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Hyperscalers: A wave of write-downs is building

by CHRISTOF SCHÜRMANN

Abstract

Investment in AI continues at an undiminished pace. This is evident from the financial statements of Alphabet, Amazon, Meta, Microsoft and Oracle. These substantial bets on the future also reveal the risks involved.

Zusammenfassung

Die KI-Investitionen gehen in unvermindertem Tempo weiter. Das zeigen die Bilanzen von Alphabet, Amazon, Meta, Microsoft und Oracle. Die hohen Wetten auf die Zukunft zeigen auch die Risiken.

Talk is cheap; it's what happens on the ground that counts. Thus, the trillion-scale investments in artificial intelligence (AI) are no longer mere announcements, but are rapidly transforming the balance sheets of the so-called hyperscalers – Alphabet, Amazon, Meta, Microsoft and Oracle.[1] The five tech companies' commitments to infrastructure investment are staggering and will be reflected in their balance sheets in the future.[2]

The five companies are referred to as 'hyperscalers' because they are investing far beyond the usual level, with the aim of scaling up future revenues from their AI-based business offerings; this is happening at a pace that was scarcely imaginable just a few years ago. What were once comparatively capital-light platform and software companies are now evolving into capital-intensive infrastructure operators that incur high fixed costs. The hyperscalers are therefore 'the new heavy industry' (Schürmann 2026).

This is also changing the perspective of their shareholders. Whereas the business models and success of these companies used to be based primarily on 'soft factors' such as the expertise and creativity of their staff, the question of whether investments in 'hard fixed assets' will pay off is increasingly taking centre stage. Companies must generate additional revenue from AI and use this to generate cash flows that cover – and, if possible, exceed – the significantly increased costs.

Whether they will succeed remains to be seen. For now, the hyperscalers are still sowing the seeds in the hope of a bountiful harvest. As the answer is still pending, it is essential to examine the hyperscalers' respective balance sheets. These provide clear indications of future developments.

1. Unabated pace of investment

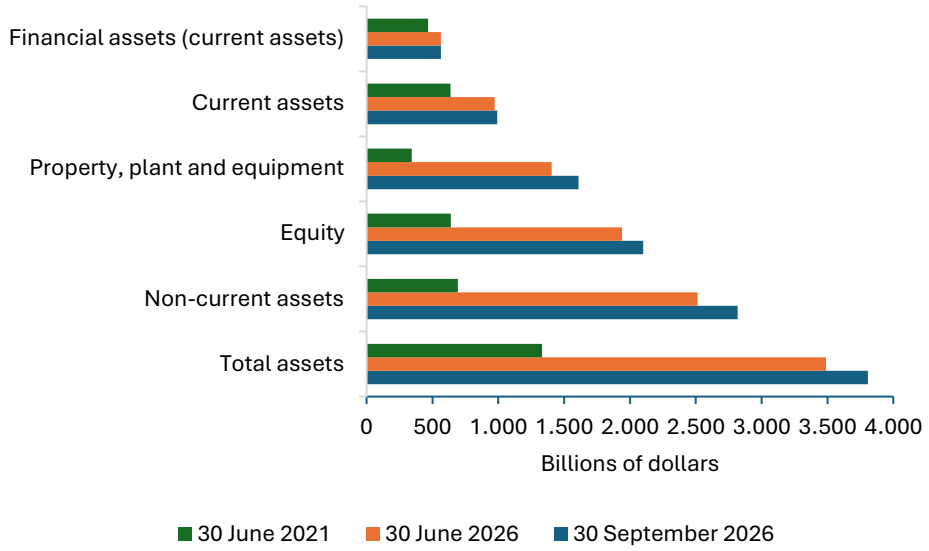
The latest quarterly reports show that the pace of AI infrastructure development remains undiminished. After the aggregate balance sheet total of the five companies rose within five years from just over 1.3 trillion dollars in the summer of 2021 to just under 3.5 trillion dollars by mid-2026, the figure – driven primarily by high levels of investment – now stands at just over 3.8 trillion dollars (Figure 1).[3]

[1] SpaceX is now also referred to as a hyperscaler in some reports due to its AI division. However, the space company, which went public this year, does not have a long history of publicly available data and is primarily active in the satellite business.

