PASI since 1977 NEWS

Volume 48 - Number 1 Spring 2024

Professional Advisory Services, Inc.
2770 Indian River Blvd. – Suite 204 • Vero Beach, FL 32960
(800) 847-7274 • (772) 778-0552 • fax (772) 770-2979

Market Update – *The Last Mile?*

by David A. Jaffe, M.D.

Three intertwined economic elements will dictate the current and near-term course of the financial markets: interest rates, inflation, and economic growth. The narrative is likely well known. Focused on curbing surging inflation, the Federal Reserve began raising short-term interest rates in March of 2022, with a total of eleven rate hikes finally pausing in July of 2023. Inflation, which peaked at 9.1% year-over-year in June of 2022, moderated considerably and now resides at 3.5%. Good enough? Well *no*, the Fed remains committed to seeing inflation capped close to 2%. Early optimism regarding fading inflationary pressure, continued economic strength, and the likelihood of a "soft landing" is being challenged by caution regarding the difficulty of navigating the "*Last Mile*."

The specter of Paul Volker's battle with inflation early in the 1980s looms large. Seeing inflation respond to short-term interest rates exceeding 17%, the Volker Fed eased, only to experience a resurgence of inflation necessitating another round of interest rate hikes, precipitating a severe recession. While today's environment is far less dramatic, measures of inflation for 2024 have been worrying, with reports exceeding expectations for three consecutive months.

For the Fed, navigating the Last Mile successfully means keeping interest rates high long enough to further slow the economy, while beginning to ease before high rates precipitate a recession. Investors are in a quandary, viewing persistent inflation positively as a reflection of a healthy economy and associated strong employment, while worried that the Fed will inevitably hold rates too high for too long and bring economic growth to a halt. The bulls won the argument in the first quarter, with the stock market launching 2024 with a robust return of 10.56% for the S&P 500 (includes reinvested dividends).

Enthusiasm about adoption of Artificial Intelligence, addressed later in this newsletter by Jeremy Goldberg, CFA, CFP®, continues to provide much of the fuel for the market's growth. While the theme persists, to some extent the key players have faded. Microsoft has replaced Apple as the U.S. company with the highest stock market valuation, while Tesla (a "Magnificent 7" component in 2023) has run into company specific potholes and is no longer a contender. Alphabet (Google) stuttered for much of the quarter, but surged in March with the introduction of a proprietary processor focused on AI and news that the company is in talks with Apple to bundle Google's Gemini AI engine in the iPhone operating system. Amazon added 19% in the first quarter thanks to analyst optimism about rising profit margins.

While the stock market advance has broadened in 2024, including participation from industrial companies, financial services, energy, and consumer staples, the rise of the S&P 500 continues to be concentrated in a handful of very large technology companies. In this setting, the broadly diversified PASI composite portfolio logged a return of 7.68% (including reinvested dividends).

Historically, gains exceeding 8% for the S&P 500 in the first quarter portend strong gains for the year overall. Broadened industry participation is viewed by investors as an important element of a healthy stock market. While precedent points to a good year for 2024, the near-term key will be successfully navigating the Last Mile.

Berkshire's Architect: Charles T. Munger

by Nathan Polackwich, CFA

In this year's annual letter to Berkshire Hathaway shareholders, Warren Buffett wrote a beautiful eulogy for his long-time partner, Charlie Munger, who passed away on November 28, just 33 days shy of his 100th birthday. I wanted to share some of Warren's remarks, followed by my own thoughts, as Munger inspired much of my philosophy on not just investing but life. First, though, a little background:

Charles Thomas Munger was born on Jan. 1, 1924, in Omaha, Nebraska. Coincidentally, as a teenager he worked at a grocery store called Buffett & Son, owned by Warren Buffett's grandfather. (Buffett also worked there, but being six years younger, he and Charlie never met). Munger later attended the University of Michigan to study mathematics but dropped out in 1943 to serve in the U.S. Army Air Corps during WWII. After achieving an unusually high score on the Army's General Classification Test, however, the Army sent him to study meteorology at Caltech in Pasadena, California. Thanks to the G.I. Bill, Munger was also able to take a number of advanced courses through several universities and was ultimately accepted to Harvard Law School in 1945. After Harvard he moved back to California to begin his law career.

Munger and Buffett first crossed paths at a dinner party in Omaha in 1959. As Buffett would later recount, "About five minutes into it, Charlie was sort of rolling on the floor laughing at his own jokes, which is exactly the same thing I did. I thought, 'I'm not going to find another guy like this.' And we just hit it off." The two stayed in touch with Buffett ultimately convincing Munger in 1962 to give up law and focus instead on managing investments, which he did with notable success.[1] In fact, Munger turned out to be such an astute investor he was soon advising Buffett, as Warren related in his eulogy:

---

[1] Munger's investment partnership returned an astonishing 19.8% a year from 1962 to 1975, a period when the Dow Jones Industrial Average returned only 5% annually.

