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PASI NEWS

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Market Update – *Volatility Returns*

by David A. Jaffe, M.D.

Growing up, I recall my dad's reassurance when needed: "pain is quickly forgotten". (Human population growth would no doubt be constrained if this were not true). Still, it is surely easier to forget the pain when it is overshadowed by a larger reward.

I'm alluding, of course, to the financial market pain of 2018. After seeing a strong January start erased by the end of the first quarter, the stock market steadily regained its footing mid-year, the S&P 500 standing up over 10% as we entered the last quarter. Then came the great swoon of which you are certainly aware, culminating in a full year decline of 4.38% for the S&P 500 (including reinvested dividends).

Unnerving as the depth and rapidity of the fourth quarter meltdown has been, it is worth noting that periodic declines are a regular and expected element of stock ownership. The last ten years alone have seen five intra-year declines exceeding 10%, easily forgotten with time and likely tempered by the fact that the market posted positive returns despite those intra-year dips:

Year	Max Intra-Year Drawdown	Annual Returns
2009	-27.6%	25.9%
2010	-16.0%	14.8%
2011	-19.4%	2.1%
2015	-10.5%	1.4%
2016	-12.4%	11.8%

After setting one more all-time high on September 20th, 2018, the S&P 500 tumbled in the fourth quarter to miss the industry definition of a "bear market" by a mere 0.50%. Scapegoats abound: blame *tariffs* (higher cost of goods), *the Fed* (raising short-term interest rates), *politics* (looming government shut-down, for one), *oil* (worst year since 2014), *Apple* (and other "FANG" stocks disappointing lofty investor expectations), a *strong dollar* (hurting U.S. multinational earnings), or

just *the bull market* (longest in history and looking "priced to perfection") suddenly facing slowing economies worldwide.

Under the heading of "the bigger they are, the harder they fall," market favorites Amazon and Apple (and others), which propelled the S&P 500 skyward through 2017 and mid-2018, fell back to earth with declines from peak prices in the range of 20% - 25%. Dodging that risk, the PASI composite portfolio bested the S&P 500 by 3.35% for the quarter, settling down 2.46% for 2018 (including reinvested dividends). Thanks to positive *net*[1] returns of 1.28% on the PASI corporate bond portfolio, our average balanced (60% stock, 40% bonds) account saw a decline of 0.96% for the year.

In the face of the market's heightened volatility, the usual questions will be: "what should we expect?" and "what should we do?" While the short-term direction of markets is always unknowable, our strategy and long-term perspective are thoroughly discussed and clearly elucidated in Nathan's article, which follows.

Common Threads

by Nathan Polackwich, CFA

Jason Zweig, long-time author of *The Intelligent Investor* column for the Wall Street Journal, once defined his job as writing "the exact same thing between 50 and 100 times a year in such a way that neither my editors nor my readers will ever think I am repeating myself. That's because good advice rarely changes, while markets change constantly." Looking back, my articles appear similarly bound by a few common threads, mainly relating to the one thing investors can actually control – their decision-making *process*. This quarter, and in light of the stock market's recent negative volatility, I thought it worthwhile to weave these common threads together into a (hopefully) coherent story to help PASI clients better weather the stock market's current rough patch.

Looking back, the key thread in my newsletter articles has been that **the stock market is a non-linear, mathematically chaotic system**. This is just a fancy way of saying it's infinitely complex and unpredictable. The market isn't like a machine you can break down to its component parts to understand exactly how it works. Its trajectory is unknowable because seemingly insignificant changes can have an outsized impact. It's just like life. Consider how a glance across a smoky bar can lead to marriage and family (as it did in my case), or a chance encounter to a life-long friendship or career opportunity. The financial markets, which are just an aggregation of all this human chaos, are equally capricious.

The stock market's inherent unpredictability has enormous implications for investors. Perhaps the most important is that *it's hard (and often impossible) to determine why stocks rise or fall***.** If an infinite number of variables are at play, how can we know which ones are truly affecting stock prices? The answer is we usually don't.[2] So, people (the news media and investors) construct

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[1] Interest rates on our 1-5 year corporate bonds approached 4% in 2018, but with rising rates the market value of bonds declined, the net gain being a 1.28% total return for our existing bond portfolio.

