INVESTMENT UPDATE: SECOND QUARTER 2024

This is a quarterly update of economic conditions and investment strategy.

Equity index returns were strong through the first six months of 2024, driven largely by investor excitement about artificial intelligence (AI). We suspect that the amount of capital chasing the promise of AI will depress future returns. We are focusing on areas that have seen more modest investor interest, including global commodities and Europe.

A STRONG FIRST HALF BUILT ON A NARROW FOUNDATION

Equity markets had a solid second quarter. The S&P 500 generated a total return of 4.3%, bringing its first-half return to 15.3%. But market returns were once again remarkably narrow, concentrated in a few mega-cap stocks benefiting from excitement about artificial intelligence. The top-five contributors to the S&P 500's performance – Alphabet, Amazon, Meta, Microsoft and Nvidia – drove 58% of the S&P 500's year-to-date return. Meanwhile, global equity markets, while not as strong as the S&P 500, had a strong quarter and first half. The MSCI All-Country World Index returned 3.0% in the second quarter and 11.6% in the first half of 2024.

AI: "DÉJÀ VU ALL OVER AGAIN"

Anyone investing for at least 25 years must be feeling some degree of déjà vu. Sweeping predictions that *AI will change everything* sound eerily like the predictions made about the internet and mobile phones in the late 1990s. Those new technologies were indeed transformative, but over decades. Prices for related stocks, however, soared on expectations of a global transformation in just a few years, driving the dot-com investment bubble that burst in spectacular fashion in March 2000.

Barton Biggs, who famously predicted the bursting of the dot-com bubble, warned about the danger of too much capital chasing a trend. *"There is no investment idea that is so fantastic that it can't be spoiled by too much capital,"* Biggs said. It is one of our favorite investment maxims. We also believe in the converse: A shortage of capital can make some less exciting investment ideas quite rewarding.

In this Investment Update, we examine AI as a potential bubble by focusing on its greatest beneficiary, Nvidia. Then, we will examine two investment areas that we find compelling, largely because they've been starved of capital for quite some time: Europe and global commodities. Finally, we briefly address Private Equity, a topic of frequent interest among our clients and another area where Biggs' maxim of too much capital may apply today.

NVIDIA: KING OF AI

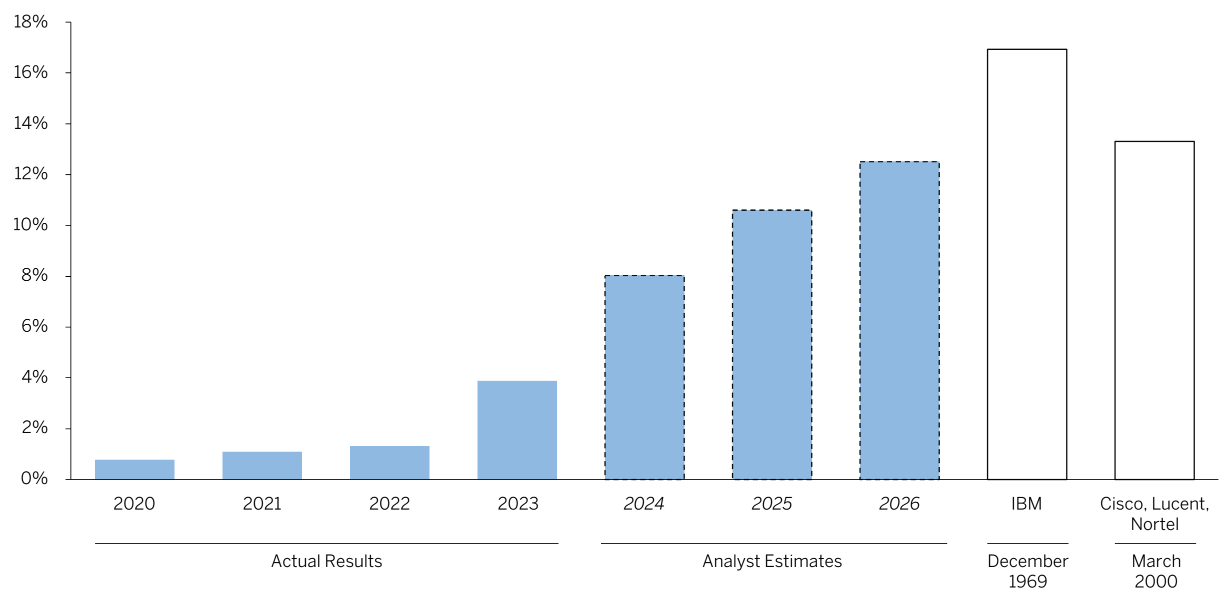
Nvidia's share price has risen more than 700% over the last 18 months, adding $2.7 trillion to its market capitalization. At its peak in the second quarter, its market cap reached $3.3 trillion, which briefly made Nvidia the world's largest company. The stock price surge, unprecedented for a large-cap company over such a short period of time, reflected a shocking rise in sales growth that dramatically changed investor expectations.