> Three years later he told me – correctly! – that I had made a dumb decision in buying control of Berkshire [a mediocre textile company that Buffett had acquired because the stock looked "cheap"]. But, he assured me, since I had already made the move, he would tell me how to correct my mistake.
>
> [He] advised me: "Warren, forget about ever buying another company like Berkshire. But now that you control Berkshire, add to it wonderful businesses purchased at fair prices and give up buying fair businesses at wonderful prices." With much backsliding I subsequently followed his instructions. Many years later [in 1978], Charlie became my partner in running Berkshire and, repeatedly, jerked me back to sanity when my old habits surfaced.
>
> In reality, Charlie was the "architect" of the present Berkshire, and I acted as the "general contractor" to carry out the day-by-day construction of his vision. Charlie never sought to take credit for his role as creator but instead let me take the bows and receive the accolades.

With a background and interests as varied as meteorology, architecture (with no formal training he contributed heavily to numerous building designs including at Stanford University), law, business, science, psychology, philosophy, and more, Munger was a polymath who cast his net widely for knowledge to better navigate the world. As he once expounded:

> What is elementary, worldly wisdom? Well, the first rule is that you can't really know anything if you just remember isolated facts and try and bang 'em back. If the facts don't hang together on a latticework of theory, you don't have them in a usable form.
>
> You've got to have models in your head. And you've got to array your experience—both vicarious and direct—on this latticework of models…What are the models? Well, the first rule is that you've got to have multiple models—because if you just have one or two that you're using, the nature of human psychology is such that you'll torture reality so that it fits your models, or at least you'll think it does. It's like the old saying, "To the man with only a hammer, every problem looks like a nail."
>
> And the models have to come from multiple disciplines—because all the wisdom of the world is not to be found in one little academic department…You may say, "My God, this is already getting way too tough." But, fortunately, it isn't that tough—because 80 or 90 important models will carry about 90% of the freight in making you a worldly-wise person. And, of those, only a mere handful really carry very heavy freight.

Among Munger's models that pertain to investing, the ones that most heavily impacted my thinking were 1) buying better businesses even if you must pay a higher price, 2) staying within your circle of competence, 3) betting rarely but meaningfully, 4) destroying your ideas (knowing the counterarguments better than your opponents), and 5) solving problems by inverting the question.

Buy Better Businesses – As Buffett noted in his eulogy, Munger taught him to favor better vs. cheaper businesses. As Munger explained:

> The bulk of the billions in Berkshire Hathaway have come from the better businesses…Over the long term, it's hard for a stock to earn a much better return than the business which underlies it earns. If the business earns 6% on capital over 40 years and you hold it for that 40 years, you're not going to make much different than a 6% return—even if you originally buy it at a huge discount. Conversely, if a business earns 18% on capital over 20 or 30 years, even if you pay an expensive looking price, you'll end up with a fine result. So the trick is getting into better businesses.

Paying reasonable prices for good businesses – those with sustainable competitive advantages, secular growth tailwinds, strong balance sheets, and reasonable capital spending requirements – has been the hallmark of PASI's investment style since its inception.

Circle of Competence – Munger and Buffett famously avoided technology stocks throughout their careers (a notable exception being Apple, which they first started purchasing in early 2016). Munger said that he and Warren were "at a big disadvantage in trying to understand the nature of technical developments in software, computer chips or what have you. So we tend to avoid that stuff, based on our personal inadequacies…Every person is going to have a circle of competence. And it's going to be very hard to advance that circle. So you have to figure out what your own aptitudes are. If you play games where other people have the aptitudes and you don't, you're going to lose. And that's as close to certain as any prediction that you can make."

It's for this reason that PASI has avoided smaller and/or newer companies for which there's limited publicly available information, those with business models or products we struggle to understand, companies heavily dependent on external financing or a single, risky product for their existence (e.g. small biotech companies), and those without a history of solid operating performance. Like Buffett and Munger, we put these companies into a metaphorical pile labeled "too hard."

Bet Rarely but Meaningfully – As Munger counseled, "It's not given to human beings to have such talent that they can just know everything about everything all the time. But it is given to human beings who work hard at it—who look and sift the world for a mispriced bet—that they can occasionally find one. And the wise ones bet heavily when the world offers them that opportunity. They bet big when they have the odds. And the rest of the time, they don't. It's just that simple."

The PASI stock portfolio is fairly concentrated typically holding 30 to 35 stocks. This number captures most of the benefits of diversification (less risk without sacrificing expected returns – the only free lunch in investing), while still allowing our individual stock picks to exert a potentially significant impact on the overall portfolio's performance. Opportunities to buy outstanding companies at reasonable prices are rare, and when they do arise, we want our positions in the stocks to matter.

