PASI since 1977 NEWS

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Market Update – *Echoes of The Last Millenium*

by David A. Jaffe, M.D.

Shortly after joining PASI in 1992, I witnessed the phenomenon now remembered as the "dot-com" bubble. Two primary catalysts drove the surging stock market of 1995-1999. First was the huge dollar investment to upgrade systems believed to be at risk of failure when the calendar evidenced the new millennium. Many legacy programs were predicted to believe the year following 1999 was 1900, with expectations that computer programs would go haywire and essential industries from farming to power generation would be impacted. Investment in preparation has been estimated at $800 billion. The anticipated calamities failed to surface, and we'll probably never know whether the fears were overblown, or the measures taken in preparation for the Y2K calamity prevented disaster.

The other element driving the stock market in the late '90s was the arrival of a new phenomenon known as "The Internet." Enthusiasts clamored for the opportunity to invest in both facilitators, such as networking equipment maker Cisco Systems and telecommunications companies which would carry signals between servers, and businesses expected to benefit from online marketing, sales, and associated efficiencies. A flood of upstart companies offered stock to eager investors. Adding "dot-com" to the enterprise name stoked demand and inflated the share price, regardless of business fundamentals. A high percentage of those new upstart companies listed their stock on the electronic exchange NASDAQ.

Investment in preparation for Y2K and demand for stocks linked to growth of Internet businesses fueled unprecedented stock market gains. For five years in a row, from 1995 to 1999, the S&P 500[1] return exceeded 20% annually. At PASI we owned a few of the "picks and shovels" facilitators including Cisco Systems, but we avoided the flood of (mostly) NASDAQ listed upstarts, many of which had never earned and never would earn a dollar, but

[1] All references to the S&P 500 in this newsletter reflect the more commonly cited stock market capitalization weighted index, unless otherwise noted.

sported "dot-com" at the end of the business name. We began receiving calls from clients: "I want to own some of those NASDAQ stocks!" Most of the callers didn't even know the names of the companies or the nature of their businesses.

The NASDAQ index rose from approximately 750 in 1995 to almost 4,600 at the March 2000 peak, before beginning a sickening descent to the October 2002 low of 1,114. Many of the profit-free upstarts failed and disappeared. We began to receive desperate calls from non-PASI investors who had been swallowed up by the bubble. I remember a surgeon telling me he'd had over $2 million in his retirement plan, now worth $400,000. A retired elderly couple visited our office with their E*Trade statements. They owned almost exclusively "dot-com" stocks, and had lost nearly all their savings.

There are strong parallels between the *current* market environment, propelled by rapid advances and adoption of Artificial Intelligence (AI), and the Internet bubble of the late '90s. As Nathan Polackwich illustrates in his article, to follow, similarities include the very high concentration of stock market value awarded to the technology industry, the concentration of that value in a small number of companies, and the price investors are willing to pay for a dollar's worth of technology company earnings ("P/E ratio"). As the composition of the commonly followed stock market indices becomes increasingly weighted in a small number of "mega-cap" companies (typically valued by investors at $1 trillion or more), investment managers unwilling to concentrate client dollars in a handful of mostly technology stocks are likely to lag their long-time benchmarks. Such is the case with the broadly diversified PASI composite stock portfolio, logging a historically healthy return of 11.6% in 2024, yet bested by the EW (**e**qual **w**eight) S&P 500 return of 13.0%, and widely outpaced by the tech heavy MW (**m**arket capitalization **w**eighted) S&P 500, which returned 25.0% in 2024 (all include reinvested dividends).[2]

Make no mistake, we believe in the growing implementation of AI and its potential to revolutionize businesses across industries. Most of today's prized companies are well financed and profitable, with a strong growth history and healthy near-term prospects. In fact, we have added companies to our portfolio, "picks and shovels" type infrastructure providers, which we believe have a robust competitive position and are fundamental to the broad adoption of AI. But there are concerns worthy of a dedicated newsletter article regarding the huge investments currently being made in such realms as gathering data for "large language models" and whether these investments can be adequately monetized. We foresee an imminent transition from the broad *gathering* of information to the focused *utilization* of information, and a parallel move in the infrastructure building needed to support such implementation. Lofty expectations and equally lofty stock valuations leave today's leaders at risk in the event of a shift in direction or disappointment in profitability. Without the protection afforded by broad diversification investors risk a replay of the declines last seen when the "dot-com" bubble deflated.