[2] Through special-purpose vehicles, the companies may also be able to manage investment projects off-balance-sheet. Any subsequent expenditure on these, however, would be recognised in the profit and loss account.

[3] The comparative periods do not coincide: for Oracle, the reporting dates are 31 May and 31 August respectively, whilst for the other four companies they are 30 June and 30 September respectively.

Figure 1: Balance sheet items of the five hyperscalers



Source: 10-Q and 10-K reports filed with the SEC, Bloomberg; for further details, see footnote to table, Flossbach von Storch Research Institute, as at November 2026.

2. Sharp rise in balance sheet assets

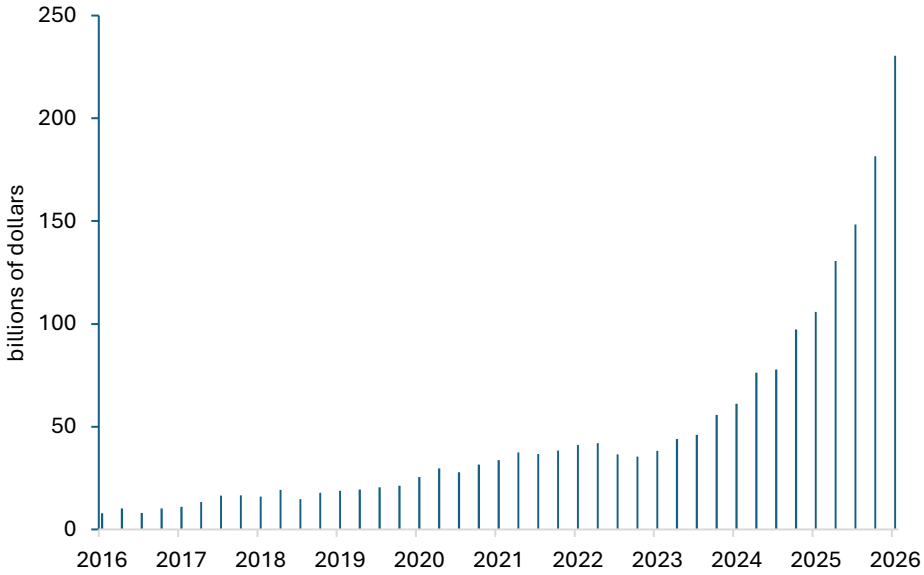
Within three months, the assets of the five hyperscalers have grown by 320 billion dollars. This growth is concentrated not in current assets (securities held and bank balances), but on fixed assets. The long-term assets recognised there have quadrupled since mid-2021, rising from $694 billion to just over $2.8 trillion.

In the most recent quarter, the five companies once again invested heavily in long-term fixed assets. Capital expenditure (Capex) stood at $230 billion, which was $48 billion higher than in the previous quarter. This means that, within three months, the five hyperscalers spent $1 billion more on Capex than they did in the whole of 2024 (Figure 2).

These investments are increasingly reflected in the balance sheet item ‘Property, Plant & Equipment’ (PP&E), which includes, amongst other things, data centres and technical infrastructure. According to the latest quarterly reports, PP&E amounts to just over 1.6 trillion dollars in total across all hyperscalers (Figure 1). In June 2021, the cumulative value stood at just 343 billion dollars.

Goldman Sachs currently estimates that the five hyperscalers will invest $797 billion in capital expenditure this year (Ng et al. 2026). In 2027, 2028, 2029 and 2030, the figures are expected to be $1.16 trillion, $1.29 trillion, $1.31 trillion and $1.33 trillion respectively. If the investment cycle were a 400-metre race, the hyperscalers would have only just catapulted themselves out of the starting blocks and begun the long sprint.

