

TECHNOLOGY

## Has Technology Sector Lost its Dominance?

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*Are today's doom and gloom fears for the tech sector merited or unwarranted?*

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There is a general **doom and gloom in the technology sector**, arguably because of the widespread decline in **its stock prices that began in September 2021**. Recent headlines highlight the **large-scale employee layoffs by technology companies** and the near failure

of **Silicon Valley bank that deals largely with technology companies**. Last week, there was even a fear that many technology **companies may miss their payroll, as their funds were stuck in SVB**. In these gloomy times, people tend to forget the big picture. We provide a historical and long-term perspective on the technology sector. We provide data-based evidence that the technology sector has not only been the most dominant sector of the US economy, but its dominance has strengthened over time. It remains vibrant and the most valuable sector in the economy.

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We analyze the market capitalizations of all companies listed on the US stock exchanges. Market capitalization represents the value that investors assign to a company, an assessment that depends on a company’s current performance as well as its expected long-term prospects. Market value may not be a perfect measure and could deviate from the firm’s fundamental performance from time to time, such as during the dotcom boom and bust years. But despite its deficiencies, market capitalization remains the best measure of a company’s importance in the capital markets. Persistence of values, lasting over decades, overcome short-term deficiencies in that measure, if any.

We divide all firms listed on the US Stock exchanges into twelve industry sectors, based on the classification provide by **Professor Ken French**. Five industry sectors are retained, three of which contributed most to the aggregate market capitalization during the decade of 1961-1970 and the two that have dominated the 21st century. Year-end equity value of all companies in an industry sector are summed up to calculate an industry’s aggregate value each year. Those annual industry values are averaged over a decade, and then divided by the average of total market value of the entire market in that decade. The resulting percentage represents the importance of that sector to the U.S. capital market.

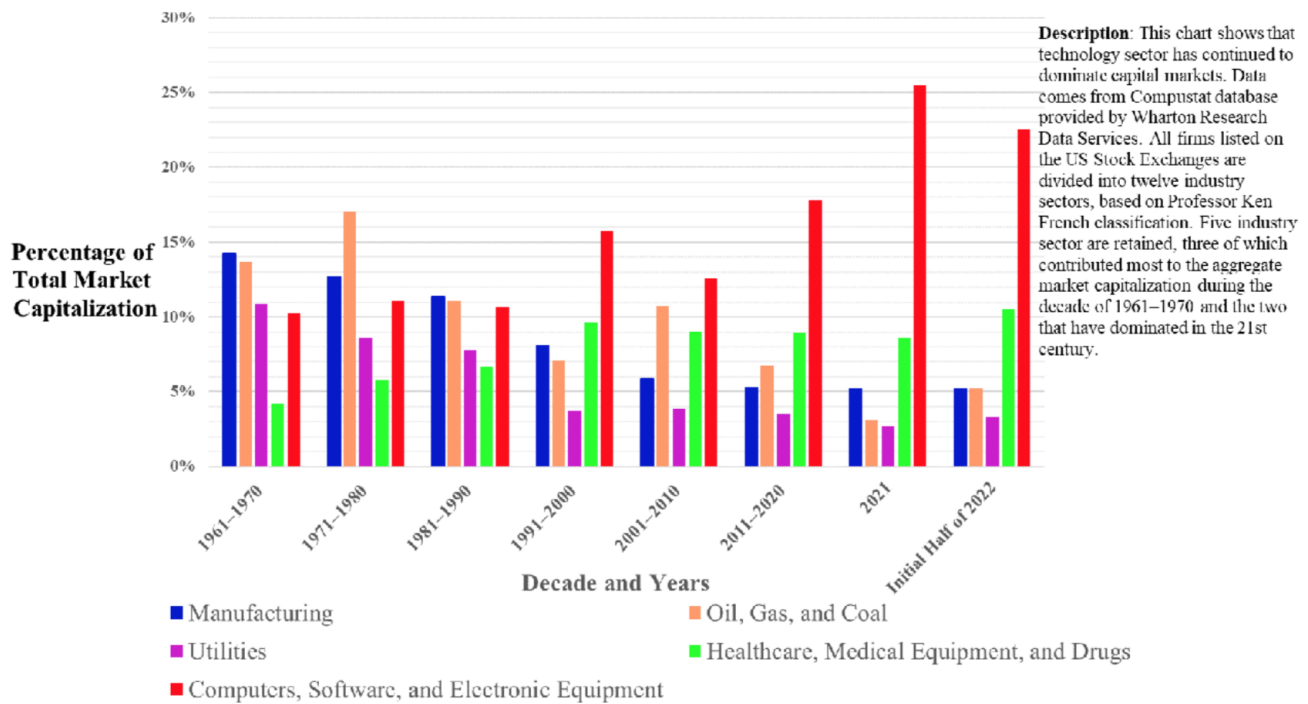
We calculate this percentage for the five sectors for successive five decades, 1961-1970, 1971-1980, 1981-1990, 1991-2000, 2001-2010, and 2011-2020. We also calculate these percentages for 2021, and the initial half of 2022

