

Economic & Market Outlook

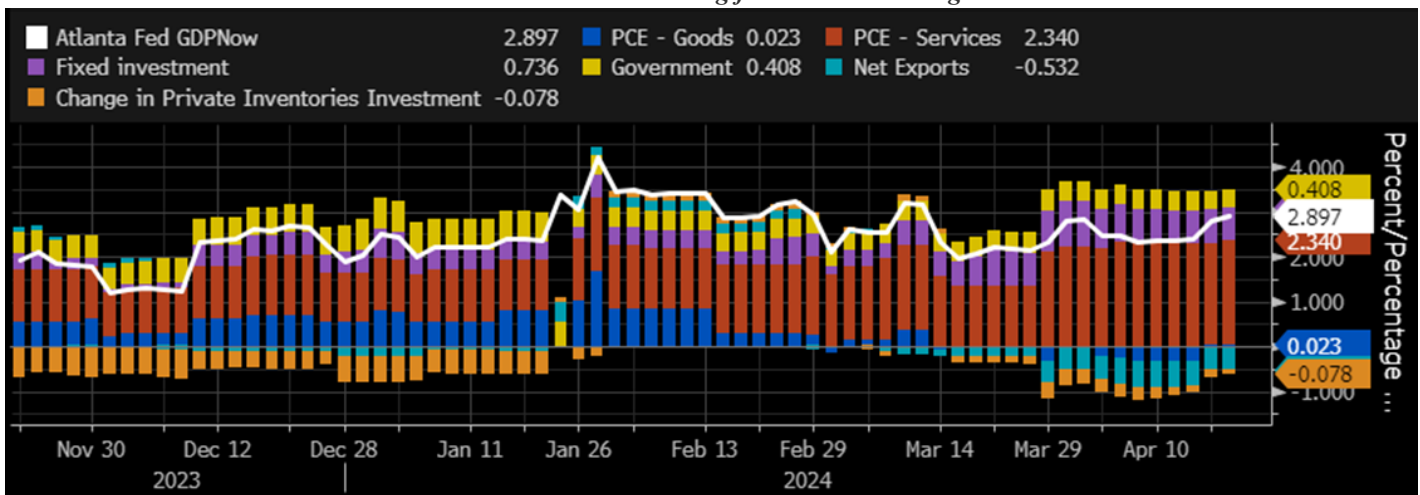
Executive Summary

- ~ Investors wait in hopes for Fed rate cuts, but inflation is proving hard to tame.
- ~ It is unclear what inning we are in, but the artificial intelligence revolution carries eerie parallels to the telecommunications bust of 2001.
- ~ Wall Street says the “golden age of Private Credit” is upon us, but we find this hard to believe given how much capital has entered the space.
- ~ Everything is a bet on US mega cap tech; who is the buyer of small caps and/or overseas stocks?

Macro Recap

Our recent commentaries have been macro-focused. It's hard not to talk about the economy. Before 2021, inflation was believed to be a relic of the past, yet it surged to 9.1% in 2022. To combat inflation, the Federal Reserve raised the Federal Funds rate from 0.1% to 5.3% in under two years, a move that many feared would cripple the economy. However, the Atlanta Fed GDP Nowcast is calling for 2.9% real GDP growth, which if accurate, puts us around 6.0% nominal GDP growth. Wow!

Atlanta Fed Nowcast is calling for 2.9% real GDP growth



Source: Federal Reserve of Atlanta

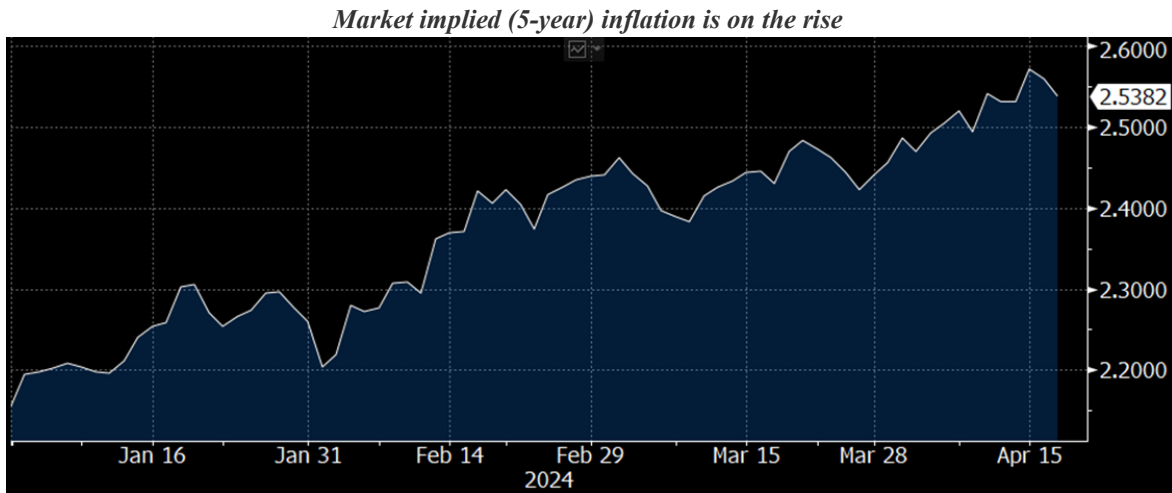
Despite strong economic growth and some inflation surprises, the Federal Reserve continues to signal they are “likely” finished raising rates, fueling the market with hope.

“We believe that our policy rate is likely at its peak for this tightening cycle. If the economy evolves broadly as expected, it will likely be appropriate to begin dialing back policy restraint at some point this year.” - Jerome Powell

Right now, the effective Federal Funds rate sits at 5.3%. FOMC members project that the rate will fall to 4.6% by year-end, which equates to roughly three rate cuts (at a quarter of a percent each). We will see what happens, but it is worth noting that since the March Fed meeting, multiple economic indicators have come in stronger than expected. Manufacturing, the only sector of our economy that contracted in 2023, appears to be expanding again. The Fed's preferred measure of inflation, core personal consumption expenditures (“core PCE”), came in at 2.8%, well above the Fed's 2.0% target. Inflation has even ticked higher over the course of the year. In short, the US economy continues to run

hot, and the Fed appears to be okay with that. During Powell's March testimony, he noted that Fed members revised their forecasts for inflation and growth higher, yet their forecasted policy rates didn't change. Maybe Powell isn't in a rush. Maybe the Federal Reserve is slowly admitting defeat, and they would be okay with inflation slightly above their 2.0% target.

Market-based measures of inflation expectations are pricing in the latter. The chart below shows the 5-year breakeven inflation rate, which is calculated by subtracting the nominal yield on a 5-year Treasury from the yield on a 5-year Treasury Inflation-Protected Security ("TIPS"). If inflation averages more than the break-even, the TIPS will outperform the Treasury, and vice versa. The break-even rate is what the market expects inflation to average, and as you can see, the break-even rate started the year at 2.2% and now resides at 2.5%.



