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- In the first half of 2024, equity markets have been driven by a handful of stocks while bonds have treaded water
- Both equity markets and the economy are acting similarly to 1995, the birth of the internet
- Because an economic soft landing looks increasingly plausible, we are overweight risk assets. This includes an overweighting in equities and corporate bonds, as well as addressing inflation by holding real assets and Treasury Inflation Protected Securities

— Section II: Equity

- Earnings estimates for the full year suggest that growth will accelerate throughout the year, and that growth will broaden beyond the high-tech stocks comprising the Magnificent 7 —Apple, Microsoft, Nvidia, Alphabet, Amazon, Meta, and Tesla
- The current narrowness of the US equity market's returns increases the risk of a 10%+ correction, something that has historically occurred in more than half of all calendar years and which typically quickly reverses

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- The combination of lower inflation, rising growth, accelerating corporate earnings

growth, and lower valuations in many countries outside the US may create an opportunity for investment outperformance

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— Section VI: Sustainable Investing

- The electricity demands of generative artificial intelligence ("GenAI") are significant – and in the near term are primarily being met by traditional energy sources. In the medium to long term, we expect corporate net-zero and clean power commitments will accelerate the shift to renewable energy and storage

Overweight	Neutral	Underweight	No Exposure
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EQUITIES

US Large Cap		Large-cap stocks continue to represent clear market leadership in 2024, after dominating the performance race in 2023. More specifically, the now “Super-6” (the Magnificent-7 minus Tesla) – companies heavily leveraged to the artificial intelligence (AI) investment cycle – are still driving most of the market-cap-weighted S&P 500 Index’s return. While concern about this dynamic last year had us adding exposure to cheaper value stocks for diversification purposes, we continue to hold significant positions in the Super-6, given their leadership status and near-term ability to capitalize on AI. Related, we still favor US companies in general, as the US economy and Dollar remain strong, and the lion’s share of AI capital expenditures are being made in the US.
US Mid Cap		We remained overweight mid-caps despite the fact they lagged both large- and small-caps in 2023 and have been rewarded as they have done better in 2024. While large-caps offer financial stability, they’re often mature companies exhibiting slow growth. Small-caps offer fast growth but high volatility and more susceptibility to higher interest rates. Mid-caps offer a nice balance between the two. Notably, mid-caps continue to trade at a large discount to large-caps, having averaged a slight premium over the past 25 years.
US Small Cap		Small-caps are hurt by higher interest rates more than large- and mid-caps because they often seek more bank lending. This is why they have suffered so much as interest rates have risen to multi-decade highs. Trading at a large discount to large-caps, small-caps do look attractive, although they need interest rates to come down materially to durably outperform. The best time to overweight small-caps historically has been as the economy comes out of a recession—and the US economy hasn’t even fallen into one yet.
Int’l Developed Large Cap		Developed international equities appear attractive on a valuation basis, currently trading at a significant discount to US equities. However, persistent US Dollar strength remains a headwind for US investors attempting to capitalize on these lower valuations internationally. While there are encouraging signs of economic improvement in developed international markets, recent political turmoil in Europe could increase the volatility of European equity markets in the near term.
Int’l Dev Small Cap		We eliminated exposure to this asset class in the summer of 2022. Smaller international companies are more exposed to the geopolitical issues impacting Europe and other developed international economies.
Emerging Markets (EM)		Broad EM equity exposure has been less attractive for some time, primarily due to China’s significant influence, historically accounting for 20% of the index. China’s economy has been slowing materially for years, mainly due to a rolling real estate crisis and a strained relationship with the US. However, there are signs of improving corporate earnings within the EM ex-China. India is emerging as a more favorable trading partner for the US, and countries like S. Korea and Taiwan are benefiting from strong demand for their semiconductor products. As a result, broad EM and/or country-specific exposure is now back on our radar.

FIXED INCOME

US Treasurys		Interest rates have risen across all maturities, making US Treasurys more attractive as a hedge against an economic downturn. We are maintaining our current exposure but would increase our allocation opportunistically and if needed.
US TIPS		We have maintained an allocation to short-term TIPS to hedge against higher, more persistent inflation. Over the last several months, inflation pressures have been slowly resurfacing, leading to solid relative returns for the sector. We will remain allocated to TIPS as long as inflation remains elevated, or a better investment opportunity arises.
US Agencies		US agencies offer minimal additional yield compared to US Treasurys. They are also less liquid and some lack the state tax exemption of Treasurys. Thus, we currently have no allocation.
US Corporates		Resilient US economic growth has caused corporate yield spreads to tighten to modestly overvalued levels. Even so, nominal yields are attractive, and the incremental yield over comparable US Treasurys is additive to portfolio returns. We are selectively choosing the bonds of issuers that are well-equipped to handle any softening in the US economy.
High Yield		We currently have no exposure to the traditional, syndicated High Yield asset class. Within this sector, credit fundamentals remain solid and funding conditions remain favorable for companies. Tight credit spreads, which are well below their long-term median values, have us waiting opportunistically for a chance to allocate here.
Floating Rate		Bank stress ramped up sharply in March 2023 and, given tightening financial conditions and banking sector issues, we eliminated our exposure to floating rate bank loans. We added to investment grade floating rate notes for their ability to preserve principal when short-term interest rates are rising.
Emerging Markets		With low growth and credit concerns outside the US, we continue to remain within the US for our fixed income exposure, as a defensive measure. US dollar strength on rising interest rate differentials has supported this posture.
Private Credit /Preferred Equity		Private credit offers an attractive yield and benefits from major banks’ recent exit from various credit businesses. It maintains strong underlying issuer credit quality. We are using private credit for accredited clients and maintaining exposure to preferred stocks for clients that qualify for participation in the private credit fund we’re using.

