

The Surge in Capital Expenditures and Debt Among Leading S&P 500 Technology Firms, 2024–2025

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Abstract

In 2025, the “Magnificent 7” U.S. technology giants and major semiconductor firms dramatically increased their capital expenditures (CapEx), channeling unprecedented resources into artificial intelligence (AI) infrastructure. This paper reviews the steep rise in CapEx relative to operating cash flow and analyzes these companies’ growing reliance on debt markets to sustain dividends and share repurchase programs. Using corporate filings and data from Reuters, Barron’s, Bloomberg, and the U.S. Bureau of Economic Analysis, the report explores both the economic stimulus and the financial stability risks that this investment-debt cycle poses for the United States.

Capital Expenditure Acceleration in 2024–2025

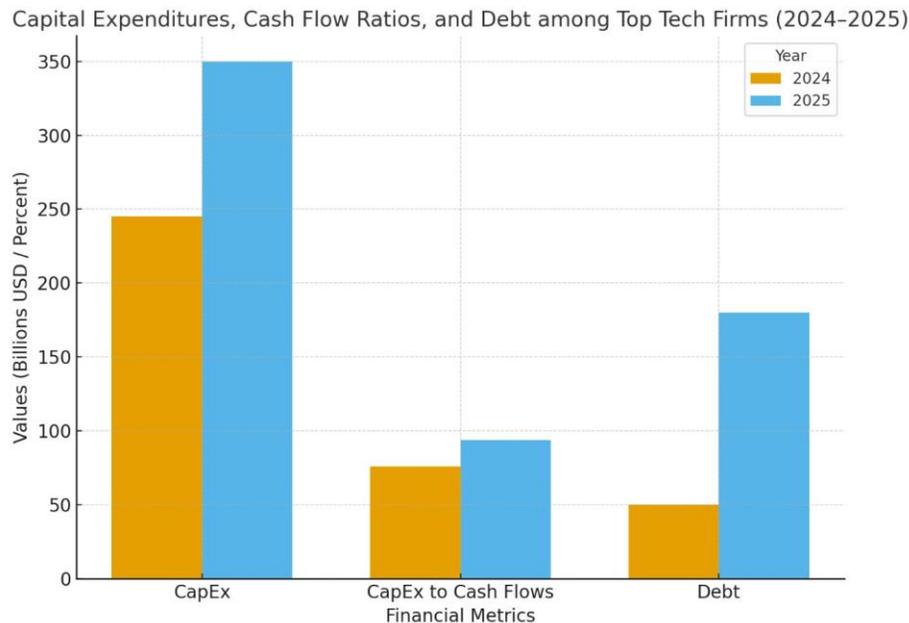
Capital spending among the ten largest S&P 500-listed technology and semiconductor companies climbed sharply—from approximately \$220–\$270 billion in 2024 to an estimated \$300–\$400 billion in 2025, constituting a year-over-year increase of nearly 50% (Reuters, 2025). Hyperscale companies such as Alphabet, Microsoft, Meta, and Amazon were the chief drivers of this growth, primarily as they scaled up infrastructure for AI data centers (Alphabet, 2024; Alphabet, 2025; Amazon, 2025; Meta, 2025; NVIDIA, 2025; Intel, 2025; TSMC, 2025). In 2025, AI infrastructure became the most significant source of new capital investment in the technology sector.

CapEx Relative to Operating Cash Flow

Analysis from Barron’s and Bank of America revealed that these technology firms devoted approximately 76% of operating cash flow to CapEx in 2024, with that figure climbing to an estimated 94% in 2025 (Barron’s, 2025). Free cash flow, as a result, tightened dramatically, raising questions about the sustainability of ongoing dividends and share buybacks.

Figure 1

Capital Expenditures, Cash Flow Ratios, and Debt among Top Technology Firms, 2024–2025



Note: Figure not included in this text version. Please see original document for graphical representation.