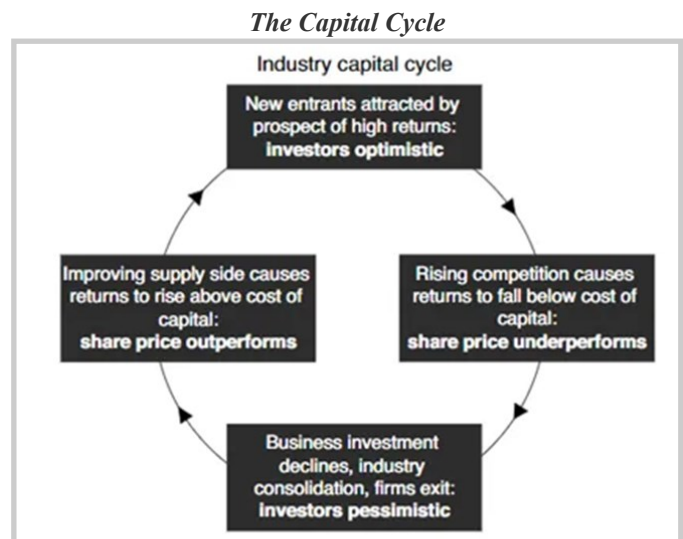
Source: Bloomberg

But that is enough discussion of the macro. As we noted earlier, our last few commentaries have discussed our economy ad nauseam, and to be frank, we aren't sure opining on the topic is all that useful. We can't forecast inflation or economic growth a year out or five years out any better than the market, and we have yet to meet a professional forecaster armed with a crystal ball. Macro talk is important but seldom actionable.

Capital Cycles

Instead, we thought we would talk about capital cycles, a topic that is actionable and timely. Two major capital cycles are playing out right now, which we will discuss later in this commentary. The concept of a capital cycle is straightforward. When an industry earns excess profits, it tends to attract capital and competition, ultimately eroding the excess profits. As profits diminish, capital exits the industry, and the conditions for excess profits reemerge. This phenomenon is akin to Joseph Schumpeter's concept of creative destruction, a fundamental aspect of capitalism.

Evidence of the capital cycle is well-documented. It helps explain why "cheaper" stocks have historically outperformed "expensive" stocks. There is even a stock market anomaly known as the "high asset growth effect," where publicly traded companies with high asset growth (indicating significant investments in property, plant, and equipment) consistently underperform

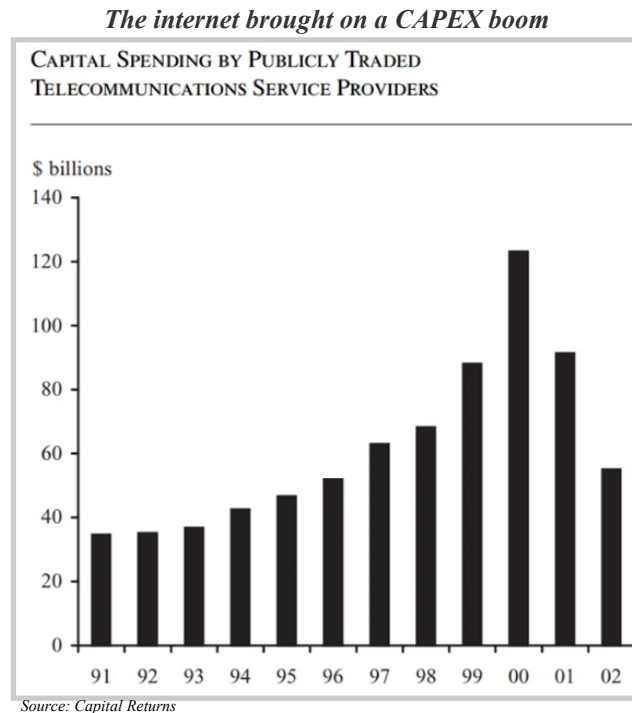


Source: Capital Returns

companies with low asset growth. Companies, on average, expand during the good times, oversupplying their respective industries. Examples of the capital cycle in action include the railway mania of 1847, the more recent shale revolution, and the iconic telecommunications bubble that peaked in 2001.

The 2001 Telecommunications Bust

The 1990s represented the dawn of the internet era. The World Wide Web emerged in 1991. The first web-based browser (Mosaic) followed two years later. Netscape went public in August of 1995, followed a year later by Yahoo. From 1996 to 1999, internet users grew from 45 million to 150 million. By 2000, there were 407 million users. A commonly cited statistic, started by WorldCom, was that internet traffic was doubling every 100 days, and it is easy to understand why everyone believed it. The potential use cases and resulting productivity gains the internet had to offer were massive, as evidenced by our everyday lives.



Delivering access to the internet required infrastructure, like routers (Cisco and Juniper) and fiber optic cables (WorldCom, Enron, Global Crossing, Level Three, etc.), the picks and shovels of the internet. From 1991 to 2000, annual capital spending from telecommunications service providers grew from just under \$40 billion per annum to almost \$130 billion. It is hard to find good estimates, but by the end of the boom, roughly 39 million miles of fiber optic cable were laid throughout the US. For perspective, the US is only 3.9 million square miles. A 2001 New York Times article claimed, “In the last two years, 100 million miles of optical fiber – more than enough to reach the sun – were laid around the world.” During this period, Cisco, the dominant supplier of routers and networking equipment, saw its sales grow from \$2.2 billion in 1995 to \$22.3 billion in 2001. 10x growth in six years! And during that period, Cisco averaged 65% gross margins.

Society was correct, the internet was going to change the world, but we overestimated the speed at which change would happen. Internet traffic would continue to grow at a blistering pace, but it wasn’t set to double every 100 days as WorldCom led the world to believe. Corporations and capital markets got ahead of themselves, massively oversupplying the technology and infrastructure that powered the Internet. When the telecommunications market blew up in 2001, only 5% of fiber optic cables were actively being utilized. By 2005, that number would improve to a mere 15%. Cisco would ultimately write off \$2.2 billion of excess inventory, the largest write-off in the technology sector’s history.

The flood of capital into the telecommunications industry killed the excess returns it had to offer.