Figure shows that during the 1960s, manufacturing, energy, and utility sectors were the most valuable in the US economy. During the 1970s and 1980s, manufacturing and energy remained the most valuable sectors, but technology sector (computers, software, and electronic equipment) started emerging as the third most valuable sector. By the 1990s, the technology sector had become the most valuable sector, and health (healthcare, medical equipment, and drugs) became the second most valuable one. Technology sector's percent valuation declined slightly from 16% in the 1990s to 13% in the decade of 2001-2010, because of the dotcom bust, but it then increased to 18% during the decade of 2011-2020, and jumped further to 25% in 2021. Thus, despite the lost prominence of erstwhile technology giants such as IBM, America Online, and Cisco over time, other technology giants, such as Apple and Microsoft emerged, and became even more valuable. At the end of 2021, almost a fourth of total market capitalization was contributed by the technology sector, despite the meltdown in the technology stock prices that began in September of 2021. Based on the limited data for 2022, that percentage has remained at 23%. Health sector has remained the second most valuable sector. The total percent values of the manufacturing, energy, and utilities sectors, the most valuable sectors of the 1960s, now do not reach even half the percent value of the technology sector. Such is its dominance.

We also examine the ten most valuable companies each year, as well as on March 17, 2023, which we select because it falls after the SVB debacle. Figure 2 shows that the composition of this leader group has gone dramatic changes over time. But the technology companies have remained a constant and dominant feature of this group, at least since the 1990s. In fact, on March 27, 2023, six out of ten most valuable companies in the ranked order are technology companies, Apple Inc, Microsoft Corp, Alphabet Inc, Nvidia Corp, Meta Platforms Inc, and Taiwan Semiconductor Mfg Co. Amazon and Tesla (both technology companies in their own right), as well as Berkshire Hathaway and Johnson & Johnson make up the rest.

Thus, looking from both the historical-trend perspective and the current valuations, there is no evidence that technology sector has lost its dominance. While the creative destruction process keeps throwing new winners and losers, technology sector remains a thriving and the most valuable sector in the US economy. No other sector ever dominated the capital markets so much in the last 60 years. Thus, we find no support for the general gloom and doom currently prevalent in the technology sector.

**Figure 1:** Most valuable industry sectors in each decade



**Figure 2:** Most valuable companies at the end of each decade

Rank	At the end of 1970	At the end of 1980	At the end of 1990	At the end of 2000	At the end of 2010	At the end of 2020	17-Mar-23
1	Intl Business Machines Corp	Intl Business Machines Corp	Intl Business Machines Corp	General Electric Co	Exxon Mobil Corp	Apple Inc	Apple Inc
2	At&T Corp	At&T Corp	Exxon Mobil Corp	Cisco Systems Inc	Apple Inc	Amazon Com Inc	Microsoft Corp
3	General Motors Co	Exxon Mobil Corp	Bank Tokyo-Mitsubishi	Microsoft Corp	Petroleo Brasileiro Sa-Petr	Microsoft Corp	Alphabet Inc
4	Exxon Mobil Corp	Amoco Corp	General Electric Co	Exxon Mobil Corp	Petrochina Co Ltd	Alphabet Inc	Amazon Com Inc
5	Sears Roebuck & Co	Schlumberger Ltd	Altria Group Inc	Pfizer Inc	Shell Plc	Meta Platforms Inc	Berkshire Hathaway
6	Eastman Kodak Co	Shell Oil Co	Toyota Motor Corp	Citigroup Inc	Microsoft Corp	Tesla Inc	Nvidia Corp
7	Texaco Inc	Standard Oil Co	Royal Dutch Petroleum Nv	Walmart Inc	China Mobile Ltd	Alibaba Group Hldg	Tesla Inc
8	General Electric Co	Mobil Corp	Walmart Inc	American International Group	Berkshire Hathaway	Taiwan Semiconductor Mfg Co	Meta Platforms Inc
9	Xerox Holdings Corp	Chevron Corp	Bt Group Plc	Merck & Co	Walmart Inc	Berkshire Hathaway	Johnson & Johnson
10	Gulf Corp	BP Plc	Bristol-Myers Squibb Co	Nokia Oyj	General Electric Co	Visa Inc	Taiwan Semiconductor Mfg Co



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