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[2] Please see additional PASI Performance and Index disclosures on page 9.

Meanwhile, very good quality companies with reasonable valuations (price relative to earnings) are being passed over as investors chase the growth and market momentum of a handful of stocks, especially those linked to Artificial Intelligence. We believe that patiently holding a broad array of those quality companies will ultimately protect our clients from changing tides as investors surf the AI tidal wave.

Extreme Concentration

by Nathan Polackwich, CFA

Ultimately, just three factors drive a stock's return: 1) dividend yield, 2) earnings growth, and 3) the change in its price to earnings (P/E) multiple – the amount investors are willing to pay for a dollar of its earnings (valuation). While earnings and yields are straightforward and objective accounting measures, the factors driving P/E multiples are subjective and mostly reflect the ebbs and flows of investor psychology, something notoriously difficult to predict.

At PASI our goal with the stock portfolio is to focus on what we can control – maintaining adequate diversification and owning financially sound companies with strong competitive positions in growing industries that trade at a reasonable valuation. By those measures, 2024 was another solid year for PASI stocks with their earnings in aggregate projected to rise an exceptional 10.1%.[3] This compares favorably to the S&P 500's earnings growth of 9.4% and greatly exceeded the average stock's earnings increase of 4.4% as measured by the S&P 500 Equal Weight Index.[4] PASI's dividend yield, at 1.60%, is also right between the overall S&P 500's (1.19%) and the Equal Weight Index (1.91%).

So what accounts for PASI stocks lagging performance last year? Despite superior earnings growth and dividend yield, as can be seen in the table below, our P/E multiples simply didn't increase as much as the S&P 500 or average stock.

	2024 EPS Growth	**2023 P/E**	**2024 P/E**	**P/E Change**
PASI	10.1%	22.3	22.5	**0.9%**
S&P 500	9.4%	22.3	25.2	**13.3%**
S&P 500 Equal Weight (Average Stock)	4.4%	17.3	18.3	**6.4%**

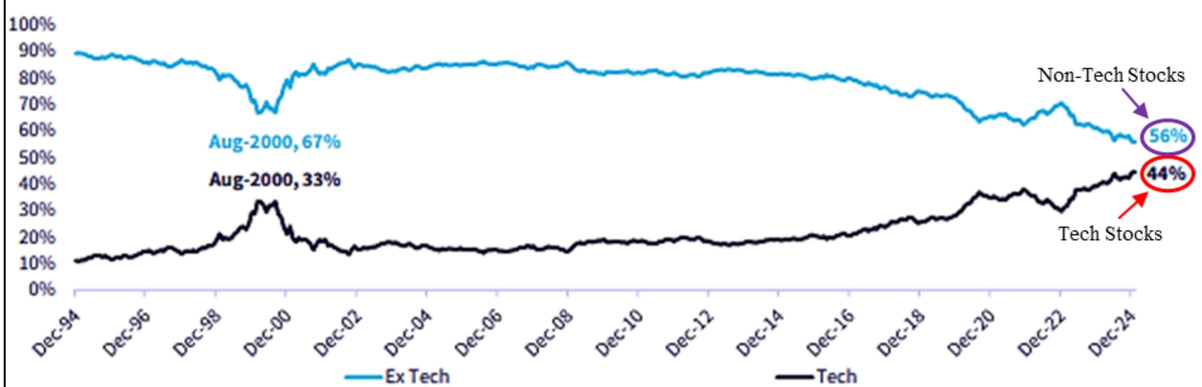
While the PASI stock portfolio P/E increased marginally, the overall S&P 500 saw its P/E expand 13.3% (22.3 to 25.2) while the average stock's P/E rose 6.4% (17.3 to 18.3).[5] The average P/E increase occurred despite poor earnings growth and seemed to reflect investor optimism that the re-election of Donald Trump would boost the fortunes of the average

[3] PASI's total stock return of 11.62% for 2024 doesn't perfectly match our year-end earnings growth + dividend yield + P/E multiple change because of our small positions in foreign ETFs and modest stock target changes over the year.
[4] Note the S&P 500's total earnings grew faster than the average stock's because the biggest companies (which represent a larger weighting in the index) posted well above average earnings growth last year.
[5] Reflecting the Equal Weight S&P 500.

company, which typically sports a weaker balance sheet and growth prospects than larger, more blue-chip names.

