of four years, renewable to as many as twenty. It provides a residual value guarantee, capped and declining over time, that applies during the first sixteen years of operations if Meta does not renew or terminates, subject to conditions.[2.8] Because Meta does not control the venture's most significant decisions, it does not consolidate it. Its initial lease commitment was about $12.3 billion. The bonds amount to $27.3 billion and run for more than twenty-three years.

Read from the lender's side, the structure has three layers of protection: the lease payments while Meta stays, the guarantee if it leaves, and the value of the buildings themselves. Read from Meta's side, it has an option at the end of each lease term and a capped obligation if it exercises that option. S&P gave the guarantee zero debt value for Meta, citing the headroom between the appraised value of the campus and the guaranteed amount.[2.9] Moody's took a less comfortable view, saying in an opinion of February 2026 that disclosures on such deals may understate liabilities.[2.3]

The market has since started to price the difference. The Hyperion bonds, which traded above 110 cents shortly after issue, were quoted at about 91 cents on September 28, 2026, yielding 7.55 percent.[2.10] When Meta used a similar structure in July 2026 for its El Paso campus, the vehicle, Sopaipilla Investor, 80 percent owned by funds of BlackRock's GIP and HPS, paid a coupon of 7.534 percent for $12.27 billion of notes due in 2048, priced at 287.5 basis points over Treasuries.[2.11] The coupon on the same off-balance-sheet structure rose by almost a full percentage point in nine months: about two thirds of it from higher Treasury yields, and the rest from a wider premium over them.

**Figure 2.1 · The price of keeping debt off the balance sheet**

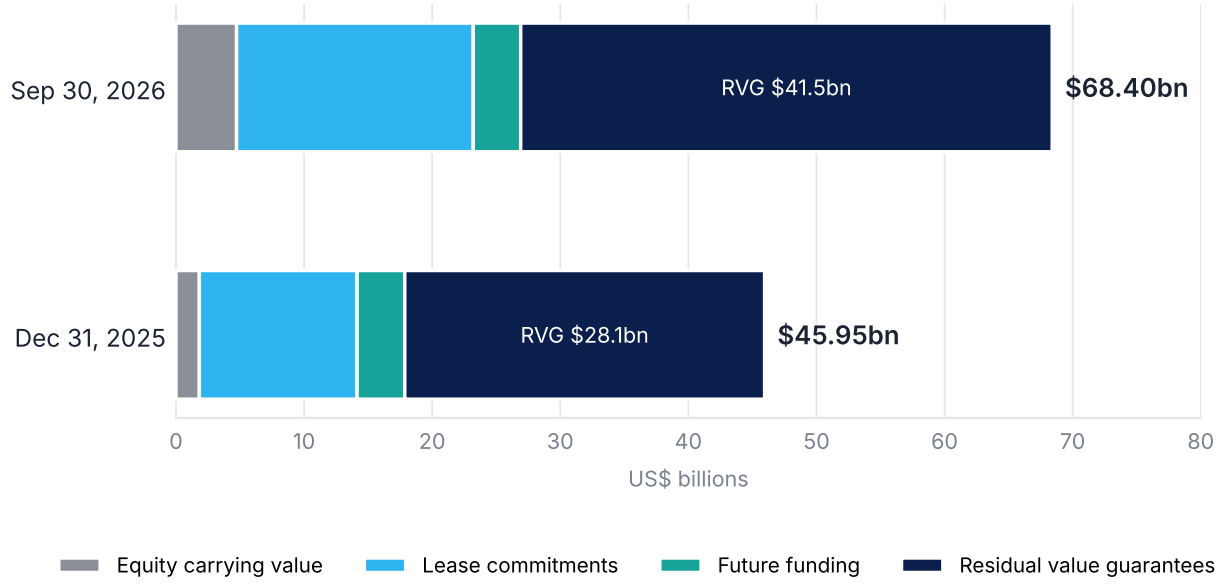
Coupon or yield, percent




Source: IFR Awards (Beignet Investor coupon, October 2025); Wall Street Journal as reported by Marcellus, November 2025 (comparable Meta corporate bond, press-reported); GlobalCapital, July 29, 2026 (Sopaipilla Investor coupon); Reuters (Jamie McGeever), September 28–29, 2026 (Beignet secondary yield, press-reported).

**Figure 2.2 · What Meta does not record as debt**

Meta's maximum exposure to loss in unconsolidated data-center ventures, US$ billions




Source: Meta Platforms, Form 10-K for fiscal 2025 (filed January 29, 2026) and Form 10-Q for the quarter ended September 30, 2026 (filed October 22, 2026), note on variable interest entities.

## 3. The GPU vehicle

The third instrument finances the chips rather than the buildings, and it is where the mismatch between asset life and debt term is sharpest. In its simplest form a special-purpose vehicle buys accelerators with a mix of equity and debt and leases them to the company that will use them. The lender is secured on the hardware and on the lease payments.

The template was set in 2025 with a roughly $20 billion vehicle for xAI's Colossus 2 cluster, reported by Bloomberg as about $7.5 billion of equity and up to $12.5 billion of debt secured by Nvidia processors, leased back for five years.[2.12] In January 2026 Apollo funds led a $3.5 billion financing for Valor Compute Infrastructure to acquire GB200 systems and lease them to an xAI subsidiary under a triple-net lease.[2.13] On October 26, 2026, SpaceX, which absorbed xAI earlier in the year, announced a master finance lease of about $40 billion with an Apollo-managed entity for Nvidia Vera Rubin accelerators, with BlackRock, Goldman Sachs Asset Management and accounts advised by KKR as anchor investors, and tranches running five to five and a quarter years.[2.14]

CoreWeave, the largest of the specialized "neocloud" operators, built its business on delayed-draw term loans sized to the depreciable cost of its servers and secured on subsidiary assets. Its 2026 facilities show the range of credit quality the same technique can produce. A facility backed by a contract with Meta was rated A3 by Moody's. A facility backed by contracts with OpenAI and Cohere was rated Ba2 and priced at the Secured Overnight Financing Rate plus

4.50 percentage points. A third, signed in August 2026 at SOFR plus 5.50 points and maturing in 2031, finances contracts that average about three years against debt of about five.[2.15] The lenders, in other words, are underwriting the renewal of contracts that do not yet exist. Moody's observed in October 2026 that if the parent guarantee lost its value, that facility would effectively become a "merchant" GPU financing: a loan against hardware with no committed buyer for its output.[2.16]

## 4. The vendor backstop

The fourth instrument is the newest and the most consequential for the argument of this Insight, because it ties the supplier's balance sheet to its customers' credit.

Nvidia's quarterly report for the period ended July 26, 2026, disclosed guarantees of up to $105 billion for leases of about 4.25 gigawatts of data-center capacity at a campus in Pike County, Ohio, on behalf of an OpenAI affiliate, with leases running twenty years. The guarantees terminate if OpenAI achieves a satisfactory credit rating. Total maximum guarantee exposure was $108.5 billion. In the same quarter Nvidia's supply and capacity commitments rose to $279 billion from $119 billion.[2.17] In August Nvidia announced memoranda of understanding with Apollo, BlackRock, Blackstone, Brookfield, Goldman Sachs and KKR to create financing platforms that could mobilize more than $500 billion of third-party capital for its customers; Jensen Huang said on X that Nvidia would have the option to backstop up to $125 billion, or a quarter of the potential deals. The filing itself states no cap and describes the support as limited residual-value support for a portion of specific projects.[2.18]

Broadcom went further in the same direction in October 2026. In a $63 billion transaction, a newly formed vehicle will buy Broadcom accelerators and networking equipment and lease them to Anthropic, with deliveries starting in 2027. Banks provide a first-lien loan and Blackstone a second lien. Broadcom's filing describes its residual value support as a contingent liability with a low probability of occurring; it covers the shortfall between 72.5 percent of outstanding lease amounts and what the racks would fetch, up to a maximum of about $43 billion undiscounted.[2.19] Anthropic's registration statement, filed the same week, shows five-year leases with rent of about $125.2 billion excluding interest, and a facility under which it may issue up to $42 billion of convertible notes to Broadcom or its designated partner to fund the rent.[2.20] Not every such structure stays off the user's books. Anthropic accounts for its Broadcom leases as finance leases, and SpaceX's arrangement is a master finance lease, so both will appear as liabilities once the equipment is delivered. What stays off the balance sheet until then is the commitment, and throughout, the supplier's guarantee.

*Broadcom sells the chip, guarantees what the chip will be worth, and stands ready to lend the customer the money to pay the rent on it.*

Each element of that arrangement has a commercial logic. Together they mean that the revenue Broadcom reports from these sales rests in part on Broadcom's own guarantee and Broadcom's own lending. That is the circularity examined in Chapter 3.

## The door the regulator opened

On July 29, 2026, the staff of the SEC's Division of Corporation Finance responded to a request from the law firm Latham & Watkins. It concluded that securities issued in data-center securitizations of the type described are not asset-backed securities within the meaning of the Exchange Act, because the data centers are not self-liquidating financial assets.[2.21] The practical effect, as summarized by counsel advising on these transactions, is that such deals fall outside the 5 percent risk-retention requirement introduced after 2008, outside Regulation AB's asset-level disclosure regime, and outside the prohibition on conflicts of interest in securitizations.[2.22] The letter states the staff's views only and does not cover every structure. It nevertheless took these deals outside the rule that requires sponsors to keep a slice of what they sell, while AI-related bond issuance was running at nearly three times its 2025 pace.

## The option and the obligation

Strip away the names and most of these structures share a shape. The company that uses the asset holds an option: to renew or not, to take delivery or invoke a condition, to let a guarantee run down over time. The vehicle that finances the asset holds an obligation: a bond with a fixed schedule, a loan with a maturity, an equity tranche that absorbs the first loss. The longer the gap between the term of the option and the term of the obligation, the more the lender is underwriting the future decisions of the tenant rather than its present credit.

A simple illustration makes the point. It is constructed, not drawn from any single transaction.

**ILLUSTRATION: THE GAP BETWEEN A LEASE AND A BOND**

A vehicle borrows $10 billion for twenty-three years to build a campus. The tenant signs a four-year lease that covers interest and some principal, with renewal options, and guarantees that if it leaves within sixteen years the campus will be worth at least a declining threshold. After four years the bond has amortized perhaps 10 percent. If the tenant renews, nothing happens. If it does not, the lenders own a specialized building whose value depends on finding another tenant with the same power needs, and a claim on a guarantee whose payment depends on an appraisal performed in the market conditions that caused the tenant to leave. The tenant's maximum loss is capped and known. The lenders' loss is open and unknown.

None of this is improper. Options have value, and companies that can buy them cheaply should. The issue is who sold them. In the structures described in this chapter, the sellers are bond investors, private credit funds, banks that could not syndicate their loans, and the insurers and pension funds behind them. Chapter 6 follows that chain. Before that, Chapter 3 examines a feature that makes these options more likely to be exercised together.

CHAPTER 3

# The Circle: Vendors, Customers and Borrowed Demand

*When the supplier finances the customer and the customer's revenue depends on the supplier's financing, demand can be counted twice. The telecom equipment makers learned what that costs in 2001.*

Every large build-out needs a buyer at the end of the chain. In the AI economy of 2026 that buyer is, more often than the headline numbers suggest, a small group of model developers whose own revenue is a fraction of their commitments and whose ability to pay depends on raising capital from the same companies that sell them compute.

This is not a moral charge, and it is not new. Vendor financing has a respectable history: a supplier that understands its product and its customer can be the best-informed lender available. The problem arises when the supplier’s revenue, the customer’s funding and the lender’s collateral all rest on the same assumption about future demand. Then the system looks diversified and is not. A disappointment at one point of the circle travels round it.

## The commitments

The figures below are drawn from company filings and from reporting of them. They are not additive in a strict sense—some overlap, some are measured in gigawatts rather than dollars, and the time horizons differ—but together they show the shape of the circle.

**Figure 3.1 · OpenAI's compute commitments, as disclosed or reported to October 2026**

| Counterparty | Commitment | Status of the information |
|---|---|---|
| Nvidia | About 12 gigawatts of existing and planned Nvidia compute; Nvidia investment of $30 billion finalized in March 2026 | Nvidia earnings call, August 26, 2026; Jensen Huang, March 4, 2026 |
| Oracle | About $300 billion over five years | Press-reported (Financial Times) |
| Microsoft | Additional $250 billion of Azure services under the October 2025 restructuring | Press-reported |
| Amazon Web Services | $38 billion, expanded by $100 billion over eight years in early 2026 | Amazon Form 10-Q, June 30, 2026 (expansion); initial $38 billion press-reported |
| Broadcom | 10 gigawatts of custom accelerators, second half of 2026 to end-2029 | Press-reported |
| AMD | 6 gigawatts of GPUs from the MI450 generation; AMD granted warrants for up to 160 million AMD shares | Press-reported |
| CoreWeave | Contracts of up to $22.4 billion | CoreWeave release, September 25, 2025 |
| Cerebras | 750 megawatts; OpenAI also lent Cerebras $1 billion of secured working capital | Cerebras Form 10-Q |

Against these commitments stands a revenue base that is growing quickly but is smaller than the market believed until recently. On October 8, 2026, the Financial Times reported that OpenAI had told investors its annualized revenue was approaching $50 billion at the end of September, rather than the roughly $70 billion that had circulated; the difference arose because some investors had grossed up OpenAI's figures to match the way Anthropic books sales made through cloud partners.[3.1] OpenAI also told investors, according to the same reporting, that its run-rate had grown 77 percent in the third quarter. That day Nvidia fell about 3 percent, Oracle about 5 percent and CoreWeave about 8 percent.[3.2] In September the same newspaper reported a company presentation projecting negative free cash flow of $278 billion over 2026–2030 and about $856 billion of compute and infrastructure spending through 2030, with the $122 billion raised in March 2026 expected to last until 2028.[3.3]

The arithmetic does not need to be precise to be clear. A company with an annualized revenue run rate of about $50 billion has signed compute contracts measured in the hundreds of billions, and expects to fund the gap with capital it has not yet raised. Its suppliers book the contracts as backlog. Their lenders lend against the backlog. The backlog is a promise financed by the next promise.

*A backlog is only as good as the balance sheet of the customer who signed it. In 2026 the largest AI backlogs were signed by customers who must borrow to honor them.*

## Who finances whom

The circle closes when the supplier also provides the money. Nvidia has invested in OpenAI and Anthropic, guarantees up to $105 billion of leases for an OpenAI affiliate in Ohio, and in September 2025 agreed to buy up to $6.3 billion of CoreWeave's unsold capacity through April 2032.[3.4] Broadcom, which sells custom accelerators to Anthropic, guarantees a large part of the resale value of those accelerators in the vehicle that leases them, and has agreed to lend Anthropic up to $42 billion through convertible notes to help it pay the rent.[3.5] AMD granted OpenAI warrants over up to 160 million of its own shares as part of a supply agreement, so that the customer's payment for chips is partly offset by the equity the supplier hands back.[3.6] OpenAI, for its part, lent $1 billion to Cerebras, one of its own suppliers.[3.7]

Oracle illustrates the hinge position. It is reported to have contracted to provide OpenAI with about $300 billion of capacity over five years, and S&P Global estimated in July that OpenAI accounts for about half of Oracle's remaining performance obligations, which far exceed its annual revenue. To build that capacity it borrowed: its notes payable and other borrowings rose from $92.9 billion to $130.1 billion in the fiscal year ended May 31, 2026. Moody's affirmed its Baa2 rating with a negative outlook in February 2026, and in July S&P Global cut its rating to BBB−, the lowest investment-grade level.[3.8] At its investor day on October 28, 2026, Oracle undertook to limit new capital-markets funding over fiscal 2027–2030 to $20 billion, split between equity and debt, on top of a $20 billion at-the-market equity raise already completed; vendor financing, customer-provided hardware and customer prepayments would reduce its upfront cash needs.[3.9] The company that borrowed to serve its largest customer now proposes to have its suppliers and customers finance more of the build. The obligation does not disappear. It moves to a different balance sheet.

## The 2000 version

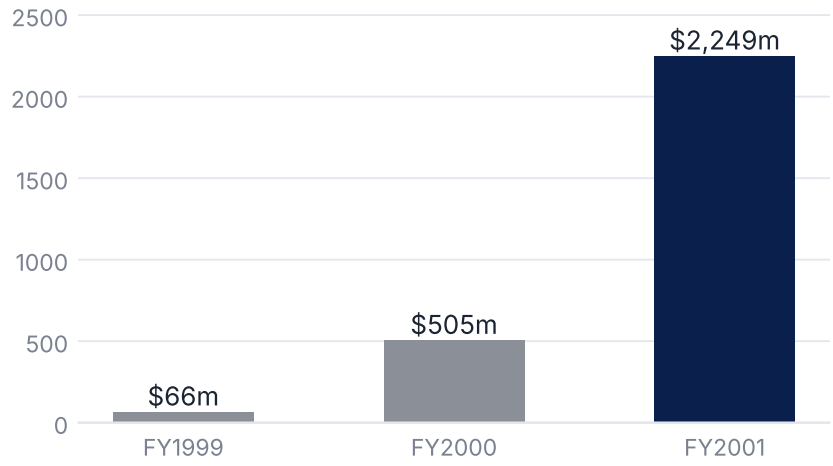
Telecommunications equipment makers ran the same play a quarter of a century ago, and their filings record how it ended.

