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2024 Second Quarter Newsletter and Outlook

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This year the stock market has been on an AI-fueled binge. In this newsletter, I share my thoughts on the underappreciated risks to the AI story, as well three popular investment strategies I'm avoiding and why.

Through June 30, 2024 (if MCS clients' accounts were treated as one large portfolio), clients gained 2.1%, after fees. For comparison purposes, the Bloomberg Barclays Aggregate Bond Index lost (0.7%), and the S&P 500 Total Return Stock Index (S&P 500) gained 15.3%. The range of MCS individual client returns was from a gain of 4.8% to a loss of (0.9%)[1]. The clients who fared the best and the worst were overweight in long held, low- cost basis stocks.

Artificial Intelligence

The stock market, as you probably know, benefited tremendously from the excitement around artificial intelligence applications such as Chat GPT, Claude, and other Large Language Models (LLM). Stocks like NVIDIA (symbol NVDA, it designs highly specialized microchips that provide the intense processing power required to support AI related programing) and Taiwan Semiconductor (symbol TSM, it is the 800lb gorilla among companies capable of manufacturing these very sophisticated chips) sport parabolic price charts, as every major Tech player has decided they must get these microchips and be in the game.

In addition to using ChatGPT4 and Claude (Anthropic's AI), I have participated in AI conference calls and online seminars, and I invested in an AI focused start-up. AI can be both quite impressive and quite stupid. None of this makes me an expert, just somewhat informed.

In May, I attended a webinar presented by AI expert Gemma Galdón-Clavell, PhD, founder of an AI auditing firm focused on technology ethics and algorithmic accountability. She did not think that ChatGPT, a Microsoft-backed and widely distributed general Large Language Model (LLM), would be viable long term. The reason is the incredible amount of energy needed to run AI. Hearing this, I decided to dig deeper.

An article published in Semiconductor Engineering, Aug 15, 2022, begins:

> *"Machine learning is on track to consume all the energy being supplied, a model that is costly, inefficient, and unsustainable."*

Experts are unclear what aspect of AI uses the most energy: **training**; identifying patterns and correlations in massive data sets or **inference**; ability to make predictions on current data based on training on past data, or the ability to parse, interpret or create new text (LLM).

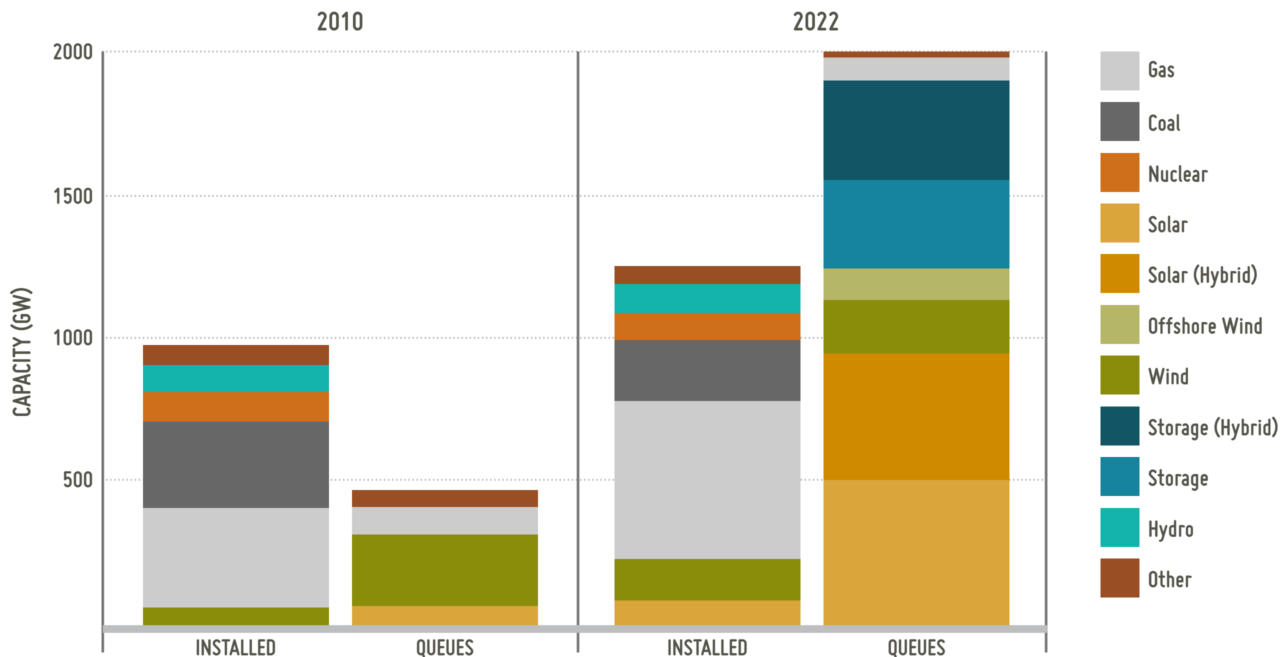
> "If you look at the amount of energy taken to train a model two years back, they were in the range of 27 kilowatt hours for some of the transformer models," says Synopsys' Maben. "If you look at the transformers today, it is more than half a million-kilowatt hours. The number of parameters went from maybe 50 million to 200 million. ***The number of parameters went up four times, but the amount of energy went up over 18,000X."***[2]... Models are getting larger in an attempt to gain more accuracy, but that trend must stop because the amount of power that it is consuming is going up disproportionately.[3]