Figure 2: Capital expenditure (Capex) on long-term fixed assets by the five hyperscalers



financial quarters from 31 August/30 September 2016 to 31 August/30 September 2026, source: Bloomberg, Flossbach von Storch Research Institute, as at November 2026.

3. Liabilities are rising

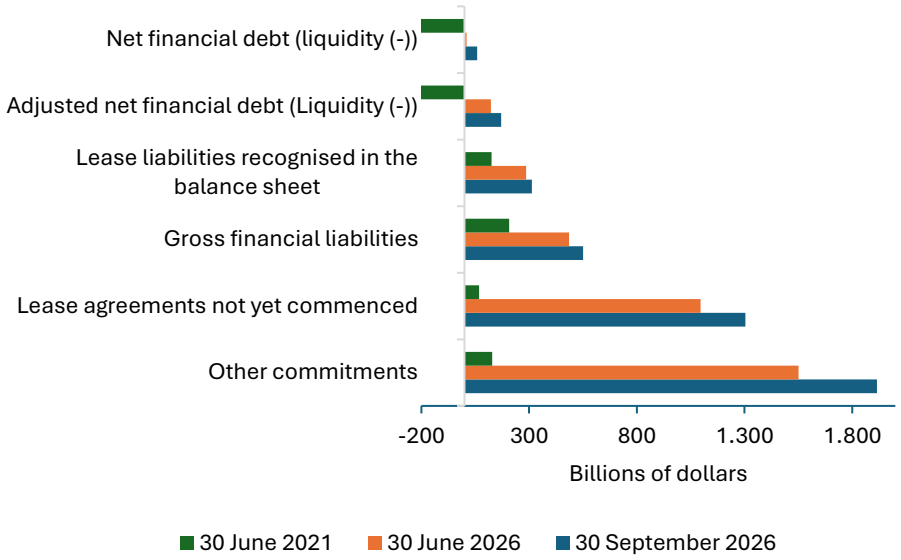
The financing of this expansion is also underpinned by mutual agreements with suppliers, for example from the chip industry, including through creative financing structures data centres.[4] In addition, traditional financing methods such as the issue of new shares and the raising of debt play a significant role.

The cumulative equity of the five hyperscalers rose by $162 billion in the most recent quarter, driven not only by capital increases but also by continued profitabilitys. Aggregate gross financial debt[5] has risen from $486 billion to $551 billion since the end of June 2026. Reported lease liabilities rose from $286 billion to $312 billion (Figure 3).

[4] In the case of the 'Hyperion' data centre, for example, the Meta Group has organised the financing and ownership structure through an external company, with the financial services provider Blue Owl holding an 80 per cent stake as the majority shareholder.

[5] Gross financial debt = bonds, bank loans, other loan-like financing. Net financial debt = gross financial debt less cash and cash equivalents and financial assets. Adjusted net financial debt = excluding restricted cash and equity investments that cannot be realised immediately.

Figure 3: Debt, leases and other liabilities of the five hyperscalers



Source: 10-Q and 10-K reports filed with the SEC, Bloomberg; for further details, see the footnote to the table; Flossbach von Storch Research Institute; as at November 2026.

Obligations not yet recognised on the balance sheet – which companies disclose in the notes to their financial statements – are growing even faster. Leases not yet commenced – which may, for example, involve investments in data centres – rose from 1.10 to 1.31 trillion dollars between the two most recent reporting dates, whilst other contractual obligations (purchases of software licences, infrastructure and energy) increased from 1.55 to 1.92 trillion dollars. Taken together, these currently amount to around 3.2 trillion dollars in off-balance-sheet commitments, 573 billion dollars more than in the previous quarter and 16 times the figure reported by the five hyperscalers in June 2021 (197 billion dollars, Figure 3).[6]

Alphabet most recently reported $924 billion in additional commitments, almost as much as the other four companies combined. Meta, Microsoft and Oracle have significant commitments arising from lease agreements that have not yet commenced, amounting to $356 billion, $365 billion and $288 billion respectively (table).