Debt Issuance as a Financing Bridge

To maintain robust shareholder return programs, these companies substantially increased their use of debt. Aggregate new debt among the ten-company cohort surged from \$40–\$60 billion in 2024 to an estimated \$140–\$220 billion in 2025, roughly tripling year-on-year (Bloomberg, 2025; Reuters, 2025). Specific examples include:

- Alphabet: \$25 billion in U.S. and EU multi-tranche bond issuances (Bloomberg, 2025)
- Meta: \$27 billion in private-credit facilities for AI data centers and \$30 billion in public bonds (Barron's, 2025)
- Microsoft: Approximately \$9–\$12 billion through multi-tranche offerings (Cbonds, 2025)
- Apple: A routine \$1 billion bond tap (Markets Insider, 2025)
- TSMC (U.S.): Project-financing debt estimated at \$5–\$15 billion (Reuters, 2025)

These levels of debt underscore a structural shift toward reliance on external financing to cover both record CapEx and ongoing shareholder payouts.

Economic and Market Implications

Macro-Economic Effects

From a Keynesian investment standpoint, increased CapEx supports aggregate demand and future productivity (Bureau of Economic Analysis [BEA], 2025). Private non-residential investment in equipment and structures accelerated in 2025, reinforcing GDP growth. Congressional Budget Office projections suggest this build-out could add as much as 0.5% to annual GDP growth in the short term. This effect, however, could reverse quickly if AI-driven demand falters.

Financial Stability Risks

Rising leverage amplifies the vulnerability of these companies to interest-rate and credit-spread shocks. Even though these technology leaders benefit from strong credit ratings and low borrowing costs, their aggregate net debt-to-EBITDA ratios are trending higher after years of steady deleveraging. Replacing internally generated cash with debt to fund dividends and buybacks resembles late-stage corporate finance behavior often seen before equity market corrections (cf. Minsky-Kalecki investment cycles).

Stock Market Valuations

Investors largely welcomed the CapEx surge, forecasting that AI would drive robust long-term earnings growth. Yet, with CapEx now absorbing nearly all of these firms' cash generation, reduced buyback capacity may weaken a major source of S&P 500 stock demand. Should debt issuance abate, or borrowing costs rise, corporate treasuries may reduce their share repurchases, fueling volatility. Notably, the Magnificent 7 comprised more than 60% of S&P 500 buybacks in 2023–2024 (Barron's, 2025).

Table 1

Capital Expenditures (CapEx) by Major Technology Firms, 2024–2025

Company	2024 CapEx (\$bn)	2025 CapEx (\$bn, est./guidance)	% Change YoY	Primary Driver
Alphabet	52.5	91–93	≈ 75% ↑	AI/data centers
Microsoft	≈ 30	≈ 80	≈ 160% ↑	AI/cloud infrastructure
Amazon	77.7	≈ 85	≈ 10% ↑	AWS expansion
Meta	39.2	60–72	≈ 70% ↑	AI infrastructure
NVIDIA	1.1	3.4	≈ 210% ↑	Capacity/R&D
Intel	23.9	18	↓ 25%	CapEx discipline
TSMC (U.S.)	≈ 35	38–42	≈ 10% ↑	U.S. fabs

Note: Data based on 2025 guidance and estimates from company filings and investor presentations (see References).

Outlook

For now, the outsized surge in CapEx represents a significant supply-side shock: it expands capacity in data centers, semiconductor fabrication, and cloud infrastructure. Over the medium term, though, funding investments through debt while maintaining high levels of buybacks and dividends may stretch corporate balance sheets, especially if higher interest rates persist. Achieving a sustainable balance may require either slowing CapEx growth or conserving cash by cutting back on shareholder distributions.

Conclusion

Between 2024 and 2025, the largest U.S. technology and semiconductor companies embarked on one of the boldest investment cycles in history, adding \$100–\$150 billion to annual CapEx and raising more than \$150 billion in new debt to sustain shareholder returns. While this expansion is an immediate economic stimulus, it also increases risks related to leverage and market volatility. Whether forthcoming AI-driven productivity gains will justify the current pace of investment remains an open question, requiring close attention from both policymakers and investors.

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