For more about AI and energy consumption, see the MIT Technology Review 12/31/2023: https://www.technologyreview.com/2023/12/01/1084189/making-an-image-with-generative-ai-uses-as-much-energy-as-charging-your-phone/

My bet is that investors in AI related stocks do not fully appreciate the energy issues related to the indiscriminate distribution of AI technology. Worse, the US Energy transmission grid is incapable of connecting energy sources already available. Consider Figure 1, below.

Figure 1

Underdeveloped, Aging Electric Power Infrastructure Hinders Use of Available Electricity



Source: CNBC: April 6, 2023[4]

A rough approximation based on the graphs: from years 2010 to 2022, electricity generation increased 28% while untapped electricity (in queues) increased 400%.

There is no easy fix. From the Economist:

> *"The grids used by developed countries are not accustomed to rapid change… Unsurprisingly, the business of supplying the highly specialised components big grids require was paced to match… There are few providers, and they are cautious… Take the transformers needed to step electricity up to, and down from, the highest voltages on the grid—massive machines made with bespoke techniques… The finished products typically weigh 300 tonnes, cost €30m ($32m), and are ready for delivery about three years after being ordered."*[5]

The resilience and growth of any system is limited by its weakest link. Climate change is wreaking havoc on existing power infrastructure with Houston, TX as the latest casualty. That infrastructure was never built to meet the energy demands of higher temperatures, disruptions from more frequent, high intensity natural disasters and the excessive power demands of AI processing and Bitcoin mining.

AI related stock prices reflect a simplistic and dangerously parabolic projection of insatiable demand without considering choke points, like available electricity, that will likely impede its growth trajectory.

> *Many investors do not understand that buying a stock at a given price is not just buying a 'good company', it's buying the company's growth trajectory.*

Goldman Sachs' head of equity research, Jim Covello, is not impressed with the AI hype.

> *He has followed the tech industry's ups and downs since joining Goldman in 2000 after stints with SG Cowen and Smith Barney… He specialized in semiconductor-equipment companies, racking up awards year after year as the sector's top analyst, before being promoted in 2015 to the firm's director of Americas equity research…*
>
> *"Most technology transitions in history, particularly the ones that have been transformational, have seen us replace very expensive solutions with very cheap solutions," said Covello, who first made a name for himself at Goldman as a tech stock analyst. "Potentially replacing jobs with tremendously costly technology is basically the polar opposite…"*[6]

According to a survey conducted by San Francisco-based Lucidworks, **fewer than half of companies investing in AI have yet to see a significant return**. Covello is doubtful that most ever will.

Does AI have *some* potentially huge upside potential? Yes. As huge as AI related stock prices and recent earnings gains imply? – that's very hard to answer.

But it's worth remembering Warren Buffet's 1987 letter to Berkshire Hathaway shareholders regarding Benjamin Graham, his mentor, "As Ben said: ***In the short run, the market is a voting machine but in the long run it is a weighing machine***."[7]

Today AI stock prices are a product of enthusiastic voting.

Three Popular Investments That I Avoid and Why

> *"Those classes of investments considered "best" change from period to period. The pathetic fallacy is that what are thought to be the best are in truth only the most popular – the most active, the most talked of, the most boosted, and consequently, the highest in price at that time."*[8]
> – Where are the Customer's Yachts? Fred Schwed Jr., 1940

Alternative Investments (Alts), a More Lucrative Alternative for Wall Street

Alts are a broad class of investments that include both private debt and private equity. The investments are pitched as an alternative to publicly traded debt (bonds) and equity (stocks). What makes it 'special' is the cache of getting in on an investment that is not publicly traded and may offer higher returns. Alts are illiquid. There isn't a public auction market, which makes these investments harder to value and more exposed to financial shenanigans.