[6] In a broader sense, so-called 'backstops' are also included. These include, for example, guarantees regarding revenue or demand for data centre capacity that hyperscalers provide to external providers. In its latest quarterly report, for instance, Meta reported a maximum exposure of 64.4 billion dollars for non-consolidated data centre projects.

Table: Balance sheet data for the five hyperscalers

Company	*Reporting date*	**Total assets** **USD billions**	**Current assets** **USD billions**	**Financial assets (current assets)** **USD billions**
Alphabet	*06.30.2021*	335	176	136
Alphabet	*06.30.2026*	922	344	242
Alphabet	*09.30.2026*	1.003	375	265
Amazon	*06.30.2021*	360	141	90
Amazon	*06.30.2026*	1.096	249	123
Amazon	*09.30.2026*	1.243	255	114
Meta	*06.30.2021*	171	81	64
Meta	*06.30.2026*	450	125	90
Meta	*09.30.2026*	479	120	82
Microsoft	*06.30.2021*	334	184	130
Microsoft	*06.30.2026*	758	208	77
Microsoft	*09.30.2026*	779	186	65
Oracle	*05.31.2021*	131	56	47
Oracle	*05.31.2026*	262	47	32
Oracle	*08.31.2026*	303	56	37

		Non-current assets **USD billions**	**Property, plant and equipment** **USD billions**	**Equity** **USD billions**
Alphabet	*06.30.2021*	160	92	238
Alphabet	*06.30.2026*	578	321	640
Alphabet	*09.30.2026*	629	373	678
Amazon	*06.30.2021*	219	134	115
Amazon	*06.30.2026*	846	446	552
Amazon	*09.30.2026*	988	509	614
Meta	*06.30.2021*	90	51	138
Meta	*06.30.2026*	324	226	261
Meta	*09.30.2026*	359	253	272
Microsoft	*06.30.2021*	149	60	142
Microsoft	*06.30.2026*	551	313	442
Microsoft	*09.30.2026*	593	347	471
Oracle	*05.31.2021*	76	7	6
Oracle	*05.31.2026*	215	100	43
Oracle	*08.31.2026*	248	128	67

		Gross financial debt **USD billions**	**Recognized lease liabilities** **USD billions**	**Leases not yet commenced** **USD billions**
Alphabet	*06.30.2021*	13	15	7
Alphabet	*06.30.2026*	100	21	91
Alphabet	*09.30.2026*	126	24	131
Amazon	*06.30.2021*	52	71	40
Amazon	*06.30.2026*	132	110	137
Amazon	*09.30.2026*	180	115	165
Meta	*06.30.2021*	-	13	7
Meta	*06.30.2026*	84	29	279
Meta	*09.30.2026*	84	31	356
Microsoft	*06.30.2021*	58	24	13
Microsoft	*06.30.2026*	40	89	329
Microsoft	*09.30.2026*	35	98	365
Oracle	*05.31.2021*	84	3	1
Oracle	*05.31.2026*	130	38	260
Oracle	*08.31.2026*	125	44	288

		Other commitments **USD billions**	**Net financial debt (liquidity negative)** **USD billions**	**Adjusted net financial debt (liquidity negative)** **USD billions**
Alphabet	*06.30.2021*	11	(121)	(115)
Alphabet	*06.30.2026*	811	(142)	(41)
Alphabet	*09.30.2026*	924	(139)	(49)
Amazon	*06.30.2021*	54	(13)	(11)
Amazon	*06.30.2026*	148	23	28
Amazon	*09.30.2026*	273	66	81
Meta	*06.30.2021*	21	(64)	(64)
Meta	*06.30.2026*	349	(7)	(3)
Meta	*09.30.2026*	455	1	4
Microsoft	*06.30.2021*	41	(60)	(59)
Microsoft	*06.30.2026*	229	30	34
Microsoft	*09.30.2026*	229	42	46
Oracle	*05.31.2021*	2	40	40
Oracle	*05.31.2026*	13	105	105
Oracle	*08.31.2026*	34	88	88