The primary reason our portfolio's P/Es didn't expand like the S&P 500's is that our exposure to technology stocks – which saw their P/Es rise from 34.5 to 41.3 – was lower. Specifically, the PASI stock portfolio's tech stock weighting was 27% last year vs. 44% for the overall market. As the chart below shows, *the S&P 500's technology stock weighting now exceeds the peak during the 2000 Internet bubble by eleven percentage points.*

S&P 500 Index Weight of Tech and Ex-Tech – as of 1/2/2025



Source: WisdomTree, FactSet, S&P. You cannot invest directly in an index. Historical forward P/E measured since 12/29/1995. Expanded Tech includes the Information Technology sector, Interactive Home Entertainment subindustry, Interactive Media & Services subindustry, Amazon, E-Bay, Etsy, and Netflix. Ex-Tech excludes the expanded tech companies.

We've maintained a lower (though still historically elevated) weighting in technology stocks because we're simply not comfortable putting almost half our clients' stock dollars in a single, extremely volatile sector. Tech companies' businesses are capable of wild swings with stock losses often magnified by sharp contractions in P/E ratios, as investor sentiment can shift abruptly from optimism to despair. A stark example of this occurred in the aftermath of the Internet bubble when the tech-heavy NASDAQ stock index plunged 78% from March 2000 to October 2002.

A related concern is the enormous size and index concentration of a handful of mega-cap tech companies. The so-called Magnificent 7 – Apple, Nvidia, Microsoft, Google, Amazon, Tesla, and Meta (Facebook) – together now represent 33% of the S&P 500's total market value. (On average their P/Es ballooned from 37.8 in 2023 to 53.9 in 2024.) So just seven tech stocks currently have the same stock market weighting as *the entire technology sector* at the peak of the Internet bubble. And the ten biggest companies, which include the Magnificent 7 plus Berkshire Hathaway, Broadcom, and Eli Lilly, now comprise a staggering 40% of the S&P 500.[6]

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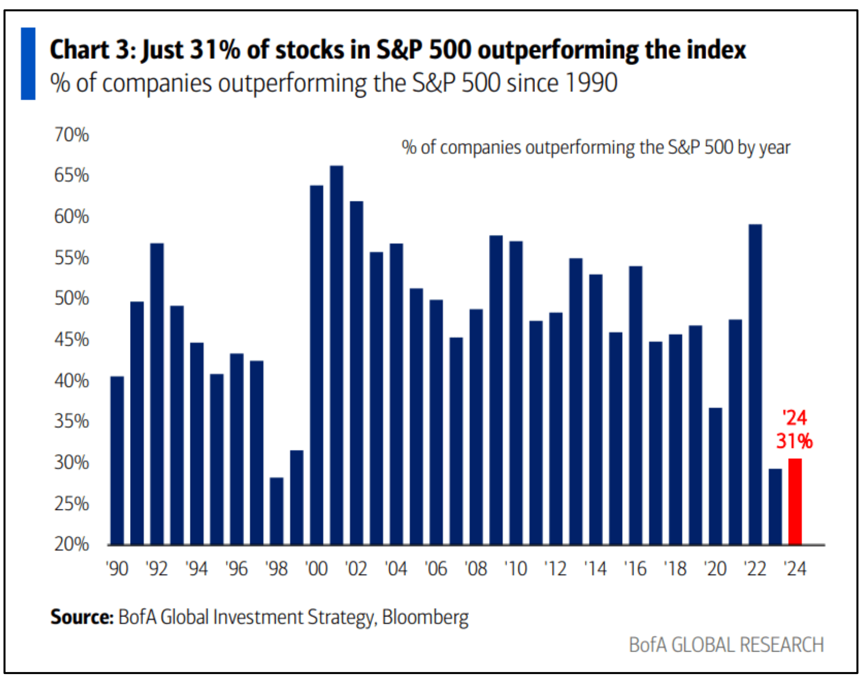
[6] All data as of 12/31/2024.