[2] Obviously, sometimes we do. If a company defaults on its debt, for instance, and the stock price plunges, it's clear the two events were related.

narratives to explain the stock market's behavior. Thus, as the old saying goes, "the market drives the news, not the other way around."

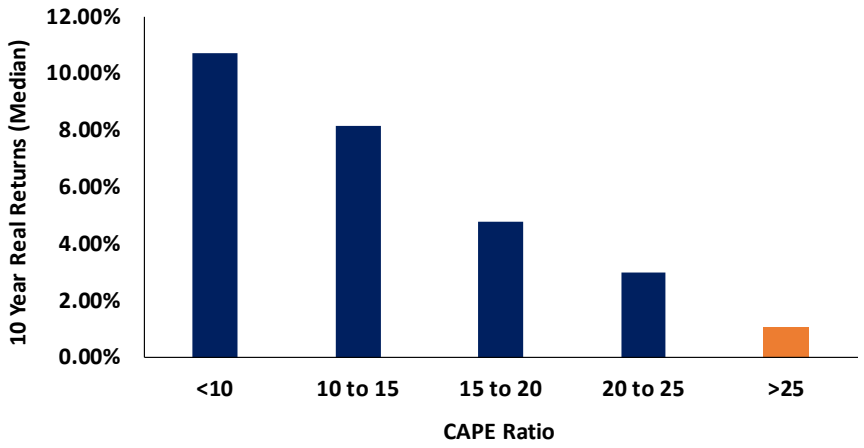
For example, if the stock market drops sharply one morning, the explanatory narrative might be that investors fear a weakening economy. But if the market recovers strongly into the close, a new narrative must emerge – perhaps that investors believe a weaker economy will compel the Federal Reserve to cut interest rates. So which narrative is right? Probably neither. There's an old story (likely apocryphal) that J.P. Morgan was once asked for his outlook on the stock market. Morgan allegedly quipped, "Young man, I believe the market is going to fluctuate." What more can any of us really say?

So, if the stock market will fluctuate and we don't know why, of what value are the news media's narratives? At best, they're worthless. At worst*, the news might actually have negative value, as it can provoke an ill-advised reaction by investors*. Specifically, the stock market's narratives tend to affect our emotions in precisely the wrong way at exactly the wrong time. When stocks have been rising for years and the economy is roaring, risk feels exceedingly low. Yet paradoxically that's the moment risk is highest. Why? *The news is always best at the top (and worst at the bottom)*.

I recently encountered a great example of this phenomenon. You might expect that a low unemployment rate would correlate with strong stock market returns and vice versa. Yet, if you look at the data since 1948, when the unemployment rate was less than 4%, stocks returned just 4.7% the following year, on average. Conversely, when the unemployment rate was over 8%, stocks posted an average gain of 22.2%. As Warren Buffett once observed, "You pay a very high price in the stock market for a cheery consensus."

The above notwithstanding, there is an important qualifier concerning the stock market's inherent unpredictability – **It's only mathematically chaotic (unpredictable) over shorter time horizons.** In *The Misbehavior of Markets* (2004), the mathematician Benoit Mandelbrot – one of the founders and key proponents of chaos theory – showed that over longer time periods, stock market returns are *not* mathematically chaotic. In fact, as the table below shows, they are predictable given just one variable – starting valuation.

Exhibit 1: Ten-Year CAPE Ratio vs. Future Returns (1900-2014)



Source: Shiller

Note that the CAPE (Cyclically Adjusted Price to Earnings) ratio above is just the total stock market's P/E ratio using ten-year average earnings rather than the current year's earnings in the denominator.[3] The table shows unequivocally that the higher the CAPE ratio (more expensive stocks are relative to their earnings), the worse the stock market tends to perform over the following ten years. As Warren Buffett's mentor and legendary investor in his own right, Ben Graham, once said, "In the short run the market is a voting machine, but in the long run it is a weighing machine."

This concept that short-term stock market returns are basically random while long-term returns are predictable and strongly correlated with valuation brings us to another important thread in my newsletter articles – **The only investment decisions worth making are those consistent with a long-term view.** Many of the investment maxims of history's greatest investors are really just an acknowledgment of this fundamental truth. For instance, Ben Graham famously wrote,

"Investment is most intelligent when it is most businesses-like."