ALTERNATIVES

Commodities		2022’s elevated inflation made commodities look attractive as a hedge. The Fed’s success in bringing inflation back down via higher interest rates resulted in our elimination of our position in early 2024.
Real Assets		This asset class offers attractive yields after inflation relative to bonds. It also improves diversification in portfolios and will likely dampen volatility in an environment of rising interest rates and/or inflation.

It is like Groundhog Day in financial markets as we wrap up the second quarter and first half of 2024. As it was in 2023 and the first quarter of 2024, the second quarter continued to see positive surprises. After surging 10.6% in the opening quarter of 2024, the S&P 500 Index added another 4.3% in the second, as the boom in artificial intelligence (AI) raged on. The S&P 500 has now advanced 15.3% since the beginning of the year, its second-best start to an election year since 1928 (Ned Davis Research). A resilient economy, improved corporate earnings, and torrid demand for companies linked to AI represent the proximate cause. Even with recent signs the US economy is cooling, the rally is benefiting from a Federal Reserve (Fed) that seems intent on cutting the Federal Funds Rate soon, after the most significant tightening campaign in decades.

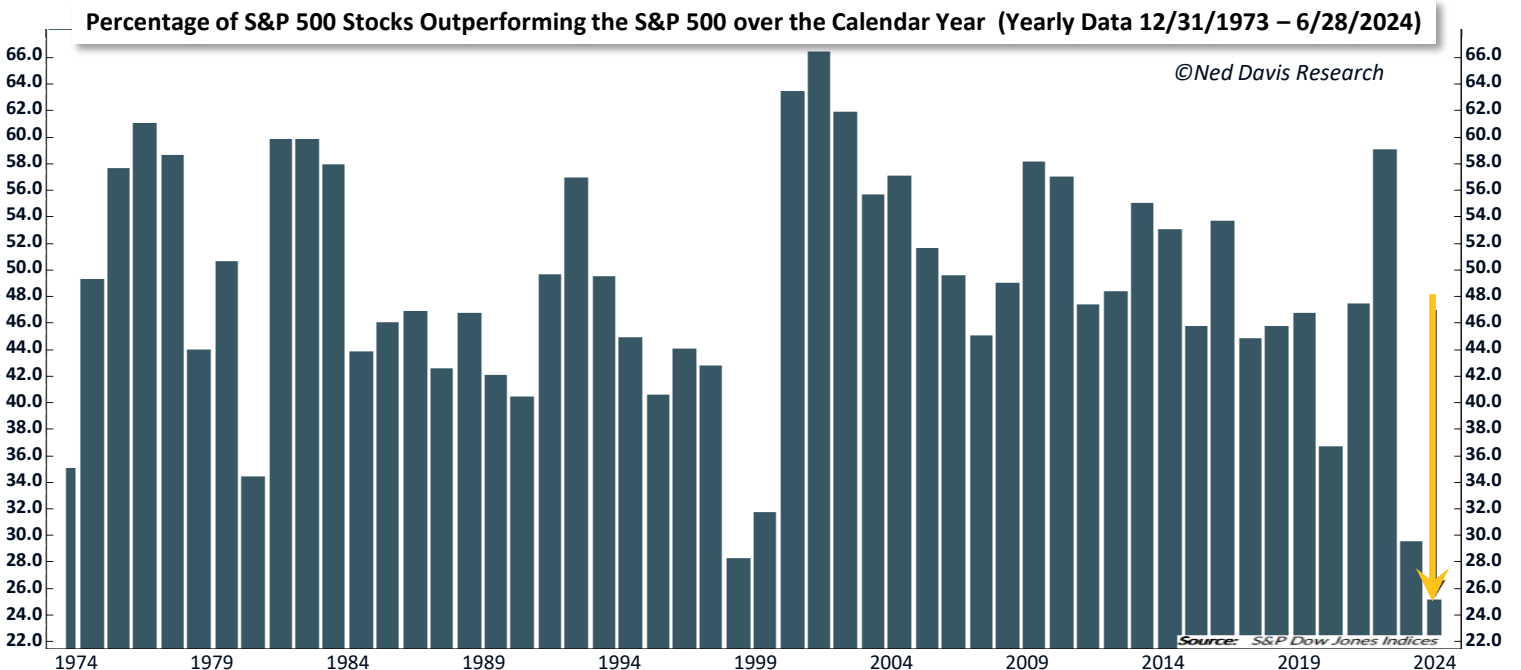
All is not well in equity-land, however, as the stock market gains referenced above have been driven almost exclusively by a handful of mega-cap technology stocks uniquely positioned to monetize AI (a subset of the Magnificent 7 now known as the “Super 6” – Microsoft, Apple, NVIDIA, Alphabet, Amazon, and Meta). For example, while the S&P 500 – which derives 31% of its value from just the Super 6 – rose in the second quarter, mid-caps, small-caps, value stocks, and developed international equities actually *fell* in US Dollar terms during the period. Further, on a year-to-date basis, just 25% of S&P 500 stocks have outperformed the S&P 500, putting that metric on pace for its lowest percentage since at least 1973 (see Ned Davis Research chart below). In other words, as the generals march on, the troops are leaving the field—not historically the sign of a healthy bull market.

Meanwhile, bonds treaded water in the second quarter, with the Bloomberg Intermediate Government/Credit Index returning just 0.6%. Once again, that return failed to beat cash,

which gained 1.3%. The Fed’s delay in cutting short-term interest rates has kept cash returns historically high, allowing US Treasury bills to post their best first half since 2000.

