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Building AI on credit: structures and spillovers

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Building AI on credit: structures and spillovers

Key takeaways

- *Capital expenditure to build artificial intelligence (AI) infrastructure is growing fast, and a rising share is financed with long-term debt and through complex off-balance sheet arrangements.*
- *Off-balance sheet commitments from a few large firms help to transform the credit rating of the debt, drawing in institutional capital. Banks often lend to both the vehicles and investors holding the debt.*
- *On AI-financing-related news days in 2026, spillovers to US Treasury and investment-grade bond markets were small and short-lived, but sustained issuance at the current pace could change this.*

Artificial intelligence (AI) is a general purpose technology that promises large productivity gains across the global economy. As with other such innovations that have come before, most of those gains are expected to arrive only once the technology is embedded in the economy's capital stock and production processes. Large US hyperscalers, a smaller set of newer cloud providers (the so-called neoclouds) and AI labs, support the capacity build-out. Capital expenditure by the five largest US hyperscalers is expected to reach more than \$800 billion by the end of 2026 or around 2.5% of US GDP (Graph 1.A). And the build-out is expected to continue in the coming years.¹

These AI investments are increasingly built on credit. Gross bond issuance this year by the five largest hyperscalers reached \$222 billion by September 2026 (Graph 1.B). Most of this debt was issued at long maturities, amounting to more than 10% of long-term US Treasury issuance this year. In addition, debt is raised through off-balance sheet vehicles.² According to market sources, \$75 to \$100 billion of bonds and asset-backed securities linked to these vehicles have been placed so far this year. And the commitments behind these structures are also large. Moody's Ratings (2026), for example, puts the largest hyperscalers' data centre lease commitments at \$1.2 trillion by mid-2026, of which around \$820 billion relate to leases that have not yet started.

Even benchmarked against past credit booms, the issuance of AI-related debt is rapid (Graph 1.C). How far this raises financial stability risks depends critically on whether promised productivity gains materialise and whether the resulting profits accrue to those making the initial investments. In the past, some booms generated sufficient returns to repay debt, while others failed to do so, ending up in crises. The two are difficult to distinguish in real time: credit evolves similarly, on average, in "good" and "bad" booms until productivity gains are realised or not (Gorton and Ordoñez (2020)). It is too early to tell how AI will affect productivity, though questions have emerged in recent weeks about whether the income-generating capacity of data centres will be sufficient to repay all debts, especially those linked to

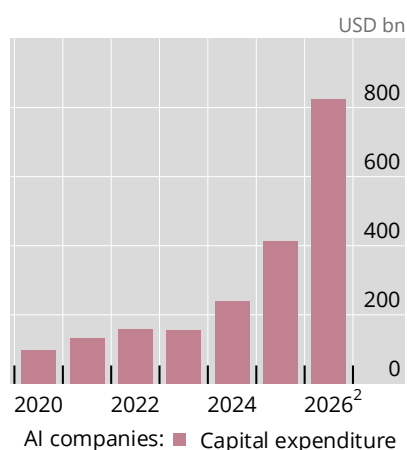
¹ Van Nieuwerburgh (2026) estimates that US data centre investment will reach nearly \$9 trillion over 2025–32, about 3.2% of GDP a year, which is more than during the railroad, electrification and telecommunications booms.

² Aldasoro et al (2026) document the shift in AI financing from cash flows to debt and the growing role of private credit as investors. Eren et al (2026) document the increased role of off-balance sheet structures through which the borrowing is raised.

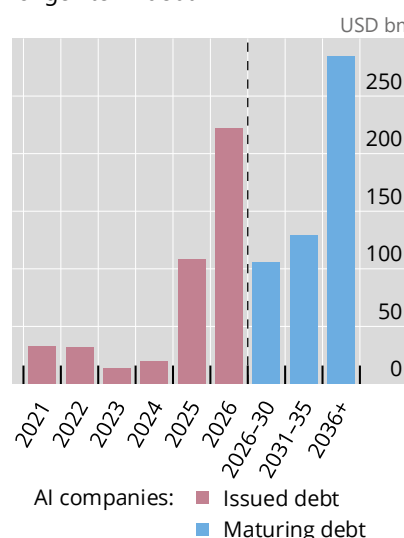
Rising capital expenditure feeds an AI credit boom