At the end of September 2000 Lucent Technologies carried a customer-financing portfolio of about $8.1 billion, credit it had extended to the carriers that bought its equipment.[3.10] Nortel's customer credit commitments were about $4.1 billion at the end of 2000; Cisco had committed about $2.5 billion.[3.11] The customers were the competitive carriers and wholesale network

builders whose business plans assumed that demand for capacity would keep doubling. When the capital markets closed to them in 2000 and 2001, the vendors became creditors of insolvent companies. In its fiscal year ended September 30, 2001, Lucent recorded a provision of $2.25 billion for uncollectibles and customer financings, against $66 million two years earlier; about 60 percent of it related to three customers, including Winstar and One.Tel.[3.12] By December 2001 Lucent had cut its customer-financing commitments to $2.5 billion. Winstar, which had owed it about $2 billion, sued Lucent for more than $10 billion.[3.13]

**Figure 3.2 · When the supplier is the lender**

Lucent Technologies: provision for uncollectibles and customer financings, US$ millions, fiscal years ended September 30




Source: Lucent Technologies Inc., Form 10-K for the fiscal year ended September 30, 2001, filed December 2001.

The lesson is not that vendor financing is always reckless. Lucent's equipment worked, and much of it carried traffic for years. The lesson is that vendor financing converts a supplier's revenue risk into credit risk, and that credit risk is concentrated in the customers least able to fund themselves elsewhere. When those customers fail together, the supplier discovers that a share of its reported growth was its own money coming back.

## What is different in 2026, and what is not

Three differences deserve to be stated plainly. The suppliers of 2026 are far more profitable than Lucent was, and their guarantees are small relative to their equity value. The largest AI customers are growing revenue very quickly: OpenAI told investors its run-rate rose 77 percent in the third quarter alone. And some of the guarantees are structured to fall away as the customer's credit improves: Nvidia's Ohio guarantees terminate if OpenAI obtains a satisfactory rating.[3.4]

What has not changed is the structure of the dependency. If the model developers' revenue grows fast enough, the circle is virtuous: commitments become cash, guarantees lapse, backlog converts to revenue. If it does not, the same features that made the circle expand will make it contract together. A customer that cannot raise its next round cannot pay rent. The vehicle that holds its lease calls on the vendor's guarantee at the moment the vendor's own sales to that customer are falling. The lender to the vehicle finds that the collateral is a rack of accelerators whose resale market is the same set of customers. Correlation, in credit, is what turns a manageable loss into a cycle.

The equity market has begun to notice. In the second week of October 2026 the Philadelphia Semiconductor Index fell after the report on OpenAI's revenue, despite the broader market's resilience.[3.2] The credit market noticed earlier. By late October the cost of insuring Nvidia's debt against default for five years had risen to about 128 basis points from 87 a month earlier, and its one-year correlation with CoreWeave's default protection stood at 0.80.[3.14] When the market prices the supplier's credit together with its weakest customer's, it is saying that it sees the circle.

CHAPTER 4

# Collateral That Ages

*The accounting life of an AI server has been stretched to as much as six years while the product cycle of the chips inside it has shortened to one. Lenders who secure their loans on the hardware are betting on the gap.*

A building can be re-let. A fiber can be re-lit. An accelerator three generations old can be rented, but at a price set by the cost of the newer machines that do the same work for less. That difference is the core of the collateral problem in AI finance, and it is the part of the argument that most clearly separates this cycle from the real-estate and network cycles it is usually compared with.

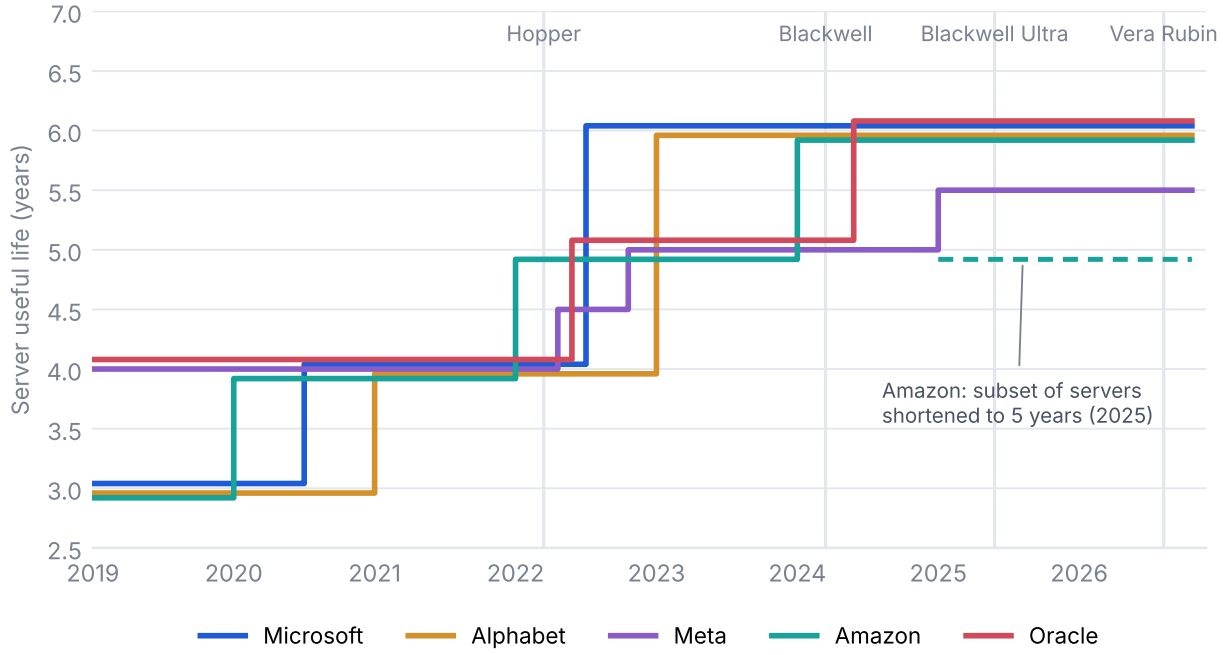
## Two clocks moving in opposite directions

Between 2020 and 2025 the largest technology companies lengthened the period over which they depreciate servers and network equipment. Microsoft moved from three to four years in fiscal 2021 and from four to six in fiscal 2023, adding about $3.7 billion to operating income in the first year of the second change. Alphabet moved from three to four years in 2021 and from four to six in 2023, reducing depreciation by $3.9 billion in that year. Meta moved to five years in 2022 and to five and a half for certain servers in 2025, which it expected to lower depreciation by about $2.9 billion. Oracle went to six years in fiscal 2025. CoreWeave depreciates its equipment over six years and defines the depreciated value of its GPU collateral on a six-year straight-line basis in its loan agreements.[4.1]

Over the same period Nvidia moved to what it describes as a one-year product cadence. Hopper was announced in March 2022 and went into full production that September. Blackwell was announced in March 2024. Blackwell Ultra began production shipments in mid-2025. Vera Rubin began production shipments in August 2026; Nvidia told investors it delivers thirty times higher throughput per megawatt than the generation before.[4.2] A server bought in late 2022 and depreciated over six years will still be on the books in 2028, by which time it will have been followed by perhaps five newer products.

**Figure 4.1 · Accounting lives went up as product cycles went down**

Useful life applied to servers by the five largest spenders, years, and Nvidia data-center architecture launches




Source: company Forms 10-K and 10-Q and earnings calls (Microsoft FY2023; Alphabet 2021, 2023; Meta 2022, 2025; Amazon 2020, 2022, 2024, 2025; Oracle FY2025); Audit Analytics (Microsoft FY2021); Hudson Labs (Oracle FY2023); NVIDIA press releases and Forms 10-Q. Nvidia markers show announcement (Hopper, Blackwell) or start of production shipments (Blackwell Ultra, Vera Rubin). Amazon shortened the life of a subset of servers from six to five years effective January 1, 2025.

One company went the other way. Effective January 1, 2025, Amazon shortened the useful life of a subset of its servers and networking equipment from six years to five, citing the increased pace of technology development in artificial intelligence and machine learning; the change raised depreciation by about $1.4 billion and lowered net income by about $1.0 billion in 2025.[4.3] It is the only one of the five to have said publicly, through its accounts, that the economic life of AI hardware may be shorter than the convention.

The debate over who is right has been loud. In November 2025 the investor Michael Burry argued that hyperscalers would understate depreciation by $176 billion between 2026 and 2028; Nvidia responded that customers use four- to six-year lives based on observed use and that much equipment remains in service for six years or more.[4.4] Moody's, in a June 2026 report, put the matter more carefully: the economic useful life of GPUs is unknown.[4.5] For a lender, that sentence carries more weight than either side of the public argument.

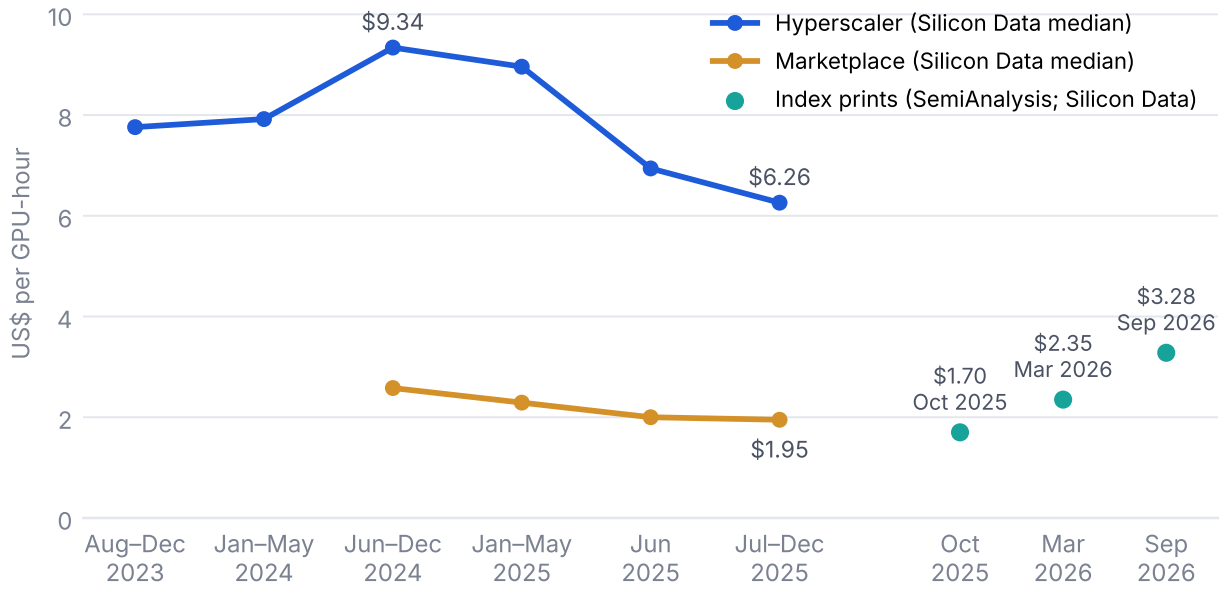
## What the rental market says

The cleanest evidence on the economic value of accelerators is the price at which their computing time is rented. It has been volatile in both directions.

Silicon Data's monthly medians show H100 rental prices at hyperscalers of about $9.34 per GPU-hour in the second half of 2024, falling to $6.26 in the second half of 2025; on marketplaces they fell from $2.58 to $1.95 over the same period.[4.6] SemiAnalysis's one-year contract index for the H100 reached a low of $1.70 in October 2025. It then recovered, above $2 by late January 2026 and to $2.35 by March, as on-demand capacity sold out across GPU types.[4.7] Later prints in 2026 put the H100 around $2.77 to $3.28 an hour.[4.8] Older chips are cheaper to rent but more expensive per unit of computation: an academic study published in July 2026, using Silicon Data and Ornn indices for April 2026, calculated that the A100 cost about $4.54 per H100-equivalent hour against $2.02 for the B200.[4.9]

**Figure 4.2 · The price of renting a chip**

H100 rental prices, US$ per GPU-hour




Source: Silicon Data, "H100 Rental Price Over Time (2023–2025)," December 21, 2025 (period medians, hyperscaler and marketplace); SemiAnalysis H100 one-year contract index (October 2025 low and March 2026), as reported April 2, 2026; Silicon Data index print of September 2026, as reported by Benzinga (September 8, 2026).

Two readings of this record are possible, and both are correct. The optimistic one is that accelerators retain value: four years after launch, the H100 rents at well above its 2025 trough because demand for compute exceeds supply. The cautious one is that, by the measure the Financial Times cited, rental prices fell from about $8 an hour at the start of 2024 to below $2 at the end of 2025, a decline of roughly three quarters in two years with no glut in data-center capacity, driven by new supply, newer products and price cuts; and that the recovery in 2026 happened under scarcity.[4.8] A lender's advance rate must be set for the case of surplus, not for the case of shortage.

## How lenders have protected themselves

The best-designed GPU financings recognize this. Moody's noted in July 2026 that all the GPU financings it had rated could repay their debt in full without the initial lease being renewed; in December 2025 it had observed that GPU leases are structured to repay within the initial term because GPU values decline as new models emerge.[4.10] CoreWeave's first delayed-draw facilities amortize on the greater of a contracted-cash-flow test and a depreciated-value test, and the first swept the proceeds of any sale of uncontracted GPUs to the lenders.[4.11] Where those protections hold, the senior lender is lending against a contract with a creditworthy customer, and the hardware is a second line of defense.

The evidence on pricing confirms that lenders are underwriting the customer, not the chip. CoreWeave's first delayed-draw facility, in 2023, cost about 14 percent. A facility backed by a contract with Meta in March 2026, whose floating-rate tranche priced at SOFR plus 2.25 percentage points, was rated A3, six notches above CoreWeave itself.[4.12] The operator IREN reportedly paid about 6 percent on financing backed by Microsoft contracts and 9 percent fixed on financing backed by contracts with customers below investment grade.[4.13] The collateral was of the same kind. The customer's credit set the price.

The protections thin out in three places. The first is tenor. Facilities are lengthening toward the depreciable life of the equipment: Lambda's October 2026 facility amortizes to May 2033, about six and a half years; SpaceX's lease tranches for Vera Rubin run five to five and a quarter years from deliveries starting in 2027.[4.14] The second is renewal. CoreWeave's August 2026 facility finances contracts averaging about three years with debt of about five; Moody's noted that if the parent guarantee lost its value, the loan would become a merchant financing exposed to whatever the hardware could earn on the open market.[4.15] The third is the customer. The companies whose contracts support the weaker facilities are model developers and neoclouds, many unrated or rated below investment grade, and some with the right to terminate after initial periods: SpaceX's third-party compute customers can do so on ninety days' notice.[4.16]

## The collateral in a downturn

Consider what happens to these protections when demand for compute falls rather than rises.

Contracted cash flows depend on customers that, in that scenario, are raising capital with difficulty. Depreciated-value tests depend on appraisals of hardware whose market is made by the same small group of buyers. Sweeps of sale proceeds work when there is a buyer. In the telecom bust, as Chapter 7 shows, network assets changed hands for two to four cents per dollar of book value or build cost, and the buyers were the survivors. In a GPU surplus, the natural buyers of used accelerators would be the hyperscalers and the best-capitalized neoclouds—who would at that point have spare capacity of their own.

This is why the collateral question cannot be answered by looking at today's rental prices or by settling the accounting debate. A six-year life may be a reasonable average for equipment that is kept in productive use by its owner. It says much less about the price at which that equipment could be sold by a lender who has taken it back, in the year when everyone else is trying to sell the same thing.

*A depreciation schedule describes the value of a machine to the company that uses it. Collateral value is what the machine fetches from a buyer in the year the lender needs to sell.*

CHAPTER 5

# The Price of Money Came Back

*The build-out was financed on the assumption that money would get cheaper. In 2026 it got dearer, and the investment boom was part of the strength that let the Fed tighten.*

On October 5, 2026, the 10-year U.S. Treasury yield closed at 5.31 percent. It had not closed that high since May 14, 2002. It had passed the peak of the 2007 cycle five days earlier and was 134 basis points above its low of the year, reached on February 27.[5.1] The next day the Philadelphia Semiconductor Index touched 13,350 during the session and closed at 13,218. It would not see that level again in October.

**5.31%**
10-year Treasury yield on October 5, 2026, highest close since 2002

**3.6%**
PCE inflation, September 2026, year on year

**+89.5%**
Brent crude oil, end-2025 to October 28, 2026

**-18.8%**
Semiconductor index, October 6 to October 22

The coincidence of the two peaks is tempting to read as cause and effect: rates went up, so growth stocks went down. The evidence for that reading is weaker than it looks, and the reason it is weak is the subject of this chapter. Higher rates matter to the AI build-out less through the discount rate that equity analysts apply to future earnings than through the coupon that a project company pays on its bonds, the spread that a lender charges over the Secured Overnight Financing Rate, and the yield at which an insurer is willing to buy a twenty-year lease-backed note. Those prices move slowly and are set in private. They are also the prices that decide whether the financing structures described in Chapters 2 to 4 hold together.

## The world in which the debt was priced

At the end of 2025 the 2-year Treasury yield was 3.47 percent, below the Federal Reserve's target range of 3.50 to 3.75 percent.[5.2] When short-term government debt yields less than the overnight policy rate, the market is paying for rate cuts. That was the consensus as 2026 began: three cuts in the last four months of 2025, more expected, and a 10-year yield around 4 percent.