As we have previously shared, our working assumption is still that markets today are acting very much like they did in the mid-1990s, the last time the Fed executed successfully on a soft-landing, (i.e., bringing inflation under control without inducing a recession). It is likely not a coincidence that we are now also in the initial stages of the deployment of a revolutionary new technology (AI), much as we were back in 1995 when the commercial internet was born. While the emergence of the internet and its buildout led to five straight years of 20%-plus total returns for the S&P 500, that is certainly not our base case this time around. We do feel, however, that the AI buildout and deployment has the potential to keep the surprises positive going forward.

As such, our asset allocation targets remain in a pro-risk stance. We are overweight equities (barbelled between the Super 6 for AI exposure and other, cheaper, and diversifying equity segments like mid-cap, small-cap, and developed international equities) and, while underweight fixed income, we are overweight credit (corporate bonds) within fixed income portfolios. As we have shared previously, we feel bonds can now once again fulfill their historical role in portfolios (income and downside protection) given now-higher yields. To hedge against potentially sticky inflation, we hold Treasury Inflation-Protected Securities (TIPS) in fixed income, as well as 4-5% of total portfolios – sourced from the fixed income allocation – in real estate and other real assets (timberland, farmland etc.). Finally, we are currently overweight cash, given it yields 5%-plus and our belief that the Fed will be slower to lower short-term rates than many expect. ■



We began the year with an optimistic outlook for public equity markets based on our expectation that nascent earnings growth would accelerate in 2024 and broaden out to include more market segments. Our outlook has been reinforced by corporate earnings reports in the first half of the year, and equity markets have responded positively. In the second quarter of 2024, the S&P 500 added a 4.3% total return onto the spectacular rally that began last fall. The S&P 500 has now returned a whopping 34% since its low last October 27 and 15.3% year to date. While public equity investors obviously welcome such strong short-term returns, some underlying trends have developed along the way and now represent meaningful risks to be managed going forward.

We have mentioned the worrisome level of market concentration in our last few updates, and this remains the dominant theme of US equity markets as shares of large companies with exposure to artificial intelligence (AI) continue to appreciate at a scorching pace. Last year there was much discussion of the performance of the “Magnificent 7” – the seven largest stocks in the S&P 500 (Apple, Microsoft, Nvidia, Amazon, Alphabet, Meta, and Tesla) that generated almost 60% of S&P 500 returns in 2023 due to their AI exposure. The market has received nearly the same return contribution from the Magnificent 7 so far this year, but the underlying stock performance has narrowed even further. Nvidia led the charge of the Magnificent 7 with a 36% return in the second quarter, adding to the 82% return in the first quarter and the 239% return last year. Nvidia was singlehandedly responsible for 43% of the S&P 500 return in the second quarter, following its contribution of 24% of S&P 500 returns in the first quarter and 10% of S&P 500 returns last year. While 2023 was the year of the Magnificent 7, 2024 is starting to look like the year of The Magnificent One.

Market concentration is now at a level that is historically unusual but not unprecedented. Prior periods of market concentration in the early 1970s and late 1990s ended badly for the market-leading stocks of their day as excessive optimism over future earnings eventually led to extreme valuations. The current episode of market concentration appears quite distinct from its predecessors as valuations remain reasonable among the Magnificent 7 as earnings and cash flow estimates are rising along with the share prices of companies tied to AI. For example, Nvidia is trading at a Price/Earnings (P/E) Ratio of 33 based on estimates of the next two years of earnings, but this is in line with its five-year median, as illustrated by the chart below. The question for Nvidia investors at this point is not whether the P/E ratio is excessive, but whether earnings are likely to meet or exceed current expectations over the next few years. While things could change, we remain reasonably confident in the growth profile of the Magnificent 7 as the initial wave of AI technology investments proceeds over the next few years. While there is more uncertainty about profitability levels after the next few years, we continue to believe that there is a reasonably high probability that the AI investment cycle will prove durable and last for many years like other recent technology investment cycles in mobile and cloud computing.

Despite our longer-term optimism, the dependence on a single investment theme (and recently a single stock) leaves the market in a vulnerable position while several catalysts loom that could generate a market “correction” in the coming months. A correction is generally defined as a decline of 10-20%, and they have occurred in the S&P 500 in more than half of all calendar years since the creation of the index in 1926. These corrections are common, unpredictable, and often recouped over months rather than years. The upcoming election, potential geopolitical strife, and impending monetary policy shifts could all create



shorter-term volatility in the stock market, but none of them seems likely to derail the accelerating and broadening profit growth in the United States that drives our longer-term optimism on US equities. As a result, we are likely to view corrections as a buying opportunity in areas with structural growth potential that currently seem a bit ahead of themselves. This has kept us slightly overweight equities, with a bias towards areas with higher quality and lower valuations that can help mitigate short-term risk. ■

As we navigated through the second quarter of 2024, equity markets displayed a striking divergence between the US and international equity markets. The US equity market, heavily influenced by overweighted technology exposure and AI momentum, alongside a strong US Dollar, outperformed international markets considerably. While the S&P 500 index advanced by 4.3%, the MSCI World ex-US index declined by 0.4%. Within international equity markets, Emerging Markets (EM) and Developed Markets (DM) also showed diverging performance trends. The MSCI EM index surged by 5.1%, driven by robust corporate earnings and accommodative monetary policies in major emerging economies. By contrast, the MSCI EAFE index, which represents developed markets outside the US, declined by 0.2%, primarily due to political turmoil in France and a weakening Japanese Yen.