In its 2021 and 2022 fiscal years,[1] Nvidia revenue growth was flat, with the firm generating roughly $27 billion in sales each year. As of March 2023, consensus analyst expectations called for low double-digit revenue growth, with $30 billion in sales projected in 2023 and $37 billion in 2024.[2] But results dwarfed expectations. The company generated $61 billion in 2023. Nvidia is now projected to generate revenue of $120 billion in 2024.

Why? Graphic processing units (GPUs), which Nvidia invented in 1999 and which set off the computer gaming craze, have become essential to data centers managing large language models and other AI technologies. Nvidia's biggest customers are well-capitalized technology firms, and many of them view AI as an existential threat to their core businesses. These companies are willing and able to spend virtually any amount of money to ensure they don't fall behind in the race to deploy AI. Analysts now forecast that 12% of all global capital spending (capex) by large-cap firms will be funneled to Nvidia's data center business. That's extraordinary, comparable only to IBM's share during the mainframe era or the combined share of Cisco, Lucent and Nortel at the peak of the tech and telecom bubble.

Nvidia Expected to Reap Share of Market Spending Near IBM's in Its Heyday

NVIDIA DATA CENTER REVENUES AS A SHARE OF MARKET-WIDE CAPITAL SPENDING[1]
2018 Through 2026E



[1]Based on aggregate worldwide capital spending for large-cap stocks.
Source: Visible Alpha, Empirical Research Partners Analysis.

Nvidia first came to our attention well over a decade ago, as part of our research in our Advent of Molecular Medicine theme. Scientists, then struggling to process the vast amount of data generated by genomic sequencing, told us they were increasingly turning to GPUs, rather than the central processing units (CPUs) in most computers at that time. We figured data-intensive applications would be developed in other sectors as well, broadening Nvidia's potential market.

[1]Years ending in January 2022 and January 2023 respectively.
[2]The 2023 and 2024 fiscal years end in January 2024 and January 2025 respectively.

While AI euphoria shows no signs of abating, it is not clear that there will be sufficient uses for AI any time soon to justify the enormous capital expenditures underway. Even if sufficient uses emerge, it's unclear whether AI service providers will be able to maintain pricing at levels that would make their investments profitable. AI searches now cost approximately 10 times more than a traditional Google search. Will users or advertisers be willing to pay that much more to use AI?

Sequoia, a Silicon Valley venture-capital firm, estimates that the technology industry spent $50 billion on Nvidia chips to train AI models in 2023 but brought in only $3 billion in revenue. Clearly, tech companies must see far better returns from AI to sustain and grow their investments.