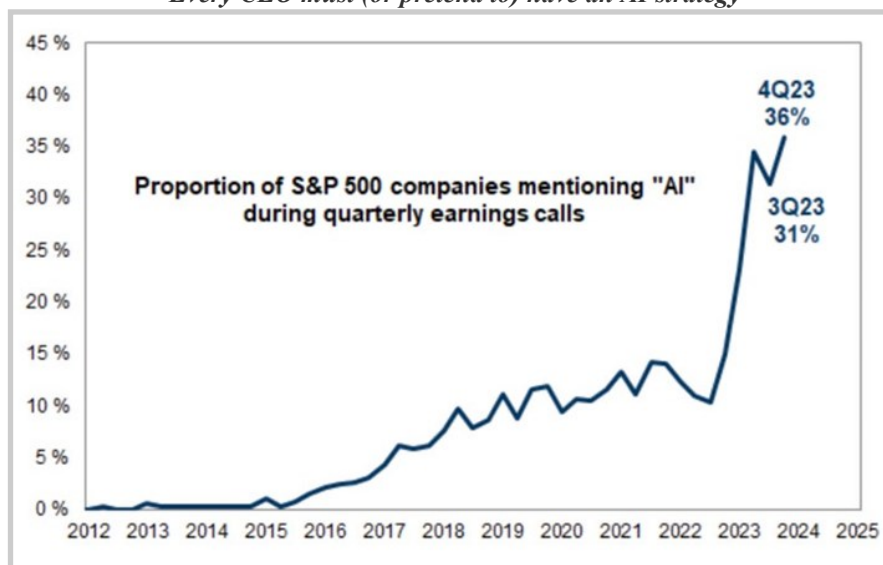
Capital Cycle 1: Artificial Intelligence

We can't help but wonder, is the artificial intelligence ("AI") revolution following a similar path?

Like the dawn of the internet, we know that AI will change the world. The use cases are endless. Ad optimization, chat boxes, inventory management, fraud detection, energy management, customer service, crime detection, autonomous driving, film production, etc..., and then there are the use cases we have yet to comprehend. There is a lot we don't know. There will be winners and losers, but who? The AI market will be huge, but how huge? The AI market should grow rapidly, but how rapidly? At present, AI is a big experiment. We know that the results are promising (maybe even great), but we don't know what the exact results are. It's as if the world woke up and heard, "The future is AI," but that was it.

For corporations, AI could offer new revenue streams, efficiency gains (cost savings), or even pose a competitive threat. Take Google for instance, last year 77% of its revenue came from advertising services and 57% of that came from ad revenues tied to Google search queries. AI-powered chatboxes, like ChatGPT, could potentially take share from Google search queries. Just think about how often you type a question into Google. Rather than see how things play out, Google is investing heavily into AI and has created its own AI chatbox called Gemini (formerly known as Bard). The profitability of this investment is unclear, but doing nothing has the potential to destabilize Google's core business. Our broader point is most major corporations don't have a choice. They know AI has the potential to enable and/or disrupt their current business practices (like the internet), and as a result, there is an urgency to experiment with AI.

Every CEO must (or pretend to) have an AI strategy

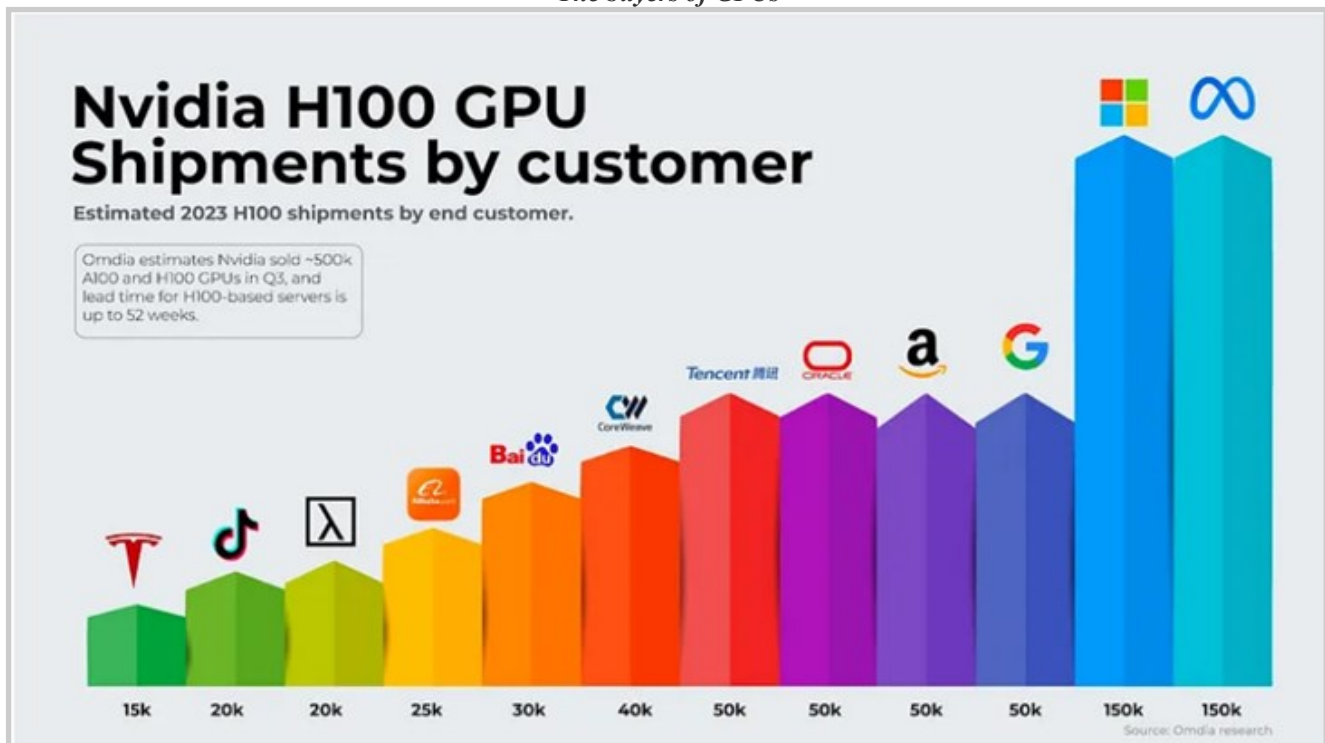


Source: Goldman Sachs

The one clear winner of the AI boom has been Nvidia, the only scaled supplier of graphic processing units ("GPUs"), which are the chips necessary to handle the complex calculations associated with AI workloads. In 2020, Nvidia reported \$2.9 billion in data center revenue. Last year, that figure surpassed \$47 billion and estimates for 2025 sit over \$95 billion. 33x growth (at size) in just five years!

Nvidia's explosive growth is being driven by an arms race for GPUs. Most AI workloads will take place at third-party data centers. The biggest players in this arena are the hyperscalers like Amazon AWS, Google Cloud, and Microsoft Azure. If the hyperscalers or their smaller competitors, like CoreWeave and Equinix, fail to secure GPUs they risk losing market share. We don't have exact estimates, but per Nvidia's filings, Microsoft alone accounted for over 15% or \$9 billion of last year's revenue. And other companies are competing for these chips as well. In January, Meta announced it would secure 350,000 Nvidia H100 GPUs by year-end, a tab that will run them billions if not tens of billions of dollars. Elon Musk recently quipped that "acquiring GPUs for AI training is even more difficult than buying drugs."