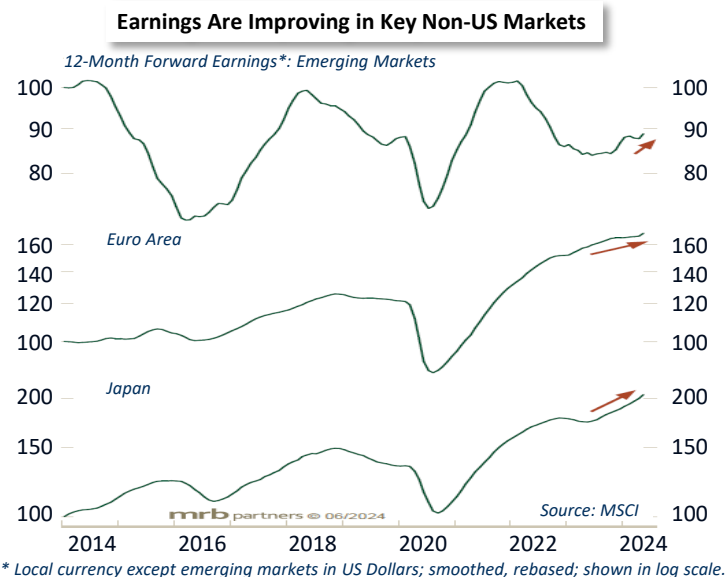
Looking ahead, we anticipate continued diverging global equity market performance driven by various factors, including economic growth, monetary policy, geopolitical risks, and corporate earnings growth. On the economic front, we anticipate a broadening economic expansion in 2024, with the global economy positioned for a soft landing. This view is supported by the strong global manufacturing PMI, which reached 53.1 in June, signaling robust economic growth outside the US. While the US economy remains strong, early signs of a slowdown suggest potential deceleration in the near future. Conversely, both developed and emerging markets are demonstrating improving economic development, with manufacturing PMIs in expansion territory for countries like the United Kingdom, Japan, South Korea, and Taiwan. Notably, the Eurozone's PMI remains in contraction, affected by political instability in France and underwhelming German exports. Despite these challenges, we believe the region's economic growth will gain momentum through improved regional development and strong global trade recovery. In China, a weakening real estate market and an improving manufacturing environment combine to suggest a mixed economic outlook for the rest of 2024.

While inflation remains sticky in the US, we observe encouraging signs of falling inflation in most international developed countries and many emerging market countries. We expect international inflation to decline further by the end of 2024, fostering more accommodative monetary policies in many regions. The European Central Bank (ECB) cut interest rates by 0.25% in June, with additional cuts anticipated. The Bank of England (BOE), facing persistent inflation, is expected to reduce rates by 1.0% over the next 12 months. Emerging markets like Mexico and Brazil have already implemented rate cuts to stimulate their economies and are widely expected to see further cuts ahead. On the other hand, Japan raised its interest rates for the first time in 17 years to combat deflation, with further hikes likely to stabilize its currency and control inflation.

Geopolitical risks remain a wild-card factor, with over 50 countries holding elections in 2024, potentially leading to policy changes and unexpected economic impacts. The French snap election and the upcoming UK election could increase market volatility for the Eurozone, though we believe these events will only lead to short-term economic disruption for the region. By contrast, the US presidential election could have significant implications for the global economy and trade, although immediate policy changes are unlikely before mid-2025. Ongoing conflicts in Russia/Ukraine and the Middle East may drive up commodity prices, clouding the shorter-term inflation outlook.

Given the improving economic backdrop and accommodative monetary policies, we expect to see strong corporate earnings growth in many key international markets. As illustrated in the chart below from MRB Partners, analysts expect earnings growth to continue in Japan, emerging markets, and the Eurozone. Currently, the international equity market is trading at a significant valuation discount compared to the US market. According to JP Morgan, international equities are at a 36% discount, representing more than two standard deviations over the last 20 years. With the combination of improving corporate earnings growth and attractive valuations, we believe international markets may present compelling risk-adjusted return opportunities for long-term investors.

Looking forward, the global economic landscape is set to remain complex, with varying growth and inflation trajectories across regions. The international equity markets will have to navigate through a landscape of economic resilience, political uncertainty, and divergent growth trajectories. For investors, this underscores the necessity of maintaining a diversified portfolio and staying attuned to regional economic developments. As always, a focus on a portfolio of high-quality companies with improving fundamentals that trade at attractive valuations will be essential in navigating the months ahead. ■



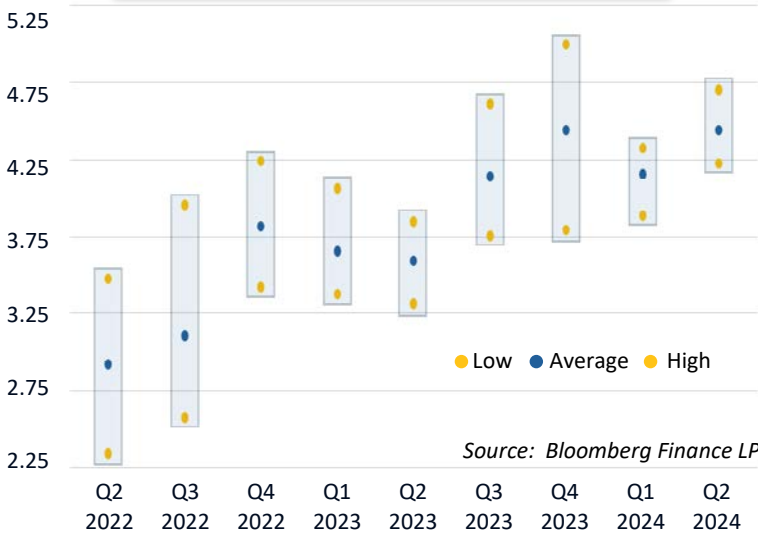
In the second quarter, US interest rates remained relatively stable compared to prior periods. The 10-Year Treasury, for example, traded in a 48-basis point (0.48%) range for the quarter, with a low of 4.22% and high of 4.70%. This is in contrast to prior quarters, where interest rate volatility was markedly higher. In the 8 quarters that comprised 2022 and 2023, the average quarterly trading range for the 10 Year Treasury was 94 basis points. Recently, interest rates have been less volatile as investors have grown more comfortable with both the path of inflation and the health of the US economy. This confidence has been on display in credit markets as well. The Bloomberg US Corporate High Yield Index credit spread is well below its long-term average, signifying a lack of stress in credit markets. It remains to be seen whether the market has become too complacent or whether this confidence is justified.