Much of the financing described in this Insight was priced in that world. Beignet Investor, the vehicle that financed Meta's Hyperion campus, sold its $27.3 billion of bonds on October 16, 2025, when the 10-year yield was 3.99 percent. It paid 6.581 percent, a spread of 225 basis

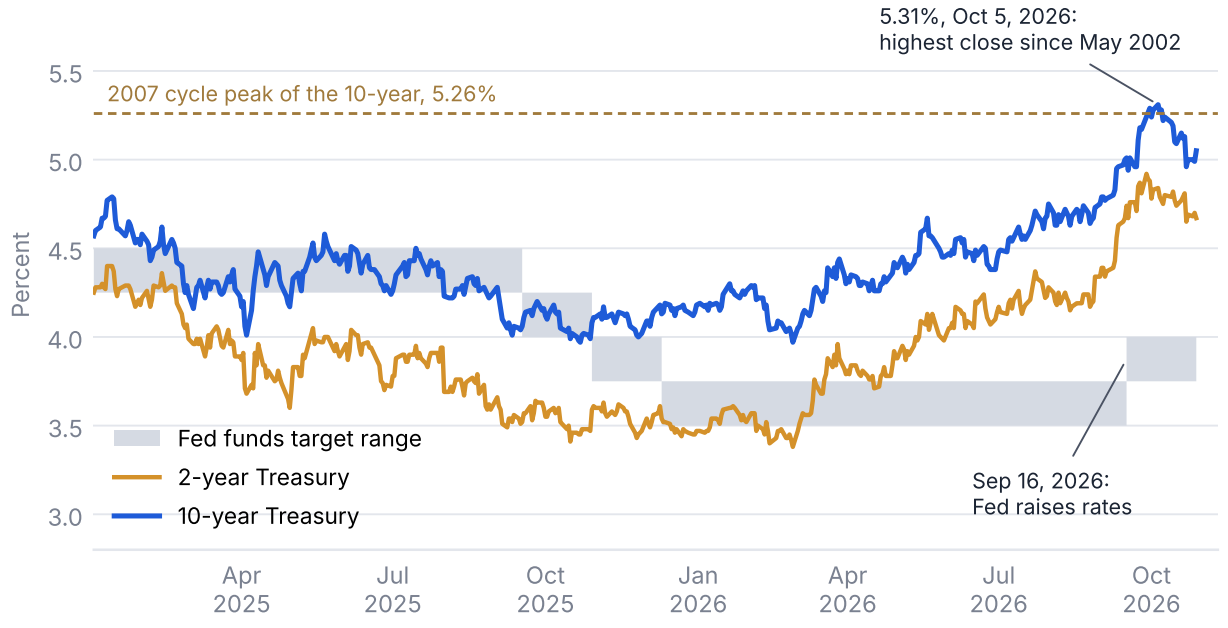
points over its Treasury benchmark.[5.3] Nine months later the same tenant, with a different financial partner and essentially the same structure, came back for its El Paso campus. Sopaipilla Investor paid 7.534 percent, 95 basis points more than Beignet.[5.4] Part of the increase was the market: the 10-year yield rose 66 basis points between the two pricings, from 3.99 to 4.65 percent. The rest was the price of the structure. Measured against the 10-year in both cases, the premium over Treasuries widened by about 30 basis points, from about 259 to about 288. Before the Federal Reserve raised rates at all, the market had already started charging more for the same promise.

## A hike nobody had financed

On September 16, 2026, the Federal Open Market Committee raised its target range by a quarter point, to 3.75 to 4.00 percent. It was the first increase since July 2023 and the first change of any kind since December 2025.[5.5] On October 28 the Committee held the range, with two members, Lisa Cook and Beth Hammack, voting for a further increase. The statement described activity as expanding at a strong pace and inflation as elevated. At his press conference, Chair Kevin Warsh said: "While overall financial conditions are tighter, I'm unwilling and unable to call them tight."[5.6] By the following day, futures markets priced a probability of about 80 percent that the Fed would raise rates again in December.[5.7]

**Figure 5.1 · From cuts priced to a hike delivered**

Fed funds target range and Treasury par yields, percent, daily




Source: U.S. Department of the Treasury, Daily Treasury Par Yield Curve Rates, January 2, 2025 to October 28, 2026; Federal Reserve, FOMC statements. The 2002 and 2007 comparisons use the Federal Reserve Board's H.15 10-year constant-maturity series.

The shape of the move matters as much as its size. Between the end of 2025 and October 28, 2026, the 2-year yield rose 120 basis points and the 10-year 87. The curve flattened from the front.[5.1] This was not, in the main, a revolt of long-term investors demanding a larger term premium. It was the market moving from expecting easier policy to expecting tighter policy. For a homeowner with a thirty-year fixed mortgage that distinction is academic. For the AI build-out it is not, because a significant part of its financing floats.

CoreWeave's two most recent delayed-draw facilities, signed in May and August 2026, pay SOFR plus 4.50 and 5.50 percentage points; with the policy range at 3.75 to 4.00 percent, the second implies a cash coupon above 9 percent.[5.8] In October a $5 billion syndicated loan for Volta Infrastructure, another GPU operator, priced at SOFR plus 6.50 points and issued at 95 cents on the dollar, for a yield above 11 percent; according to Bloomberg, the two underwriting banks committed to only $1.3 billion of it.[5.9] On October 22 Nebius announced a $3.5 billion senior secured bridge from Citigroup with a term of 364 days, priced at SOFR plus 2.75 points and rising to 3.50.[5.10] A one-year bridge is a bet on the next financing. Each of these loans floats over SOFR, so any increase in the policy rate passes into the borrower's interest bill at the next reset. A hyperscaler with fixed-rate bonds and a hundred billion dollars of cash felt almost nothing.

## Inflation that the boom helps to make

The Fed did not raise rates because of artificial intelligence. It raised them because inflation turned up again and stayed up. The proximate cause was oil. At the end of February 2026 the United States and Israel began military operations against Iran, and commercial shipping through the Strait of Hormuz, which carries about a fifth of the world's oil and liquefied natural gas, came almost to a halt.[5.11] Brent crude, $72.87 on February 27, reached $112.57 a month later and stayed mostly above $100 through May, touching $114.44 on May 4. It fell back to about $72 by the start of July, then rose again through the autumn, to a 2026 high of $116.72 on October 23.[5.12] Headline PCE inflation, 2.8 percent at the end of 2025, peaked at 3.8 percent in May and was 3.6 percent in September; the core measure, which excludes food and energy, was 3.1 percent.[5.13]

**Figure 5.2 · The oil shock**

Brent crude oil, US$ per barrel, daily close, weekdays




Source: Financial Modeling Prep, series BZUSD. Weekend prints excluded.

Oil explains the turn in inflation. It does not explain why the Fed felt able to respond to an energy shock with a rate increase rather than looking through it, which is what central banks usually prefer to do with supply shocks. The Fed's own statements point to growth: in September it cited strong economic activity, and in October it described activity as expanding at a strong pace. The advance estimate for the third quarter, published on October 29, bore this out: real GDP grew at an annual rate of 3.4 percent. By press calculations from the release, business investment in equipment and software contributed about 1.2 percentage points of that growth, the largest contribution from those categories since 2011 outside the pandemic.[5.14] An economy growing at 3.4 percent with core inflation above 3 percent does not need the central bank's help.

That is a feedback loop the AI debate has largely ignored. At the scale reached in 2026, the build-out is no longer a sector story that the macroeconomy can absorb unnoticed. It shows up in GDP: on press calculations, equipment and software investment added about 1.2 points to third-quarter growth. It adds to the strength of activity the Fed cited when it tightened. To that extent the investment helps raise the price of the money that finances it. A boom financed from retained earnings is indifferent to that loop. A boom financed by credit is not.

> *At the scale it reached in 2026, the build-out adds to the growth that lets the Fed keep tightening. To that extent the investment helps raise the price of the money that finances it.*

There is a historical contrast here that the comparison with the telecom bust usually omits. When that bust arrived, the Federal Reserve cut its target rate from 6.5 percent at the start of 2001 to 1.75 percent by December of that year and to 1 percent by June 2003.[5.15] The survivors of 2002 refinanced into the cheapest money in a generation. A central bank facing 3.6 percent inflation and an oil shock cannot offer the same cushion, and its chair has said, in effect, that falling asset prices are a sign that policy is working.[5.6]

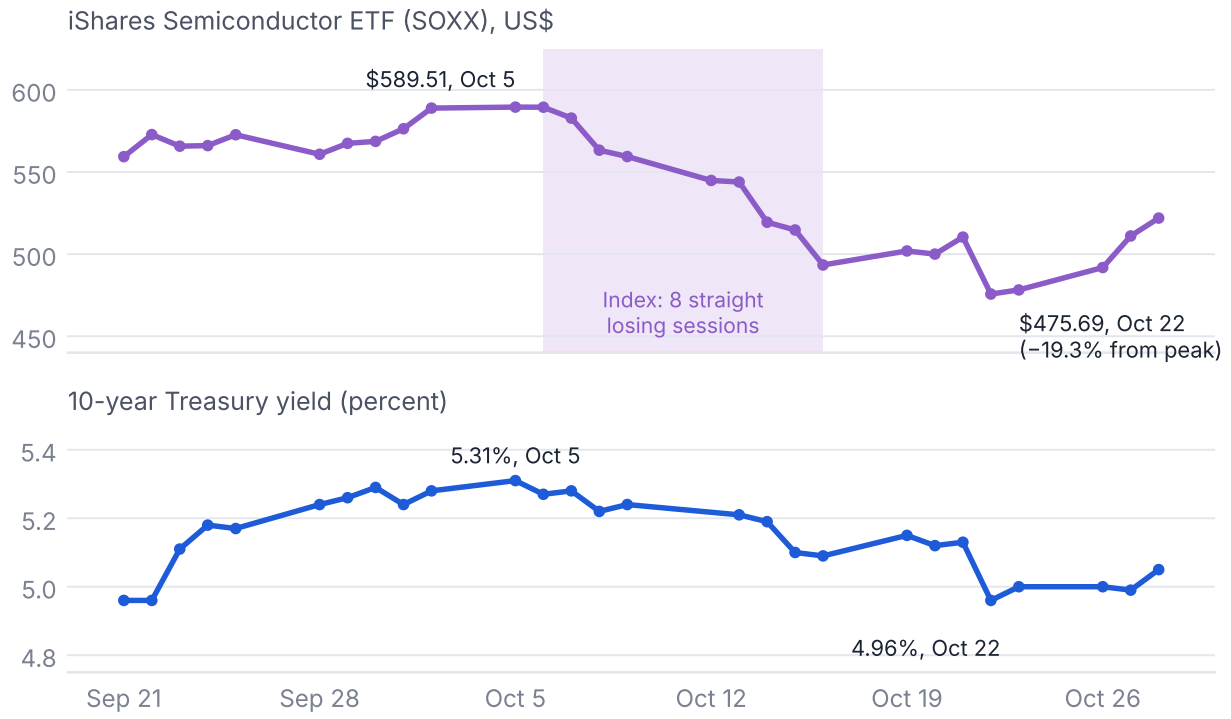
## What the market sold in October

The first tremor came in early summer. From its high on June 22 to July 29, the iShares Semiconductor ETF fell 29 percent; CoreWeave lost 39 percent and Oracle 20 percent between June 30 and July 29.[5.16] On July 30 CNBC reported that Situational Awareness, the hedge fund run by the former OpenAI researcher Leopold Aschenbrenner, whose disclosed holdings were concentrated in AI infrastructure stocks, was unwinding its public positions after steep losses.[5.17] The Nasdaq Composite regained its July high by August 4, helped by strong results from Microsoft and Amazon; the semiconductor ETF recovered only part of its loss.

The October decline was different in character. From October 7 to October 16 the PHLX Semiconductor Index fell for eight consecutive sessions, losing 15.7 percent, the longest such streak since October 2008. All thirty constituents fell on the last day of it.[5.18] After a brief recovery, Meta's report of negative free cash flow on the evening of October 21 produced the worst single session of the episode: on October 22 the index fell 6.7 percent, the Nasdaq Composite 2.6 percent and Meta 7.0 percent. From its close on October 6 to its close on October 22, the semiconductor index lost 18.8 percent; measured from intraday high to intraday low, 20.1 percent.[5.19] The S&P 500, by contrast, never closed more than 2.5 percent below its high during the month.

**Figure 5.3 · Chips and yields fell together**

iShares Semiconductor ETF (SOXX) and 10-year Treasury par yield, daily close, September 21 to October 28, 2026




Source: Alpha Vantage (SOXX closing prices); U.S. Department of the Treasury, Daily Treasury Par Yield Curve Rates. The shaded sessions are the eight consecutive declines of the PHLX Semiconductor Index.

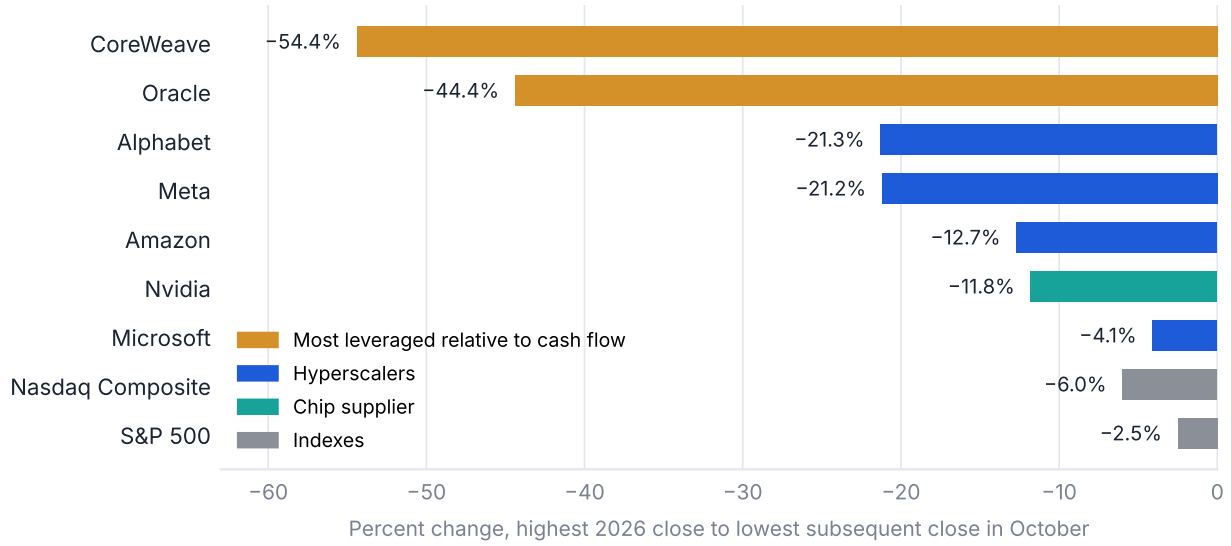
If rising rates had driven the sell-off, the yield should have been rising while chip stocks fell. Figure 5.3 shows the opposite. The 10-year yield peaked on October 5 and drifted lower for most of the month, to 4.96 percent on October 22; on that day, when the semiconductor index fell 6.7 percent, the yield dropped 17 basis points. Investors were buying Treasuries and selling chips at the same time. I tested the relationship more formally. Over the 98 trading days from June 9 to October 28, daily changes in the 10-year yield explain essentially none of the daily return on the iShares Semiconductor ETF: the correlation is −0.06 and statistically indistinguishable from zero. In the October window, measured on the index itself over 21 sessions, it turns positive, at +0.54, because bonds rallied while chips fell. The result rests heavily on October 22; without that day the correlation is +0.25 and not significant. For the Nasdaq Composite as a whole the correlation over 2026 is −0.29, significant and of the expected sign.[5.20] Rates were a backdrop. They were not what the market was selling.

What it was selling becomes clear when the declines are lined up by company. From its highest close of 2026 to its lowest subsequent close in October, CoreWeave fell 54 percent and Oracle 44 percent. Alphabet and Meta, whose quarterly free cash flow has turned negative, fell about 21 percent each. Amazon fell 13 percent and Nvidia 12. Microsoft, whose free cash flow remains comfortably positive and which reported results above expectations on October 28, fell 4

percent.[5.21] The ranking is not perfect: Amazon, whose free cash flow was also negative in the second quarter, fell less than Alphabet. Its shape is nonetheless clear. The companies most dependent on borrowed money lost the most, and the one whose investment is still covered by its own cash lost the least.

**Figure 5.4 · The market sorted AI by how it is financed**

Decline from highest 2026 close to lowest subsequent close in October, percent




Source: exchange closing prices compiled from Financial Modeling Prep (Nvidia, Meta, Microsoft, Alphabet, Amazon, S&P 500, Nasdaq Composite) and Alpha Vantage (Oracle and CoreWeave, weekly closes before June 8, 2026, so earlier highs may be understated). Calculations by FINTECH SCB. "Most leveraged" refers to debt relative to operating cash flow.

This is what it looks like when an equity market begins to price AI as a credit question. The selling came from investors who can leave at 9:31 in the morning, and did.

## The bondholders have not been asked yet

Credit markets, through October 27, had barely moved. The ICE BofA U.S. high-yield index spread widened from 2.60 percent on August 28 to 3.40 percent on October 22, the day the semiconductor index hit its low, and was back to 3.18 percent five days later. In April 2025, during the tariff shock, it had reached 4.57 percent. The investment-grade spread was 0.88 percent on October 27, against 0.79 percent at the end of 2025.[5.22] On the aggregate measures, bondholders had absorbed almost nothing.

Below the aggregates, the repricing had begun where Chapter 4 said it would: with the weakest borrowers and the newest structures. CoreWeave's notes due 2031 were reported to trade at a record yield of about 16 percent on October 27, and its 9.625 percent notes due 2032 below 80 cents on the dollar the following day.[5.23] Bloomberg counted at least eighteen data-center financings carrying double-digit yields.[5.24] Top-rated data-center bonds yielded under 5 percent early in the year and about 7 percent in October, and securitized issuance for the sector had

reached only about $22 billion in 2026. Carolyn Campbell of Morgan Stanley, one of the banks arranging these deals, observed in mid-October that issuance becomes much harder as borrowing costs approach 8 percent.[5.25] Weekly trading in credit default swaps on a group of AI-exposed issuers rose from under $2 billion in July to more than $9 billion in September, according to Morgan Stanley data reported by the Financial Times.[5.26]

The arithmetic that makes 8 percent so difficult is simple, and it applies to every structure in which a fixed rent pays a coupon.

