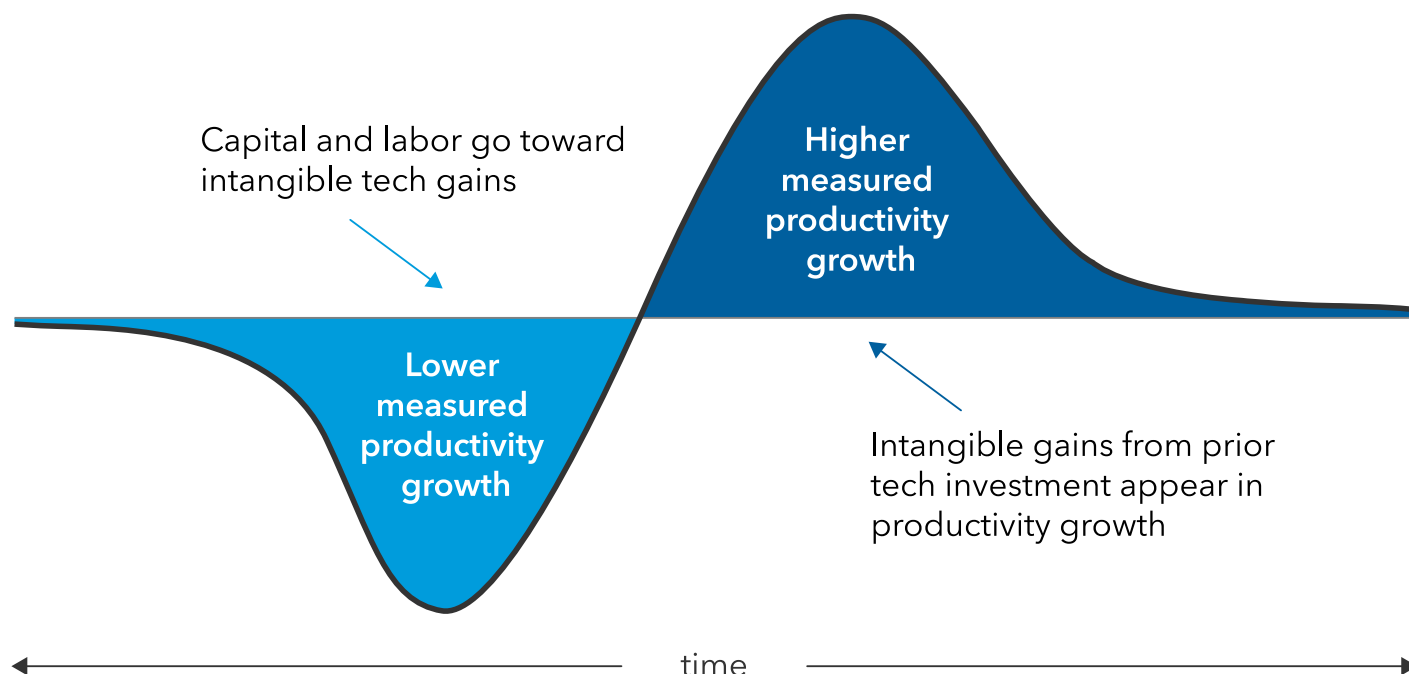




Productivity gains from new technologies often take years to surface

Measured productivity growth vs. reality



Sources: Capital Group, MIT Initiative on the Digital Economy. The productivity “J curve” illustration shows the lag effect that the introduction of new technology can have on total factor productivity (TFP). TFP is measured as the change in aggregate economic output that is not associated with changes in either capital or labor input and approximates the impact of technology change.

But adapting to new tools for productivity gains takes time. New technology can be a drag on productivity as enterprises and individuals continue with old processes while learning and integrating new ones. As a result, it can be several years before tangible economic benefits are realized.

I believe 10 years from now AI will have transformed the way we do business. But that doesn't mean that returns will show up immediately or that AI is a one-way escalator up for companies. It is also a cycle, and it will be subject to the same psychology and laws of economics that we've seen in other innovation cycles.