The buyers of GPUs



Source: Omdia Research

As alluded to earlier, Nvidia has enjoyed a monopolistic position in the GPU market. The overwhelming demand for their chips, relative to their ability to supply said chips, has given the company tremendous pricing power. In 2023, a Raymond James analyst estimated Nvidia H100 GPUs were selling for \$25,000 to \$40,000 versus a total cost to manufacture of \$3,320. At the company level, Nvidia's gross margin has ballooned from 63% in 2020 to 75% today.

As is true with every capital cycle, excess profits attract competition. This quarter, Intel introduced Gaudi 3, which they claim is "twice as power efficient as and can run AI models one-and-a-half times faster than Nvidia's H100." Then you have AMD which has been ramping up production on its MI300X chips. Even Nvidia's core customers, the hyperscalers and Meta, are in a race to design their own chips, to reduce their reliance on Nvidia.

There is also the question of supply. Synergy Research Group estimates the top 19 hyperscale companies are set to add at least 427 new data centers over the next five years, which will lead to a three-fold increase in total capacity. Nvidia has said it plans to triple its production of the H100 processor by threefold this year, shipping anywhere from 1.5 to 2 million units this year compared to just 500,000 last year. It is also worth noting that AI workloads happen in two stages. The first stage, training, is a computationally intensive process, as you are feeding your models exorbitant amounts of data. For perspective, the large language model, Chat GPT-4, was trained on 25,000 Nvidia A100 GPUs, a chip almost nine times slower than the H100, in a matter of three months. The second stage, inference, requires far less computational power and could be conducted on legacy central processing units ("CPUs"), for which compute capacity is far easier and cheaper to secure. Is AI compute capacity over or undersupplied relative to today's demand? We can't find a good answer. It is worth noting that AI enthusiasts, like Sequoia Capital, are asking the same questions. *"The important question to be asking is: How much of this CapEx build-out is linked to true end-customer demand, and how much of it is being built in anticipation of future end-customer demand? This is the \$200B question."*

We believe that like the internet, AI is a game changer, but we find it hard to ignore today's parallels to the telecom bust. Routers and fiber optic cables were the picks and shovels that paved the way for internet adoption. GPUs and data centers are the picks and shovels paving the way for AI adoption. At the epicenter of the AI craze sits Nvidia, the dominant supplier of GPUs trading for 37x trailing sales, the highest multiple of sales for any S&P 500 constituent. For perspective, only 7.4% of S&P constituents trade north of 10x sales. To make sense of Nvidia's valuation you must believe we are still in the early innings of the capital cycle, that data center demand for GPUs will continue

multiple years into the future, and that competitors are too far behind to pose a threat to Nvidia’s margins, a company with the third highest pre-tax margin in the S&P 500. If for some reason, the market discovers it overestimated the speed or magnitude of AI adoption, then it is likely that data centers and Nvidia will have flooded the market with GPUs, like fiber optic companies did during the dot.com boom.

The odds of outperforming the stock market for stocks that trade at extreme price/sales multiples (1965-present)

P/S	# Of Companies	% of Time Stock Outperforms Market				
		1 Yr	3 Yr	5 Yr	10 Yr	20 Yr
> 25	231	21%	9%	8%	8%	4%
25-30	139	24%	9%	8%	7%	7%
30-40	137	20%	6%	4%	6%	3%
> 40	148	21%	10%	9%	9%	3%

Source: *Stocks for the Long Run, 6th Edition*

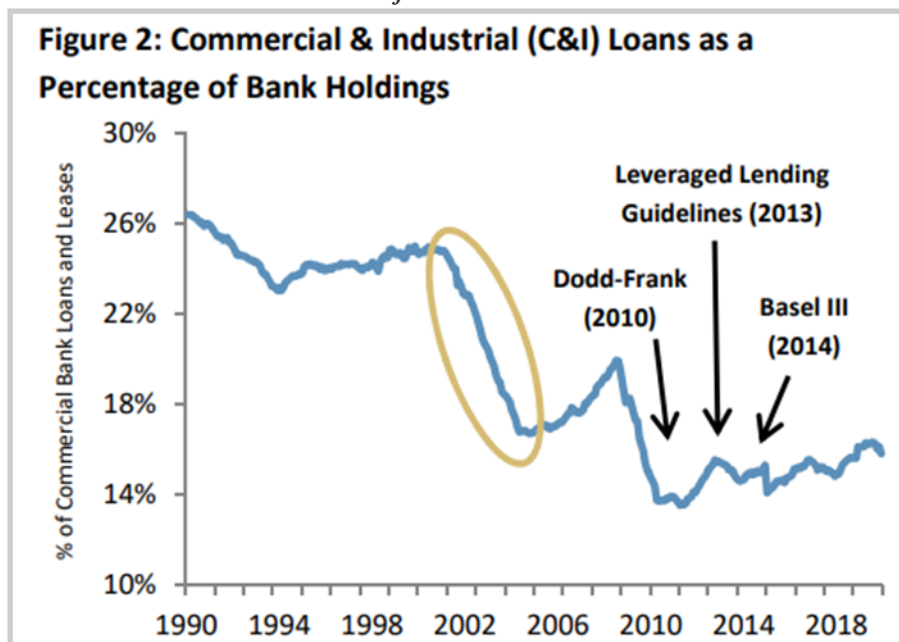
To us, there are far simpler bets to make. More on this topic later.

Capital Cycle 2: The “Golden Age” of Private Credit

The second capital cycle we wanted to discuss is the rise of private credit.

Before the global financial crisis, private businesses obtained debt financing from banks. If a company was large enough, it could also raise funds in the bond and/or levered loan market. The financial crisis left bank balance sheets impaired, and a series of legislative reforms were introduced. Dodd-Frank and Basel II forced banks to improve underwriting standards and reduce leverage. The Leveraged Lending Guidelines prohibited banks from lending more than six times a company’s cash flow and required all loans to be amortized by at least half within seven years of closing. The net effect was it became a lot harder for banks to lend to small and medium-sized businesses. It is also worth noting that the global financial crisis hit in the middle of a private equity boom. In 2000, there were about 4,000 private equity-backed companies globally. By 2009, 13,000. Last year, 28,000.