This historically unprecedented stock market concentration in just a handful of mostly technology companies has made it increasingly difficult for investors to maintain an appropriate level of stock diversification without deviating significantly from the composition of the S&P 500, our historical benchmark. Equally, their extraordinary gains, which have far outpaced the majority of stocks, have made it even more challenging to match the performance of the S&P 500 the last few years. In fact, last year (for the second year in a row) fewer than a third of S&P 500 companies outperformed the broader market. The last time this happened was 1998 and 1999 at the height of the Internet bubble. Then began a long stretch from 2000-2006 when the majority of S&P 500 companies strongly outperformed the overall index. We think history is likely to repeat itself.



Although we're not willing to allocate close to half the PASI portfolio to technology stocks, that doesn't mean we don't see opportunities in the sector and in particular the new frontier of Artificial Intelligence (AI). PASI stocks Amazon, Google, Microsoft, and to a lesser extent Apple, are among the biggest investors in AI technologies. Another PASI stock, corporate consultant Accenture, has already generated $1 billion in revenue and $3 billion in backlog orders to help its clients integrate AI into their operations. We also recently took the opportunity to add positions in semiconductor maker Advanced Micro Devices (AMD) and semiconductor equipment companies Applied Materials (AMAT), Lam Research (LRCX), and ASML Holding (ASML). All four stocks were either flat or modestly down in 2024 despite solid earnings and an increasingly exciting long-term secular outlook driven by rapid progress in AI.

There are two fundamental stages of artificial intelligence – training and inference. Training involves using massive datasets to teach an AI model how to recognize patterns. Inference is the application of that trained model to new, unseen data – like a user query. For instance, when you ask ChatGPT a question, inference is what enables the model to generate a response.

While major tech companies continue to invest heavily in AI training (where Nvidia excels), we expect a gradual pivot to inference in the coming years for two reasons. First, most available training data – essentially, the entire Internet – has already been integrated into existing models. And as the supply of new data dwindles, the return on further training continues to diminish, even with more powerful chips. Second, the true economic value of AI lies in inference – actually using it for real-world tasks to increase productivity and drive innovation.

This evolution plays to AMD's strengths, as its AI graphic process units (GPUs) like the MI300 series deliver excellent inference performance (inference is less computationally intensive than training) at a fraction of Nvidia's cost. And AMD has already made inroads going from $0 in AI chip revenue in 2023 to $5 billion last year (and $10 billion estimated for 2025). Key customers like Microsoft and Meta are driving this growth – Microsoft uses AMD's GPUs to power its AI assistant Copilot, while Meta exclusively uses AMD's chips for its AI inferencing infrastructure, including its advanced Llama models.

Ultimately, one of the major end goals of AI technology is autonomous agents that can act as personal digital assistants, of which Microsoft's Copilot is just the beginning. For instance, with travel, instead of spending hours planning itineraries, looking for the best prices and times for flights, booking hotels rooms and rental cars, etc. we'll eventually just let an AI travel agent handle everything. But to work, these agents must completely understand our preferences, habits, and decision-making patterns, which means continuously tracking and storing everything from our entertainment consumption to search patterns to email correspondence.

All of this will require an unprecedented amount of data and computing power (though for inference not further training) to operate in real time – essentially, a massive increase in both storage capacity and processing speed. This will lead to surging demand for semiconductor chips, particularly processors and memory. To meet this demand, chipmakers will need what could amount to a paradigm shift in spending on new equipment.

The big five companies that dominate the semiconductor equipment industry are ASML, Applied Materials, Lam Research, KLA Tencor, and Tokyo Electron. These five companies enjoy massive competitive advantages such as advanced proprietary technologies, extensive R&D investments, and long-standing relationships with leading chipmakers. In addition, they tend to specialize in different areas of the semiconductor manufacturing process so most of the time they’re not in direct competition with each other.