> ILLUSTRATION: WHAT A HIGHER COUPON DOES TO COVERAGE
>
> A vehicle borrows $10 billion to build a data-center campus leased to a single tenant. Net of operating costs, the rent brings in $856 million a year, which covers interest at 6.58 percent, the Beignet coupon, 1.30 times. The sponsor now finances a second, identical campus at the same rent. At 7.53 percent, the Sopaipilla coupon, coverage falls to 1.14 times. At 8 percent it falls to 1.07 times. At 9 percent the rent no longer covers the interest. The tenant, the building and the rent are unchanged. Only the price of money has moved. The figures are constructed for illustration and do not describe any single transaction.

Rents for data-center capacity are set years in advance and do not reset with interest rates. That is their appeal to a lender in a stable rate environment and their weakness in a rising one. A sponsor that cannot raise the rent and cannot borrow below 8 percent can still build, but only by putting in more equity, accepting lower coverage or finding a lender who will. The rest of this Insight is about who that lender is likely to be.

## What the price of money changes

The first half of 2026 offered a reassuring account of AI finance: the borrowers are the strongest companies in the world, the bond market is open, and the Fed is on its way down. By the end of October only the first part of that account still held. The Fed had raised rates, the bond market was open on terms that one of its own arrangers said become significantly more challenging as borrowing costs approach 8 percent, and the equity market had sorted the AI companies by how much of their spending depended on the next financing.

None of this proves that a credit event is coming. It does establish the conditions under which credit cycles end. When money is cheap, a structure with a thin margin can be refinanced; when it is dear, a structure with a thin margin has to perform. Chapter 6 identifies the institutions that hold those structures and asks how well placed they are to wait for performance.

CHAPTER 6

# Who Holds the Loss

*Follow the claims from the data center to the household. At each link of the chain the holder can leave less easily than the one before, and the last link is the one that never chose the exposure.*

A useful way to read any credit structure is to ask, for each party, two questions. How is my claim valued, and how quickly can I leave? A shareholder in a listed company is valued by the second and can leave by the minute. A bond fund that offers daily redemptions is valued daily but must sell into the market to pay. An insurer holding a bond to maturity values it, in most cases, at amortized cost and need not sell at all. A private credit fund with a quarterly redemption limit values its loans with models and leaves its investors in a queue. A saver who owns an annuity cannot leave without penalty and does not see the portfolio at all.

The AI build-out has distributed its debt along this ladder. The higher rungs carry the price risk and can exit. The lower rungs carry the credit risk and cannot. This chapter follows the money down.

## The annuity holder as AI creditor

The most important new piece of evidence on who holds AI credit was published by Moody's on October 21, 2026, from the statutory filings of U.S. life insurers. At the end of the second quarter of 2026 the industry held $85.2 billion of debt issued across the AI ecosystem—hyperscalers, data centers and chipmakers—equal to 1.4 percent of its cash and invested assets and up 24 percent from $69 billion six months earlier. Within that total, data-center debt amounted to $39.5 billion, up 34 percent in six months, and the share of it rated below investment grade rose from 4.7 to 6.1 percent. The largest data-center positions were $4.6 billion in debt of QTS, the Blackstone-owned data-center operator, and $3.4 billion in the Hyperion bonds issued by Beignet Investor. Moody's noted that a majority of the industry's holdings of the Valor Compute Infrastructure financings, which lease Nvidia accelerators to an xAI subsidiary, sat with the life entities of Athene, the insurer owned by Apollo. It added that its figures understate the exposure, because they exclude alternative investments, commercial mortgages, collateralized loan obligations and structures backed by guarantees or leases.[6.1]

**$85.2bn**

AI-ecosystem debt held by U.S. life insurers, Q2 2026 (up 24% in six months)

**$39.5bn**

of which data-center debt (up 34%); below-investment-grade share 6.1%

**$50–100bn**

additional AI holdings Moody's estimates life insurers could add by end-2027

**~56%**

share of ceded U.S. annuity reserves reinsured offshore, 2025 (press-reported)

Less than one and a half percent of assets is not a crisis. The number matters for three other reasons. It is growing fast: Moody's estimates that life insurers could add another $50 to $100 billion of AI holdings by the end of 2027.[6.1] It sits inside portfolios that have already moved toward private and illiquid credit: Moody's counted $807 billion of private and illiquid bonds at U.S. life insurers at the end of 2025, 20 percent of a $4 trillion fixed-income portfolio, with the ten largest insurers holding 44 percent of it; the Federal Reserve estimates that illiquid assets make up about 37 percent of life insurers' total assets and describes leverage at the largest life insurers as well into the upper quartile of its history.[6.2] And it is concentrated in a particular kind of insurer.

In 2024, 139 insurers were owned by private-equity firms, compared with about 25 in 2017. They held about $700 billion of cash and invested assets, wrote 18 percent of all annuities and 33 percent of indexed annuities, according to the Congressional Research Service.[6.3] Their owners are also among the largest originators of private credit and, increasingly, of AI infrastructure financing: Apollo with Athene, KKR with Global Atlantic, Blackstone with its partnership with Corebridge, Brookfield with American National and American Equity.[6.4] The structure is commercially coherent. The asset manager originates the loan, the affiliated insurer buys it to back annuities, and the spread over public bonds funds the guaranteed rates that make the annuities attractive. A Federal Reserve Bank of Chicago study attributed 61 percent of private-equity-owned insurers' gain in annuity market share to the growth of private credit in their portfolios.[6.5]

The annuity sales that fund this engine have set four consecutive annual records, including $385.4 billion in 2023, $434.1 billion in 2024 and $464.1 billion in 2025, and a first-half record of $228.7 billion in 2026, according to LIMRA.[6.6] A growing share of the resulting liabilities is then reinsured offshore, mostly in Bermuda, where reporting is less granular; AM Best data cited in the trade press put the offshore share of ceded annuity reserves at almost 56 percent in 2025.[6.7]

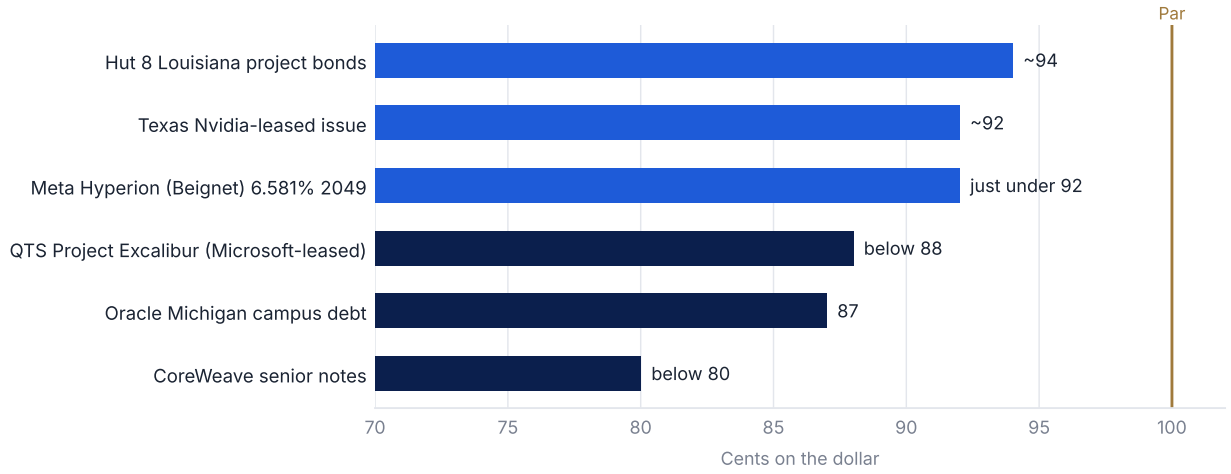
The accounting is what turns a fast-growing exposure into a slow-moving loss. Insurers' statutory statements carry most investment-grade bonds at amortized cost. A data-center bond that trades at 92 cents is still carried near par unless the insurer judges the impairment to be other

than temporary. That is a sensible rule for an institution that holds to maturity, and it protects policyholders from forced selling in a panic. It also means that the policyholder's exposure becomes visible only when a loss is realized, which in a credit cycle is late.

The market prices that statutory accounts do not show are already moving. In mid-October 2026, according to the Financial Times, the Hyperion bonds traded just under 92 cents, bonds issued for a QTS campus in Georgia leased to Microsoft below 88, and debt financing an Oracle campus in Michigan at 87, down from par in July.[6.8] I found no disclosure by any insurer of an impairment on data-center or GPU loans by the research cutoff. That is consistent with this Insight's thesis rather than a refutation of it.

**Figure 6.1 · Data-center paper below par**

Quoted prices of selected data-center and AI-infrastructure debt, cents on the dollar, mid-October 2026




Source: Financial Times, as reported by Dealroom, October 15, 2026; Reuters, as reported by KSL, October 16, 2026. Press-reported quotations; "below" levels are shown at the stated threshold. Par = 100.

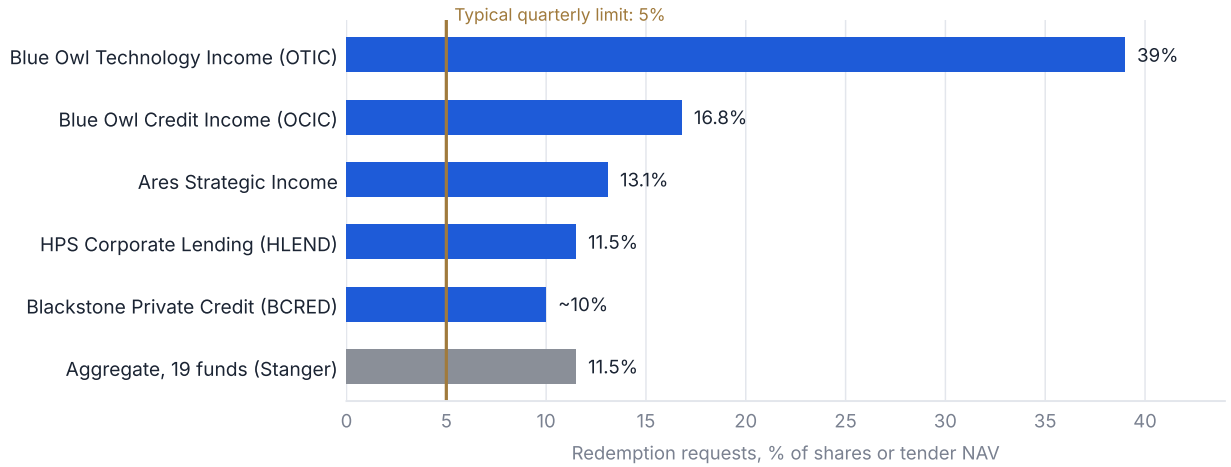
## The private credit fund and its queue

The second rung belongs to private credit funds, and in particular to the semi-liquid vehicles—perpetual business development companies and interval funds—sold to wealthy individuals through private banks and brokers. The Federal Reserve put their size at about $425 billion gross and $241 billion net early in 2026, about a fifth of private credit net assets; the IMF reported that such vehicles accounted for more than half of new U.S. private credit fundraising in 2025.[6.9] Globally, the Alternative Credit Council estimated private credit assets under management at $4.1 trillion at the end of 2025, up 17 percent.[6.10] The Bank of England, citing the OECD, reported that private credit's share of the financing of AI investment rose from 9 percent in 2024 to 34 percent in 2025.[6.11]

These vehicles promise limited liquidity: typically up to 5 percent of net assets per quarter. In the first quarter of 2026, for the first time since such vehicles were created, accepted redemptions exceeded new inflows, and some funds received requests much larger than 5 percent of their value, according to the Federal Reserve.[6.12] The queue has persisted. In the third quarter, according to Robert A. Stanger & Co., investors in nineteen of these funds asked for $13.8 billion, 11.5 percent of tender value; about 40 percent was paid, leaving an unmet backlog of $8.2 billion.[6.13] Blackstone's flagship private credit fund held repurchases to its 5 percent limit against requests of about 10 percent. At Blue Owl's technology lending vehicle, requests reached 39 percent of shares.[6.13]

### Figure 6.2 · The queue at the exit

Redemption requests at selected non-traded private credit funds, third quarter of 2026, percent of shares, against the typical 5 percent quarterly limit




Source: Robert A. Stanger & Co., as reported by AltsWire, October 3, 2026; Fitch Ratings, as reported by InvestmentNews, October 13, 2026. Press-reported.

The redemption pressure was driven less by data centers than by a second AI channel that this Insight has not yet named: the effect of AI on the software companies that private credit funds lent to in the previous cycle. Software has become the largest sector in private credit portfolios, according to the Federal Reserve, and the IMF warned in April 2026 that software exposure may exceed half of net asset value in some leveraged vehicles.[6.14] Private credit is therefore exposed to AI twice: as a lender to the build-out, which pays if AI demand is strong, and as a lender to software borrowers, which loses if AI demand is strong enough to erode their businesses. The two exposures do not hedge each other cleanly. They share a common sensitivity to rates and to investors' willingness to stay in the queue.

The IMF's October 2026 report found that four of ten large business development companies, with about $90 billion of assets, have commitments that exceed their liquidity buffers.[6.15] Measured credit quality has drifted rather than broken: non-accrual loans at public BDCs rose to 4.2 percent of cost in the second quarter of 2026 from 3.4 percent a year earlier, while pay-

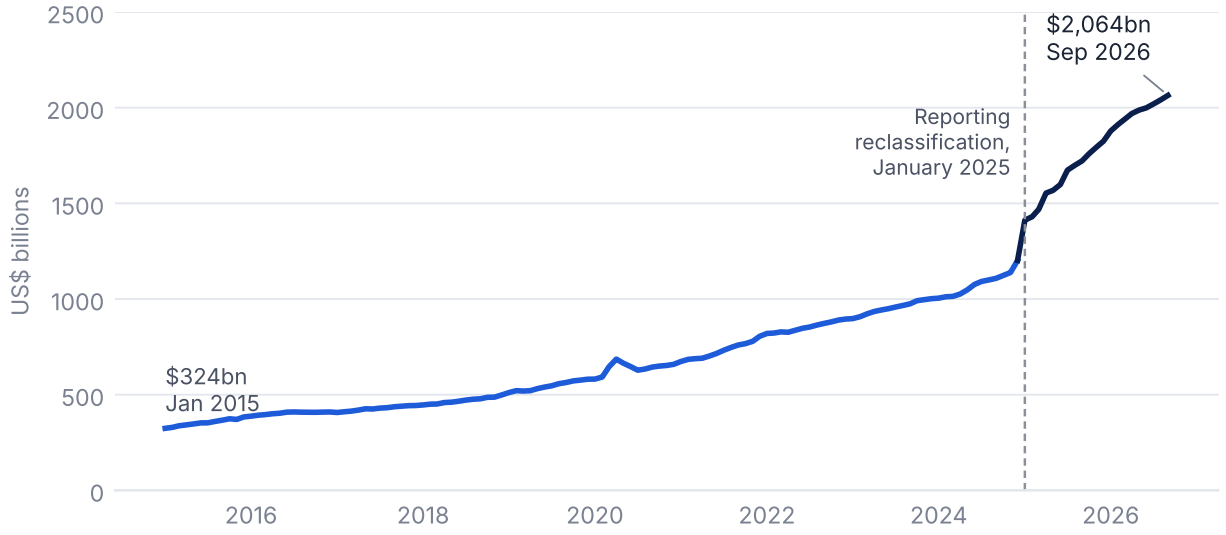
ment-in-kind income—interest paid with more debt rather than cash—remained around 8 percent of total investment income.[6.16] These are the indicators of the slow path described in Chapter 9, not of the fast one.

## The bank behind the fund

The third rung is the one the 2008 reforms were meant to protect, and it is more involved than the phrase "non-bank lending" suggests. U.S. commercial banks' loans to non-depository financial institutions—private credit funds, business development companies, private-equity funds, mortgage intermediaries and others—reached $2,064 billion in September 2026 and $2,106 billion in the week of October 14, according to the Federal Reserve's H.8 release.[6.17] The series has a break in January 2025, when reporting instructions moved some loans into the category; comparing like with like from that month, the level rose by about 46 percent in twenty months.[6.18] The Federal Reserve Bank of Boston estimated drawn bank loans to non-bank financial institutions at $1.7 trillion in the first quarter of 2026, with total commitments of $2.7 trillion, of which $1.3 trillion were to private-equity funds and business credit intermediaries.[6.19]

**Figure 6.3 · Banks lend to the lenders**

Loans by U.S. commercial banks to non-depository financial institutions, US$ billions, seasonally adjusted, monthly




Source: Board of Governors of the Federal Reserve System, H.8 Assets and Liabilities of Commercial Banks, release of October 23, 2026 (FRED series LNFACBM027SBOG). The January 2025 increase reflects a reporting reclassification effective December 31, 2024.

Banks also lend directly to AI projects. Chapter 2 described the roughly $18 billion of loans for Project Jupiter, quoted at 89 to 91 cents by the banks trying to sell them. The $38 billion of loans for the Vantage campuses in Texas and Wisconsin had still not been fully placed more than six months after launch.[6.20] The Bank for International Settlements observed in October

2026 that banks lend both to AI vehicles and to the investors who hold those vehicles' debt.[6.21] The IMF warned that a tail of banks would be undercapitalized under stress, and that these are the banks most exposed to non-bank financial institutions.[6.22]

I do not expect the banking system to be the primary bearer of AI credit losses; its claims are mostly senior, secured and short. Its role is different. It is the source of the leverage that lets funds and project vehicles borrow against their holdings, and the provider of liquidity lines that are drawn when everyone needs them at once. In a stress, banks protect themselves by cutting those lines. That protects the bank and accelerates the loss for everyone below it.

## The household at the end of the chain

At the bottom of the ladder is the household, which holds AI exposure through three doors that rarely appear on the same statement.