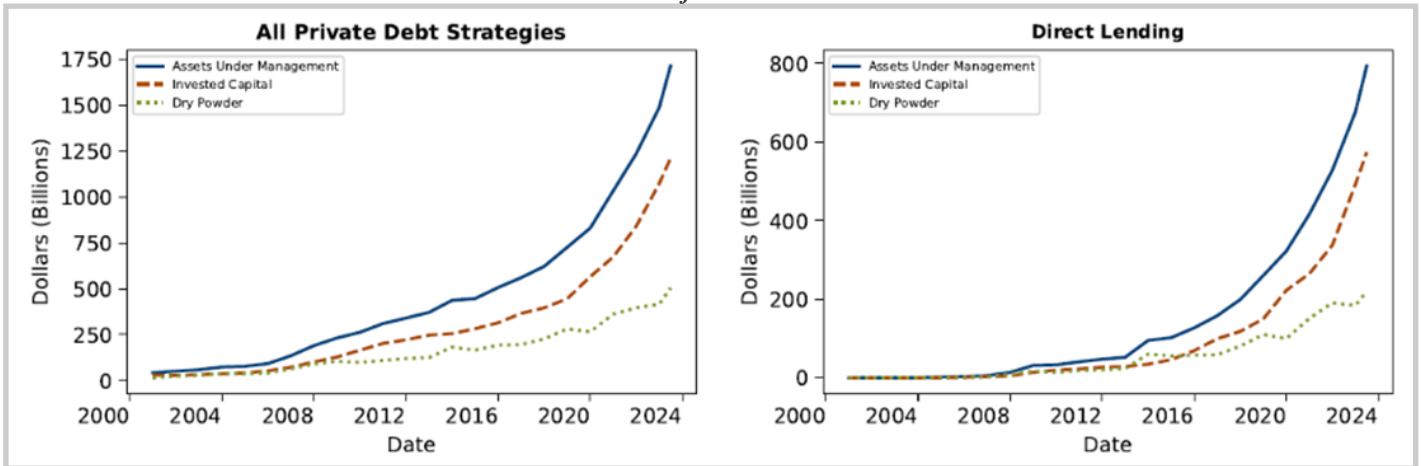
Banks have retreated from the commercial loan market



Source: *Goldman Sachs*

The capital void created by the global financial crisis created the perfect opening for the private credit industry. Funded by third-party capital and unburdened from regulatory scrutiny, private credit funds could help finance the growing number of buyouts and make loans directly to owner-operated businesses. Furthermore, these loans could be more finely tailored to the end user's needs. In 2008, the private credit industry managed a mere \$231 million in assets. By mid-year 2023, the private credit industry had grown to \$1.7 trillion in assets under management, a 15.2% compound annual growth rate. More recent estimates argue the industry controls over \$2.0 trillion in assets. For perspective, there is only \$1.2 trillion in high-yield bonds outstanding, and the syndicated levered-loan market sits at \$1.3 trillion.

The Rise of Private Credit



Source: Federal Reserve

We don't know when or where the phrase originated, but after COVID, we began seeing numerous headlines heralding the "golden age of private credit." Since COVID, our inboxes have been flooded with private credit pitches.

Here is how the industry sells the asset class:

1. Private credit usually sits at the top of the capital stack, i.e. it is a senior loan.
2. The loans are covenant-heavy and more specifically tailored to the company.
3. The funds that originate direct loans carry less balance sheet leverage than banks.
4. Most loans are floating rate, tied to SOFR, which reduces interest rate risk.
5. These loans come at a hefty price tag, often 200 to 300 basis points above what a syndicator would charge.
6. Given these characteristics, the private credit industry has delivered returns more than both high yield bonds and levered loans with lower rates of default. Some funds will go so far as to argue they offer equity-like (or greater) returns with bond-like (or lower) volatility.

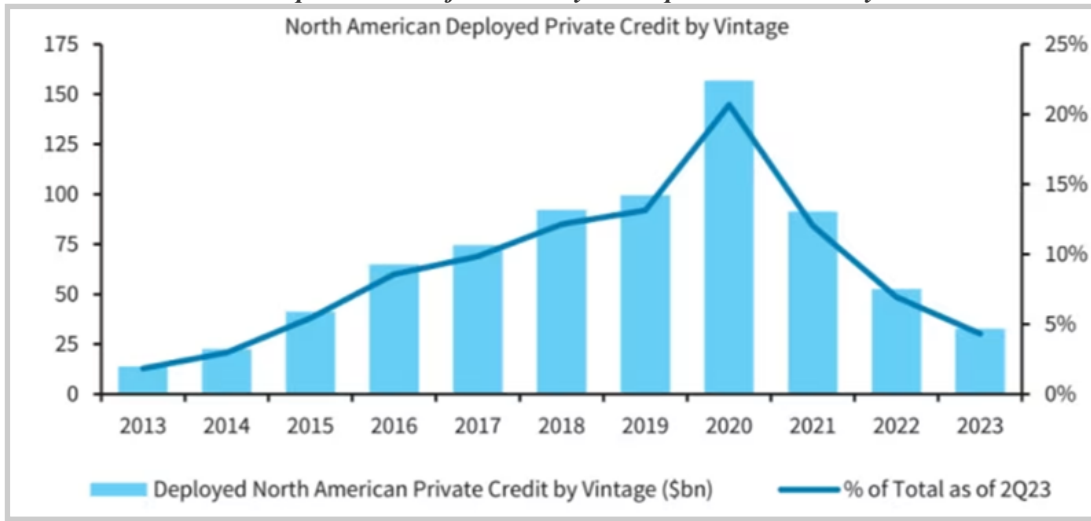
In a recent report, Blackstone noted, "From 2015 to 2023, a portfolio that added a 20% allocation to private credit reduced volatility, increased annualized returns, and added 140 basis points of income." Sounds pretty good.

Annandale has a long history of investing across the private credit universe. Most of our investments have been backed by hard collateral (like real estate), but we have also given money to a handful of individuals who make direct loans to cash-flowing businesses. We don't mind investing in private credit, given the right partner and collateral, but we don't buy the industry's sales pitch.

First and foremost, the industry's track record of below-average defaults is misleading. Very few private credit managers have managed through a recession, and we won't have good data on default rates until the industry experiences one. Furthermore, when a loan does go south, private credit funds can amend and/or extend that loan to avoid an actual

default, which is not only in their interest but also in the industry’s interest. The IMF’s 2025 stability report noted that 81.2% of private credit funds are also managed by private equity funds (like KKR), and 72% of private credit loans are sponsored by private equity funds. If a private credit fund fails to work with its troubled borrower, then it will cut off the hand that feeds them deals.

