Evaluating the AI Megatrend in 2023

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Key Takeaways

- Global corporate investment in AI has grown from $14.57 billion in 2013 to $189 billion in 2023, representing a 13x increase.
- Private investment in generative AI has increased by more than 5x relative to levels observed in 2022.
- The U.S. leads in private investment in AI, with no other country coming close to its level of private spending.

The Stanford AI Index for 2024 has grown to more than 500 pages! If you have an interest in AI, this is an incredible resource. But as a form of AI for you on this report, we highlight key takeaways for you.

Trends Impacting AI Investment

Figure 1 plots global corporate investment in AI back to 2013.

- The change from $14.57 billion ($B) in 2013 to $189B in 2023 represents a 13x increase.
- 2021 was the peak level of investment, and 2023 was lower than 2022.
    - **M&A activity** was $173B in 2021, cut in half to $80.6B in 2023. The scrutiny that M&A activities receive in 2024—especially M&A that involves large technology companies—has been widely publicized.
    - **Private investment** also dropped compared to 2021, going to a figure of $96B. It's still a big number, but higher costs of capital and short-term interest rates put a dampener on activity in lieu of larger capital expenditures, perhaps in AI chips.

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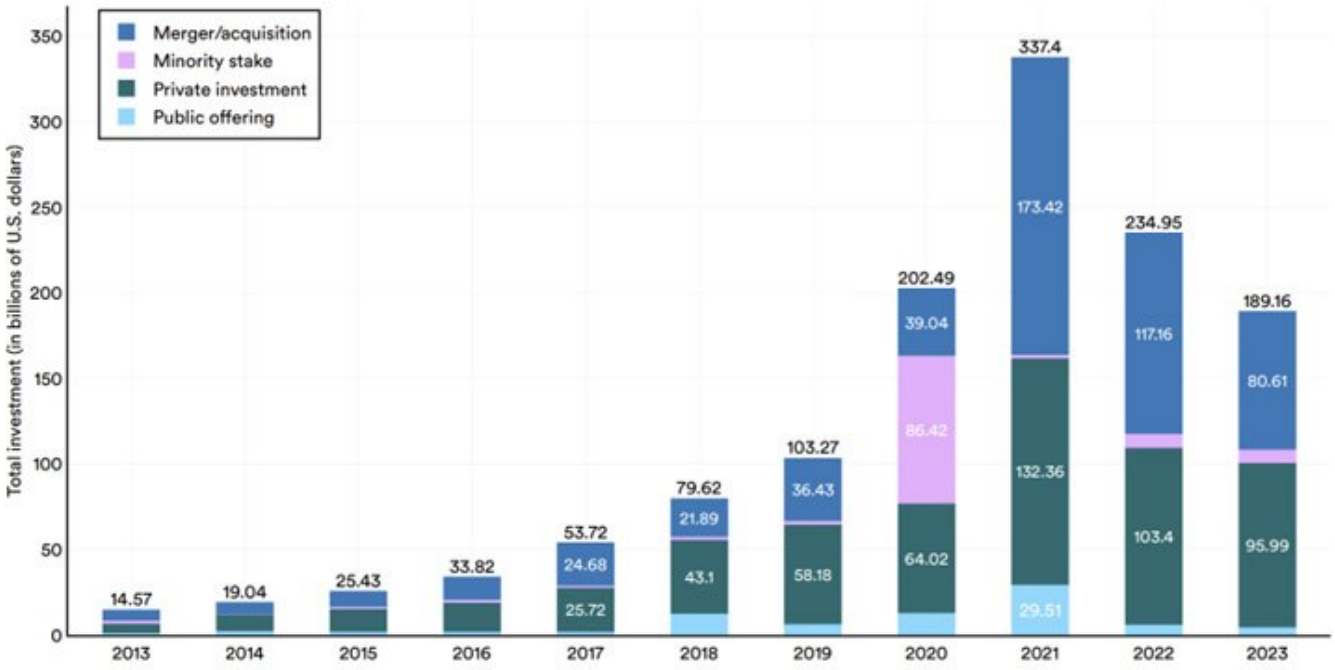
Figure 1: Global Corporate Investment in AI by Investment Activity