The first door is equities. U.S. households' directly and indirectly held corporate equities reached 48.2 percent of their financial assets in the second quarter of 2026, according to the Federal Reserve's Financial Accounts—the highest share in data back to 1995, above the 38.7 percent reached at the peak of the dot-com boom in early 2000.[6.23] Households gained $10.7 trillion of equity wealth in that quarter alone. A broad index fund is now, to a large degree, an AI fund: the ten largest companies in the S&P 500 made up about 40.6 percent of the largest S&P 500 exchange-traded fund on October 23, 2026.[6.24]

**Figure 6.4 · More stock than at the dot-com peak**

Corporate equities held directly and indirectly, percent of U.S. household financial assets, quarterly




Source: Board of Governors of the Federal Reserve System, Financial Accounts of the United States (Z.1), release of September 11, 2026, via FRED (series BOGZ1FL153064486Q and BOGZ1FL153064475Q).

This door belongs mainly to the wealthy. Mark Zandi of Moody's Analytics has pointed out, using the Federal Reserve's distributional accounts, that the top 20 percent of households hold almost 90 percent of corporate equities and mutual funds, and that they now account for about 60 percent of consumer outlays.[6.25] They can sell, and they own the price risk they chose.

The second door is the annuity and the insurance savings product, described above. It belongs to the middle of the distribution: retirees and savers who bought guaranteed income and do not see the portfolio behind it.

The third door is the retirement plan. An executive order signed in August 2025 directed federal agencies to facilitate access to alternative assets, including private credit, in 401(k) plans; the Department of Labor published a proposed rule in March 2026 creating a process-based safe harbor for plan fiduciaries who include such assets.[6.26] If adopted, it would make it easier to move private credit, with its quarterly queues and model valuations, into the accounts of savers who can least afford to wait in them.

A note of caution is due here, because the debate has run ahead of the evidence. A report published on October 16, 2026, by the Open Markets Institute and the Americans for Financial Reform Education Fund, and shared by Senator Elizabeth Warren on October 26, argued that data-center debt is being repackaged and sold to pension funds and university endowments.[6.27] That is plausible, and according to the Financial Times' account of the European Central Bank's May 2026 Financial Stability Review, the ECB's scenario analysis put losses at 5 to 6 percent of assets for euro-area pension funds in an AI-related stress.[6.28] But on the public evidence I could verify, the identified buyers of U.S. data-center debt are life insurers and bond funds; I found no quantified holdings by U.S. pension funds or endowments. The argument of this Insight does not need the stronger claim, and it should not borrow it.

## The ladder of exits

### Figure 6.5 · Who holds AI credit, how it is valued and how fast the holder can leave

| Holder | Typical claim | How the claim is valued | How fast the holder can leave | Who stands behind the holder |
|---|---|---|---|---|
| Equity investor | Shares of hyperscalers, chipmakers, neoclouds | Market price, every second | Immediately | The investor |
| Bond fund or ETF | Hyperscaler and project bonds | Market price, daily | Daily, by selling | Fund shareholders |
| Bank | Construction loans, fund-finance lines, warehouse lines | Amortized cost; regulatory capital | At maturity or by cutting lines | Shareholders, deposit insurance |
| Private credit fund | GPU loans, project loans, notes of vehicles | Models, quarterly | Up to about 5% of assets per quarter | Fund investors, increasingly retail |
| Life insurer | Project bonds, private placements, hyperscaler bonds | Mostly amortized cost (statutory) | Holds to maturity | Policyholders and annuitants; state guaranty funds |
| Household saver | Annuity, 401(k) allocation, index fund | Not visible to the saver | Surrender penalties; plan rules | The saver |

The table is not a forecast of losses. It is a description of where losses would be recognized and by whom. Read from top to bottom, it shows the AI credit cycle's essential asymmetry. The parties at the top—hyperscalers with options, managers with fees, equity investors with daily liquidity—can respond first to bad news. The parties at the bottom will learn about it last, through a lower crediting rate on an annuity, a gated redemption, or an impairment recognized years after the price moved.

In *The Price of Standing Still* I argued that the capacity to wait determines who keeps the recovery after a crisis. This chapter adds a corollary. The AI financing system has been built so that the people with the greatest capacity to wait are also the ones most able to leave, while those who are obliged to wait were never asked whether they wanted to.

CHAPTER 7

# What the Telecom Bust Actually Teaches

*The comparison with 2000 is made constantly and read carelessly. The bust was not mainly an equity crash. It was a credit event in which the networks survived, the lenders paid, and the survivors bought the assets for a few cents on the dollar.*

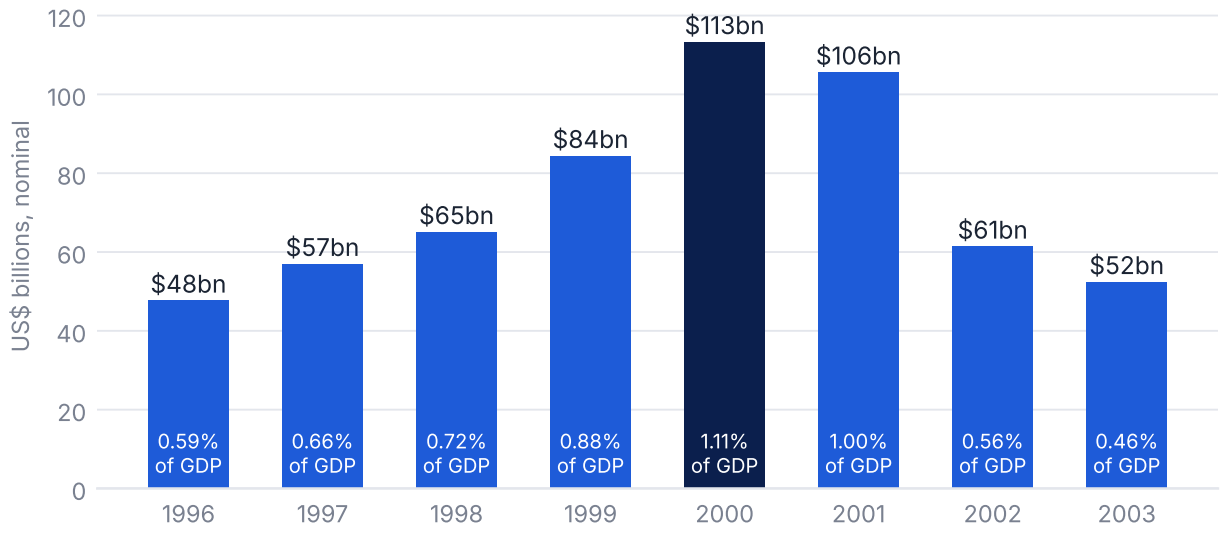
When people compare the AI boom with the year 2000 they usually mean the Nasdaq Composite, which peaked at 5,049 in March 2000 and lost almost four fifths of its value by October 2002.[7.1] That comparison is the least useful one available. The closer analogy is not the dot-com equity bubble but the telecommunications build-out that ran alongside it, because that was an infrastructure cycle financed with debt, and its unwinding allocated losses in exactly the way this Insight describes.

## The size of the build

U.S. telecommunications carriers spent $47.7 billion on capital equipment and structures in 1996, according to the Census Bureau's Annual Capital Expenditures Survey. By 2000 they were spending $113.3 billion, about 1.1 percent of gross domestic product and nearly 10 percent of all capital spending by U.S. companies. Three years later the figure was $52.4 billion.[7.2] The Federal Reserve Bank of San Francisco, using data for publicly traded carriers, found the same shape: $121 billion at the 2000 peak, $49 billion in 2002.[7.3] Capital expenditure per dollar of end-user telecom revenue, as tracked by the Federal Communications Commission, rose from 39 cents in 1999 to 49 cents in 2000 and fell to 23 cents by 2003.[7.4]

**Figure 7.1 · The last infrastructure cycle financed with debt**

Capital expenditure of U.S. telecommunications carriers, US$ billions, and as a share of GDP




Source: U.S. Census Bureau, Annual Capital Expenditures Survey, reports for 1997–2003 (1996–1997 on SIC basis, 1998–2003 on NAICS basis, cable excluded); GDP from U.S. Bureau of Economic Analysis via FRED. Shares calculated by FINTECH SCB.

The build was not irrational in its premise. Internet traffic was growing very fast; the technology for carrying it on fiber was improving even faster. Capacity per fiber strand rose from about 2.5 gigabits per second in 1996 to about 100 gigabits per second in 2000.[7.5] The error lay in the forecast of demand that was used to finance it. The Chairman of the FCC told the Senate in July 2002 that capacity had increased, by some estimates, five-hundredfold, while traffic had been doubling every year rather than every hundred days as the financing story had assumed.[7.6] By 2002 estimates of the share of U.S. fiber actually in use ranged from 2 to 5 percent.[7.7]

## How it was paid for

The build was financed with debt on a scale that matched the ambition. Cambridge Associates, writing in 2002, put the debt raised by the telecom sector worldwide in the five years to 2001 at a record $1.3 trillion; it also counted about $192 billion of high-yield bonds issued by telecom and cable companies between 1997 and 2000 and more than $250 billion of bank loans financing long-haul networks.[7.8] An FCC commissioner estimated U.S. telecom industry debt at over $200 billion in September 2002.[7.9] Equipment makers added their own layer of credit, as Chapter 3 described: Lucent's customer-financing portfolio alone reached $8.1 billion.

The financing was distributed through the same channels that distribute credit today: public high-yield bonds bought by mutual funds and insurers, syndicated loans held by banks and sold to institutional investors, and vendor finance that sat on the balance sheets of equipment

makers. The competitive carriers that did much of the building had little revenue relative to their spending. The bet was that the revenue would come.

## How it ended

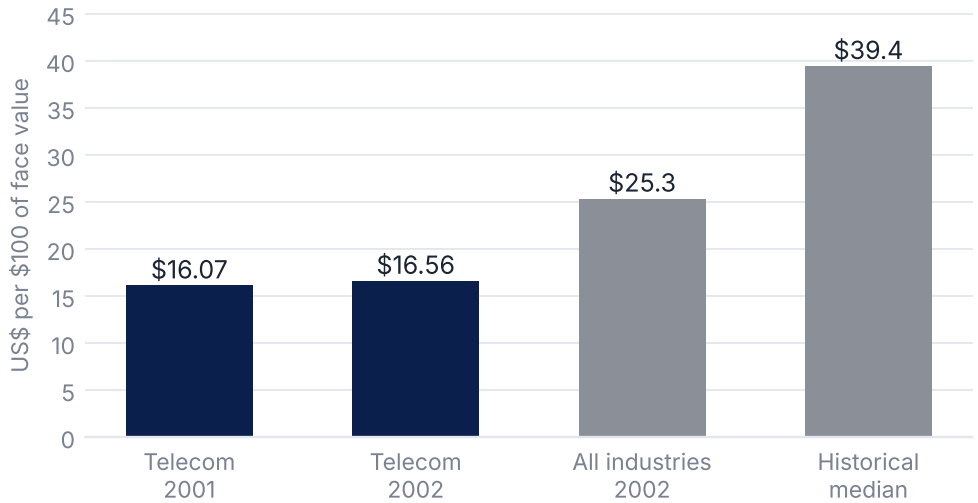
The equity losses were enormous, and they are the part that is remembered. The FCC Chairman put the market value lost by the telecom sector at about $2 trillion in the two years to July 2002, along with nearly half a million jobs.[7.6] The Nasdaq Telecommunications index fell from 1,230 on March 10, 2000, to 136 in May 2003, a decline of about 89 percent.[7.10]

The credit losses are less remembered and more instructive. In 2002 the U.S. high-yield market suffered defaults of about $96.9 billion, a default rate of 12.8 percent; telecommunications accounted for 52 percent of the defaulted dollars, more than $50 billion.[7.11] In the bank market, the 2002 Shared National Credit review by the Federal Reserve, the OCC and the FDIC found a record $19.6 billion of syndicated loan commitments classified as loss, of which $7.6 billion, or 39 percent, was telecom and cable.[7.12] WorldCom filed for bankruptcy in July 2002 listing assets of about $107 billion and debt of about $41 billion, including $24 billion of bonds; Global Crossing had filed in January with assets of $25.5 billion.[7.13]

What creditors recovered is the number that matters most for this Insight. Edward Altman's studies at New York University found that defaulted telecom bonds traded at a weighted average of $16.07 per $100 of face value in 2001 and $16.56 in 2002, against an all-industry average of about $25 in 2002 and a historical median of about $39.[7.14] Even at WorldCom, where most bondholders recovered a comparatively good 35.7 cents on the dollar, the reorganization erased about $35 billion of debt.[7.15]

**Figure 7.2 · Telecom creditors recovered about sixteen cents**

Recovery on defaulted bonds, US$ per $100 of face value




Source: Edward I. Altman and Gaurav Bana, "Defaults and Returns on High Yield Bonds: The Year 2002 in Review," NYU Salomon Center, February 2003 (weighted-average price after default; telecom 2001 and 2002; all-industry 2002; historical median).

## The assets survived

Then the networks were sold. ST Telemedia acquired 61.5 percent of the reorganized Global Crossing for $250 million in equity; the company emerged from bankruptcy in December 2003 with $200 million of debt, against roughly $11 billion of long-term debt and preferred stock two years earlier.[7.16] Tyco's global undersea network, which had cost about $3 billion to build, was sold to India's VSNL in 2004 for $130 million.[7.17] Genuity's internet backbone went to Level 3 out of bankruptcy for a headline price of $242 million.[7.18]

### Figure 7.3 · What the networks fetched

| Asset | Buyer and year | Price | What came before |
|---|---|---|---|
| Global Crossing (61.5% of reorganized equity) | ST Telemedia, 2003 | $250 million | Assets of $25.5 billion listed at filing, January 2002 |
| Tyco Global Network (undersea) | VSNL, 2004 | $130 million | Build cost about $3 billion (TeleGeography estimate) |
| Genuity (internet backbone) | Level 3, 2003 | $242 million (announced) | Liabilities subject to compromise about $3.8 billion |
| FLAG Telecom (four-continent undersea network) | Reliance Gateway, 2003 | $207 million | Build cost not disclosed |

The assets kept their value for their new owners. ST Telemedia's price implied about $400 million for all of Global Crossing's equity in 2003; Level 3 bought the company in 2011 for about $3 billion including debt, and Level 3 was itself acquired by CenturyLink for about $34 billion including debt.[7.19] The networks stayed in service under their new owners.

This is the sentence the AI debate needs most and uses least: the infrastructure was a success and the financing was a failure. The two facts are compatible. The country got its network. The creditors who paid for it absorbed most of the cost, and the companies that bought the assets out of bankruptcy captured much of the value. That is the pattern I described in Chapter 2 as the option and the obligation, played out over five years.

## What I take from it

I spent part of my career in the finance functions of telecom operators, at Fastweb and at Colt Telecom. The lesson I took from that industry is not that networks are bad investments. It is that the value of a network to its eventual owner and the value of a loan to its original builder are different quantities, and that the gap between them is set by three things: how long the asset takes to earn its keep, how much debt was placed in front of it, and who is forced to sell when the forecast proves wrong.

Applied to AI infrastructure, the comparison cuts both ways. The borrowers at the center of the AI build-out are far stronger than the competitive carriers of 1999. Much of the capacity is contracted, not speculative. Those differences matter, and Chapter 8 gives them their due. But three features of 2026 resemble 2000 more closely than the reassurance allows. The marginal buyers of capacity are again young companies that fund their purchases with outside capital. Equipment makers are again lending to and guaranteeing their customers. And the debt is again being placed with institutions that will hold it to maturity, so that the losses, if they come, will be recognized slowly and borne by people who never saw the business plans.

## The 2007 footnote

One more episode belongs in this chapter, because it concerns the specific mechanism of off-balance-sheet finance. In the summer of 2007 structured investment vehicles—entities sponsored by banks but kept off their balance sheets—held almost $400 billion of assets, according to Moody's. By mid-December the figure had fallen to about $200 billion.[7.20] On December 13, 2007, Citigroup announced that it would consolidate its SIVs, bringing about $49 billion of assets, net of cash, onto its balance sheet.[7.21] A study by Viral Acharya, Philipp Schnabl and Gustavo Suarez later showed that most losses on the wider universe of asset-backed commercial paper conduits remained with the sponsoring banks, because the sponsors had provided liquidity and credit guarantees that made the risk transfer largely illusory.[7.22]

The SIVs were not data centers, and the banks of 2007 were not the technology companies of 2026. The parallel is narrower and more precise: a sponsor that provides a guarantee to keep an obligation off its balance sheet may find, at the worst moment, that the guarantee was the obligation. Moody's counted about $2.8 trillion of future commitments disclosed by Amazon, Microsoft, Alphabet, Meta and Oracle in September 2026—leases not yet commenced, purchase commitments and guarantees—up eightfold since 2023, and said it would make debt adjustments for guarantees in limited circumstances.[7.23]

CHAPTER 8

# The Strongest Case Against This Insight

*The best objections to the credit-cycle thesis are serious. Each deserves to be stated at full strength before it is answered, and three of them land: one entirely, two in part.*

An argument that has not been tested against its best opposition is a mood. This chapter sets out the case that the AI build-out is not a credit cycle in any dangerous sense, made as its most capable defenders would make it. I have tried to put it more strongly than it is usually put. After each objection I give my answer, and where the objection is right, I say so.

## Objection one: the borrowers are the strongest companies in history

The telecom build-out of the late 1990s was financed by companies that had little revenue, no profits and junk ratings: competitive local exchange carriers, long-haul fiber start-ups, wholesale carriers whose business plans assumed that internet traffic would double every few months. The AI build-out is financed overwhelmingly by Microsoft, Alphabet, Amazon and Meta. At their latest balance sheets the four held about $535 billion of cash and short-term investments, $265 billion of it at Alphabet alone.[8.1] Microsoft carries the highest credit rating available to a corporation. These companies could fund a large part of their AI spending from cash on hand if they chose to. The comparison with 2001 is a category error.