Most private credit funds have yet to experience a credit cycle

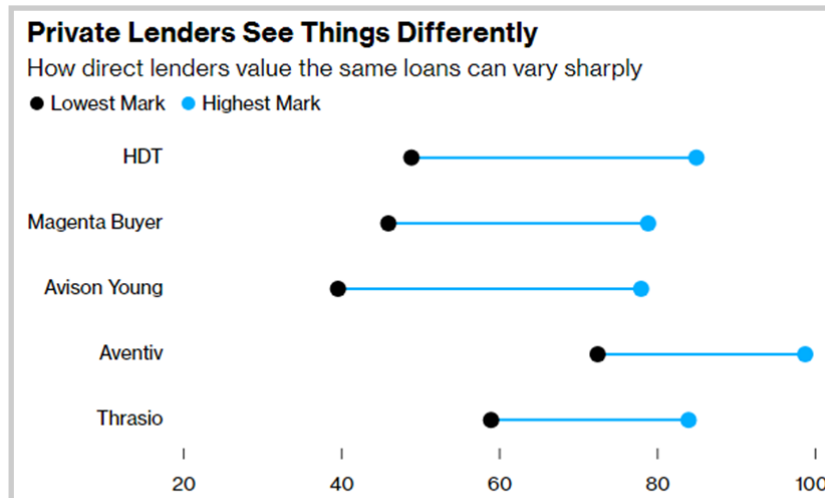


Source: Prequin, Barclays Research

Second, by definition, these are higher-risk loans even though they have seniority and strong covenants. Private credit borrowers tend to be smaller corporations. Large corporations can obtain funding in the bond and/or levered loan markets, which they most assuredly would, because of its lower total costs. The credit rating agency, S&P Global, estimates that the median loan sits at 7.1x debt/EBITDA with only 1.5x interest coverage. These credit metrics are similar to the single-B/CCC segment of the high-yield market, whose default rate is pushing 7.7% compared to only 2.5% for the overall high-yield market. Furthermore, S&P Global estimated that under a mild downturn, defined as a 10% decline in cash flows, 26% of issuers would see interest coverage fall below 1x.

Third, the industry’s reported returns are likely overstated, given the private credit fund has a lot of latitude when it comes to valuing their loans. Bloomberg and the Financial Times have reported on this extensively. There are often loans held by multiple private credit funds ("club deals") for which the valuations will vary considerably. “In one loan to Magenta Buyer, the issuing vehicle of a cybersecurity company, the highest mark from a private lender at the end of September was 79 cents, showing how much, it would expect to recoup for each dollar lent. The lowest mark was 46 cents, deep in distressed territory.” Anecdotally, we can look at the long-term returns of listed business development companies (“BDCs”), which are effectively publicly traded, private credit managers. Since its inception (9/30/2004), the Cliffwater BDC Index has compounded at 8.0%, slightly ahead of high-yield bonds at 6.4%.

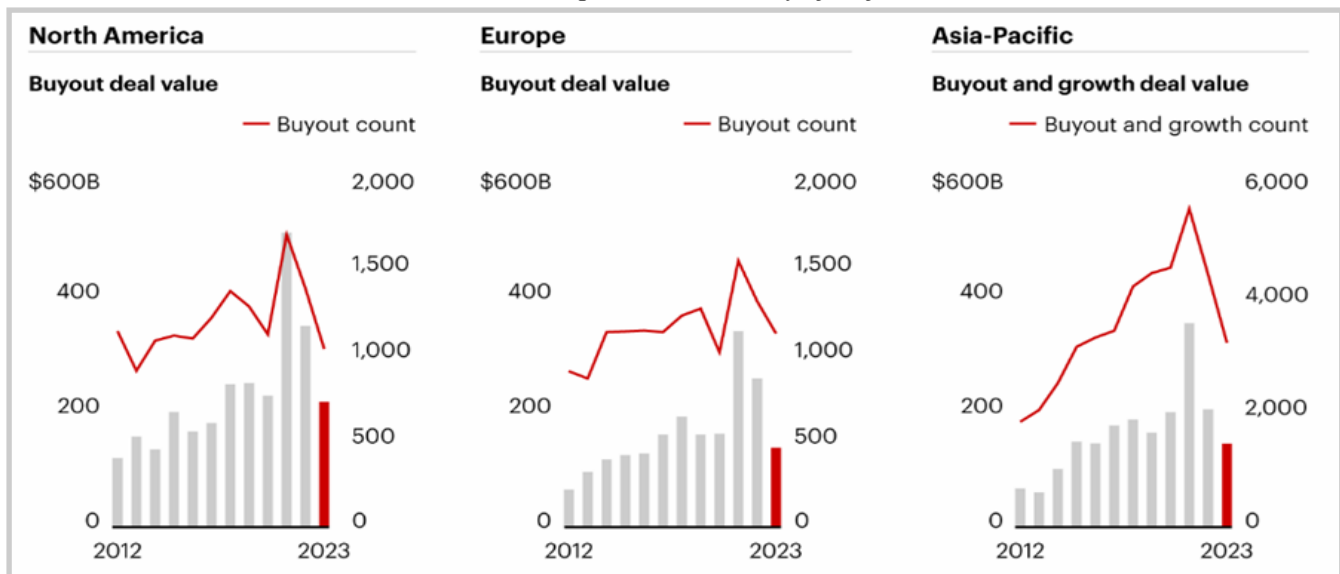
There is a glaring disparity between private credit marks for the same loan



Source: Bloomberg

As was the case with the railway mania, the telecom boom, the shale revolution, and potentially the AI revolution, too much capital threatens to erode the excess returns the industry once offered. Furthermore, the flood of capital into private credit strategies occurs when leveraged buyout volumes are plummeting, meaning more dollars will have to compete for fewer deals. This might be the golden age for fundraising, but the golden age for risk-adjusted returns existed in the years following the financial crisis when capital and competition were sparse.

Private credit assets are up, but the deals they often fund are down



Source: Bain

Annandale's Investment Philosophy

On any given day, we will get five to ten emails and a handful of phone calls from investment banks, funds, and third-party marketers pitching us an investment (mostly privates). The outreach is almost always the same. They lead with the fund or asset class's performance, biased heavily by recent returns. In our industry, you are always getting pitched what has worked but seldom pitched what will work, which makes sense. Salespeople don't stick around when their product is tough to sell, they are pro-cyclical, so they go where capital is easy to come by.

Eventually, when we get to the heart of the matter, our philosophy, we tell them that first and foremost, we want to look at investments where the cost of capital is high, and more importantly, we want to understand why that cost of capital is high. For the unacquainted, the cost of capital refers to a party's required rate of return. It is another way of asking, where are valuations low or debt yields high?