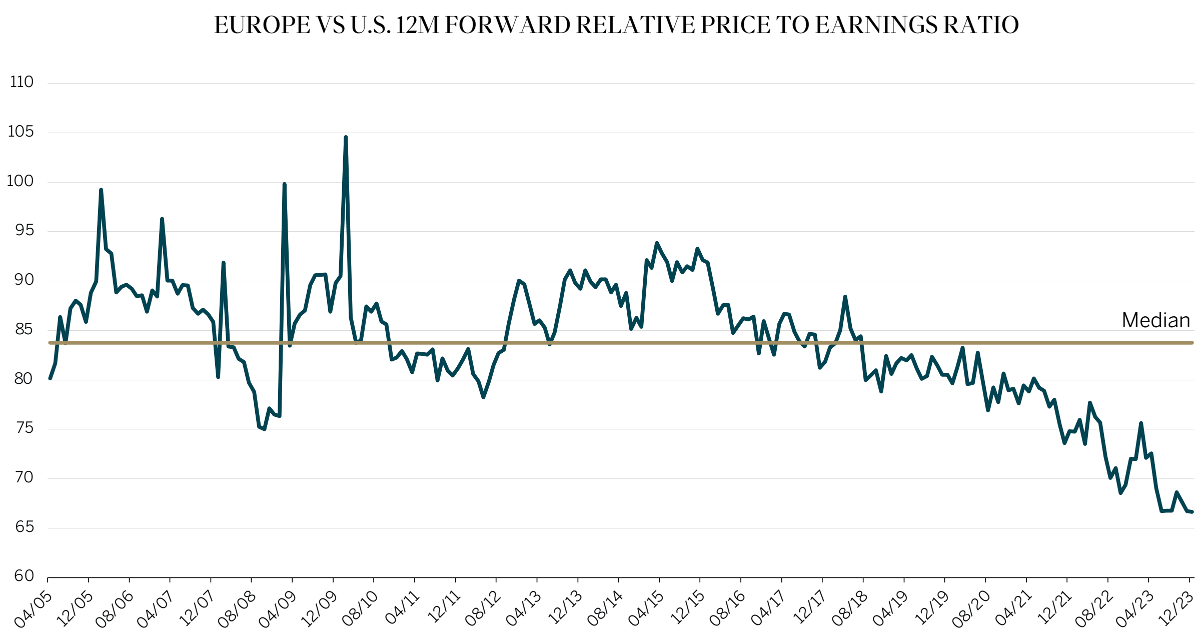
Today, Nvidia cannot produce enough chips to meet demand. But when the company runs through its current order backlog, profitable new uses for AI will have to drive growth. If these don't emerge, excess Nvidia chips will likely be resold on the secondary market at heavily discounted prices, and disappointed investors will drive the stock price down.

Given this uncertainty, we think it is prudent to continue to trim AI-related exposures like Nvidia, allowing us to redeploy the capital raised in areas that are not as "hot." Two such areas that are attracting our research team's attention are European equities and global commodity infrastructure.

EUROPE: RECOVERING AND UNDERAPPRECIATED

European equities have been out of favor for many years, thanks to slower economic growth in Europe than in the U.S. and far less exposure to the technology sector. Despite stronger European index performance over much of the last two years, European equities are trading at a greater than usual discount to U.S. stocks. A recent sell-off in response to the results of the European Parliamentary election and the announcement of snap elections in France made matters worse.

Europe Trading at Unusually Deep Discount to the U.S.



Data through December 31, 2023.
Source: Bloomberg.

With valuations so low and expectations for Eurozone GDP growth of only 0.8% in 2024, the bar is low for European stocks to outperform U.S. stocks over the coming years.