My answer is that this is true of the companies and less true of the claims. The question for a lender is not how strong Meta is, but what the lender is owed by Meta, under which conditions, and for how long. A bondholder in a project vehicle that owns a data center leased to Meta holds a claim on the lease. If the lease has an initial term shorter than the bond, the bondholder depends on a renewal decision that Meta will make in light of the economics at the time, supported by a residual value guarantee whose terms set the floor. The tenant's balance sheet stands behind the obligations it has signed, not behind the ones it has carefully avoided signing.

The objection is also weaker at the margin than at the center. Alphabet, Amazon and Meta account for most of the rise in reported corporate debt, but they borrow at investment-grade spreads. The riskiest borrowing of 2025 and 2026 has come from the companies with less cash and more leverage: Oracle, which S&P cut in July 2026 to BBB−, the lowest investment-grade

rating;[8.2] the neocloud operators, whose debt trades at high-yield spreads; and the model developers, whose revenue is a fraction of their commitments. A credit cycle does not need the strongest borrowers to fail. It needs enough of the marginal ones to fail at the same time.

## Objection two: demand is contracted, not hoped for

Unlike the fiber networks of 2000, built on the speculation that someone would one day need the capacity, much of today's AI capacity is sold before it is built. Cloud providers report contracted backlogs measured in hundreds of billions of dollars: Microsoft's commercial remaining performance obligations were $678 billion at the end of June 2026, Oracle's $664 billion at the end of August, Google Cloud's backlog $561 billion at the end of September, and Amazon Web Services reported about $496 billion of unrecognized performance obligations at the end of June.[8.3] Accelerators are fully utilized; providers say they are capacity-constrained. The financing follows signed demand.

This is the objection I take most seriously, and it is partly right. Contracted demand is better than speculative demand. But a contract is only as good as the counterparty's capacity to pay, and the largest contracts in the AI backlog are with a small number of model developers whose own revenue does not yet cover their obligations. Microsoft's own disclosure makes the point: its commercial obligations grew 84 percent in the year to June 2026, but only 25 percent excluding OpenAI. About half of Oracle's obligations have been reported to relate to the same customer.[8.4] When the Financial Times reported on October 8, 2026, that OpenAI's annualized revenue was close to $50 billion, below the figure of around $70 billion that had circulated, semiconductor stocks extended the decline that became their longest losing streak since 2008.[8.5] The backlog of a cloud provider can be the liability of a customer that must itself raise capital to honor it. Contracted demand, in that case, is a promise financed by the next promise.

## Objection three: the debt is small relative to the value being created

The market value of the companies at the center of the AI build-out runs to many trillions of dollars. Even the largest estimates of AI-related borrowing are small relative to that equity cushion and to the size of the U.S. credit market. A loss of a few hundred billion dollars on infrastructure credit would be painful for its holders, but it would not threaten the financial system the way mortgage losses did in 2008.

Aggregate ratios are the wrong measure of a credit problem. What matters is where the losses would sit relative to the capital of the institutions that hold them. A loss that is small relative to the market capitalization of Alphabet can be large relative to the surplus of a life insurer that concentrated its private-credit allocation in data-center paper, or relative to the equity of a business development company with leverage of its own. In 2007 subprime mortgages were also small relative to U.S. household wealth. The damage came from where they were held and how they were funded.

I accept the core of this objection in one respect. The AI credit cycle, as documented here, is unlikely by itself to produce a 2008-style banking crisis, because the banks are not the principal holders and deposits are not the principal funding. The losses are more likely to be absorbed slowly by insurers, funds and their beneficiaries. That makes the episode less dramatic. It does not make it less costly for the people who bear it.

## Objection four: sophisticated investors priced the risk

The buyers of AI infrastructure debt are among the most sophisticated credit investors in the world. They negotiated the structures, modeled the residual values and demanded spreads above those of the tenants' own bonds. If they accepted the risk, they were paid for it.

The sophisticated investor is usually an intermediary. A manager that buys a data-center bond for an insurance general account, a pension mandate or a retail credit fund earns fees on the assets and passes the outcome to its clients. That is not a criticism of the managers; it is a description of who bears the result. The spread compensates the portfolio, but the portfolio belongs to annuity holders and pensioners who did not negotiate the structure and cannot read it. Pricing a risk correctly and placing it with the right holder are different achievements.

## Objection five: the assets will be used even if the investors lose

Even in the worst case, the data centers will not disappear. They will be bought by someone who can operate them, as the fiber was. The economy keeps the infrastructure.

This objection is entirely correct, and it is the reason this Insight is about finance rather than technology. The telecom bust left the United States with a national fiber network that its later owners kept in service; the creditors who financed it absorbed most of the loss. The survival of the asset is not evidence that the financing was sound. It is evidence that the loss was transferred from the people who financed the asset to the people who bought it cheaply. That transfer is exactly what I mean by allocation.

## Objection six: this time the interest-rate environment is benign

The economy is growing. The Federal Reserve has raised rates modestly, from a restrictive but not punitive level, and the real economy has absorbed it. Default rates in investment-grade credit remain low.

The interest-rate backdrop is the part of the objection that has aged worst in 2026. When most AI infrastructure debt was structured, the market expected the Federal Reserve to cut rates through 2026. Instead it raised them in September, the 10-year Treasury yield moved above 5 percent, and an oil shock linked to the war with Iran pushed headline inflation back above 3.5

percent.[8.6] Structures that were sound at a 4 percent long rate are tighter at 5. Refinancing is the escape route of every credit structure that depends on future cash flows, and in 2026 that route became more expensive.

## What survives the objections

One objection is entirely correct: the assets will survive, and that is precisely why the question is who absorbs the loss on the way. Two are partly right. Contracted demand is better than speculative demand, and the banking system is not the principal holder of the risk. Both narrow the thesis without refuting it. The AI build-out is unlikely to produce a banking panic. It is likely to produce a slow, unevenly distributed credit loss, borne in large part by institutions whose beneficiaries never chose the exposure. That is a smaller event than 2008 and a different one. It is still the event that the bubble debate is not looking at.

CHAPTER 9

# Three Paths to 2028

*A credit cycle can end in absorption, in a slow repricing at the edges, or in a disorderly allocation of losses. The indicators that separate the three are observable now.*

Scenarios are useful only if they are different enough to change a decision and specific enough to be recognized when they arrive. The three paths below are not forecasts with probabilities attached to two decimal places. They are descriptions of how the same set of contracts behaves under three sets of conditions, with the observations that would tell a reader which one is unfolding. I give my own judgment about their relative likelihood at the end, and I label it as judgment.[9.1]

All three start from the position documented in the preceding chapters at the close of October 2026: capital expenditure by the five largest spenders absorbing almost all the cash their businesses generate (96 percent of operating cash flow in the first half of 2026) and exceeding it at Alphabet, Amazon and Oracle; a growing stock of obligations in leases not yet commenced, purchase commitments and project vehicles; collateral whose economic life is uncertain and whose rental value has already fallen by three quarters once, financed in places by debt that runs longer than the contracts behind it; a 10-year Treasury yield around 5 percent; a Federal Reserve that raised its policy rate in September and has left a further increase on the table; and a creditor base weighted toward institutions that hold to maturity and cannot easily leave.

## Path one: absorption

In the first path, the revenue arrives. AI-native companies grow sales fast enough to pay their compute bills from operating income rather than from new equity and debt. Enterprise adoption moves from pilots to budgeted spending, in the way my October 17 article described as the test of accepted outcomes rather than generated output.[9.2] Hyperscaler cloud revenue grows faster than depreciation, and capital expenditure, after peaking in 2026 or 2027, settles at a level that operating cash flow can fund.

In this world the credit structures do what their designers intended. Lease payments are made. Residual value guarantees are never called. Data-center bonds that traded wide of issuance during the autumn of 2026 recover. Private credit funds report steady cash interest. The insurers that bought long-dated paper earn the spread they were promised.

Absorption does not mean nobody loses. Even in this path, some neocloud operators, which financed GPUs at high cost to rent them to a small number of customers, are likely to be consolidated, refinanced on worse terms or acquired by larger players at a discount, because the market for compute rental becomes more competitive as supply catches up. Equity investors who paid for growth at any price may earn poor returns from high starting valuations. But the losses stay where they were chosen.

What I would need to see to believe this path is unfolding:

- Hyperscalers funding capital expenditure plus lease principal from operating cash flow for four consecutive quarters, with no net increase in borrowing.
- Reported AI revenue at the largest model developers growing faster than their disclosed compute commitments, so that commitments fall as a multiple of revenue.
- Spreads on data-center bonds and asset-backed securities returning to their issuance levels.
- Rental prices for current-generation accelerators stabilizing rather than following the steep decline seen in earlier generations.

## Path two: rolling repricing at the edges

In the second path, the revenue arrives, but more slowly and more unevenly than the financing assumed. The largest platforms continue to grow and continue to spend, but they begin to discriminate. Capital expenditure guidance flattens. New leases are signed on shorter initial terms. Some sites are delayed. The marginal buyer of compute—start-ups and model developers financed by venture capital—finds equity harder to raise in a world where the 10-year Treasury yields about 5 percent.

The stress appears first where leverage is highest and the customer base is narrowest. Neocloud operators breach covenants or negotiate waivers. Loans secured by older accelerators are extended, with interest added to principal rather than paid in cash. Project vehicles whose tenant has an option to leave at the end of an initial term face renewal negotiations from a position of weakness. Rating agencies move from stable to negative outlooks on a handful of issuers. Spreads widen, not across the market, but for the specific paper whose repayment depends on AI demand rather than on the general credit of a diversified company.

This path is the one most likely to be invisible to the public for longest. Its losses are recognized gradually, through valuation marks that lag market prices, through payment-in-kind interest that inflates reported income while cash collections weaken, and through restructurings negotiated privately. An annuity holder or a participant in a private credit fund may learn about it, if at all, through a lower crediting rate, a gated redemption or a footnote in an insurer's statutory filing two years later.

What I would watch for:

- The share of payment-in-kind income at business development companies with AI and data-center exposure, and the volume of loan amendments that extend maturity or capitalize interest.
- Covenant waivers or restructurings at GPU-financed operators.
- Shortening of initial lease terms in new hyperscaler data-center leases, or the replacement of long leases with shorter capacity contracts.
- Rating-outlook changes on data-center asset-backed securities and on the most indebted infrastructure borrowers.
- Redemption limits being reached at non-traded private credit vehicles.

## Path three: disorderly allocation

In the third path, a revenue disappointment and a financing shock arrive together. The trigger could be any of several events: a model developer that cannot raise the next round on which its compute commitments depend; a sharp cut in capital expenditure guidance by one hyperscaler that resets expectations for the whole supply chain; a further rise in long-term interest rates driven by inflation that the oil shock has embedded; or a technology step that makes a large installed base of accelerators uneconomic sooner than lenders assumed.

What makes the path disorderly is not the size of the initial loss but the interaction between the structures documented in this Insight. Vendor backstops become live obligations at the moment the vendor's own revenue falls. Residual value guarantees are tested at the moment the residual values are lowest. Lenders that hold GPUs as collateral try to sell them into a market where everyone is selling the same thing. Insurers and private credit funds that marked positions at model values face the choice between recognizing losses and restricting redemptions. Banks that lent to those funds against the same collateral tighten terms simultaneously.

In this world the strongest companies are likely to emerge stronger. Hyperscalers with cash can buy distressed data centers and compute capacity at a fraction of their cost, exactly as the survivors of the telecom bust bought fiber networks for cents on the dollar. That is the uncomfortable symmetry at the center of this Insight. The technology survives. The platforms survive. The capital that financed the build-out on the expectation of contracted cash flows absorbs the loss, and the platforms acquire the assets at the price the loss implies.

The signals of this path are louder and later: a failed financing round at a major model developer; a hyperscaler canceling or deferring commenced projects rather than unstarted ones; a jump in default protection costs on several AI-linked issuers at once; a public statement by an insurance regulator about concentration in data-center assets; forced sales of accelerators at prices that reset collateral values across the market.

## The test I set for myself

An argument about a credit cycle should be judged by what it would take to refute it. This one is wrong if, by the end of 2027, the following are true together:

> **WHAT WOULD PROVE THIS INSIGHT WRONG**
>
> 1. The five largest spenders fund capital expenditure plus lease principal payments out of operating cash flow, with no net increase in borrowing over four consecutive quarters.
> 2. Spreads on data-center bonds and asset-backed securities return to their levels at issuance.
> 3. No insurer or private credit vehicle reports material markdowns, rising payment-in-kind income or amendments concentrated in data-center or GPU-backed loans.
> 4. Disclosed off-balance-sheet commitments—leases not yet commenced plus purchase obligations—fall as a share of contracted revenue at the companies that carry them.

If all four hold, the AI build-out will have behaved like a well-financed infrastructure cycle rather than a credit cycle, and the people who financed it will have been right to do so. I will say so in writing.

## My judgment

As of October 29, 2026, I regard path two as the most likely, path one as possible, and path three as a tail that has become fatter over the past six months. The reason for weighting the second path is structural rather than emotional. The financing has been arranged so that the strongest balance sheets hold the option to adjust and the weaker vehicles hold the obligation to pay. In such arrangements the adjustment does not need a crash to happen. It happens a contract at a time, at renewal, at refinancing and at the moment a guarantee is tested. That is why the most important indicators in this chapter are not stock prices. They are the terms of the next lease, the cash interest received by lenders, and the price at which a used accelerator changes hands.

CHAPTER 10

# What to Do Now—and What I Will Track

*The argument changes decisions for five kinds of reader. None of them requires a prediction about the next quarter. All of them require knowing which side of a contract you are on.*

The practical value of a thesis about credit is that it directs attention to terms rather than to prices. The suggestions below are general. They describe questions worth asking and features worth checking; they are not recommendations to buy or sell any security, and the right decision for any individual depends on circumstances this Insight cannot know.

## For savers who own annuities or insurance savings products

An annuity is a claim on an insurer's general account, and the general account is a portfolio. In the past decade a growing share of that portfolio at many insurers, and particularly at insurers owned by or allied with private-equity managers, has moved into privately placed and asset-backed credit originated by affiliated managers. Some of that credit now finances data centers and AI infrastructure. That is not a reason to surrender a policy, which can carry penalties and tax consequences of its own. It is a reason to read.

Three questions are worth putting to an adviser or the insurer. What share of the general account is in privately placed or structured credit, and how has it changed since 2022? How much is originated by an affiliate of the insurer's owner? And what is the exposure to data-center, digital-infrastructure and technology lending specifically? Insurers file detailed statutory statements with their state regulators; rating-agency reports summarize the same information. A saver who cannot get an answer has learned something about the product.

## For retirement savers in index funds

The concentration of the U.S. equity market in a small number of AI-linked companies means that a broad index fund is no longer a neutral bet on the economy. A saver who also holds an annuity backed by data-center debt, works for a company whose largest customer is an AI developer, and owns a market-weighted index fund has built three exposures to the same out-

come without choosing any of them deliberately. The first step is simply to add them up. Diversification is a question about what drives losses, not about how many line items appear on a statement.

## For entrepreneurs who sell to, or buy from, AI companies

Many businesses now sit inside the AI supply chain as contractors, software vendors, landlords, power suppliers or service providers. The credit cycle described here travels through them as payment terms. In *The companies that became banks without choosing to*, published on Substack on October 7, 2026, I described how a strong buyer that stretches its payables makes its suppliers finance it.[10.1] The same mechanism applies when the buyer is a data-center developer whose own funding depends on the next bond issue.

The checks are straightforward and often neglected. Who is the legal counterparty on the contract—the parent with the strong balance sheet, or a project company? Is there a parent guarantee, and what are its limits? What happens to the contract if the project is delayed or canceled? How concentrated is revenue in one AI customer? An entrepreneur who would never lend a customer twelve months of revenue unsecured can end up doing exactly that through extended payment terms and capacity commitments.

## For investors in credit

For a credit investor, the useful distinctions are the ones that the label "AI exposure" hides. A bond issued by a diversified, investment-grade technology company is a claim on that company. A bond issued by a project vehicle that owns a building leased to the same company is a claim on a lease, whose value depends on its term, its renewal options, any residual value guarantee and the conditions attached to it. A loan secured by accelerators is a claim on hardware whose economic life is short and whose resale market is thin. These three instruments can carry similar ratings and similar spreads at issuance. They behave very differently when the tenant reconsiders.

The questions that matter are the ones a finance director asks of any commitment. Does the debt amortize faster than the collateral loses value? Does the lease term cover the bond's maturity, or does the bond depend on a renewal? Who holds the option to leave, and at what cost? Is the yield compensating for credit risk, or for complexity and illiquidity that the investor may need to bear for longer than expected? In my October 24 article on private credit I suggested six indicators that deserve more attention than any headline about assets under management: cash interest received, maintenance-adjusted borrower cash flow, the economic terms of restructurings, leverage at each layer, redemption obligations and concentrated exposure to common sponsors or sectors. They apply with particular force here.[10.2]

## For policymakers and supervisors

Three changes would reduce the risk that losses land unseen on the people least able to bear them.

The first is disclosure. Leases signed but not yet commenced, unconditional purchase obligations for chips and capacity, residual value guarantees and vendor backstops are economically debt-like for the companies that sign them. They are disclosed today in footnotes, in different formats and at different levels of detail. A standardized table, in the body of the financial statements, would let investors and rating agencies compare commitments across companies without reconstructing them.

The second is insurance supervision. Concentration limits and capital charges for privately rated and affiliate-originated credit were designed before data-center and GPU lending became a material asset class. Supervisors should know, and publish in aggregate, how much of the life-insurance general account finances AI infrastructure, through which structures, and with what ratings.

