# The Relationship Between Capital Expenditures and Earnings Growth: Technology's Role in the S&P 500

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Understanding how capital expenditures (CapEx) drive earnings growth is crucial for assessing corporate strategy and long-term shareholder value. Over the past decade, data from the S&P 500 reveals a notable connection between rising CapEx, particularly in technology, and robust earnings growth. Despite the volatility in overall S&P 500 earnings, periods of significant investment in digital infrastructure, semiconductors, and cloud computing have often coincided with strong profitability, underscoring technology's outsized influence (FactSet, 2024; Multpl, 2025).

**Earnings Growth and the Technology Surge**

Between 2015 and 2024, S&P 500 earnings saw dramatic swings, with declines of −15.42% in 2015 and −32.51% in 2020 (largely due to the COVID-19 pandemic), followed by a record-shattering rebound of +110.21% in 2021,a year powered by technology companies (Multpl, 2025). This rebound illustrates how targeted investment can translate to financial resilience. For example, as remote work and e-commerce exploded, big tech firms quickly scaled cloud infrastructure and digital platforms, capturing surging demand and driving earnings (FactSet, 2024).

Examining sector-level data tells a similar story. Technology's share of annual S&P 500 earnings growth has fluctuated widely, sometimes exceeding 100% due to both sector-specific booms and changes in sector definitions. In 2018, for instance, technology's purported share of S&P earnings growth soared over 1,100%, a distortion caused by the GICS reclassification that moved companies like Alphabet and Meta into Communication Services (News Release Archive, 2018). More recently, the technology sector contributed an estimated 346% and 76% of S&P earnings growth in 2023 and 2024, respectively (YCharts, 2025). This dominance is not theoretical: just a handful of mega-cap tech companies have accounted for virtually all index-level earnings expansion in some years.

This dynamic is clearly illustrated in Table 1, which summarizes technology's share of annual S&P 500 EPS growth over the last decade. As the table shows, technology's impact on S&P 500 earnings growth has been both substantial and volatile, with contributions ranging from negative territory in years of sector reclassification or market stress, to triple-digit percentages during periods of tech-led expansion.

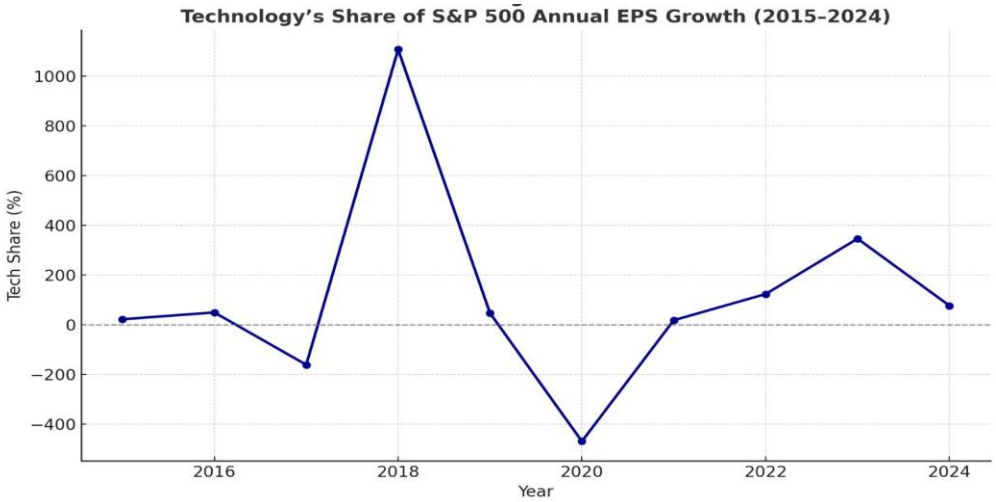
**Table 1. Technology's Share of Annual S&P 500 EPS Growth, 2015–2024**

| Year | Total EPS ($) | Total ΔEPS ($) | IT EPS ($) | IT ΔEPS ($) | Tech Share (%) |
|---|---|---|---|---|---|
| **2015** | 23.06 | −3.69 | 10.17 | −0.79 | 21.41% |
| **2016** | 27.90 | +4.84 | 12.54 | +2.37 | 48.97% |
| **2017** | 33.85 | +5.95 | 2.91 | −9.63 | −161.85% |
| **2018** | 35.03 | +1.18 | 15.98 | +13.07 | 1107.63% |
| **2019** | 39.18 | +4.15 | 17.90 | +1.92 | 46.27% |
| **2020** | 38.18 | −1.00 | 22.60 | +4.70 | −470.00% |
| **2021** | 56.73 | +18.55 | 25.87 | +3.27 | 17.63% |
| **2022** | 50.37 | −6.36 | 18.05 | −7.82 | 122.96% |
| **2023** | 53.90 | +3.53 | 30.26 | +12.21 | 345.89% |
| **2024** | 61.21 | +7.31 | 35.82 | +5.56 | 76.06% |