We see several reasons for optimism:

- **Support for European integration is high and broad:** Belief that a more cohesive European Union is good for the region's long-term economic future is becoming increasingly widespread. Even Marine Le Pen, the leader of France's far-right National Rally party, no longer advocates for a break-up. Her popularity soared when she dropped anti-Euro policies from her party's platform.
- **Regulatory impediments to growth are under attack:** Mario Draghi, the former head of the European Central Bank and Prime Minister of Italy, is expected to deliver a report on European competitiveness this summer calling for even deeper capital markets integration, which would enable companies to raise capital more easily. The report is also expected to warn against implementing regulatory requirements, such as the onerous Basel standards for the international financial sector, or adopting more stringent climate-related targets, before the rest of the world. Others are advocating for this as well.
- **Europe's energy crisis is over:** With the war in Ukraine disrupting supply, European natural gas prices rose from €25 per megawatt hour (MWh) in the summer of 2021 to €340 per MWh in September of 2022. Thanks to recent large investments in energy infrastructure, gas prices are now back down to €35 per MWh. We expect these lower costs to lead to higher industrial production and corporate profitability.
- **Inflation is lower and interest rates are falling:** Over the past two years, inflation has eroded household purchasing power and reduced consumer spending, and the rising cost of credit has depressed bank lending. But now, lower inflation and the first round of European Central Bank rate cuts (which began on June 20) may unleash consumer spending and bank lending.

Despite investor disappointment over the past decade, we see the Eurozone as a coiled spring, with the potential for impressive growth. Recent data suggest the economic recovery has begun. While U.S. economic data surprises were modestly negative in April and May of this year, economic activity in Europe has improved. Declining inflation has led to positive real wage growth, and consumer confidence is rebounding. With excess savings equal to 12.5% of GDP (vs. 3.9% for U.S. consumers), we expect European consumer spending to rise, bolstering the overall economy and the prices for many shares.

GLOBAL COMMODITY INFRASTRUCTURE: UNDERINVESTMENT IN AN AREA OF CRITICAL NEED

Other than perhaps semiconductors, no industry is as subject to capital investment booms and busts as commodities. Typically, increased demand or supply disruptions drive up commodity prices, which spurs heavy capital spending that eventually leads to excess supply and depressed commodity prices. At that point, capex dries up, leading in time to the next shortage, and the cycle repeats.

We believe the current period of depressed capital spending on commodities is nearing an end. When adjusted for inflation, capex in the oil and gas and the metals and mining industries fell 60% to 65% between 2015 and 2022. This roughly matches the percentage capex decline in commodities from 1981 to 1999, which set the stage for a 12-year bull market.

In inflation-adjusted terms, capital investment in oil exploration and development is down 33% from its level a decade ago. The International Energy Forum predicts that annual upstream investment will need to increase by $135 billion to a total of $738 billion by 2030 to ensure adequate supply. With U.S. shale-oil production slowing meaningfully, we expect capital spending to accelerate soon.

Some analysts argue increased conservation and the shift to alternative energy will reduce demand for fossil fuels. We believe this is unlikely to offset continued energy demand growth from emerging markets in the near term. Today, plans for renewable energy are falling short, and optimism about electric vehicles has faded. Even if renewable energy investment picks up, these technologies are very reliant on other non-oil commodities, creating additional demand for metals and mining.

For many years, investors have shunned commodities, while companies have underinvested in related infrastructure. We see compelling opportunities to invest in this area by owning the shares of well-managed companies in the energy ecosystem and in metals and mining that are positioned to participate in this essential capex cycle.

OBSERVATIONS ON PRIVATE EQUITY

At Chevy Chase Trust, we do not invest in private equity for our clients, but clients often ask about our views on the asset class. We believe it can be a suitable investment for certain families and institutions, but the opportunity doesn't appear attractive today.

Private equity may be appropriate for investors who are:

- *Comfortable with the trade-offs it requires when compared to public equities.* These trade-offs include long periods of illiquidity, substantial imbedded leverage, subjective valuation of fund investments, iron-clad commitments to meet periodic capital calls, no decision rights for limited partners and higher fees.
- *Able to invest across multiple "vintages" of funds.* If not, investments may be unduly restricted to the opportunities available in a narrow window of time.
- *Confident that they are investing with a top-tier manager.* Winning in private equity requires investment acumen, skill in managing portfolio companies, and strategic insight. Such attributes are scarce.