Indeed, there are several opposing forces that could sharply move interest rates either higher or lower in the remainder of 2024. Specifically, the path of inflation, the US economy, and global politics are factors that will influence the direction of interest rates. Inflation data has been mostly favorable year-to-date with the latest Consumer Price Index (CPI) rising 3.27% on a year-over-year basis. Despite the dramatic improvement over the last couple years, inflation is still well above the Fed’s 2% target and some of its underlying components, such as core services and shelter, show no signs of relief. The US economy is showing mixed signs as well. Broadly, the economy looks relatively stable with US Real GDP tracking at a 2% growth rate, buoyed by a healthy consumer and a steady labor market. On the other hand, economic data has consistently underperformed the market’s expectations since February, as measured by the Citi Economic Surprise Index. Overall, it is clear the economy is slowing, but at a glacial pace. Finally, global politics are playing an increased role in the direction of interest

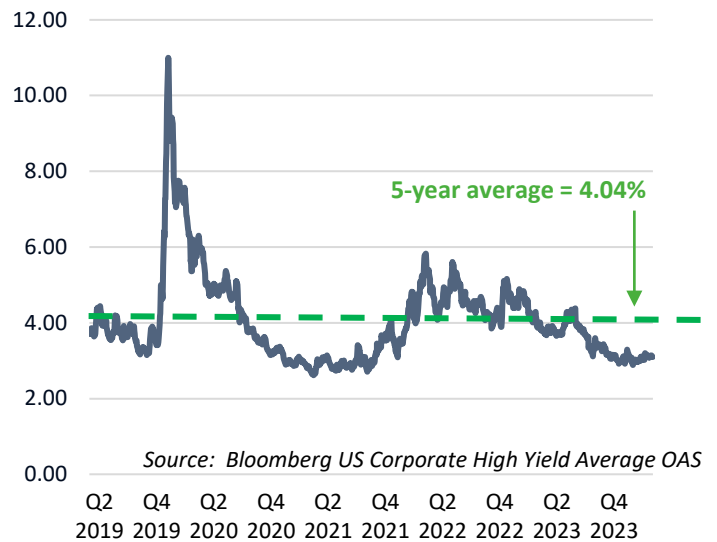
rates. Internationally, nationalistic and populist themes are a common thread in the recent elections in Mexico, Germany, France, and several other countries. These trends are inherently inflationary and likely to trigger higher interest rates, but they have also had the effect of boosting the US Dollar and increasing demand for US-denominated assets, potentially lowering interest rates in the process. Domestically, the US presidential election has the potential to disrupt interest rate markets. The Republican platform of increased tariffs, reduced immigration, and tax cuts is distinctly inflationary while the Democratic platform of increased deficit spending is also inflationary. Notably, neither party is focused on reducing the deficit or government borrowing levels, and renewed concerns in these areas could also drive interest rates higher.

In summary, stubborn inflation, increased deficits, and the US presidential election are likely to bias interest rates higher in the second half of 2024. Despite this, any increase in interest rates will likely be capped by foreign demand for US Dollar assets and the attractive yields that US fixed income securities can currently provide. In fixed income portfolios, we are positioned for persistent inflation with an allocation to Treasury Inflation Protected Securities (TIPS). On the credit side, the stable balance sheets and stellar cash flows of corporate issuers lead us to a continued overweight in the sector. For clients where municipal bonds are appropriate, credit fundamentals in the sector are in great shape and relative value looks more attractive recently. In addition, we continue to like preferred securities, private credit, and short-duration securitized bonds as a way to add incremental yield to portfolios. Undoubtedly, the best news within the fixed income asset class continues to be the overall level of yields. A 5%-plus starting yield for a high-quality portfolio should bode well for future returns regardless of the market environment. ■

The 10 Year Treasury Yield Has Stabilized and the Trading Range Has Narrowed



High Yield Option-Adjusted Spread (%)



Private Equity

In general, valuations trended positively for private equity during the quarter and over the first half of 2024. After stagnating materially in 2022 and throughout 2023, private equity deal activity and distributions accelerated in 2024 but remained below historical averages. While fundraising and deal activity remain below trend, we are clearly on the path to a more normalized environment for transactions, which is generally a positive indicator for go-forward returns.