The third is retail access. Policy in the United States has moved toward opening private markets, including private credit, to retirement savers. That may broaden opportunity. It also moves illiquid, model-valued credit into the accounts of people who are least able to monitor it. Liquidity terms, valuation practices and fee disclosure for those products should be designed on the assumption that the next stress will arrive while they are being sold.

## The indicators I will track

The dashboard below is the one I will use to judge which of the three paths in Chapter 9 is unfolding. Each indicator is public, or published regularly by an official body, a rating agency or the companies themselves.

## Figure 10.1 · The dashboard: what I will watch, where it is published, and what would move my judgment

| Indicator | Where it is published | Reading at the cutoff | Points to path two or three | Points to path one |
|---|---|---|---|---|
| Capital expenditure ÷ operating cash flow, five largest spenders | Forms 10-Q, quarterly | From 0.66x (Microsoft) to 1.42x (Oracle), 2026 to date | Above 1.0x at three or more of the five through 2027 | Capex plus lease principal paid from cash for four quarters running |
| Leases signed but not yet commenced | Lease notes in Forms 10-Q and 10-K | About $1.2 trillion, 2.4 times reported debt | Growing faster than reported debt | Leases not yet commenced plus purchase obligations falling as a share of contracted revenue |
| New data-center vehicle bonds | New-issue terms; trade reports | Sopaipilla 7.534% at issue (July); Beignet 7.55% (September 28), just under 92 cents mid-October (press-reported) | New deals at or above 8%, or withdrawn | Spreads back to issuance levels |
| GPU-backed loans | Forms 8-K; loan-market reports | SOFR + 2.25 (Meta contract, A3) to SOFR + 6.50 (Volta, yield above 11%); Lambda 6.78% fixed | Waivers, maturity extensions, interest paid in kind | Refinancing at lower spreads |
| Neocloud bonds | Trade data | CoreWeave 2031 notes near a 16% yield | Distressed exchange or default | Yields back below 10% |
| High-yield and investment-grade spreads | ICE BofA indices, daily | 3.18% and 0.88% (October 27) | High yield above 4.5%, with technology issuers leading | Stable near current levels |
| Life insurers' AI-ecosystem debt | Moody's analysis of statutory filings | $85.2 billion at mid-2026, up 24% in six months | Continued growth with a rising affiliate-originated or below-investment-grade share | Growth slows as a share of general accounts |
| Redemptions at non-traded private credit funds | Fund filings; Robert A. Stanger & Co., quarterly | Requests above the 5% quarterly limit at several funds, third quarter of 2026 | Gates, prorated payouts or markdowns of net asset value | Requests back below limits |
| BDC non-accruals and payment-in-kind income | Raymond James; BDC filings, quarterly | Public BDCs: 4.2% of cost; PIK about 8% of income (second quarter of 2026) | Non-accruals above 5% with rising PIK | Both falling |
| Bank loans to non-depository financial institutions | Federal Reserve H.8, weekly | $2,106 billion (week of October 14) | Abrupt slowdown with tighter terms | Steady growth without stress |
| H100 rental price | Silicon Data and SemiAnalysis indices | About $2.77 (Silicon Data/CME reference, October 25); $3.28 in early September (press-reported) | Return toward the SemiAnalysis one-year contract low of $1.70 (October 2025) | Stable above $2.50 |
| Policy rate and long rate | FOMC; U.S. Treasury par yields, daily | 3.75–4.00%; 10-year at 5.05% (October 28) | Further increases; 10-year above its October peak of 5.31% | Cuts as inflation falls; 10-year below 4.5% |
| Vendor and tenant guarantees | Nvidia, Broadcom and Meta filings | Nvidia up to $108.5 billion; Meta residual value guarantees up to $41.5 billion; Broadcom up to about $43 billion | First payment, or a liability recognized | Guarantees expire unused |

Source: as cited in Chapters 1 to 9 and their notes. Thresholds are the author's judgment and are stated in advance so that they can be checked.

## A final word

The people who built the AI infrastructure of the past three years have created something real, and some of them will be proven right in ways that are hard to imagine today. That does not settle who should bear the cost of the parts that turn out to be wrong. In the financing structures of 2026, the answer has been arranged in advance: the platforms hold the options, the vehicles hold the obligations, and the savers who stand behind the vehicles hold the consequences. A financial system is judged by whether that allocation is visible before the losses arrive. This Insight is an attempt to make it visible.

METHODOLOGY

# How This Insight Was Built

**Research cutoff.** Market prices, yields and company disclosures run to the close of October 28 or 29, 2026, as stated in each note. Later data and revisions are not reflected.

**Sources.** Company figures come from filings with the U.S. Securities and Exchange Commission (Forms 10-K, 10-Q, 8-K and S-1), earnings releases and earnings-call transcripts. Macroeconomic and market series come from the U.S. Treasury, the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Federal Reserve and the Census Bureau. Historical material on the telecommunications cycle comes from official statistics, testimony and published research. Where a figure is available only through press reporting, the note names the outlet and identifies the item as press-reported. Where a filing's notes could not be retrieved in full, the figure is taken from a secondary report of the filing, identified as such in the notes. Several sources were retrieved through data services, including Bigdata.com, Financial Modeling Prep and Alpha Vantage; in those cases the note names the original publisher.

**Definitions.** "Capital expenditure" means purchases of property and equipment as reported in each company's cash-flow statement; where companies also acquire assets under finance leases, those amounts are identified separately. "Free cash flow" means operating cash flow minus capital expenditure, calculated by FINTECH SCB from reported figures unless the company's own measure is cited. Fiscal quarters of Microsoft (year ending June 30) and Oracle (May 31) are mapped to the calendar quarter in which they end.

**Estimates and illustrations.** Third-party estimates, such as aggregate financing gaps or off-balance-sheet totals compiled by banks and rating agencies, are attributed to their authors and are not presented as observed data. Constructed examples are labeled as illustrations, and their assumptions are stated in the text.

**What this Insight does not do.** It does not value any security, recommend any transaction, or assess the solvency of any named company. It describes contractual structures and public data, and draws an argument from them that the reader is invited to test against the indicators in Chapter 10.

**Independent review.** Before layout, every figure and attribution in the text was checked against the research team's evidence files and underlying data by a reviewer who did not draft the text. Statements that could not be supported were corrected, qualified or removed.

# Notes and Sources

Each note gives the source of a figure or claim, with publication or release date. Where a number comes from a data service, the note names the original publisher. Press-reported items are identified as such. URLs were checked at the research cutoff.

## Introduction

0.1 Meta Platforms, Inc., third-quarter 2026 earnings release (Form 8-K, Exhibit 99.1), October 21, 2026: revenue $64,601 million; free cash flow as defined by the company (operating cash flow less purchases of property and equipment and principal payments on finance leases) of −$2,120 million; 2026 capital expenditure outlook of $135–145 billion including finance-lease principal. Preliminary Information Statement (Schedule 14C), October 2026, on the nonvoting Class C common stock.

0.2 Benzinga, October 23, 2026 (via Bigdata.com). Index moves refer to the session of October 22, 2026.

0.3 NVIDIA, press release of August 10, 2026, announcing memoranda of understanding with the six firms; the backstop of up to $125 billion was stated by Jensen Huang on X, as reported by Reuters, August 10, 2026. See Chapter 2, note 2.18.

0.4 Roberto Balbino, *Principles of Political Economy* (FINTECH SCB, first edition, October 2026), Book I, Chapter 5, "Productivity, Measurement and the Adoption J-Curve."

0.5 Roberto Balbino, "The AI Productivity Reckoning: Who Captures the Value When Intelligence Gets Cheaper?," Substack, October 17, 2026. robertobalbinoofficial.substack.com/p/the-ai-productivity-reckoning-who

0.6 Roberto Balbino, "The Rules Behind Private Credit," Substack, October 24, 2026. robertobalbinoofficial.substack.com/p/the-rules-behind-private-credit

## Chapter 1

1.1 Alphabet Inc., third-quarter 2026 earnings call, October 28, 2026 (transcript as posted by MarketBeat); Form 10-Q for the quarter ended September 30, 2026. Operating cash flow $42,290 million; purchases of property and equipment $51,355 million.

1.2 Alphabet Inc., Form 10-Q for the quarter ended June 30, 2026 (June 4, 2026 underwritten offering and concurrent private placement; 6.25% mandatory convertible preferred stock); repurchases of $45.7 billion in calendar 2025 from SEC XBRL cash-flow data.

1.3 Alphabet Inc., Forms 10-K for 2024 and 10-Q for the quarter ended September 30, 2026 (long-term debt $10,883 million and $125,102 million); cash, cash equivalents and current marketable securities $265,098 million at September 30, 2026.

1.4 FINTECH SCB calculations from quarterly cash-flow statements of Microsoft, Alphabet, Amazon, Meta and Oracle (SEC XBRL via Financial Modeling Prep and Alpha Vantage; latest quarters cross-checked against Forms 10-Q). "Like-for-like" first halves compare quarters ending January–June in each year; for Oracle, the quarters ended February and May.

1.5 Microsoft Corporation, Form 10-Q for the quarter ended September 30, 2026, filed October 28, 2026; Note 5 (AAA long-term unsecured rating).

1.6 Meta Platforms, Inc., third-quarter 2026 earnings release (Form 8-K, Exhibit 99.1), October 21, 2026, and Form 10-Q for the quarter ended September 30, 2026, Note 9.

1.7 Amazon.com, Inc., Form 10-Q for the quarter ended June 30, 2026, filed July 31, 2026; first-half 2026 operating cash flow minus gross purchases of property and equipment calculated by FINTECH SCB.

1.8 Oracle Corporation, Form 10-Q for the quarter ended August 31, 2026, and first-quarter fiscal 2027 earnings call (September 2026); debt history from prior Forms 10-Q.

1.9 FINTECH SCB aggregation of reported debt excluding lease liabilities: $225.9 billion at end-2024 (Oracle at November 30, 2024) and $495.7 billion at the latest balance sheets.

1.10 Bloomberg data as reported by Yicai, October 2026 (via Bigdata.com). Press-reported.

1.11 Pimco, as reported by Yicai, September 23, 2026 (via Bigdata.com). Press-reported.

1.12 Bank of England, Financial Stability Report, July 2026; International Monetary Fund, Global Financial Stability Report, October 2026, Chapter 1.

1.13 Meta Platforms, Inc., Preliminary Information Statement (Schedule 14C), October 2026 (new nonvoting Class C common stock; charter effective January 19, 2027); remarks by the chief financial officer on the October 21, 2026 earnings call as reported by TIKR.

1.14 SEC XBRL cash-flow data (Financial Modeling Prep) for Alphabet and Meta, 2025 and 2026 year to date.

1.15 Alphabet earnings call, October 28, 2026 (2026 range reaffirmed); Amazon second-quarter 2026 earnings call, July 30, 2026, as reported by TIKR; Meta earnings release, October 21, 2026; Microsoft fourth-quarter fiscal 2026 earnings call, July 29, 2026; Oracle first-quarter fiscal 2027 earnings call, September 2026.

1.16 S&P Global Ratings, "Credit Outlook For Hyperscalers: A Temperature Check," September 3, 2026, as summarized on the S&P website and in press coverage (Motley Fool, September 6, 2026; MonitorDaily). The full report was not reviewed.

1.17 Microsoft Corporation, fourth-quarter fiscal 2026 earnings call, July 29, 2026 (remarks of Amy Hood, chief financial officer).

1.18 Meta Platforms Form 10-Q, September 30, 2026, Note 10 (leases not yet commenced about $355.73 billion; non-cancelable contractual commitments $454.52 billion); Oracle Form 10-Q, August 31, 2026, Note 6 ($288 billion; unconditional purchase obligations $34.15 billion); Amazon Form 10-Q, June 30, 2026, Note 4 (schedule summing to $137.2 billion); Alphabet Form 10-Q, June 30, 2026, Notes 4 and 10 ($85.2 billion plus a short-term lease of about $5.8 billion; purchase and other commitments $707.0 billion); Microsoft Form 10-K for fiscal 2026, lease note, as reported by Bloomberg Government and btw.media ($329.1 billion), with purchase commitments of $194.1 billion as tabulated by sec-api.io. Amazon's purchase obligations were not verified.

1.19 CoreWeave, Inc., second-quarter 2026 earnings call (August 2026) and SEC XBRL data via Alpha Vantage.

1.20 FactSet data as reported by CNBC, October 22, 2026; S&P Global Market Intelligence data as reported by Benzinga, October 26–27, 2026.

## Chapter 2

2.1 Meta Platforms, Inc., Form 10-Q for the quarter ended September 30, 2026, filed October 22, 2026, note on variable interest entities (maximum exposure to loss $68,404 million, of which maximum residual value guarantees $41,493 million; December 31, 2025: $45,952 million and $28,091 million). sec.gov/Archives/edgar/data/1326801/000162828026066773/meta-20260930.htm. The statement that RVG payments are not probable and that no liability has been recorded is from Meta's Form 10-K for fiscal 2025, filed January 29, 2026.

2.2 Meta Platforms, Form 10-K for fiscal 2025, Report of Independent Registered Public Accounting Firm (Ernst & Young LLP), critical audit matter on the consolidation assessment of the Hyperion joint venture. sec.gov/Archives/edgar/data/1326801/000162828026003942/meta-20251231.htm

2.3 Moody's Ratings opinion of February 23, 2026, as reported by IFR, "Moody's opinion threatens to derail off-balance sheet data centre deals." prod.ifre.com/bonds/2390941

2.4 Morgan Stanley equity research (Todd Castagno), August 25, 2026, as reported by Bloomberg Tax, "AI-related off-balance-sheet commitments top $3 trillion," and Axios, August 27, 2026. Figures are Morgan Stanley's estimates.

2.5 Bloomberg, as reported by The Fly and Alliance News, September 24, 2026 (via Bigdata.com). Press-reported; the notice itself is not public.

2.6 Financial Times, as reported by Reuters, September 18, 2026; Nikkei, October 2, 2026 (via Bigdata.com). Press-reported quotations.

2.7 Meta Platforms newsroom, "Meta and Blue Owl Capital to develop Hyperion data center," October 21, 2025; IFR Awards, "Financing package: Blue Owl Capital/Beignet Investor's US$27.3bn 23.6-year bond." Pimco's anchor role is stated by Meta; the size of Pimco's allocation (about $18 billion) is press-reported (Wall Street Journal, November 2025).

2.8 Meta Platforms, Form 10-K for fiscal 2025: 20% equity interest; initial four-year lease terms renewable up to twenty years; leases commence in 2029; aggregate initial lease commitment about $12.31 billion; RVG aggregate threshold about $28 billion, decreasing over time, applicable during the first sixteen years of operations.

2.9 S&P Global Ratings treatment as described in Reuters (Jamie McGeever), September 28–29, 2026, and in S&P's ratings commentary at issuance (via Bigdata.com).

2.10 Reuters (Jamie McGeever), column of September 28–29, 2026: price about 91 cents, yield 7.55%, about 230 basis points over Treasuries; CRE Daily, October 23, 2025, on early trading above 110 cents. Press-reported prices.

2.11 GlobalCapital, July 29, 2026: Sopaipilla Investor, $12.274 billion, 7.534% notes due November 2048, priced at T+287.5 bp, rated A+ (S&P) and AA- (Fitch). Bloomberg reported the size as about $12.5 billion; IFR reported $12.547 billion due June 2048 at a 7.50 percent yield.

2.12 Bloomberg, October 2025, as reported by GuruFocus/TradingView. Press-reported; primary terms not public.

2.13 Apollo Global Management, press release, January 7, 2026.

2.14 SpaceX investor relations release and Form 8-K, October 26, 2026; tranche terms as reported by Yahoo Finance/Morningstar, October 26, 2026.

2.15 CoreWeave, Inc., Forms 8-K of March 31, May 18 and August 10, 2026; Form 10-K for fiscal 2025, filed March 2, 2026. Contract and debt tenors for DDTL 5.5 as described in Moody's Ratings, sector comment, October 20, 2026.

2.16 Moody's Ratings, "Risk levels vary for project finance transactions connected to CoreWeave," October 20, 2026. moodys.com/research/doc–PBC_1499791

2.17 NVIDIA Corporation, Form 10-Q for the quarter ended July 26, 2026, filed August 26, 2026, notes on guarantees and commitments. sec.gov/Archives/edgar/data/1045810/000104581026000075/nvda-20260726.htm

2.18 NVIDIA, press release, August 10, 2026, "NVIDIA partners with Apollo, BlackRock, Blackstone, Brookfield, Goldman Sachs and KKR to establish AI compute infrastructure financing platforms"; Jensen Huang's statement on X as reported by Reuters, August 10, 2026; Nvidia Form 10-Q (note 2.17) on the non-binding nature of the memoranda.

2.19 Broadcom Inc., Form 8-K, filed October 27, 2026. sec.gov/Archives/edgar/data/1730168/000119312526434271/d148323d8k.htm; joint announcement of October 26, 2026, as reported by MT Newswires.

2.20 Anthropic, PBC, Form S-1 registration statement, filed October 26, 2026, sections on lease arrangements and the Infrastructure Partner 2026 note purchase agreement (via Bigdata.com).

2.21 U.S. Securities and Exchange Commission, Division of Corporation Finance, staff letter "Certain Data Center Securitizations," July 29, 2026, in response to Latham & Watkins LLP request of July 23, 2026. sec.gov/rules-regulations/no-action-interpretive-exemptive-letters/division-corporation-finance-no-action/certain-data-center-securitizations-072926

2.22 Alston & Bird, "Data center securitizations and SEC regulations," August 3, 2026. alston.com/en/insights/publications/2026/08/data-center-securitizations-sec-regulations

## Chapter 3

3.1 Financial Times (George Hammond, Stephen Morris), October 8, 2026, as reported by The Fly and MT Newswires (via Bigdata.com); CNBC confirmed a figure of about $50 billion against a widely reported $68 billion. Press-reported.