*Note. EPS = earnings per share. Tech share (%) = 100 × (ΔIT EPS ÷ ΔTotal EPS). Source: YCharts (2025).*

For a visual perspective, Figure 1 charts technology's share of S&P 500 annual EPS growth over the same period. The chart highlights the dramatic swings in tech's contribution, with notable spikes following reclassifications and periods of rapid innovation, and dips during sector rotations or market disruptions. This volatility underscores both the opportunity and risk inherent in relying on a concentrated group of technology firms to drive index earnings.

**Figure 1.** Technology's *Share of S&P 500 Annual EPS Growth (2015–2024).*




*Note. Tech share (%) = 100 × (ΔIT EPS ÷ ΔTotal EPS). Source: YCharts (2025).*

**The CapEx–Earnings Link in Practice**

The influence of technology CapEx is especially apparent among the so-called “Magnificent Seven” (or “Great Eight”), the largest tech firms in the index. In Q2 2025, these companies delivered a staggering 28.4% year-over-year EPS growth, while the rest of the S&P 500 managed only 7.4% (DWS, 2025). Similarly, LSEG (2025) found that technology mega-caps drove the lion’s share of 2024 EPS gains. These case studies vividly illustrate how concentrated CapEx in digital infrastructure, such as server farms, AI development, and semiconductor fabrication, can translate into sector-wide and even index-wide earnings momentum.

**Examples to Illustrate the Dynamics**

Consider the 2020 pandemic, when most industries saw sharp earnings declines. Amazon and Microsoft, however, rapidly expanded data center investments to meet surging cloud demand, resulting in record profits even as the broader economy contracted. Similarly, Alphabet’s heavy spending on AI research positioned it to capture the generative AI wave that supercharged earnings in 2023–2024 (FactSet, 2024; YCharts, 2025).

Another example: In 2018, the GICS sector shake-up meant that companies like Meta and Alphabet were no longer counted as “technology”, a technical move that dramatically skewed year-to-year comparisons and sometimes exaggerated or understated tech’s true contribution to earnings growth (News Release Archive, 2018).

**Limitations and Caveats**

Two main caveats deserve attention. First, the 2018 GICS reclassification fundamentally altered sector definitions, making historical comparisons less straightforward (News Release Archive, 2018). For instance, excluding Communication Services from tech after 2018 can misstate the impact of companies like Alphabet and Meta. Second, when aggregate earnings growth is small or negative, the ratio method used to calculate sector contributions can generate extreme or even negative numbers, as seen in 2020. Despite these challenges, the evidence consistently points to technology CapEx as a critical engine for S&P 500 earnings growth.

**Investor Implications and Practical Takeaways**

The high concentration of S&P 500 earnings in a handful of tech giants means investors face unique risks and opportunities. If these mega-cap firms underperform, index-level earnings could drop sharply, increasing volatility and downside risk. For instance, stress-testing a portfolio by simulating a 20% earnings miss among the top five tech firms can reveal significant exposure that traditional diversification metrics might miss.

To address these structural realities, investors should consider constructing a “consistent tech” series for attribution analysis, combining historical Information Technology with Communication

Services post-2018. Additionally, using dollar-change (ΔEPS) rather than percent change helps avoid distortions when the index base is small or negative.

**Conclusion**

In summary, technology-driven CapEx has become a cornerstone of S&P 500 earnings growth over the last decade. While sector definitions and aggregation methods pose analytical challenges, the data makes clear that continued investment in digital infrastructure, cloud computing, artificial intelligence, and semiconductors will likely keep technology at the center of earnings momentum for years to come. For a deeper dive into these trends, see my recent publication, *The Intelligent Age*, now available on Amazon.

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