Unlike a portfolio of publicly traded securities, which is independently valued daily and is forward-looking, alternative investments may be valued quarterly by looking backward at previous transactions. This method lowers the reported volatility or apparent risk of the investment in a manner that is misleading if compared with the volatility of publicly traded securities.

The volatility (price fluctuations) of public securities is a result of their daily liquidity - a very valuable attribute. In a crisis, Alts may turn into investment roach motels, the money goes in, and you may not get it out when you need it.

The lack of liquidity might be ok if the investor earned enough extra return to compensate for the roach motel risk. Unfortunately for the investor, but not for Wall Street, the extra fees charged by Alt investment managers may offset most or all the extra return vs publicly traded securities over a market cycle.

A 2023 Cliffwater study of private fund fees as of the fourth quarter of 2022[9] revealed that "Management fees and administrative expenses for direct lending private funds average 3.94%".

The fees are high, so how did they do? "… at the time of the study (2022), investors in direct lending collectively could expect to earn a 9.68% return net of all fees and expenses and net of expected credit losses.

The assumptions used in the study provide additional insight:

> *"A single set of loan assumptions underly the results. Unlevered middle market loan yields, including OID and other prepayment fees are assumed to equal 10.25% with a 1.05% annual credit loss ratio. Additionally, borrowing costs are assumed to equal 5.25%* ***(assuming 1.95% SOFR)*** *and administrative and other costs equal 0.48%, both consistent with the characteristics for the study group."*

I ***highlighted*** the 1.95% SOFR (Secured Overnight Financing Rate) because it is now **5.34%**. Imagine a variable rate mortgage loan on your house increasing from 1.95% to 5.34%. That's gonna hurt.

I did a simple 'back of the envelope' calculation (see page 8 for details) and the increase in SOFR reduces the average Alt Fund return from 9.68% to 7.88%.

At the same time, the 5.34% SOFR raises the 'required return' on the Alt fund from 9.68% to 11.48%. This is bad news for Alt fund investors. If a bond offers 7.88% interest and the market requires a 11.48% yield, the price of the bond or Alt fund is going down.

This is a simplified illustration to give you a sense of what happens to investment funds using borrowed money when interest rates increase. Years of a good track record can be obliterated when higher rates persist.

And going down it is, for Alternative private equity funds. Faced with investor expectations to now return their money that was tied up for years, Alt private equity funds are foundering and resorting financial shenanigans err, 'engineering' to placate investors. To wit:

> ***Continuation funds***[10]*, which allow GPs to sidestep deeper losses while returning capital to investors who seek distributions, have become increasingly popular. Further telling of pressure to return capital to LPs, the secondary market for VC has also "exploded", according to Financial Times. Trading volume growth has been >50% year-over-year through May, per Caplight data, and discounts from prior fundraising rounds of 45% to 50% have been prevalent, according to Lightspeed Ventures.*[11]

Translation: A 'continuation fund' is a fancy name for "you're not getting your money back now." The expected big payday is not happening. There's no liquidity, which investors knew was a risk. Yet for investors who planned on cashing in after tying money up for a decade or more there is a rapidly growing secondary market, and those investors will receive 45% to 50% of their original investment.

Warren Buffet is Not a Fan of Alternative Investments.

At the 2019 Berkshire Hathaway annual meeting, Warren Buffet and his partner Charlie Munger expressed their disdain for private alternative investments. Buffett describes the calculation of returns on private equity as 'not honest'. You can watch it here: https://www.youtube.com/watch?v=UwkkJfz-ksc&ab_channel=Toriddwar minute 3:50 to 3:55.

Buffett and Munger go on to observe (minute 6:50 to 7:25) that declines in the value of private investments are not fully accounted for (hidden) and how the deal structure is manipulated to enhance the internal rate of return (performance) calculation to appear better than it is.

I would add that to make the sale, the promoters may take their performance numbers and then inappropriately compare them to unleveraged fully invested portfolios or simply say nothing and let the investor inappropriately compare them.

In Short: Alts are illiquid investments with high fees that use borrowed money to increase returns. These investments can quickly go upside down when rates rise while simultaneously preventing investors from exiting.