3.2 Finwire, October 9, 2026; closing prices for October 8, 2026, from Financial Modeling Prep and Alpha Vantage; Benzinga/PR Newswire, "AI Revenue Questions Pull Semiconductor Stocks Off October Highs," October 10, 2026 (via Bigdata.com).

3.3 Financial Times, September 19–20, 2026, citing a July 2026 OpenAI presentation, as reported by MT Newswires and The Fly (via Bigdata.com). Company projections as reported; not audited figures.

3.4 NVIDIA Corporation, Form 10-Q for the quarter ended July 26, 2026, filed August 26, 2026 (guarantees); Moody's Ratings, Sector In-Depth, June 4, 2026, describing the CoreWeave capacity agreement of September 2025 (up to $6.3 billion through April 2032); Jensen Huang, Morgan Stanley Technology, Media & Telecom conference, March 4, 2026 (investments in OpenAI and Anthropic).

3.5 Broadcom Inc., Form 8-K, October 27, 2026; Anthropic, PBC, Form S-1, filed October 26, 2026.

3.6 Press-reported (Motley Fool, October 25, 2026, summarizing the AMD–OpenAI agreement of October 2025).

3.7 Cerebras Systems, Form 10-Q for the second quarter of 2026 (via Quartr/Bigdata.com).

3.8 Oracle Corporation, Form 10-K for the fiscal year ended May 31, 2026: notes payable and other borrowings $130,105 million versus $92,917 million; S&P Global Ratings downgrade to BBB- on July 9, 2026, press-reported (Eastmoney, July 10, 2026); Moody's Ratings, Oracle senior unsecured Baa2, outlook negative, affirmed February 2, 2026 (moodys.com). The $300 billion OpenAI contract is press-reported; the OpenAI share of remaining performance obligations is S&P Global Ratings' estimate (July 2026), as reported by ppc.land and iTiger. Borrowings are as presented in the 10-K note; Chapter 1 uses XBRL carrying amounts of $92.6 billion and $129.5 billion.

3.9 Oracle Corporation, Form 8-K, October 28, 2026 (investor day materials). sec.gov/Archives/edgar/data/1341439/000119312526435853/d75538d8k.htm

3.10 Treasury & Risk, "Rebuilding credit and credibility at Lucent," January 1, 2002, citing Lucent filings (portfolio of $8.1 billion at September 30, 2000).

3.11 eWeek, "Vendor Financing Backfires," April 23, 2001 (Nortel commitments of $4.1 billion at end-2000); Light Reading, "Vendor Financing," December 6, 2000 (Cisco commitments of $2.5 billion), both citing company filings.

3.12 Lucent Technologies Inc., Form 10-K for the fiscal year ended September 30, 2001: provision for uncollectibles and customer financings of $2,249 million (FY2001), $505 million (FY2000), $66 million (FY1999). sec.gov/Archives/edgar/data/1006240/000095011701501896/a31752.txt

3.13 Lucent Technologies Inc., Form 10-Q for the quarter ended December 31, 2001 (commitments of $2.5 billion); Lucent Form 10-K for fiscal 2001 (Winstar damages sought in excess of $10 billion); eWeek, April 23, 2001 (Winstar owed about $2 billion).

3.14 S&P Global Market Intelligence data as reported by Benzinga, October 26–27, 2026 (via Bigdata.com).

## Chapter 4

4.1 Microsoft Form 10-K for fiscal 2023, filed July 27, 2023 (operating income +$3.7 billion); Audit Analytics, October 28, 2020, on Microsoft's fiscal 2021 change; Alphabet fourth-quarter 2021 earnings release and Form 10-K for 2023, filed January 31, 2024 (depreciation −$3.9 billion); Meta Form 10-K for 2024, filed January 30, 2025 (expected 2025 reduction of about $2.9 billion); Oracle Form 10-Q for the quarter ended February 28, 2025; CoreWeave Form S-1, March 3, 2025, and Forms 8-K of March 31 and August 10, 2026.

4.2 NVIDIA press releases of March 22 and September 20, 2022 (Hopper); NVIDIA GTC announcement of March 18, 2024 (Blackwell); NVIDIA Form 10-K for fiscal 2026 (Blackwell Ultra shipments; one-year product cadence); NVIDIA Form 10-Q for the quarter ended July 26, 2026, and earnings call of August 26, 2026 (Vera Rubin production shipments; throughput claim is the company's).

4.3 Amazon.com, Inc., Form 10-K for 2025, filed February 6, 2026, note on property and equipment.

4.4 Michael Burry, post on X, November 10, 2025, as reported by CNBC (November 11, 2025) and MT Newswires; Nvidia's response as reported by CNBC, November 25, 2025. The Nvidia memo itself was not reviewed.

4.5 Moody's Ratings, Sector In-Depth, "GPU obsolescence risk: uncertain economics, certain structural protections," June 4, 2026. moodys.com/research/doc–PBC_1474957

4.6 Silicon Data, "H100 Rental Price Over Time (2023–2025)," December 21, 2025. silicondata.com/blog/h100-rental-price-over-time

4.7 SemiAnalysis, "The Great GPU Shortage: Rental Capacity," April 2, 2026.

4.8 Benzinga, September 8, 2026 (H100 at $3.28 per hour, Silicon Data index); Anue, October 25, 2026, citing the Financial Times (CME/Silicon Data reference quote H100 $2.77; rental prices of about $8 an hour at the start of 2024 and below $2 at the end of 2025). Press-reported index levels.

4.9 Bandi and Su (Johns Hopkins University), "(Early) AI Compute Asset Pricing," arXiv:2607.12156, July 13, 2026, revised October 22, 2026, using Silicon Data and Ornn indices for April 2026.

4.10 Moody's Ratings, research of July 16, 2026 (repayment without renewal) (moodys.com/research/doc–PBC_1488375) and December 3, 2025 (lease structuring; moodys.com/research/doc–PBC_1467058).

4.11 CoreWeave, Inc., Form S-1, March 3, 2025, description of DDTL 1.0 and 2.0 amortization and sweep provisions.

4.12 CoreWeave Form S-1 (average rate of 14.12% in 2023 on DDTL 1.0); Moody's Ratings, June 4 and July 16, 2026 (DDTL 4.0 floating-rate tranche at SOFR + 2.25%, rated A3; the reported fixed-rate cost was about 5.9%).

4.13 Press-reported (Money Today, October 24, 2026, citing IREN's August 2026 results).

4.14 Lambda, release of October 1, 2026 (Business Wire): $1.008 billion facility, 6.78% fixed, final maturity May 30, 2033; Moody's Ratings, Issuer Comment on SpaceX, October 26, 2026.

4.15 CoreWeave Form 8-K, August 10, 2026; Moody's Ratings, "Risk levels vary for project finance transactions connected to CoreWeave," October 20, 2026.

4.16 Moody's Ratings, Issuer Comment on the SpaceX–Apollo master finance lease, October 26, 2026. moodys.com/research/doc–PBC_1500416

## Chapter 5

5.1 U.S. Department of the Treasury, Daily Treasury Par Yield Curve Rates (10-year: 5.31% on October 5, 2026; 3.97% on February 27, 2026; 4.18% on December 31, 2025; 5.05% on October 28, 2026; first 2026 close above the 2007 peak, 5.29% on September 30). home.treasury.gov/resource-center/data-chart-center/interest-rates. Historical comparison: Federal Reserve Board, H.15 Selected Interest Rates, 10-year constant maturity (FRED series DGS10): 5.32% on May 14, 2002; 5.26% on June 12, 2007; 4.98% on October 19, 2023. Data retrieved via Financial Modeling Prep and Alpha Vantage; the two sources agree to the hundredth on all 206 overlapping days of 2026.

5.2 U.S. Treasury par yield curve, December 31, 2025 (2-year 3.47%); Federal Reserve, FOMC statement of December 10, 2025 (target range 3.50–3.75%).

5.3 IFR Awards, "Financing Package: Blue Owl Capital/Beignet Investor's US$27.3bn 23.6-year bond" (priced October 16, 2025; coupon 6.581%; Treasuries plus 225 basis points). 10-year yield from the U.S. Treasury par yield curve.

5.4 GlobalCapital, July 29, 2026 (Sopaipilla Investor, $12.274 billion, 7.534%, Treasuries plus 287.5 basis points, due November 2048). Premium over the 10-year par yield (3.99% on October 16, 2025; 4.65% on July 27, 2026) calculated by FINTECH SCB; the reported spreads of 225 (IFR) and 287.5 (GlobalCapital) basis points appear to use different benchmarks, and Reuters reported Beignet's launch spread as 185 basis points.

5.5 Federal Reserve, FOMC statement of September 16, 2026, as reported by FOX Business and Alliance News; Alliance News, October 28, 2026 ("the first change in its benchmark rate since December 2025").

5.6 Federal Reserve, FOMC statement of October 28, 2026 (Quartr transcript copy via Bigdata.com); press conference of October 28, 2026, as reported by CNBC and FXStreet; Benzinga, October 28, 2026 ("It tells me our policy is working").

5.7 CME FedWatch probability of 79.6% for a December 2026 increase, as reported by Benzinga, October 29, 2026.

5.8 CoreWeave, Inc., Forms 8-K of May 18, 2026 (DDTL 5.0, SOFR + 4.50%) and August 10, 2026 (DDTL 5.5, SOFR + 5.50%, maturing September 1, 2031).

5.9 Bloomberg, October 2026, as reported by Tiger Brokers (press-reported).

5.10 Nebius Group, press release of October 22, 2026. nebius.com/newsroom/nebius-secures-3-5-billion-financing-facility-with-citi

5.11 Trading Economics, "Brent Rises as US-Iran War Intensifies," March 4, 2026 (commercial traffic through the strait effectively stopped); NPR, "Oil prices surge as Iran war continues," March 9, 2026 (share of world oil and LNG transiting the strait).

5.12 Brent crude oil daily closes, Financial Modeling Prep series BZUSD, weekdays: $60.85 on December 31, 2025; $72.87 on February 27, 2026; $112.57 on March 27; $114.44 on May 4; $71.57 on July 1; $116.72 on October 23; $115.32 on October 28.

5.13 U.S. Bureau of Economic Analysis, Personal Income and Outlays: PCE price index and PCE excluding food and energy (FRED series PCEPI and PCEPILFE; year-on-year changes calculated by FINTECH SCB; August 2026 values match BEA's published 3.4% and 3.0%). September 2026 values (3.6% and 3.1%) from the BEA release of October 29, 2026, as reported by Trading Economics; the BEA page itself could not be retrieved at the research cutoff.

5.14 U.S. Bureau of Economic Analysis, Gross Domestic Product, Third Quarter 2026 (Advance Estimate), October 29, 2026, as reported by Alliance News and HuggingNews. The contribution of equipment and software investment is a press calculation from the release and has not been checked against BEA's contributions table.

5.15 Board of Governors of the Federal Reserve System, historical changes in the target federal funds rate: 6.50% before January 3, 2001; 1.75% on December 11, 2001; 1.00% on June 25, 2003.

5.16 iShares Semiconductor ETF (SOXX), Alpha Vantage daily closes: $655.01 on June 22, 2026; $465.00 on July 29, 2026. CoreWeave and Oracle closes from Alpha Vantage. Calculations by FINTECH SCB.

5.17 CNBC, July 30, 2026, "Leopold Aschenbrenner's hedge fund is facing steep AI losses" (headline only; article text not reviewed); holdings from the fund's Form 13F as summarized by SpotGamma. Details of the unwind beyond the CNBC report were not verified.

5.18 Investing.com, October 16, 2026, as syndicated by Yahoo Finance (via Bigdata.com); Benzinga on the October 2008 precedent. Index closes: 13,217.8 on October 6 and 11,137.3 on October 16.

5.19 Nasdaq, Inc., PHLX Semiconductor Index closes (FRED series NASDAQSOX): 10,731.98 on October 22, 2026; intraday high of 13,350.0 on October 6 and intraday low of 10,666.4 on October 22 from Investing.com. Nasdaq Composite, S&P 500 and Meta closes from Financial Modeling Prep. Calculations by FINTECH SCB.

5.20 FINTECH SCB calculations. Daily change in the 10-year Treasury par yield, in basis points, against the daily percentage change in the iShares Semiconductor ETF, June 9 to October 28, 2026 ($n = 98$; Pearson $r = -0.056$, $p = 0.58$; Spearman $\rho = -0.063$); against the PHLX Semiconductor Index, September 28 to October 27, 2026 ($n = 21$; $r = +0.54$, $p = 0.01$; Spearman $\rho = +0.34$, $p = 0.13$; excluding October 22, $r = +0.25$, $p = 0.28$); against the Nasdaq Composite, January 2 to October 28, 2026 ($n = 206$; $r = -0.29$, $p < 0.001$). The October sample is small and the ETF is a proxy for the index; correlation does not establish causation.

5.21 As Figure 5.4. Microsoft fiscal first-quarter 2027 results as reported by SiliconANGLE, October 28, 2026.

5.22 ICE BofA US High Yield Index Option-Adjusted Spread (FRED series BAMLH0A0HYM2) and ICE BofA US Corporate Index Option-Adjusted Spread (BAMLC0A0CM). The August low is the lowest value in the series window retrieved (July 8 to October 27, 2026). ICE Data Indices, LLC; values cited, series not reproduced.

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5.24 Bloomberg, October 28, 2026 (press-reported).

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6.3 Congressional Research Service, In Focus IF13319, "Private Investments and Insurance Companies," September 23, 2026, citing NAIC and Federal Reserve Bank of Chicago research.

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6.5 Meisenzahl, Overpeck and Polacek, Federal Reserve Bank of Chicago Working Paper 2025-09, June 2025, revised April 27, 2026.

6.6 LIMRA news releases of March 2024, March 11, 2025, March 23, 2026 and September 8, 2026.

6.7 AM Best data as reported by Bermuda Re/Insurance, August 27, 2026. Press-reported.

6.8 Financial Times, as reported by Dealroom, "Investors dump data centre bonds as AI borrowers face Darwin moment," October 15, 2026. Press-reported quotations.

6.9 Federal Reserve, Financial Stability Report, May 2026, Box 4.1; International Monetary Fund, Global Financial Stability Report, October 2026, Chapter 1.

6.10 Alternative Investment Management Association / Alternative Credit Council, "Financing the Economy 2026," with Houlihan Lokey, released October 22, 2026. Industry estimate.

6.11 Bank of England, Financial Stability Report, July 2026, citing OECD estimates.

6.12 Federal Reserve, Financial Stability Report, May 2026, Box 4.1.

6.13 Robert A. Stanger & Co., as reported by AltsWire, October 3, 2026; fund-level figures as reported by AltsWire and by InvestmentNews citing Fitch Ratings, October 13, 2026. Press-reported.

6.14 Federal Reserve, Financial Stability Report, May 2026; International Monetary Fund, Global Financial Stability Report, April 2026, Chapter 1.

6.15 International Monetary Fund, Global Financial Stability Report, October 2026, Chapter 1 (released October 13, 2026).

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6.17 Board of Governors of the Federal Reserve System, H.8 release of October 23, 2026; FRED series LNFACBM027SBOG.

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## Chapter 8

8.1 Cash, cash equivalents and short-term or current marketable securities from the latest Forms 10-Q: Microsoft $64.5 billion and Alphabet $265.1 billion (September 30, 2026), Meta $82.4 billion (September 30, 2026), Amazon $123.0 billion (June 30, 2026). Microsoft is rated AAA by S&P Global Ratings and Aaa by Moody's.

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8.6 See Chapter 5: U.S. Treasury par yield curve (2-year yield of 3.47 percent at December 31, 2025, below the federal funds target range; 10-year at 5.31 percent on October 5, 2026); FOMC statement of September 16, 2026; BEA, PCE price index for September 2026 (3.6 percent year on year).

## Chapter 9

9.1 Scenario descriptions are the author's analytical constructions, built on the contractual features documented in Chapters 1 through 6. They are not probability-weighted forecasts.

9.2 Roberto Balbino, "The AI Productivity Reckoning: Who Captures the Value When Intelligence Gets Cheaper?," Substack, October 17, 2026.

## Chapter 10

10.1 Roberto Balbino, "The companies that became banks without choosing to," Substack, October 7, 2026. robertobalbinoofficial.substack.com/p/the-companies-that-became-banks-without

10.2 Roberto Balbino, "The Rules Behind Private Credit," Substack, October 24, 2026.

## The question is not whether the AI boom is a bubble. The question is who is holding the paper.

Between 2024 and 2026 the money behind artificial-intelligence infrastructure changed source. The largest technology companies stopped paying for it entirely out of their own cash and began to finance it through bonds, leases on buildings not yet built and joint ventures that keep debt off their balance sheets, while their customers and suppliers added loans secured on chips and guarantees written by the chipmakers themselves.

Shareholders can sell in a second. The life insurers and private credit funds that now hold much of this debt, and the savers who stand behind them, cannot. *Off the Books* follows the contracts, from Meta's residual value guarantees to Broadcom's backstop of Anthropic's chip lease, and shows how a technology cycle has been financed as a credit cycle—and why its losses, if they come, will be allocated to the savers least able to see them.

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Roberto Balbino is the founder and Chief Executive Officer of FINTECH SCB LLC. Before founding Fintech SCB, he served as Financial Director and board member of leading multinational corporations, and later founded ventures such as SCB, Reba and B S. He writes on macroeconomic analysis, geopolitical risk and international capital flows, and is the author of *The Capital That Remains*, *The Prince*, *Principles of Political Economy* and *The Price of Standing Still*.

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