Graph 1

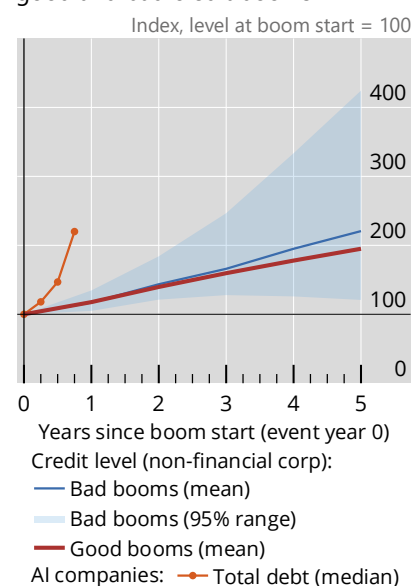
A. Capital expenditure is on the rise¹



B. Hyperscalers issue more and longer-term debt^{1,3}



C. Current AI credit boom versus past good and bad credit booms⁴



¹ The artificial intelligence (AI) companies included in the sample are Alphabet, Amazon, Meta, Microsoft and Oracle. ² Maximum guidance amount provided in the companies' communications. ³ As of 22 September 2026. ⁴ Identification and classification of past credit booms follow Gorton and Ordoñez (2020). "Bad booms" ended in a systemic banking crisis. The sample covers 37 countries. Instead of normalising by GDP, total credit to the private non-financial sector is set to 100 at the start of a boom; each firm's debt series is set to 100 in Q3 2025. AI companies included in the sample are Alphabet, Amazon, CoreWeave, Meta, Microsoft, NVIDIA and Oracle.

Sources: Gorton and Ordoñez (2020); S&P Global Market Intelligence; companies' communications; BIS; authors' calculations.

neoclouds. In the meantime, mapping where the associated risks ultimately lie is important to better understand potential financial stability risks.

This Bulletin addresses two questions. The first concerns how emerging financing structures allocate credit risk within the AI ecosystem and who bears losses if returns fall short of expectations. We provide a mapping of the emerging structures through which these risks are allocated. Off-balance sheet vehicles can draw institutional capital into the build-out by combining asset backing with lease commitments, guarantees and vendor backstops. But the structures obscure the final allocation of risks, and ultimate exposures are concentrated in a few large firms – more than what their balance sheets suggest.

The second question involves broader spillovers from the borrowing. Much of the new debt is long-dated and placed with non-bank financial institutions (NBFIs) that also hold long-dated government and investment-grade corporate bonds. A growing supply could therefore affect the compensation these investors require for bearing duration risk, with consequences for benchmark yields and borrowing costs beyond the AI sector. This Bulletin finds that so far, such spillovers have been limited. On AI-financing-related news days in 2026, movements in Treasury term premia and investment-grade corporate spreads were small and short-lived. But sustained issuance at the current pace could make them larger and more persistent.

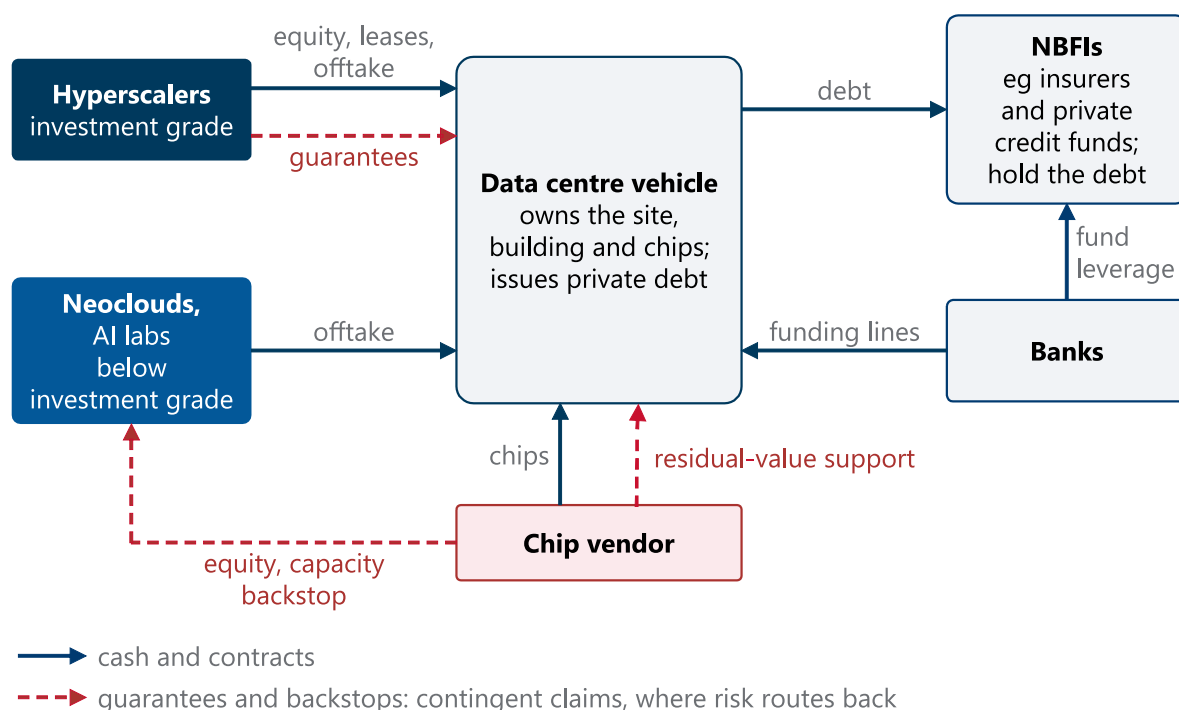
Emerging credit relationships and risks in the AI credit boom