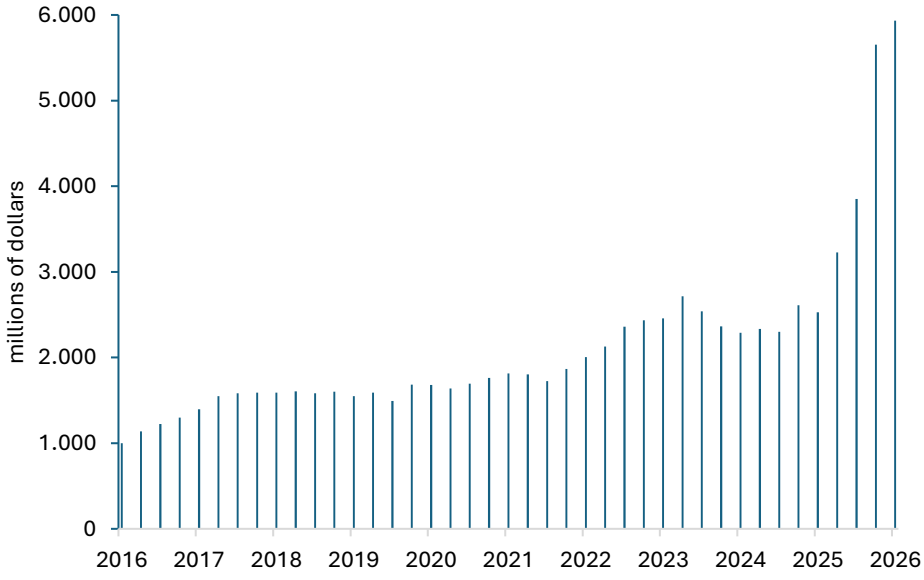
Source: 10-Q and 10-K reports filed with the SEC, Bloomberg, Flossbach von Storch Research Institute, as at November 2026. Figures rounded; for adjusted net financial debt, equity securities or 'restricted cash/restricted investments' were deducted from liquidity (current assets). For example, of the over $101 billion in marketable equity securities included as in Alphabet's liquidity as at 30 June 2026, $94 billion consisted of SpaceX shares, which are subject to short-term ($80 billion) and medium-term disposal restrictions ($14 billion until 2027). This position is therefore not equivalent to ordinary liquidity or short-term government bonds. The potential future realisable value of other equity securities is uncertain; their current carrying amount is also deducted for all companies. In June 2021, Alphabet held equity securities in current assets totalling over $6.3 billion, Amazon $1.9 billion (summer 2026: 4.7 billion), Meta: none in 2021 (2026: 3.5 billion), Microsoft in 2021/2026 and Oracle in 2021/2026: zero. Microsoft did not provide any new figures on 'other commitments' in its latest quarterly report; figures are therefore as at 30 June 2026. The amounts of other commitments are generally comparable, as they represent off-balance-sheet purchase, procurement and other contractual obligations, including short- and long-term agreements. However, the exact composition may vary. **Historical balance sheet figures are not an indicator of future performance**. **No recommendations regarding trading in the securities of the companies mentioned can be derived from balance sheet data.**

A significant proportion of the commitments entered into is likely to be reflected in the balance sheet in the coming years as additional property, plant and equipment and right-of-use assets. This will result in an additional depreciation charge, which will weigh on future profits. However, not all contractual obligations lead to depreciable assets. Furthermore, some of the obligations now mentioned in the reports represent maximum amounts.