Option Income Funds

> *Those who cannot remember the past are condemned to repeat it.*
> *—George Santayana, The Life of Reason, 1905*

These Hot New Funds Are 'Boomer Candy' for Retirees, WSJ updated June 23,2024[12]

> *"Such funds, nonexistent four years ago, give retirees the chance to chase stocks returns while protecting against a market slide… The most popular of the strategies, dubbed equity premium income funds by fund managers invests in a portfolio of large cap stock while selling option contracts on those shares. The funds generate higher dividend income than is typical in a stock fund -sometimes 8-10% but they also cap investor gains and carry chunky fees."*

EXCEPT IT'S NOT NEW. This option selling investment strategy was a big hit in the 1980's. At the time, the advertised income was around 15%! Then, like now, it attracted great gobs of investor money.

No doubt 8-10% yield strategies with equity upside and some downside protection sounds exciting to many investors. The Wall Street journal article says that these strategies "were used by institutional clients and high-net worth individuals." and "…now we're seeing them used by more and more investors" PFFFT!

Unfortunately for the investors, option income fund performance in the 1980s was terrible. The mutual fund industry buried their dismal track records using a cute trick. The funds, which were quite large at the time, were merged into much smaller funds.

And presto Chango! The smaller funds with better track records survive and the crappy track records of the multi-billion-dollar Option Income Funds disappear!

Why did these option income funds eventually do so poorly? Adverse Selection: losing winners and keeping losers. I'll explain.

The Strategy: You buy a stock at $50 /share. You sell someone a call option i.e. the right to buy (call) your stock at $55 within the next 6 months. You get paid $2 (premium) for giving another investor the right to buy your stock at $55. If the stock goes to $64 during the 6-month period (becomes a winner), your stock will be called away by the option holder and your highest selling price is $55 + $2 premium or $57. If the stock doesn't go over $55 in six months, you keep the $2 per share premium and write another call option.

The Problem: Selling a call significantly reduces returns on winners because those stocks are called away. Meanwhile, the fund is stuck with most of the downside of losers. While losses are somewhat mitigated by the option premium income; it's not very satisfying to buy a stock at 50 get a $2 option premium and watch it drop to 40. Over time, the net asset value of these funds declines as the fund misses out on the big gainers and option premium income is paid to fund investors who want those hefty distributions!

In Short: Option Income Funds are a recycled failed strategy, offering a new generation of investors valuable learn-the-hard-way investment lessons.

Long Term Bonds with Juicy Interest Rates and Early Call Options

These are very popular because investors often only see the yield and not the terms. The two most important aspects of buying income investments are terms and credit quality (ratings). Once you have comparable terms and ratings, then you compare the investment yields. Otherwise, you're comparing onions to watermelon.

How it works:

A bond is a loan, and the attractiveness of the loan (bond) as an investment depends on the credit rating of the borrower, loan terms, and interest rate. There are many types of terms, and here we'll just concentrate on one: the call option. (If this sounds like the call option on stocks give yourself a pat on the back for sticking with this newsletter, but don't throw out your shoulder in the process.)

Remember in the stock example when you sold a call, the right to buy the stock at a set price in the future, and the stockholder received extra income called a premium? It works in a similar way with callable bonds.

- A callable bond pays the bondholder an extra yield premium for giving the bond issuer (borrower) the right to call /redeem the bonds before maturity.

Why would the bond issuer (borrower) pay more interest for that right?

The reason is the bond issuer wants the ability to refinance; to pay off the old bonds and issue new bonds at lower interest if interest rates decline.

A common deal today is for issuers to offer a bond with a 10- or 15-year maturity, callable after one year, with extra interest of 1 or 2%.

Like the stock option strategy, that seems good in the short run, the ability of the bond issuer to call the bonds, can result in lower long-term returns.

The investor in a long-term, one-year callable bond suffers all the downside when rates rise while missing the upside when rates decline because the bond issuer will redeem the bonds when rates decline.

In Short: Bonds with a long period of call protection (10 years or more, or non-callable) benefit the investor, whereas a short period of call protection (1 year) benefits the bond issuer.

Bottom Line

While T-Bills remain very attractive, I'm on the hunt for investments that offer a better combination of return, safety and liquidity than US Treasury bills. Both the challenge and opportunity are that the era of ultra-low interest rates, persistently low inflation, relative political stability (global and domestic), and economic globalization has ended.

My guess is that we're only in the 2nd or 3rd inning of a painful adjustment process. I hope I am wrong. Unique to this period is the industrial scale production of mind viruses, aka memes programmed to distort reality in the name of engagement. The destruction of shared understanding about how the world works is intentional and very disturbing. It's all in service to the pursuit and concentration of money and power.