The AI build-out is financed through a web of on- and off-balance sheet commitments supported by a handful of investment-grade firms. This section focuses primarily on the off-balance sheet structures within this financing network. Graph 2 illustrates a stylised version. At its centre is a special purpose vehicle that owns a data centre and earns its income from the contracts it has signed. Its debt is issued as a bond

or an asset-backed security. It is often placed privately with several institutional investors. Investment-grade hyperscalers lease capacity from these vehicles, sometimes on short initial terms with options to renew. In some cases, they take a minority stake or guarantee in the residual value of the assets.³ Neoclouds and AI labs, which are mostly unrated or rated below investment grade, sign similar contracts, and neoclouds also borrow against their chips, often at floating rates. The chip vendor sells the hardware and supports its customers' financing. It holds equity in some neoclouds, has committed to buy computing capacity from some of them and provides contingent support for facility lease obligations in some cases. It may also offer limited protection against a fall in the value of assets financed through new investment platforms.⁴ Banks provide construction financing to some vehicles and may also extend credit to private credit funds that invest in their debt.

Emerging credit relationships in the AI ecosystem

Graph 2



NBFIs = non-bank financial institutions.

Source: Authors' elaboration.

The structures transform credit through asset backing and guarantees. First, ring-fencing the data centre in a vehicle gives lenders a secured claim on a durable building. The building, its power connection and its cooling plant can be rented to other tenants, which makes them relatively easier to put to other uses. Second, the vehicle's debt is also backed by the data centre's chips, which are arguably less robust as collateral. Chips have fewer alternative uses and might lose value with each new generation. Therefore, capacity contracts and initial lease terms typically run for a few years. Moreover, multiple companies may hold similar hardware from the same vendor, so resale values could fall sharply if many seek to sell used

³ The Hyperion data centre, developed through a joint venture between Meta and Blue Owl managed funds illustrates this. The project was financed in part through \$27.3 billion of privately placed, A+ rated senior secured bonds, supported by Meta's lease commitments, which begin in 2029, initially run for four years and include the option to renew for a total lease term of up to 20 years with limited residual-value protection for the first 16 years of operation. Meta does not consolidate the venture.

⁴ In August 2026, NVIDIA signed memoranda of understanding with six investment firms to set up platforms that aim to raise more than \$500 billion of third-party capital for AI infrastructure over time. It said it may provide residual value support for up to 25% of a project, without specifying its form.

chips at the same time. Finally, guarantees by hyperscalers and chip vendors provide residual support to issue long-term investment-grade debt.

These structures benefit the firms building AI capacity. Neoclouds and AI labs gain access to long-dated investment-grade funding from a deep pool of investors. Hyperscalers gain capacity without adding debt directly to their balance sheets. Contracting through an unconsolidated vehicle can also allow them to record the associated payments as operating expenses rather than debt-financed capital expenditure, while preserving rating headroom and avoiding owning chips outright that the next generation may make obsolete. Lease contracts can provide flexibility: relatively short initial terms and options to renew allow hyperscalers to adjust capacity as demand and technology evolve. They pay for this through the lease rate, as the vehicle's debt carries a higher yield than their own bonds.⁵ For the chip vendor, supporting its customers' financing sustains demand for its hardware.⁶

The same structures might also carry risks to financial stability, especially if their adoption becomes more widespread.