Destroy Your Ideas – I love these two quotes from Munger:

> "Rapid destruction of your ideas when the time is right is one of the most valuable qualities you can acquire. You must force yourself to consider arguments on the other side."
>
> "I never allow myself to have an opinion on anything that I don't know the other side's argument better than they do."

I have often described the financial markets as infinitely complex, mathematically chaotic, and thus inherently unpredictable (with any sort of precision). Accordingly, successful investing demands humility and the ability to change course when confronted with new and contradictory information. Of course, adaption is impossible for those who only seek news which merely confirms their prior held beliefs.

Solve Problems by Inverting the Question – In his commencement address to Harvard, Johnny Carson said that while he hadn't found the secret to happiness, he knew from personal experience sure-fire ways to guarantee failure. Carson's "prescriptions for guaranteed misery in life" were 1) ingesting chemicals in an effort to alter mood or perception, 2) envy, and 3) resentment. Years later in his own Harvard commencement speech, Charlie Munger added the following to Carson's list:

4) Be unreliable. Do not faithfully do what you have engaged to do.
5) Don't learn from the mistakes of others, living and dead. Become as non-educated as you reasonably can.
6) Go down and stay down when you get your first, second, or third severe reverse in the battle of life.

Concerning success in life and general happiness, Carson's and Munger's insight was that the problem is better tackled by turning the question around – that is, instead of asking what to do, they focused on what to *avoid*. Both were applying the mathematician Karl Jacobi's maxim to "invert, always invert." A variety of paths can lead to happiness, but, as Munger observed, "How little originality there is in the common disasters of mankind."

In this spirit, over a decade ago I wrote a newsletter article titled, "Prescriptions for Guaranteed Investment Misery" where I detailed surefire ways to lose money in the financial markets:

1) Believe you can predict the future with 100% accuracy (don't destroy your ideas).
2) Make sure your predictions are extreme (large changes from the status quo are usually the lowest probability bets).
3) Invest in the fastest growth stocks and industries with which investors are currently enamored (surprisingly, rapidly growing companies and industries tend to underperform over the long-term, as their stocks are usually overvalued).
4) Invest in what you don't understand (venture outside your circle of competence).
5) Invest today where you wish you'd invested five years ago (ignore the danger of mean reversion).

Charlie Munger once observed, “I constantly see people rise in life who are not the smartest, sometimes not even the most diligent, but they are learning machines. They go to bed every night a little wiser than they were when they got up.” Indeed, Munger’s own success was a product of his insatiable curiosity about the world and a lifetime devoted to continuous learning. Ultimately, this is the lesson from Munger I find most inspiring.

Beyond the Headlines: The Unsung Heroes of Artificial Intelligence

by Jeremy Goldberg, CFA, CFP®

During the 1849 California Gold Rush, most fortunes were made not by those sifting for gold, but by the merchants who sold them their picks and shovels. Today, artificial intelligence (“AI”) commands a similar spotlight, sparking a modern-day gold rush for technological advantage. This article explores a selection of PASI portfolio companies and their pivotal roles in this revolutionary technology.

We admire the cutting-edge AI companies that grab headlines, and our roster includes the *obvious* beneficiaries – **Apple** with personalized smartphone interactions, **Amazon** with tailored product recommendations, **Alphabet (Google)** with intelligent search algorithms, and **Microsoft** with productivity-enhancing tools. More importantly, our investments also represent a diversified network of the *not-so-obvious* players who provide the essential building blocks that make AI function. From the semiconductors that power ‘smart’ hardware to the software that facilitates crucial data analysis, our portfolio holdings form the backbone upon which AI innovation relies:

Building the Essential AI Infrastructure: From microchips to data centers, robust infrastructure is vital for making AI function at scale.

- **Analog Devices** (ADI – semiconductors): Semiconductors are a necessary and expected component of AI, but Analog Devices sets itself apart with specialized chips that are crucial for translating real-world data, like temperature, pressure, sound, motion, and light, into digital signals that AI systems can interpret and analyze, enabling smart decision-making. For example, in smart factories, ADI's vibration sensors on conveyor belts detect early signs of wear or misalignment by monitoring changes in operation patterns. This information allows algorithms to predict and prevent breakdowns, keeping production smooth in industries like automotive and renewable energy.

- **Carrier Global** (CARR – air conditioning): While the connection between AI and air conditioning might not be immediately apparent, Carrier addresses a vital yet often overlooked challenge: The use of AI significantly increases demand on data centers, making them run hotter. CARR provides critical cooling solutions for efficiency and sustainability. Traditional cooling methods struggle to manage the heat generated by powerful AI chips, often relying on water-intensive systems. Carrier sets itself apart with ‘dry and liquid cooling technologies’ designed to meet the demanding requirements of AI-powered computing. Their closed-loop systems conserve water, reduce energy consumption, and ensure optimal temperatures for data centers, positioning them as a leader in expanding AI infrastructure.