- Secondaries Activity:** Secondaries activity was robust over the first half of 2024 as Limited Partners (LPs) continued to demand that managers be more decisive around portfolio exits and distributions. The increase in secondaries as a share of total private equity exits increased even as both the total value and volume of these deals fell overall. The fourth quarter of 2023 saw the highest activity of overall exits in private equity as a percentage, at 34.3%, since the first quarter of 2019. Secondaries fundraising saw a strong start to the year, with \$35.0 billion raised across just ten funds. This marked the highest fundraising amount for the strategy in any first quarter since 2008 and represented a 6.0% year over year (YoY) increase from \$33.0 billion. Additionally, as of the first quarter end, secondaries fundraising saw an aggregate raise of \$83.7 billion (+48.3% YoY change) over the trailing four quarters. According to Preqin, nearly two-thirds of LPs surveyed said that secondaries provide the best opportunity in private equity, making it more popular than small and mid-market buyout and special situations. We remain optimistic about this strategy given the current environment and the desire by fund managers (General Partners or GPs) to create liquidity for LPs. Over the course of 2024, GP-led deal volumes far exceeded those of LP-led deals. According to Pantheon Ventures, a leading private market investment firm, estimated GP-led deal flow over the next two years is expected to be around \$100 billion, which is roughly two times larger than the estimated capital dedicated to these deals. The lack of capital relative to the size of the opportunity set should create a structural tailwind for GP-led secondaries buyers over the near-to-medium

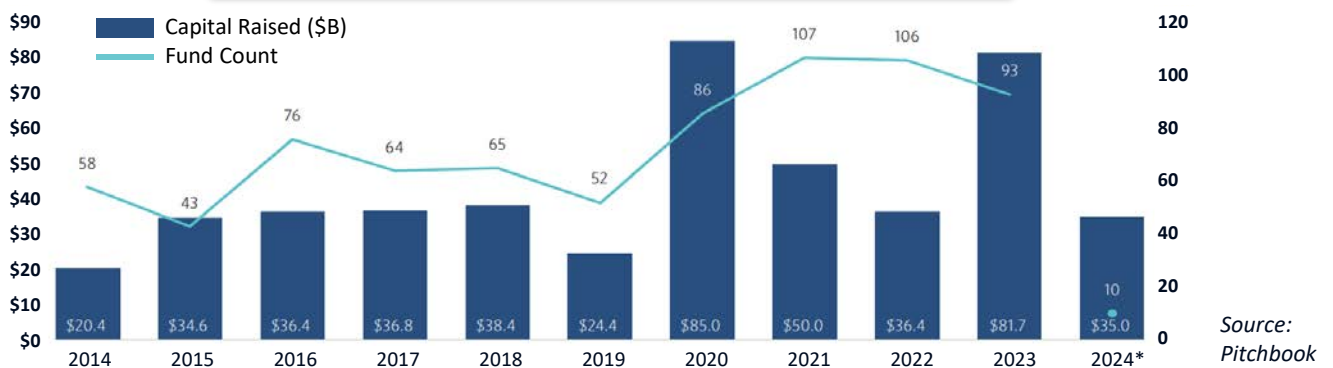
term. The chart below highlights the total global secondaries fundraising activity as of March 31st, 2024.

- Growth Equity:** Growth equity investing was one of the hardest-hit sub-strategies within private equity in response to increased interest rates and the normalization of excessive COVID-era valuations. While 2024 started with optimism surrounding interest rate cuts, the euphoria subsided over the second quarter with acknowledgement that higher interest rates and tighter underwriting standards are unlikely to change in the near-term. On the other hand, the sub-strategy was bolstered by markups in AI-driven companies with investor enthusiasm comparable to what is seen in the public markets. During the quarter, some late-stage venture and growth equity investors were able to achieve exits with IPOs such as Reddit, Klaviyo, and Rubrik. However, as a note of caution, pre-IPO shares that were acquired via secondary during the COVID era did not profit from the IPO as the prior valuations were simply too high. Said differently, the valuation multiples in growth equity have been rather volatile, and the public markets have not been kind to newer listings. Atrato believes that growth equity investments will continue to be challenged as the markdowns from the aggressive overvaluations seen in 2021 provide little breathing room for outperformance.

Private Debt

While private equity deal activity and valuations have been constrained by higher interest rates over the last few years, private credit has continued to benefit from the long-term structural trend of increased non-bank lending as well as the performance improvement that comes from a materially higher base rate (the Fed Funds rate). Overall, the fundraising trends for private credit remain attractive, as the asset class has grown to an estimated size of \$1.5 trillion in 2024 from \$1 trillion in 2020. The asset class includes not just middle market direct lending, which represents loans to primarily sponsor-backed (private equity owned) businesses, but also a variety of niche consumer and asset-backed lending strategies. After a dramatic slowdown in issuance in the 2022-2023 period, the lending

Total Global Secondaries Fundraising Activity as of March 31st, 2024



Private Debt, continued

environment has thawed significantly over the past 6-12 months across most areas of private credit, with spreads returning to more normalized long-term levels. The exception may be real estate credit, where the hand-off from regional banks to private non-bank lenders has been slower than anticipated and borrowers/lenders are still struggling with an uncertain valuation/cap rate environment. We remain constructive on the ability of private credit to deliver outperformance relative to public markets but believe the market environment requires additional care in manager, sub-strategy and/or vintage selection.

- *Middle Market Direct Lending (Sponsor-Backed):* While middle market direct lending strategies provide investors with access to corporate credits generally not found in public markets, private credit trends are influenced by public market conditions. With generally more open capital markets in 2023 and a greater supply of private credit relative to deal volumes, credit spreads have tightened from a high of 5.7% in the second quarter of 2022 to 4.3% in May 2024. It’s worth noting that these credit spreads continue to offer an attractive premium to the public, broadly syndicated loan market. It is somewhat contradictory that spreads have tightened when high base rates are putting strain on borrowers, but we nonetheless expect these trends to continue over the near-to-medium term given flow dynamics. The chart below highlights the spread and yield-to-maturity on US leveraged loans.