First, exposures are concentrated. The lease commitments and guarantees rest on a small number of large firms, leaving investors dependent on the financial strength of these companies. While hyperscalers generate large cash flows from non-AI segments of their businesses, their aggregate off-balance sheet commitments already exceed their reported debt (Moody's Ratings (2026)).

Second, there are large interconnections. For instance, a chip supplier may have several links to the same customer. It may sell hardware to the customer, hold an equity stake, purchase its capacity and guarantee some of its payments. If that customer encounters difficulties, the supplier could be affected through each of these channels. Banks may also be exposed directly, through construction loans to vehicles, and indirectly, through loans to the funds that hold vehicle debt.

Third, the contractual support protects investors only in part, leaving them exposed to falls in the value of data centres and chips. If a hyperscaler does not renew a lease or terminates it early, the vehicle may need to find a new tenant or realise the value of the assets, potentially at a time when similar capacity is also being offered to the market. In that event, the vehicle can fall back on residual value guarantees, but they are typically capped.

Finally, the structures are opaque, making risks hard to assess. Leases that have not yet started are disclosed but not recorded as debt. Guarantees are often recorded at little or no value until payments become likely. Such claims are harder to size than bonds. Without a clear view of the ultimate guarantor, lenders may hold larger exposures to a single firm than they realise. An insurer that holds a hyperscaler's bonds and the debt of several vehicles leased to it, for example, could be more exposed to that hyperscaler than its bond holdings alone suggest. Opacity could also make the market for this debt freeze in stress, as investors struggle to value it. Since most of the debt is long term, a run on short-term funding like in the Great Financial Crisis appears less likely. But losses could still fall on the insurers, funds and other investors that hold the debt as well as on their bank lenders, and opacity could delay their recognition. Closer monitoring and fuller disclosure of these commitments would help investors, rating agencies and supervisors assess the risks.

Spillovers from AI borrowing to broader bond markets

The structures described above shape the allocation of credit risk within the AI ecosystem. Their growing size could also affect borrowers with no direct link to AI through interest rates. Much of the debt issued by both hyperscalers and project vehicles is long-dated and placed with NBFIs that also hold long-dated

⁵ Eg, the Hyperion bonds were rated A+ by S&P, one notch below Meta, and priced at 225 basis points over Treasuries in October 2025. Two weeks later, Meta's own 20- and 30-year bonds priced, respectively, at 88 and 98 basis points over Treasuries.

⁶ For further discussion on the circular financing relationships of AI firms, see Frost et al (2026).

government bonds and investment-grade corporate bonds. A larger supply of long-dated bonds tends to raise the compensation these investors require for bearing duration risk (Greenwood and Vayanos (2014)). Treasury yields are the benchmark for pricing mortgages and corporate bonds and they influence long-term rates in other economies.

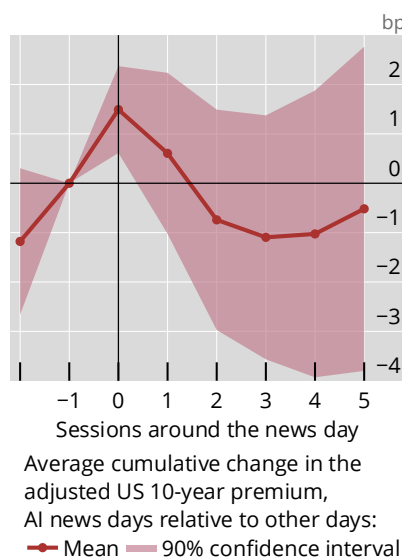
To assess these concerns, we first examine changes in the 10-year term premium on AI-financing-related news days. The 10-year yield comprises expected short-term rates over the next decade and a term premium, which compensates investors for bearing duration risk. Since AI-financing-related news should have little direct effect on expected policy rates, any effect of increased long-dated debt supply should appear mainly in the term premium. A rise in the term premium tightens financial conditions regardless of the stance of monetary policy.