Of the big five, the three most exposed to the processing and storage needs associated with the rise of AI agents are the first three – ASML, Applied Materials, and Lam Research. Every single chip needed for this AI future must be manufactured using their equipment. We see a very long runway of growth for all three.

What is Financial Planning?

by Donald H. Sienkiewicz, J.D., CFP® and Kelly Meinders, CFP®, MSF

Professional Advisory Services has long offered retirement projections and analysis as a courtesy to our clients, primarily focused on expectations for income at the time of retirement. As the depth and skills of our personnel have expanded, we recently adopted advanced planning software with tools which expand our ability to model various financial scenarios and empower you with deeper insights and more flexible planning options.

With four Certified Financial Planner® professionals on our investment team, we can assess and compare the potential impact of different financial decisions in real-time, ensuring that recommended strategies are both well-informed and aligned with your long-term goals.

Financial planning is about transforming your life's numbers – earnings, savings, financial obligations, and goals – into a strategic roadmap for your financial future. This comprehensive process not only captures a snapshot of where you are today but also charts a course toward where you want to be.

What Does Financial Planning Mean to You?

While the fundamental questions about financial planning are similar, the answers are unique to each individual. For one client, it might be "Am I ready to retire?" To another, it could address "Am I saving enough for retirement?" Whatever your concerns or life stage, our process can provide a guide.

We start with an information gathering meeting. We ask that you share your financial life in numbers and discuss your goals and risk tolerance. This initial intake typically takes about an hour, with potential follow-up for additional details. One of our Certified Financial Planner®

professionals will then build a comprehensive plan. We have the ability to create scenarios that demonstrate how different decisions can affect your financial life and goals. Once the plan is finalized, we will present it to you and answer any questions.

Why Do You Need a Financial Plan?

The short answer: It helps you make informed decisions about your life, investing, and money in general. Our sophisticated planning tools are particularly valuable for addressing critical financial decisions. We can help you determine the optimal time to retire, identify the most strategic moment to begin Social Security benefits, evaluate whether Roth conversions make sense for your unique situation, and suggest approaches for efficiently transferring assets to heirs.

Keeping Your Plan Relevant

From the initial “base case,” we incorporate historical market volatility into our comprehensive plans, creating a margin of safety insulated from changing economic conditions. As life progresses, your financial plan will evolve. We will conduct a regular review to ensure that your plan continues to align with your long-term goals, addressing any changes in your life circumstances.

Our Commitment

As an investment management firm adhering to a fiduciary standard, our goal is to provide objective analysis and unbiased recommendations which are in your best interest. We collaborate with your existing professionals such as accountants and attorneys if specialized expertise is needed. Financial planning helps us to do the best possible job we can for you – this is a service integral to our function as your investment advisor, and we receive no additional compensation for this work.

If you're interested in exploring a comprehensive financial analysis, please reach out to your Portfolio Manager.

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.

S.E.C. Compliance

Pursuant to the Investment Act of 1940 and specifically Rule 204-3 thereunder, a registered investment adviser shall annually deliver or offer in writing to deliver upon written request to each of its advisory clients a disclosure statement prepared in compliance with the requirement of this rule. Part II of Form ADV complies with this rule and you may request a copy by calling or writing our office.

In February 2003, the SEC also adopted new rules requiring investment advisers to annually offer a copy of their Proxy Voting Policy. In January 2021 Professional Advisory Services, Inc. contracted with Broadridge Financial Solutions to vote proxies with respect to client holdings. Voting will be solely in the client's best interest with the primary goal of long-term enhancement of shareholder value. Records of each proxy vote will be retained for five years. You may request a copy of our complete Proxy Voting Policy and details of the service from Broadridge by calling or writing our office.

Under SEC Rule 204A-1, Investment Advisers are required to adopt a Code of Ethics. Professional Advisory Services employs a Code of Ethics and Business Conduct which outlines our standards of conduct in dealings with clients, staff, regulators and business associates. The Code provides guidelines to prevent the misuse of material non-public information. All officers and employees receive a copy of the Code, which they acknowledge in writing. They are educated in the meaning of all aspects of the Code through compliance meetings and are required to comply with it. Individuals are instructed to raise issues internally if they believe malpractice has occurred or is likely to occur, without fear of recrimination. Professional Advisory Services is committed to maintaining and enforcing the Code. Records relating to the Code will be retained five years beyond effective dates of use per current SEC regulations. You may request a copy of our Code of Ethics and Business Conduct by calling or writing our office.