Source: Nestor Maslej, Loredana Fattorini, Raymond Perrault, Vanessa Parli, Anka Reuel, Erik Brynjolfsson, John Etchemendy, Katrina Ligett, Terah Lyons, James Manyika, Juan Carlos Niebles, Yoav Shoham, Russell Wald and Jack Clark, AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA, April 2024. ("The AI Index 2024 Annual Report" hereafter)

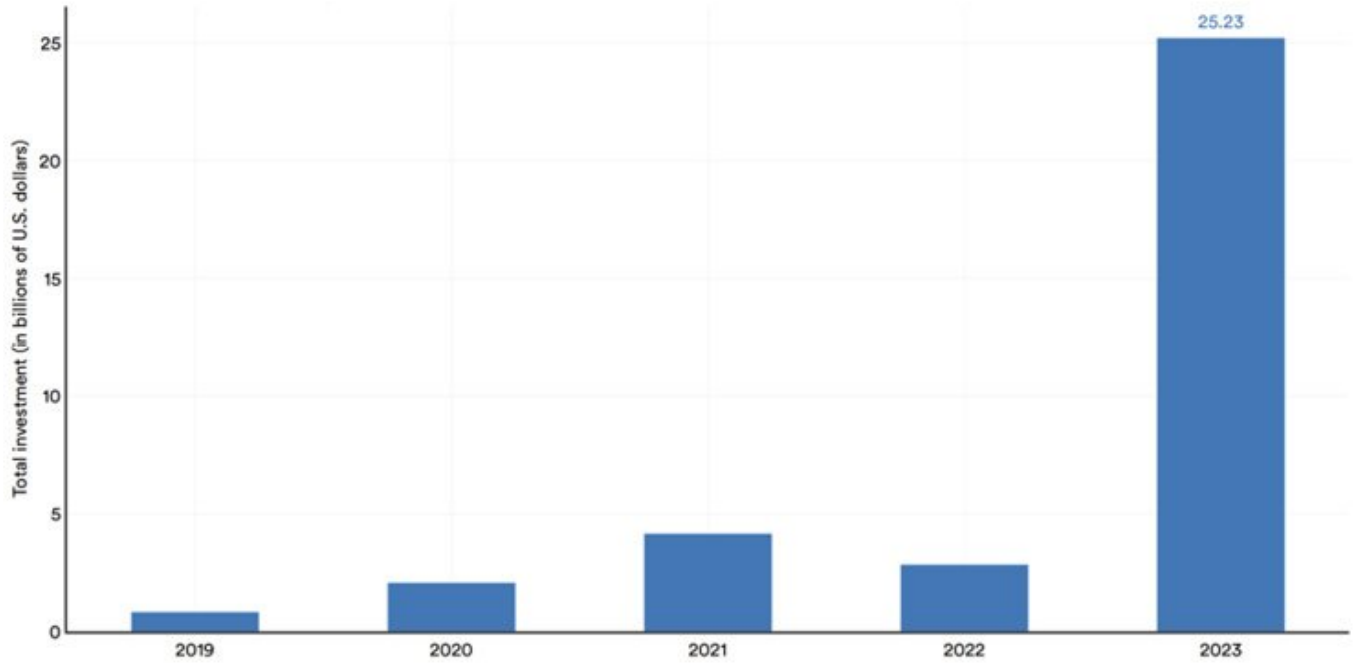
Now, we would be remiss to leave the discussion there, as the headlines that we are seeing on a daily basis would not naturally lead us to predict that AI investment has been going down.

The report evolves each year to best capture new learnings and new details. Generative AI is clearly one of these details, as ChatGPT catapulted this technology into the mainstream. 2023 was the first full year from which we can pull data about different investment activities related to Generative AI. Figure 2:

- Indicates private investment in generative AI from 2019 to 2023.
- Shows that after the catalytic event—the launch and viral uptake of ChatGPT—private investment in generative AI increased by more than 5x the levels observed in 2022.

We believe this trend in generative AI investment is the primary driver behind the headlines we have been seeing for the better part of the last 16 months.