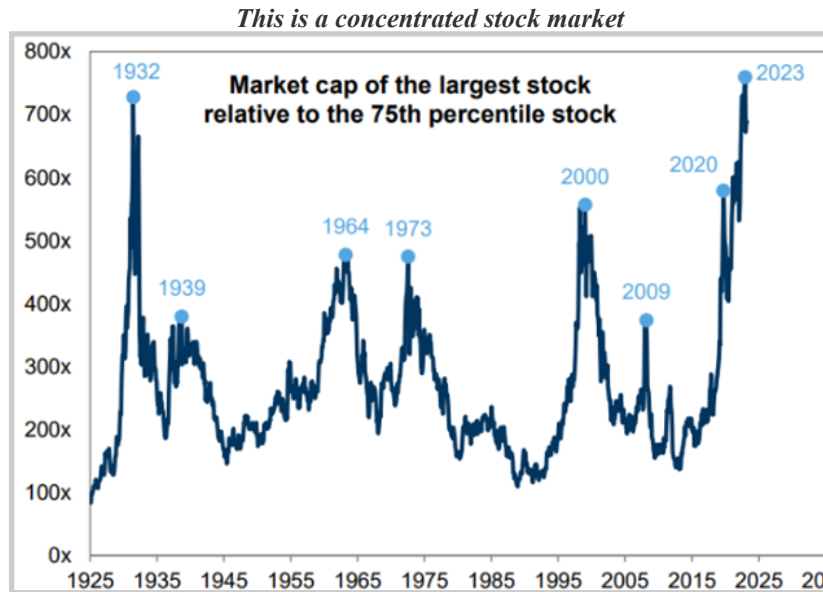
The cost of capital can be high for a few reasons, and often deservedly, but we are principally interested in two drivers: stress or structural.

Stress is self-explanatory. In 2020, oil briefly went below \$0 and no one wanted to touch energy assets with a 10-foot pole, which drove up its cost of capital. Annandale's investment in Angelo Gordon's energy credit fund was a play on this theme. Structural refers to a supply/demand imbalance between those seeking capital and those needing it for some external reason. For example, Emet, our manager focused on acquiring discounted revenue bonds backed by real estate, benefits from structural issues when municipal bonds are used to fund real estate projects. Municipal financing allows for over-levered capital structures, which are more prone to default. The holders of these bonds, often large mutual funds, have little or no incentive to cure the default via restructuring. Emet faces little competition buying these discounted revenue bonds because their strategy isn't scalable for private real estate funds, and it requires expertise within the arena of municipal finance. Sometimes it's both, stress and structural, like private credit in the wake of the global financial crisis. Impaired balance sheets, risk aversion, and government regulations forced banks to exit the corporate lending market, which caused the supply of capital to fall well below what was demanded.

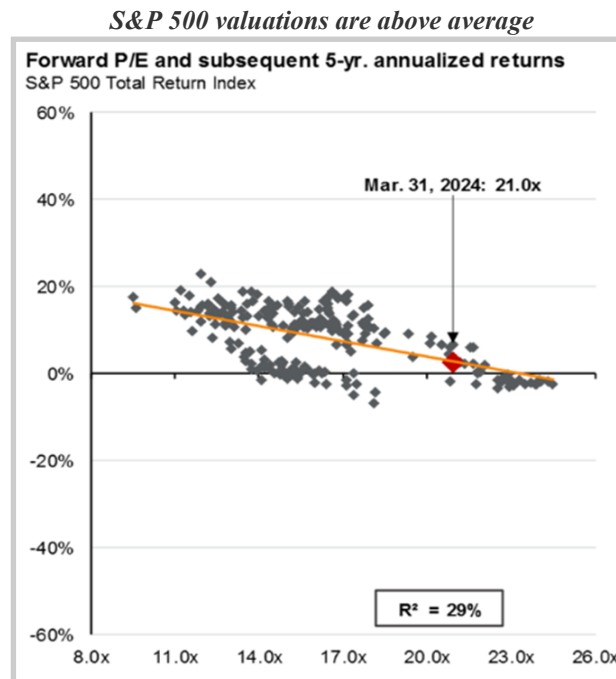
The Current State of Investing

It would be disingenuous for us to tell you our current “idea funnel” is full. We are working on some promising projects around search funds, litigation finance, distressed real estate, and one-off private deals, but, at present, many of the deals that flood our inbox look mediocre. The public equity markets are equally challenging.

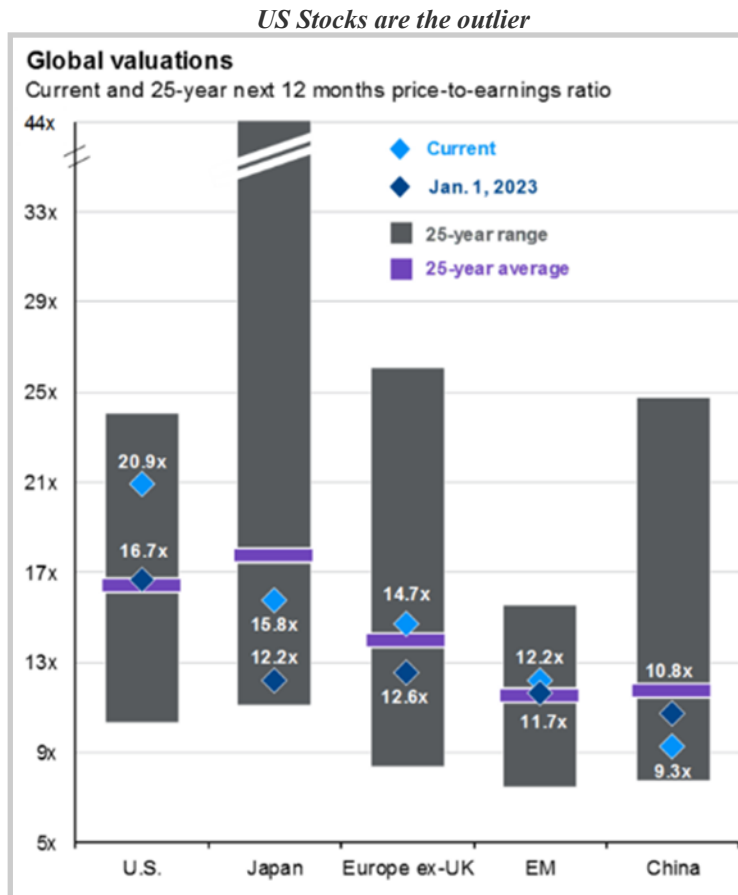
The outperformance of a few mega-capitalization stocks, like Nvidia, has led to a market that is highly concentrated. At quarter-end, the 10 largest stocks accounted for 33.5% of the S&P 500’s weight, but less than a quarter of its earnings. Furthermore, the information technology sector (which doesn’t include Google 4.8% or Meta 2.6%) accounts for over a third of the index. The S&P 500 has effectively become a proxy for large cap growth stocks, and the exposure it provides to other large sectors of our economy, like energy, is de minimis.



To be fair, the S&P’s largest components, Microsoft, Apple, Nvidia, Google, Amazon, and Meta, are all wonderful businesses, and with one exception, it is hard to argue they trade at “bubbly” valuations. At the same time, they aren’t obvious steals. The S&P 500 trades at 21.0x forecasted earnings, and its five largest components trade hands at 32.5x. The technology sector sells for 28.4x earnings. This represents a sizeable premium to long-term averages.