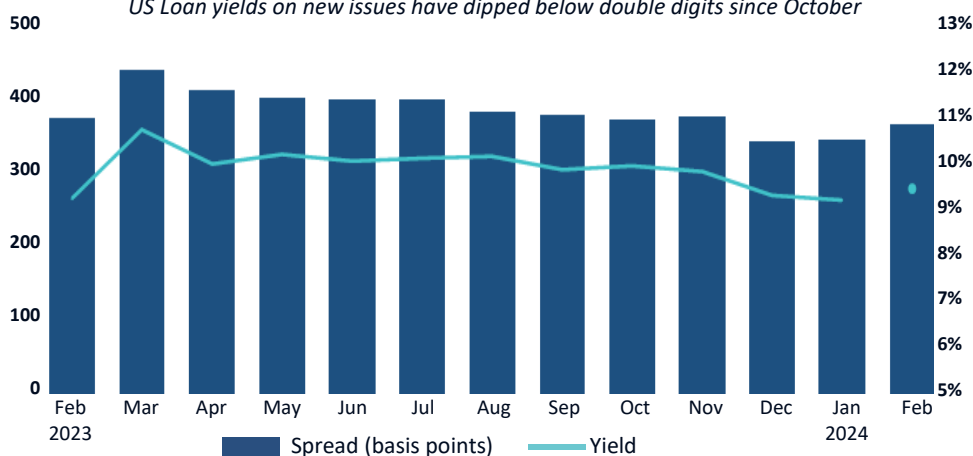
collateral, while the old creditors face a business entity with diminished value should the company default. We expect more of this activity going forward, which should drive increased return dispersion between lower-quality and older pre-2022 loan portfolios and newer and higher-quality portfolios with credits that better reflect the current environment.

- *Asset-Based Lending:* The asset-based lending market represents a growing portion of the private debt market, offering an alternative to investors wishing to increase the collateral value against their debt. The loan-to-value (LTV) of asset-based loans is measured against the liquidation value of relevant assets while middle market direct lending loan amounts are calculated as a percentage of the enterprise value of the business. As such, the recovery of asset-based loans in a default scenario is predicated on the value of the borrower’s assets and not their financial performance. Historically, asset-based loans have had higher recovery rates compared to typical corporate loans and our expectation is for continued flows into the asset class.

- *Real Estate Lending:* Given the bank failures of 2023 and general weakness in office real estate nationally, there have been tighter regulations for regional banks, such as higher reserve requirements, less leverage, and more oversight in general. This has resulted in a large retrenchment of regional bank participation in commercial real estate (CRE) lending across development and stabilized assets. This has resulted in a material repricing of loan terms – for example, a whole loan on a stabilized building in a healthy sector in the fall of 2021 was priced at SOFR +200 bps at 75% LTV, and the same property today might be priced at SOFR +325 bps at 65% LTV. This reflects a dramatic widening of spreads in new credit originations and tighter loan terms, which has substantially increased the opportunity set across fundamentally strong assets. Moreover, the office

Spread and Yield to Maturity on New-issue US Leveraged Loans

US Loan yields on new issues have dipped below double digits since October



2024 has continued to witness activity where middle market borrowers are moving collateral to the detriment of their legacy lenders to secure new financing. During the second quarter, Pluralsight Inc., a firm owned by private equity sponsor Vista Equity Partners, restructured its assets to secure additional financing. This involved relocating its intellectual property to a new subsidiary under tight covenants. The new creditors benefit from the value of this collateral, while the old creditors face a business entity with

market, most of which is financed by banks, has seen a clear delineation between trophy and commodity offices. With fundamentally weak demand for commodity offices, banks are asking private lenders and other opportunistic pools of capital to offer solutions across loan purchases and risk transfers for their legacy portfolios. The opportunity set to generate a premium income return to public markets with compelling risk characteristics remains robust. ■

We are living through a major transformation in how computing works, with the shift from serial processing to parallel processing and from CPUs (central processing units) to GPUs (graphics processing units), both types of microprocessors. GPU chips, which can run trillions of operations per second, have accelerated the development of artificial intelligence (AI), and in particular generative AI (“GenAI”), a type of AI that can create many types of content including text, images, video, and even computer code. The models that make GenAI possible are created and trained at data centers, many owned and operated by the largest technology companies on the planet. The growth in AI-capable data centers, which require significantly more energy than traditional cloud computing, is driving power demand and raising questions about the sustainability of this new era of computing.

Research from [Alex de Vries](#) shows that using AI to generate search results at Google could use between seven-to-ten times the energy consumption of a traditional search. Further, Empirical Research Partners’ work shows a strong correlation between the number of parameters in an AI model and the energy required to do the training. While newer GPUs are more energy efficient, the shift toward this type of computing along with growth in model size and complexity are contributing to electricity demand growth in the US.

Data from the Energy Information Administration (EIA) show that US electricity [demand](#) has been roughly flat at around 4,000 billion kilowatt-hours (kWh) or 4,000 terawatt-hours for over 15 years as efficiency has offset growth in the economy. With the recent trend toward electrification, the EIA estimates that demand will grow 1.5% annually, with nearly a third of this from data center growth. Private forecasters, such as [Goldman Sachs](#), forecast demand growth of 2.4% through 2030, while others see growth above 3% annually. Should the Goldman forecast prove accurate, data center power demand in 2030 would represent 8% of total US power demand, well above today’s 3%. Note that the average American home uses roughly 10,800 kWh (10.8 megawatt hours) of electricity per year.

It’s important to note that electric generating capacity has been steadily increasing over the last 15 years, which may seem at odds with the historically flat demand. The reason for this is an increasing mix of more intermittent forms of power generation, primarily wind and solar, which have lower capacity factors (run less often) relative to nuclear, coal, and natural gas-fired generation. A 1-megawatt (MW) solar array can generate about 2,100 megawatt hours (MWh) of output in one year based on a national [average](#) capacity factor. A 1MW gas plant can generate roughly 5,000 MWh of output based on an [average](#) capacity factor. Nuclear and coal tend to have higher capacity factors than gas plants. The trend toward renewables and away from coal is well established, though the time it takes to connect this new capacity is increasingly a roadblock, creating a challenging

setup for the largest tech companies seeking to win the GenAI arms race.