Figure 2: Private Investment in Generative AI, 2019 to 2023



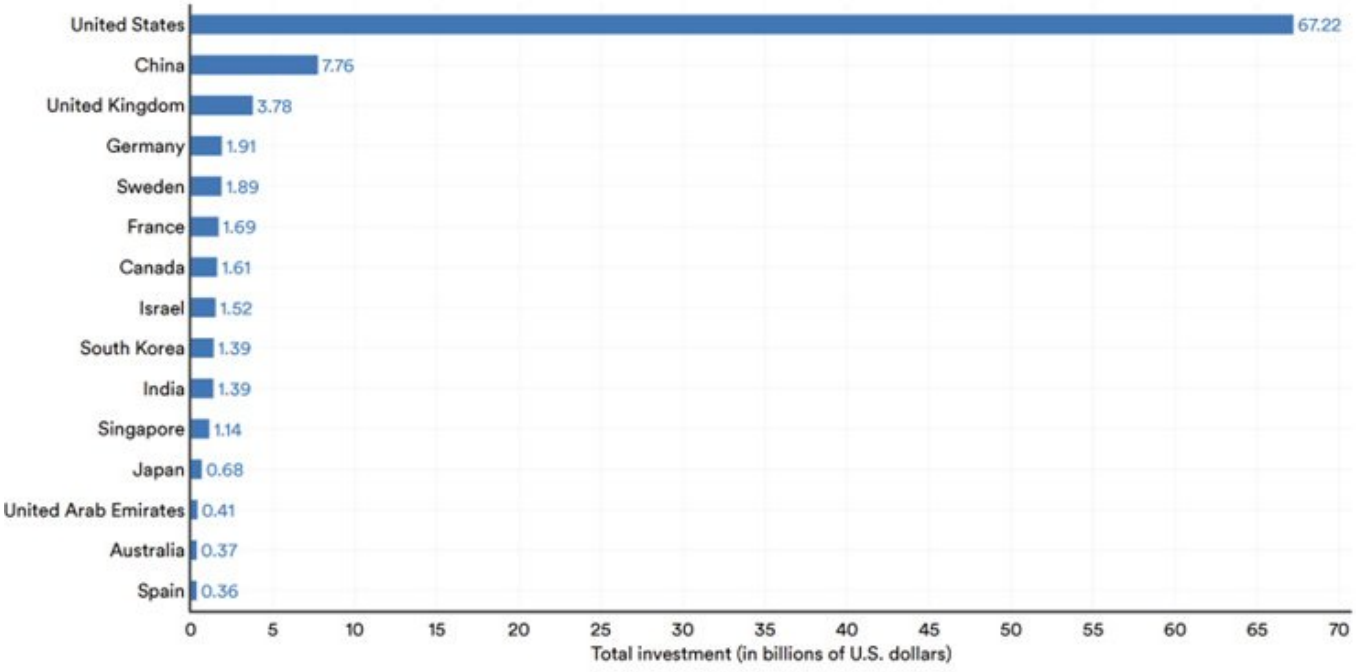
Source: The AI Index 2024 Annual Report.

The Geopolitics of AI Show Up in the Private Investment in AI

One geopolitical rivalry, time and again, is ever-present in the AI headlines: the U.S. versus China. These two countries have the most prolific spending on AI. China is more influential at the government investment level, whereas the U.S. is more focused on the private side—even if we are seeing things like the CHIPS Act encouraging the semiconductor supply chains to shift more toward the U.S.

Figure 3 shows that no country, at least on a private investment basis, is spending anything close to what the U.S. is spending, which likely means it will be difficult to challenge U.S. leadership in this area.

Figure 3: Private Investment in AI by Geographic Area, 2023



Source: The AI Index 2024 Annual Report.