Globally, it is the same issue. The US's long run of above-average performance, led by the aforementioned mega-caps, has resulted in the US now accounting for 64% of the global equity market, even though the US only accounts for 15.5% of global gross domestic product. And 29.0% of the global stock market is invested in the technology sector. It leaves us wondering, besides us, who is investing in small caps and overseas stocks?



Taking Comfort in the Way You Generate Returns

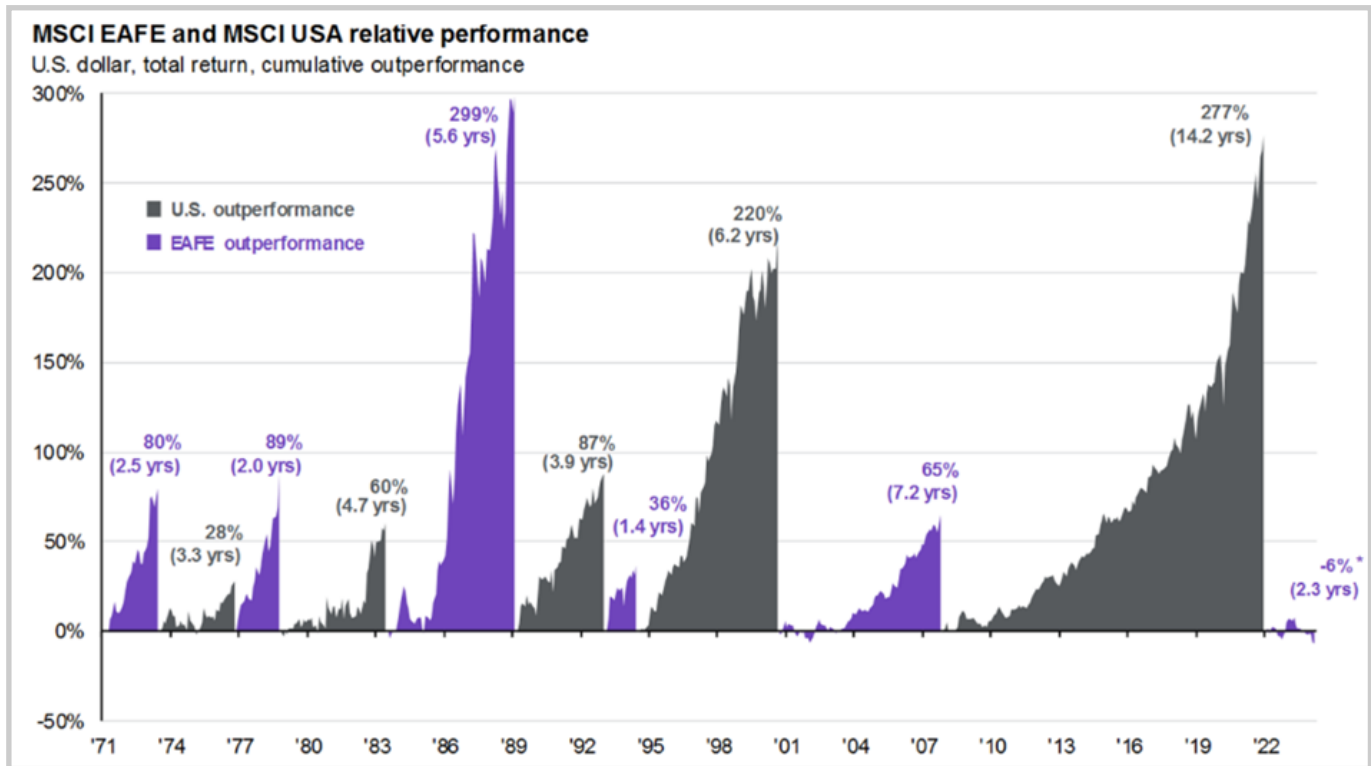
This is a topic that gets far too little airtime, but how you generate returns matters just as much as the returns you generate. It sounds like a loser's statement but hear me out. Imagine you were allowed to travel forward three years in time and record the price of a single stock. When you arrive back to the present, you immediately compare that future stock price to today, and the future stock price is 29.6% higher. What should you do? The obvious answer is to load the boat, invest everything you can risk in that stock, and earn a risk-free 9.0% compound rate of return. After all, 3-year Treasuries, (the closest thing to a risk-free investment you can think of) yield 4.4%, less than half the prospective return. Unfortunately, even if you made the right decision, it doesn't mean you won't look stupid. The market could end up compounding at say 26.0%, like it did from 2019 through 2021.

Alas, there are no time machines that we are aware of, and return certainty is impossible to come by. Still, a portfolio manager can take steps to increase the probability that their portfolio achieves its desired objectives. The key word here is objective.

When it comes to stocks, you could simply buy the powerhouse, Nvidia, at 37x trailing sales, or you could invest more broadly. We wouldn't be shocked if Nvidia rallied another 100%, amid the craze for all things AI, but we also wouldn't be surprised if we woke up to a glut of GPUs and Nvidia's earnings power cratered. You could buy the S&P 500, a more defensible choice, but still, your fate would be concentrated in a handful of mega-cap tech stocks, Nvidia one of them at 5.1%. What would happen to that portfolio if we went through another period like we did surrounding the

dot.com bubble? From 1999 to 2003, small-cap US stocks returned 7.6% per annum, compared to -0.6% for the S&P 500. The same goes for owning overseas stocks. We are skeptical of investing in the Chinese economy, but when Alibaba, the Chinese equivalent to Amazon, carries a market capitalization of only \$179 billion despite sitting on \$117 billion in cash and generating ~\$20 billion in free cash flow, do you make an exception?

Markets cycle and the US doesn't always lead



Source: JP Morgan

When it comes to fixed income do you reach for yield and buy speculative-grade bonds? They offer 3.1% in excess yield, above Treasuries, but on average 4.0% of those bonds will default in any given year, and during recessions, default rates can push upwards of 10-13%. Do you instead offload your liquid fixed income instruments, and make illiquid private credit investments at even slightly higher yields?

The simple reality is we are in a bull market for most financial assets. The fact that Dogecoin, an accidental crypto movement based on a dog meme, is in vogue and has amassed a \$22 billion capitalization is all you need to know. Things haven't reached the levels of absurdity yet, but it is a good reminder that sometimes, chasing the hottest portfolio isn't the best idea. A general knowledge of where you are in the capital cycle will go a long way when it comes to identifying investment opportunities and avoiding bad ones.

All investments carry risk because the future is uncertain. Bad investors lose sight of this fact. They assume risk blindly without demanding adequate compensation for uncertainty. No investment is so great or obvious that it makes sense at any price. We will close with a quote from Howard Mark's latest memo, *"You shouldn't expect to make money with bearing risk, but you shouldn't expect to make money just for taking risk."*

As always, we appreciate the trust you have placed in us.

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