Harnessing the Power of AI: Companies across sectors are tapping into AI's potential to transform operations, research, and how businesses serve their clients.

- **CDW Corporation** (CDW – information technology solutions): For businesses seeking to quickly adopt and integrate powerful AI tools, CDW acts as a bridge. They excel in identifying, configuring, and integrating cutting-edge software solutions from industry leaders like Google and Microsoft to optimize existing workflows. For example, CDW could guide a school district in integrating Google AI for personalized learning, or help a hospital system utilize Microsoft AI for patient data analysis, leading to faster diagnoses and improved care efficiency.

- **Accenture** (ACN – technology consulting): For enterprises targeting broader AI-driven transformation, Accenture serves as a strategic partner. They specialize in developing comprehensive roadmaps for AI implementation, automating operations, extracting data-driven insights, personalizing customer experiences, reskilling employees, and establishing robust data foundations. Accenture's commitment to AI is evident in their large and rapidly growing AI workforce, which currently exceeds 53,000 practitioners with a goal to reach 80,000 by the end of 2026. To gain a competitive edge in today's data-driven market, companies struggling with operational optimization or complex data analysis can partner with Accenture for strategic expertise and long-term support.

- While AI's impact on healthcare outcomes is widely recognized, its integration within the tools that power life sciences research is a less publicized but powerful element of progress. **Charles River Laboratories** (CRL – life sciences) utilizes AI platforms for drug design, stem cell modeling, and streamlining *in vitro* oncology research, enabling more efficient discovery of therapeutic solutions. Similarly, **Thermo Fisher Scientific** (TMO – scientific instruments) employs AI across scientific instruments and software, significantly accelerating research in drug development and genomics. In practice, their AI-powered platforms optimize the drug development process, with chromatography and mass spectrometry instruments providing more precise analysis and faster results.

- **Elevance Health** (ELV – healthcare): Elevance actively leverages AI to transform the healthcare experience for its 117 million insured members. Focusing on simplified and personalized care, the company utilizes AI to provide customized recommendations, assist with understanding benefits, and match members with suitable healthcare providers. Their AI-powered systems analyze member data to proactively identify and address gaps in healthcare coverage, offering real-time support. Management also sees significant potential in generative AI, with the ability to create new personalized content like text, images, or code, to further enhance the consumer experience and lead to better healthcare outcomes.

AI in Consumer Experiences: AI is reshaping consumer-facing businesses by unlocking the power of data. This transformation extends from traditional retail to industries like travel, enabling companies to personalize experiences and streamline operations.

- **Booking Holdings** (BKNG – travel services): Booking goes beyond trip planning, deploying AI to individualize and enhance the entire travel experience. CEO Glenn

Fogel's vision of a "connected trip" takes shape through tools like Booking.com's conversational AI Trip Planner, which provides custom recommendations based on individual preferences. In Booking for Business, features like automated expense tracking streamline the experience for corporate travelers. The company's focus on capabilities such as real-time translation demonstrates their forward-thinking approach, positioning them well to meet the evolving needs of the travel industry, particularly for the tech-savvy younger generations.

- **Dollar General** (DG – retail): The integration of AI into traditional retail might initially seem surprising, but DG tackles the major retail challenge of inventory loss due to theft – also known as "shrink" – by harnessing AI in its supply chain to optimize inventory management and tailor promotional strategies. A standout example of DG's problem-solving approach is its implementation of Everseen, an AI solution that meticulously monitors self-checkout transactions across hundreds of thousands of instances. Everseen provides the data-driven insights needed to identify and address shrinkage and transaction discrepancies with unprecedented precision. This analysis fueled the strategic decision to convert certain self-checkout stations to assisted-checkout in about 9,000 stores, demonstrating DG's commitment to leveraging technology for operational efficiency, improved customer service, and increased profitability.

Legendary investor Peter Lynch reminds us, "Investing is fun and exciting, but dangerous if you don't do any work." This wisdom underscores the importance of our rigorous research, particularly for uncovering the hidden gems driving AI innovation. Our investment approach focuses on identifying well-managed companies, trading at reasonable valuations, that are strategically positioned for long-term growth. Holding positions in both the backbone *and* the transformative potential of AI, we remain committed to quality and believe this philosophy sets the stage for enduring success.

Disclosure

Professional Advisory Services, Inc. may, from time to time, have a position in securities mentioned in this newsletter and may execute transactions that may no longer be consistent with this presentation's conclusions. Reference to investment performance of the PASI composite stock portfolio is made gross of expenses. For formal performance disclosure with net returns please contact our office.