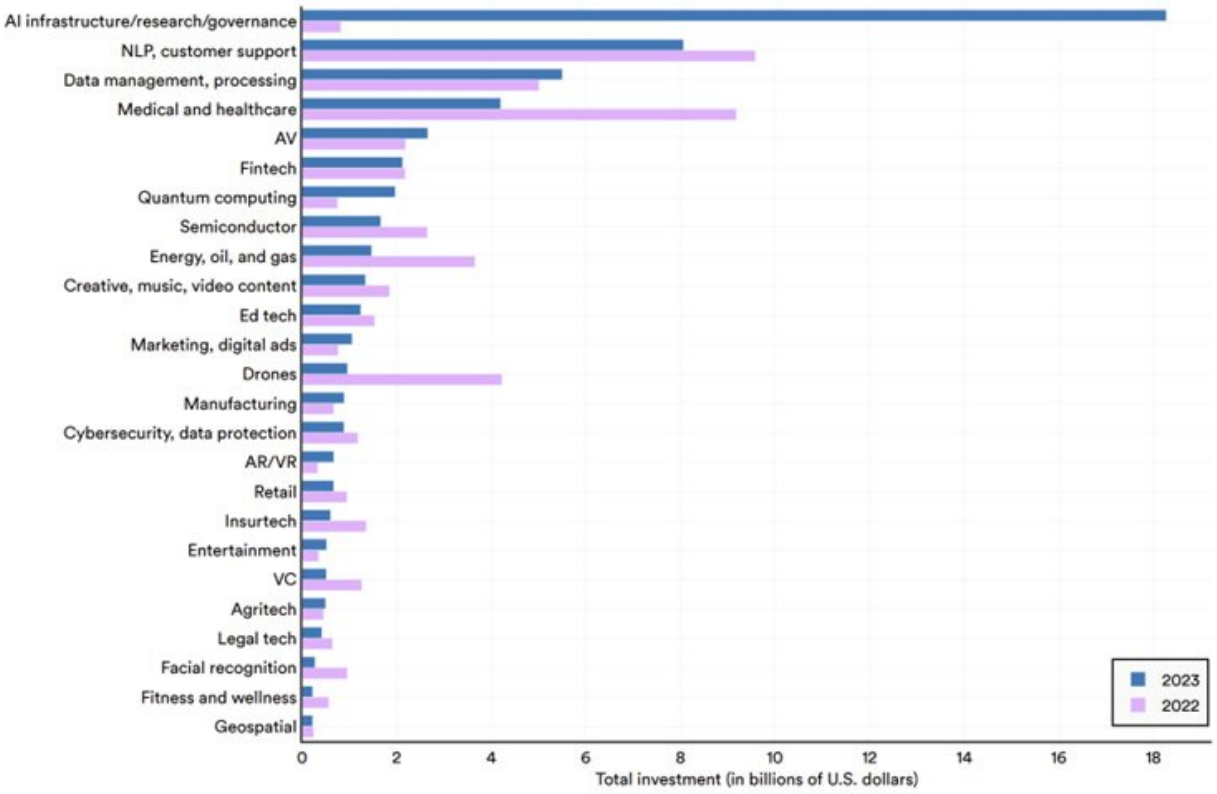
2023 Was a Year of Building AI Applications

Looking at figure 4, it's clear the focus category of 2023 was "AI infrastructure/research/governance," and then there was everything else. This category took $18.3B of private investment, whereas the next biggest focus area, "NLP, customer support," took $8.1B. Companies building AI applications, like OpenAI, Anthropic and Inflection AI, are included here.

Quantum computing also had a rather significant increase in investment from 2022 to 2023.

Drones, on the other hand, saw a rather significant decrease.

Figure 4: Private Investment in AI by Focus Area, 2022 vs. 2023



Source: The AI Index 2024 Annual Report.

Conclusion: What Are the C-Suites Selling Us?

The quarterly earnings calls in which U.S. publicly listed companies engage represent a dance, and the most important takeaway from every call is learning what the C-suite of the specified firm is trying to sell. Figure 5 shows the themes of AI mentions in earnings calls, comparing 2018 to 2023.

This is, in our view, the true impact of ChatGPT. This application made the potential of generative AI so exciting that every public company felt it must pay attention and promote actions. Even if the "*Attention is all you need*"[1] paper defining generative pre-trained transformers as an architecture was published in 2017, prior to ChatGPT, corporate America was not really paying close attention.

The mentions on Fortune 500 earnings calls with generative AI as a theme increased more than 6,300% from 2018 to 2023.