2. The pace of capital investment will depend on results

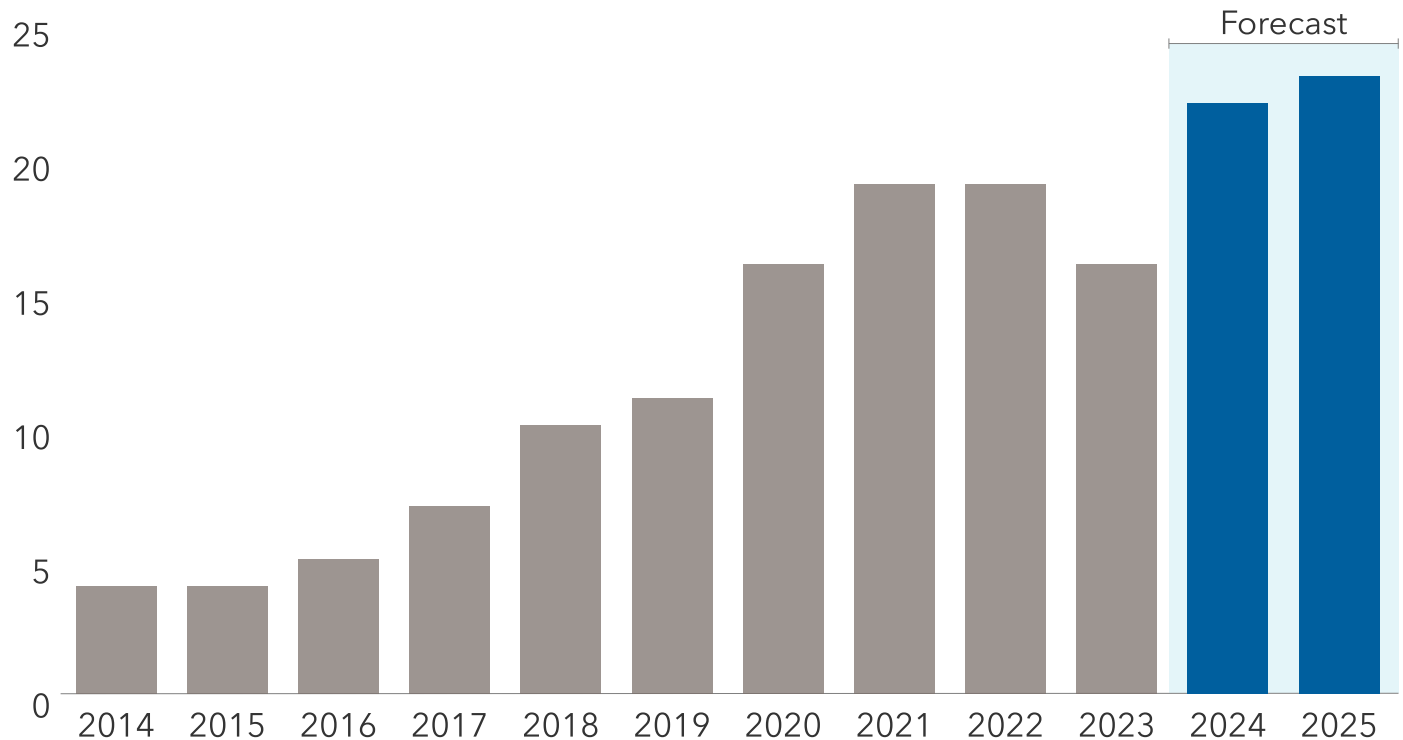
Tech giants Microsoft, Meta, Alphabet and Amazon [have invested tens of billions of dollars in AI infrastructure](#). Much of this has been spent on semiconductors and other materials needed for the build-out of data centers. For these so-called hyperscalers (companies that represent the leading providers of internet and cloud platforms) to continue spending at such elevated levels, I

expect they will need to see a tangible return on their investment in the form of revenue and, ultimately, profit growth.

Tech giants are investing heavily in AI and other capital projects



Big Tech's proportion of total capex across S&P 500 companies (%)



Sources: Capital Group, FactSet, Standard & Poor's. "Big Tech's proportion of total capex" represents total capital expenditures by Alphabet, Amazon, Meta and Microsoft as a percentage of total capital expenditures companies in the S&P 500 Index. Data as of June 30, 2024.

Feedback

Will we see returns from AI unfolding over the next year or two? I expect that for some companies we will but for many others we won't. It seems likely that there will be hiccups along the way for companies whose stock prices are already reflecting future AI-related growth expectations.

I've seen this movie before. The market and companies become very enthusiastic about a growth opportunity and invest significantly toward that opportunity. In this case that means spending heavily on AI-related infrastructure. When the market changes its mind and decides spending is a bad thing, the companies will eventually line up and begin to cut spending. That is not the mindset that you see right now with AI-related investments, but when the market changes its mind, you will eventually see that mindset permeate the industry and spending will come down.

Back in the late 1990s, Cisco Systems, the maker of networking hardware and telecom equipment for the internet, saw its shares soar, making it the most valuable company in the S&P 500. After the bubble burst, shares plummeted nearly 80% as telecom companies cut spending. The company has yet to recover to its highs of that period.

The bottom line

Today we're in a period of heightened enthusiasm for AI, and I don't question that enthusiasm. I think AI will be spectacular and very important. But I believe that at this point in the cycle investors should be selective and carefully consider the risks.

[Read important disclosures](#)



Chris Buchbinder is an equity portfolio manager with 28 years of investment industry experience (as of 12/31/2023). He holds bachelor's degrees in economics and international relations from Brown.

RELATED INSIGHTS