AI-financing-related news has had a small, temporary effect on long-term yields so far.⁷ We compare changes in the 10-year term premium on 18 days in 2026 when AI-financing-related news reached markets with those on other days. On AI-financing-related news days, term premia rose by around 1.5 basis points (Graph 3.A) after accounting for changes in expected policy rates and other market-moving events. The

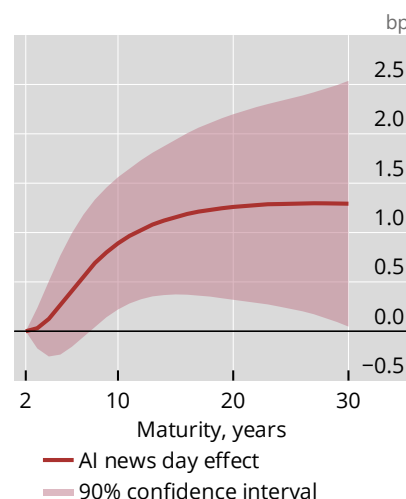
Spillovers to the US Treasury market remain small and short-lived, but issuance is rising fast

Graph 3

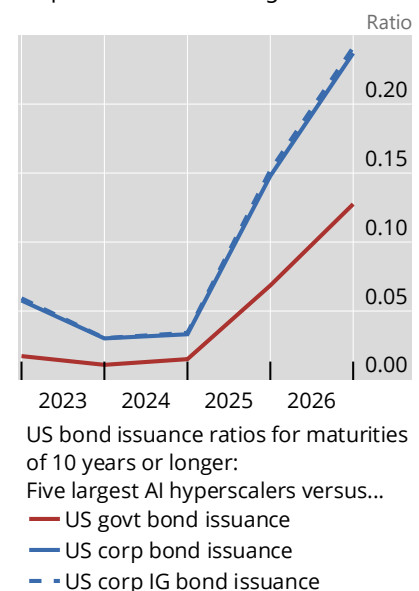
A. Term premium response fades within two trading days^{1,2}



B. The response is higher at longer maturities^{1,3}



C. Long-term hyperscaler debt issuance as a share of Treasuries and corporate bonds is rising fast⁴



¹ The sample covers 6 January–18 September 2026. ² Daily changes are adjusted for the fitted constant, Federal Open Market Committee (FOMC) statement days and the daily change in the two-year yield. Confidence interval based on standard errors of the difference in mean cumulative changes. ³ Artificial intelligence (AI) news day effect is the coefficient on the AI news day indicator at each maturity of the zero coupon curve, controlling for the FOMC statement days and the daily change in the two-year yield. Confidence interval based on Newey-West standard errors. ⁴ 2026 year to date through August (US government bonds), 22 September (AI hyperscalers) and 21 September (US corporate bonds). US corporate bond issuance is based on the information available in the Dealogic database. IG = investment-grade.

Sources: Adrian et al (2013); Gürkaynak et al (2007); Board of Governors of the Federal Reserve System; Federal Reserve Bank of New York; Securities Industry and Financial Markets Association; Dealogic; S&P Global Market Intelligence; companies' communications; authors' calculations.

⁷ Table A1 in the online annex reports the regression results, including robustness checks. The estimates are event-day associations, not causal effects. Some news may be partly anticipated or coincide with other market-moving developments. Table A2 lists the events.

term premium typically moves by around 3.5 basis points a day, so an AI-financing-related news day stands out only modestly. After accounting for changes in the two-year yield and FOMC statement days, the increase relative to other days was reversed within two trading days (Graph 3.A). Investment-grade spreads did not change significantly.

Beyond the term premium, we also examine the response of Treasury yields across maturities. After accounting for changes in the two-year yield and FOMC statement days, yields rose more at longer maturities on AI-financing-related news days (Graph 3.B). The 90% confidence band excludes zero at maturities from eight to 30 years. The pattern is consistent with higher compensation for duration risk but is not causal evidence.

Immediate spillovers to Treasury and investment-grade corporate bond markets therefore appear limited, but the potential pressure is growing. In 2026, hyperscaler bonds with maturities of 10 years or more accounted for about 24% of corporate issuance at those maturities and 13% of gross Treasury issuance, up from about 3% and 1.5%, respectively, in 2024 (Graph 3.C). Off-balance sheet vehicles add further long-dated claims. If supply expands at this rate, a concentrated group of duration investors will need to absorb a larger stock of claims with correlated exposures. This could exert greater pressure on long-term yields and, where leverage is shifted into opaque vehicles, add to financial stability risks.

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