A recent Department of Energy [report](#) noted that the typical duration between connection request and operation date for new power projects is about 5 years, with 1,480 gigawatts (GW – 1 GW equals 1,000 MW) of renewable capacity and 1,030 GW of storage capacity currently seeking access. This is a growing problem for the large cloud providers (also known as hyperscalers) and other AI developers. Recent research from Morgan Stanley quantifies the value of “time-to-power,” the percent power price premium willingly paid to bring an AI data center on line 2 years faster. The research points to premiums of 60% to 100% based on GPU useful lives of 10 to 6 years respectively, relative to an indicative all-in utility rate of \$100/MWh.

In the near-term, the growth in GenAI-related power demand will clearly outstrip renewable energy capacity additions to the grid, setting up fertile ground for innovative deals to secure power. Amazon recently [agreed](#) to buy a data center campus from Talen Energy, operator of an adjacent nuclear plant, while Microsoft announced a [partnership](#) with nuclear operator Constellation Energy for regional hourly matching of clean energy. In May, Intel deepened a [partnership](#) with Bloom Energy for fuel cell power at a data center expansion project. While all positive steps, the nuclear deals capture clean power that could be used for other drivers of demand growth and the scale is simply not sufficient to meet net-zero targets, at least in the near term.

One clear example of this is Microsoft, a company that has set aggressive sustainability targets including being carbon negative, water positive, and zero waste by 2030. While Microsoft has made significant progress, they’ve hit a bump in the road. The 2024 Environmental Sustainability Report posted recently highlighted a 31% increase in scope 3 (value chain) CO² emissions, driven by construction of data centers. This same metric was flat in the 2022 report, while scope 1 & 2 (direct and indirect) emissions continue to decline. The 29% increase in Microsoft’s total CO² emissions (scopes 1-3) will likely continue as data center construction picks up pace. To address this, over the last two years, MSFT has signed 6.3 GW of renewable energy power purchase agreements (PPAs) and added an additional 2.4 GW through June of this year. Most recently, Microsoft announced a framework agreement with Brookfield, one of the largest renewable energy developers, to deliver 10.5 GW of renewable energy in the US and Europe between 2026 and 2030.

Over time, data center construction and AI model training will turn to running this infrastructure to drive GenAI-related revenue from commercial applications. As renewable energy and storage assets, backed by PPAs, are developed, along with

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Sustainable Investing, continued

other innovative power solutions, Microsoft and other GenAI leaders are likely to hit sustainability goals. Eventually, GenAI may well accelerate efforts to tackle extremely complex challenges such as climate change and degradation of natural capital, efforts [Microsoft](#) and [others](#) are already taking on.

As we evaluate the broad landscape of companies supporting the development of AI infrastructure, it's clear that the combination of growing power demand and corporate climate commitments will drive accelerating renewable energy

development. The inherent intermittency of renewables combined with grid connection and transmission/distribution challenges will drive local development and a focus on energy storage. Companies able to execute on this development at scale are likely to prosper along with the better-known technology companies, creating potential investment opportunities for sustainable investors who have long-term horizons. ■

GLOBAL MARKET RETURNS

		Last 3 Months	Last 12 Months*	20-Year Annual Return**
US Equities	S&P 500 (<i>Large US Companies</i>)	4.28%	24.56%	10.28%
	S&P 400 (<i>Mid-size US Companies</i>)	-3.45%	13.55%	9.79%
	S&P 600 (<i>Small US Companies</i>)	-3.11%	8.58%	9.04%
	Russell 3000 (<i>All US Companies</i>)	3.22%	23.11%	10.15%
	Dow Jones US Real Estate Index	-1.73%	4.79%	7.12%
International Equities	MSCI World Index ex US (<i>Developed Markets</i>)	-0.36%	11.82%	6.23%
	MSCI EAFE (<i>Developed Markets</i>)	-0.20%	12.18%	6.22%
	MSCI Emerging Markets (<i>Emerging Markets</i>)	5.12%	12.97%	7.64%
	MSCI World ex US Small Cap (<i>Developed Markets Small Companies</i>)	-1.34%	8.35%	6.77%
Fixed Income	Bloomberg Intermediate US Government/Credit TR	0.64%	4.19%	2.93%
	Bloomberg US Corporate High Yield Total Return	1.09%	10.44%	6.65%
	Bloomberg Intermediate Corporate Total Return	0.74%	5.89%	3.86%
	Bloomberg US Intermediate Treasury TR	0.58%	3.37%	2.50%
	Bloomberg US Treasury Inflation Notes TR	0.79%	2.71%	3.56%
	Bloomberg US MBS Index Total Return Value Unhedged	0.07%	2.12%	2.89%
	Bloomberg Global Aggregate ex USD 10% Issuer Capped (Hedged)	-1.54%	0.88%	2.00%
	J.P. Morgan Emerging Market Bond Index Global Core	0.30%	9.02%	5.90%
	Bloomberg Capital 5-Year Municipal Bond	-0.42%	2.26%	2.90%
Inflation	US CPI Urban Consumers ex Food and Energy NSA***	0.49%	3.42%	2.44%
Treasury Bill	US 3-Month Treasury Bill Index	1.32%	5.47%	1.60%

Source: Bloomberg Capital Markets

* Includes dividends for equity indices

** Annualized

*** CPI data for time periods is date ended 5/31/2024

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