Today, we think even investors well-suited to private equity should approach it with an extra dose of caution, given the Biggs maxim that excess capital can spoil even the best investment ideas. Capital has flooded into private equity funds over the past two decades. Assets under management mushroomed from $600 billion in 2000 to more than $10 trillion at the end of 2023. Roughly 16 times more capital is pursuing a universe of investable companies that hasn't changed much, making high returns far harder to come by.

Recent data[3] indicate private equity returns are indeed faltering, and many deals may be in trouble.

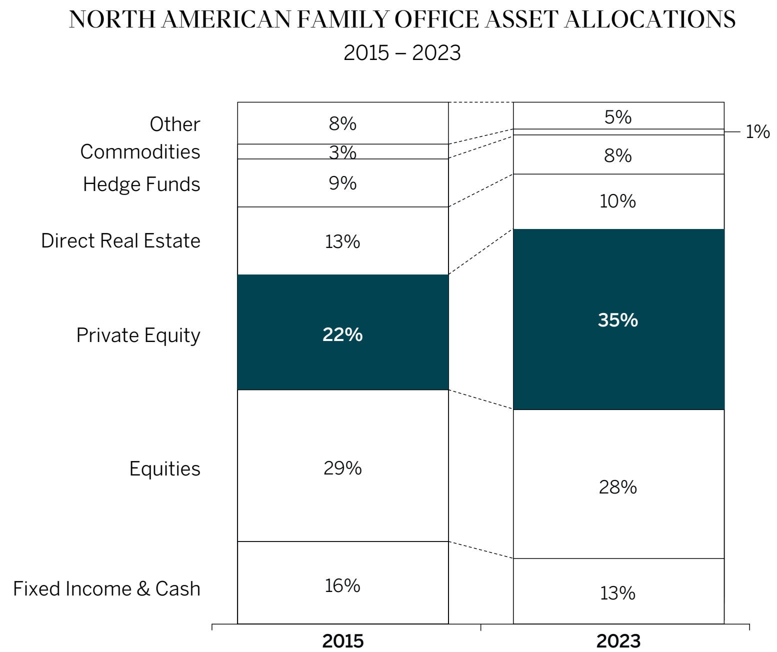
- The private equity industry currently has $3.2 trillion in unsold, leveraged assets that were initially purchased at relatively expensive valuations.
- The number of deals per year has fallen 35% from the peak in 2021, and exit values are down two-thirds on average. With many exit channels closed, returns distributed to investors have slowed.

[3]Source: CLSA

- Average interest rates on the high levels of debt used to purchase companies have doubled to over 9%, increasing bankruptcy risk for portfolio companies.
- Funds haven't disclosed write-downs on many private equity fund holdings yet, but we think they will soon, as nearly $300 billion in leveraged loans for private equity transactions come due by the end of 2025. In the meantime, investors may be paying management fees based on overly optimistic company valuations.

These dynamics are playing out at a time when allocations to private equity are far higher than they once were.

Family Offices Have Piled Into Private Equity Since 2015



Source: UBS/Campden Wealth Global Family Office Report (2016 and 2024).
Other (2023): Private debt, Art & Antiques, Infrastructure.
Other (2015): ETFs, REITs, Tangibles, Art and other assets.

No doubt, some will make money in new private equity investments, but the opportunity appears much slimmer, and the risks far greater, than was the case several years ago.

CONCLUSION

As we have noted in past Investment Updates, we continue to adjust client portfolios, taking profits in some themes, while pivoting into areas where we see greater promise. For many clients, we have pared exposure to our *Heterogenous Computing* theme, which includes AI-related stocks, while being sensitive to the tax consequences of these sales. We continue to invest in new ideas related to our *Opportunities Abound Abroad* and *End of Disinflationary Tailwinds* themes, and we are starting to increase our weighting in our *Next Generation Automation* theme.

While we continue to see exciting opportunities in equity markets globally, we remain vigilant to developments in the macroeconomy and capital markets, particularly in a year where geopolitical risks run high.