Additionally, the SEC issued Regulation S-P on June 22, 2000. The operating premise of this ruling is to effect compliance with the Gramm-Leach-Bliley Act which prohibits the sharing of any nonpublic personal information with any nonaffiliated third party unless the firm has provided initial notice of its privacy policies. The ruling requires we provide a copy of our Privacy Policy to our customers on an annual basis. A copy of our Privacy Policy is included with this newsletter.

Performance Disclosure

To obtain a detailed analysis of Professional Advisory Services, Inc.'s (PASI) historical performance, inclusive of gross and net results from our balanced accounts and performance data for our segregated asset classes, please contact our office at 800-847-7274. It is important to note that PASI performance data presented in this newsletter is stated before the deduction of fees and in the context of each article. For a clearer understanding of the impact of fees, please refer to the following disclosures including a hypothetical example based on the maximum PASI investment management fee.

The **PASI Stock Portfolio** includes the reinvestment of dividends; and is reduced by brokerage commissions but is gross of Professional Advisory Services, Inc. fee, which is described in Part II of form ADV, available upon request. Our fee is a maximum of 1% and decreases based on assets under management. As an example of fee impact, over a ten-year period, $100,000 invested in stocks growing at 8% per year would increase at the end of ten years to $205,419 net of 1% fee versus $220,804 gross return.

PASI Stock Portfolio Benchmark: The ***S&P 500 Index (Market-Cap-Weighted)*** is an unmanaged index of the 500 leading publicly traded common stocks in the U.S., including reinvestment of dividends. This index is weighted according to the market capitalization of each participating company. As a result, companies with larger market capitalizations exert greater influence on the index's overall return, reflecting their proportionate size to the overall market.

Other Indices

The ***S&P 500 Equal Weight Index (Equal-Weight)*** is an unmanaged index of the 500 leading publicly traded common stocks in the U.S., including reinvestment of dividends. Designed to be size-neutral, it assigns equal weight to each participating company, irrespective of their market capitalization. This approach equally captures the influence of each company on the index's overall return relative to its individual performance, providing a balanced reflection of the collective market activity.

PROFESSIONAL ADVISORY SERVICES, INC.
PRIVACY POLICY FOR CLIENTS

While information is the cornerstone of our ability to provide superior service, our most important asset is our clients' trust. Keeping client information confidential and using it only as our clients would want us to are top priorities for all of us at Professional Advisory Services, Inc.

Clients will be provided with our Privacy Policy annually. Potential clients will receive a copy of our Privacy Policy.

1) We will safeguard, according to strict standards of security and confidentiality, any information our clients share with us. We maintain physical, electronic, and procedural safeguards to guard your nonpublic personal information. These safeguards include password protection for server and workstations, 24/7 video surveillance, encrypted data back-up, a virtual private network (VPN) for secure remote access to the PASI network by authorized PASI personnel, secure ShareFile utility for emailing sensitive documents, and monitored secure shredding for document destruction.

2) We will permit only authorized employees, who are trained in the proper handling of client information, to have access to that information. Employees who violate our Privacy Policy will be subject to company sanctions.

3) We gather nonpublic personal information about you from the following sources:
   - Information we receive from you on an application or other form
   - Information you provide us in client meetings or other forms of communication such as fax, e-mail, letter, and telephone
   - Information about your transactions with us and your designated custodian

4) We will not reveal nonpublic client information about you to anyone, except as permitted by law, or as authorized by you as the client.

5) Whenever we hire other organizations (third-party) to provide support services, we will require them to conform to our privacy standards or agreed upon privacy standards in writing.

6) We will strive to keep client files complete, up-to-date, and accurate. We will provide our clients with this account information when requested.

7) If you decide to close your account(s) or become an inactive customer, we will continue to adhere to the policies and procedures as described in this notice.

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