4. Interest expenses are rising; free cash flow has turned negative

Interest expenses are also rising sharply as a result of increasing debt. Gross, before deducting interest income, these expenses amounted to just under 18.7 billion dollars in the past four quarters ending 30 September 2026. In the four preceding quarters, they totalled just under 9.8 billion dollars (Figure 4).

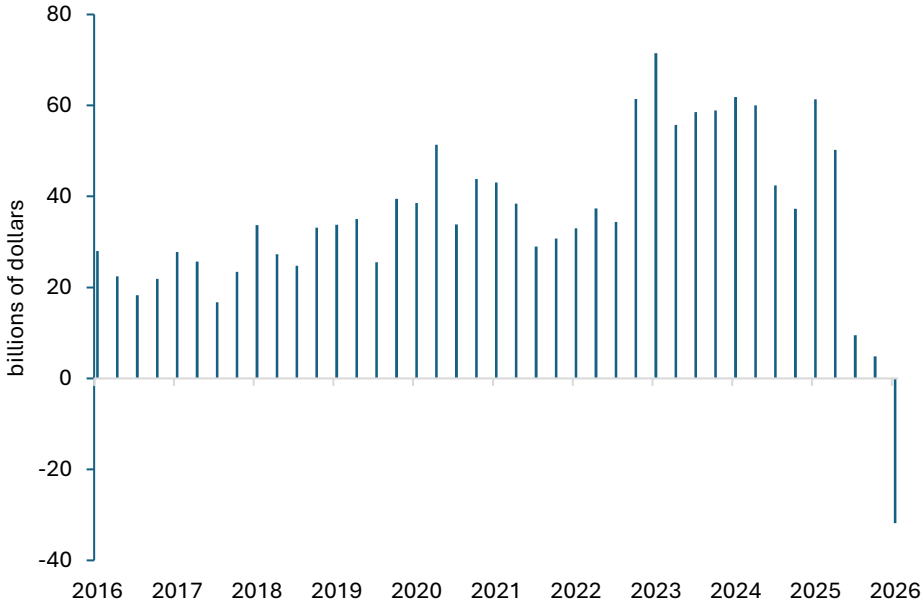
Figure 4: Interest expenditure of the five hyperscalers



gross, quarters 30 September 2016 to 30 September 2026, data from Meta since 31 March 2019, source: Bloomberg, Flossbach von Storch Research Institute, as at November 2026.

Free cash flow – a figure closely watched by the stock market, which, put simply, represents the cash inflow from operating activities less capital expenditure – turned negative in the quarter ending 30 September 2026 for the first time in the past ten years. In total, the hyperscalers burned through $32 billion (Figure 5).

Figure 5: Free cash flow of the five hyperscalers



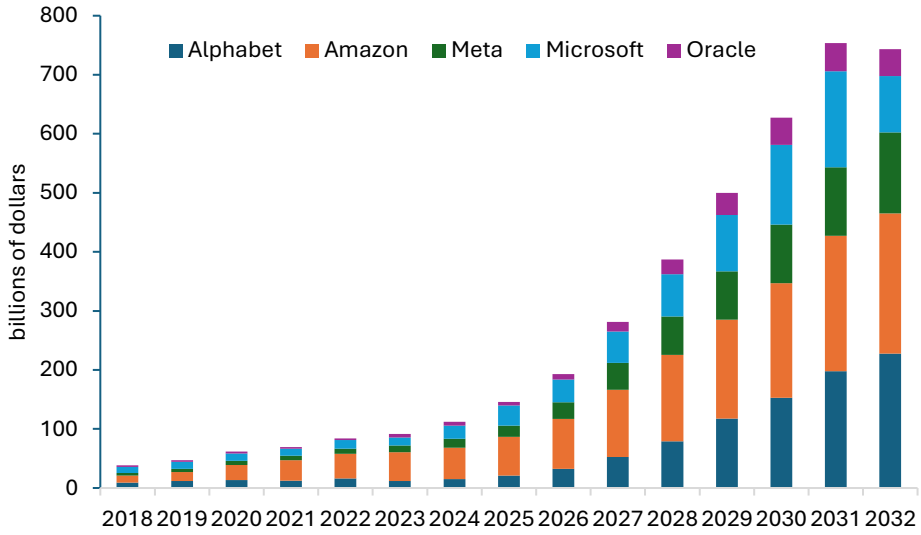
Quarters 30 September 2016 to 30 September 2026, Source: Bloomberg, Flossbach von Storch Research Institute, as at November 2026.