As always, if you have any questions or comments, please contact me at michael@mcsfwa.com or 541-345-7023.

Notes on Calculation

The Alt Fund has many moving parts. Using the assumptions in the report, I've simplified the Fund's borrowing cost to illustrate how sensitive the returns are to changes in interest rates. Note: SOFR is an acronym for Secured Overnight Financing Rate, the overnight borrowing rate for loans collateralized with US Treasury securities. https://www.newyorkfed.org/markets/reference-rates/sofr

A very important assumption regarding the 9.68% return is: "… borrowing costs are assumed to equal 5.25% (assuming 1.95% SOFR)"

Put another way, the 5.25% borrowing cost is made up of 1.95% SOFR plus 3.35% additional yield known as the 'credit spread'. The credit spread is compensation for additional risk.

Here's a problem: the SOFR interest rate is no longer 1.95%. It is currently 5.34%. That's 3.39% higher than it was at the end of 2022. It's a big change.

Now what happens to the return on the fund (holding everything else constant)?

- 5.34% (current SOFR) - 1.95% (previous SOFR) = 3.39% interest rate increase
- 3.39 x 53% (% of borrowed money in the fund) = 1.80% increase in fund interest expense
- The Alt fund return has been reduced by the higher borrowing costs:
  9.68% – 1.8% = 7.88%

You might think that 7.88% isn't too bad, but it is bad in comparison to other investments.

A simplified approach is to start with the risk-free return on US T-Bills (SOFR is also a risk-free alternative), then add the extra return to compensate for more risk.

- 9.68% 2022 Alt fund net return minus 1.95% SOFR = 7.70% excess return over SOFR
- SOFR has increased to 3.39% (from 1.95% to 5.34%)
- 3.39% + 7.70% (excess) = 11.48% required return now

That Alt investment now needs to yield 11.48% to compensate for the increase of 3.39% in the SOFR rate. Unfortunately, the investment fund yields less than before (7.88%) because the Alt's borrowing costs increased.

- If the investor can get out, they will need to sell their investment for less than they paid to make up the difference between the required yield of 11.48% and the actual yield of 7.88%
- On top of that, an additional discount may be demanded by a new buyer to compensate for the risk that the new buyer could also be underwater if rates continue to increase

Endnotes

[1] MCS Family Wealth Advisors (MCS) consolidated client returns are dollar-weighted, net of investment management fees unless stated otherwise, include reinvestment of dividends and capital gains and represent all clients with fully discretionary accounts under management for at least one full month in 2024. These accounts represent 99% of MCS's discretionary assets under management as of 06/30/2024 and were invested primarily in US stocks and bonds (1.1% of client assets on 06/30/2024 were invested in tax-exempt municipal bonds). The Stock Index values are based on the S&P 500 Total Return Index, which measures the large-capitalization US equity market. The Bond Index values are based on the Bloomberg Barclays US Aggregate Bond Index, which measures the US investment-grade bond market. Index values are for comparison purposes only. The report is for information purposes only and does not consider the specific investment objective, financial situation, or needs of any recipient, nor is it to be construed as an offer to sell or solicit investment management or any other services. Past performance is not indicative of future results.

[2] Emphasis added.

[3] https://semiengineering.com/ai-power-consumption-exploding/

[4] https://www.cnbc.com/2023/04/06/outdated-us-energy-grid-tons-of-clean-energy-stuck-waiting-in-line.html#:~:text=The%20entire%20electric%20grid%20in,in%20line%20to%20be%20connected

[5] https://www.economist.com/technology-quarterly/2023/04/05/adding-capacity-to-the-electricity-grid-is-not-a-simple-task

[6] Wittenstein, Jeran; Goldman's Top Stock Analyst Is Waiting for AI Bubble to Burst; Bloomberg News 07/18/2024

[7] https://www.berkshirehathaway.com/letters/1987.html

[8] Schwed Jr., Fred; Where are the Customer's Yachts?, January 1, 1940

[9] https://cliffwater.com/files/cliffwaterfunds/data/pdfs/PrivateFundFeesExpensesForDirectLending2022.pdf

[10] https://www.skadden.com/insights/publications/2024/05/continuation-funds-what-you-need-to-know

[11] https://www.markovprocesses.com/blog/a-private-equity-liquidity-squeeze/

[12] https://www.wsj.com/finance/investing/retirees-boomer-candy-investing-fund-62454210

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