Figure 5: Themes of AI Mentions on Fortune 500 Earnings Calls, 2018 vs. 2023

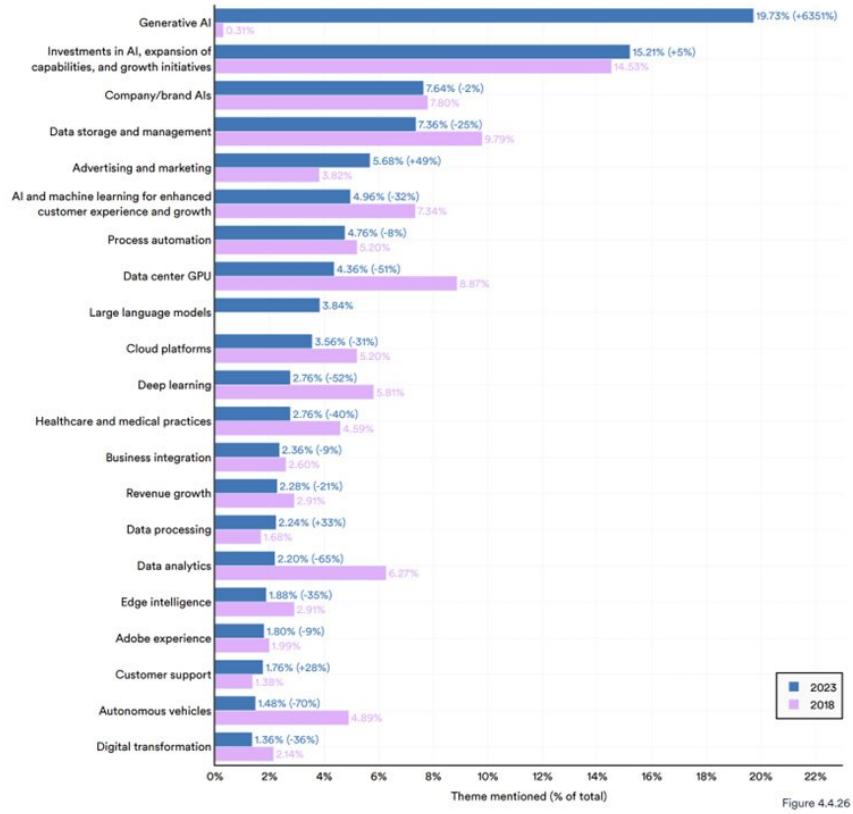


Figure 4.4.26

Source: The AI Index 2024 Annual Report.

WisdomTree has focused on the AI megatrend in a few different ways:

- The WisdomTree Artificial Intelligence & Innovation Fund (WTAI) tracks the returns, before fees and expenses, of the WisdomTree Artificial Intelligence & Innovation Index. This is an exposure across the broad AI ecosystem, and it touches many of the topics that publicly listed companies are pursuing that are mentioned in the Stanford AI Index report.
- The WisdomTree U.S. Quality Growth Fund (QGRW) tracks the returns, before fees and expenses, of the WisdomTree U.S. Quality Growth Index. This is an exposure to some of the highest-quality companies in the U.S., defined by return on equity and return on assets. It so happens that many of these companies are the ones focused on deploying and developing large language models, such as Microsoft, Alphabet, Amazon.com and Meta Platforms.

Both of these Funds can provide exposure to this theme, depending on whether you want more diversified ecosystem exposure and the innovative applications or the mega-caps that are currently benefiting the most.

[1] Source: Vaswani et al., “Attention is all you need,” *arXiv*, 2017.

Important Risks Related to this Article

For current Fund holdings, please click the respective ticker: WTAI, QGRW. Holdings are subject to risk and change.

There are risks associated with investing, including the possible loss of principal. Please read the Fund's prospectus for specific details regarding the Fund's risk profile.

WTAI: The Fund invests in companies primarily involved in the investment theme of artificial intelligence (AI) and innovation. Companies engaged in AI typically face intense competition and potentially rapid product obsolescence. These companies are also heavily dependent on intellectual property rights and may be adversely affected by loss or impairment of those rights. Additionally, AI companies typically invest significant amounts of spending on research and development, and there is no guarantee that the products or services produced by these companies will be successful. Companies that are capitalizing on innovation and developing technologies to displace older technologies or create new markets may not be successful. The Fund invests in the securities included in, or representative of, its Index regardless of their investment merit, and the Fund does not attempt to outperform its Index or take defensive positions in declining markets. The composition of the Index is governed by an Index Committee, and the Index may not perform as intended.

QGRW: Growth stocks, as a group, may be out of favor with the market and underperform value stocks or the overall equity market. Growth stocks are generally more sensitive to market movements than other types of stocks. The Fund is non-diversified; as a result, changes in the market value of a single security could cause greater fluctuations in the value of Fund shares than would occur in a diversified fund. The Fund invests in the securities included in, or representative of, its Index regardless of their investment merit. The Fund does not attempt to outperform its Index or take defensive positions in declining markets, and the Index may not perform as intended.