5. Trillions in depreciation and amortisation

With increasing investments and commitments, it is now easier – albeit still only approximately – to estimate the pressures that will be placed on the hyperscalers' profits. These investments and commitments will, in future, result in depreciation and amortisation charges on the assets recognised on the balance sheet.

Based on the latest quarterly reports, the analyst consensus forecasts depreciation and amortisation expenses of around 282 billion dollars on the hyperscalers' balance sheet values in the financial year 2027. This figure is then expected to rise to 500 billion in 2029, with the (provisional) peak of 754 billion dollars expected to be reached in 2031 (Figure 6).

Figure 6: Depreciation and amortisation of the five hyperscalers



Source: Bloomberg, Flossbach von Storch Research Institute, as at November 2026Depreciation of tangible assets and amortisation of intangible assets, financial years; financial year 2026 = partial estimate; financial years from 2027 onwards = estimate.

Whilst the wave of investment is still in full swing, the resulting wave of depreciation is already building up. Just a few years ago, depreciation stood at well below $100 billion per year – when the hyperscalers' business models did not require significant investment in hardware.

No one can predict exactly how quickly the companies will depreciate their investment. If business performance is worse than expected, the companies may face additional impairment charges. Furthermore, the companies have some leeway and the option to adjust depreciation periods. For instance, with effect from 1 July 2026, Microsoft has increased the expected useful life of data centres and office buildings from 15 to 25 years.

All five hyperscalers have, in recent years, extended the useful life of their server and network equipment from three years (Microsoft network equipment: two) to four, then in some cases to five (Amazon, Oracle) and most recently to six years (Meta: 5.5 years). This is evident from their annual reports (10-K). Amazon has reverted to five years for some of its assets.

Conclusion

This new heavy industry is growing rapidly. In view of the expected investments, the hyperscalers' long-term assets are likely to continue to rise sharply for the time being. A further increase in their aggregate balance sheet total is also probable. The hyperscalers are increasingly unable to finance their investments solely from their day-to-day operations and are instead relying more heavily on share capital increases, debt and other sources of financing. Furthermore, the commitments entered into and expected investments are likely to remain significantly above the expected depreciation for the time being. For the cash inflows, it is the investments



that are relevant, not the depreciation. The former place a strain on cash flows, whilst the latter are excluded from the calculation and are therefore cash-flow neutral.

To offset rising depreciation, as well as additional financing and other operating expenses, the hyperscalers must demonstrate a high rate of growth. Whilst the cost and expense side can at least be estimated very roughly, the additional revenue expected from AI remains highly uncertain.

It remains to be seen whether the expected additional AI revenues will sufficiently offset the rising investment and capital costs. Cautious investors are therefore applying higher risk premiums to hyperscaler shares. With expectations otherwise unchanged, this suggests lower valuation multiples than in the past. Lower price-to-earnings ratios could therefore be justified for the time being.

References

Ng, Michael / Shema, Lindsey / Singer, Brian / Corbett, Brendan / Xie, Lizzy (2026): Global Data Centre Capacity Update: Increasing Capacity Estimates. Goldman Sachs Equity Research, 2 November 2026. Accessed on 4 November 2026

Schürmann, Christof (2026): Hyperscaler: Die neue Schwerindustrie. Flossbach von Storch Research Institute, 10 August 2026. Accessed on 4 November 2026



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