Both Ben Graham and Warren Buffett strongly encouraged investors to think of an investment not as a piece of paper, but as an ownership interest in a business. And business owners don't thoughtlessly trade in and out of their companies based on temporary changes in the economy or business outlook. As Buffett wrote back in 1988,

"When we own portions of outstanding businesses with outstanding managements, our favorite holding period is forever."

Buffett's stipulation that any business he invests in be "outstanding" is, however, critical. As his long-time partner, Charlie Munger, explained,

"A great company keeps working when you're not. A great company will eventually earn more and more and more while you're just sitting and doing nothing. And a mediocre company won't do that. So you're harnessing a long range force that will help you…These mediocre companies, they by and large are going to cause a lot of agony and very modest profits. If you do fine, you've got to sell it and find another one. It's a lot of work. Whereas you just buy one great company, and if you get the right thing at the right price, you just sit there."

Focusing on owning great businesses allows us to make fewer and hopefully better decisions. Buffett has often said that he could improve the average investor's ultimate financial welfare by giving them a ticket with only twenty slots in it "so that you had twenty punches – representing all the investments that you got to make in a lifetime. And once you'd punched through the card, you couldn't make any more investments." With only twenty decisions available, it wouldn't be possible (at least for long) to buy and sell stocks in response to short-term news events like quarterly earnings reports or economic data.

Another common thread of my newsletter articles is to **think like a fox rather than a hedgehog**. This idea comes from the philosopher, Isaiah Berlin, who wrote,

"There is a line among the fragments of the Greek poet Archilochus which says: 'The fox knows many things, but the hedgehog knows one big thing.'…Taken figuratively, the words can be made to yield a sense in which they mark one of the deepest differences which divide writers and thinkers,

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[3] Profit margins tend to fluctuate greatly over the course of a business cycle so taking the average earnings over the prior ten years helps smooth out those fluctuations giving us a better read on the stock market's sustainable level of earnings potential.

and, it may be, human beings in general. For there exists a great chasm between those, on one side, who relate everything to a single, universal, organizing principle in terms of which alone all that they are and say has significance — and, on the other side, those who pursue many ends, often unrelated and even contradictory... Their thought is scattered or diffused, moving on many levels, seizing upon the essence of a vast variety of experiences and objects…The first kind of intellectual and artistic personality belongs to the hedgehogs, the second to the foxes."

Hedgehogs, as Berlin explained, think one – or just a few – organizing principles direct the current of history. For them, the world is black and white. The Internet or "peak oil" or crypto-currencies will "change everything." The CIA or "big business" or "deep state" is the puppeteer pulling all the strings. The causes of and solutions to the world's problems are, to them, simple and glaringly obvious.

Hedgehogs are often extremely intelligent. But their intellect makes them overconfident that they can predict the inherently unpredictable. So, the mark of a hyper-intelligent hedgehog is not good decision-making but rather the ability to construct convincing and complex narratives that are no more likely to be correct than any other. Regardless, armed with their compelling narratives, hedgehogs commonly demonstrate a penchant for high-risk, which they couple with a dangerous inability to admit a mistake. While hedgehogs sometimes enjoy incredible (though usually short-lived) investment success, their failures are often equally spectacular.

Foxes, by contrast, are pragmatists. They see the world for its complexity and nuance, the many shades of gray. They are skeptical that they, or anyone, can predict something as opaque as the future. Thus, foxes tend to take more moderate positions, eschewing risk. Their skepticism concerning the future's predictability means far less of their egos are wrapped up in the decisions they do make. Consequently, foxes have an amazing superpower when confronted with new and contradictory information – they change their mind!

But, ultimately, the fox has one purpose when it comes to the financial markets – survival. And the formula for survival, as the common threads of my newsletter articles over the years make clear, isn't all that complicated.

1. Buy great businesses at reasonable prices.
2. Stay diversified in case some of those businesses turn out to be not-so-great (sell these when you learn you were wrong).
3. Buy high quality bonds to further reduce risk in your portfolio (if appropriate for your risk tolerance).
4. Expect that your great businesses will encounter unpredictable though temporary setbacks including recessions and business-specific issues.
5. Don't let those setbacks provoke you to sell your great businesses at what are likely discount prices.

While the formula for investment survival is simple, its execution isn't nearly as easy. Sticking with your investments (or even adding to them!) through the pain of a recession and bear market requires a measure of fortitude that few possess, especially when managing their own money. That's why we feel that a dispassionate and steady hand on the wheel – helping our clients stay the course with their investments through the market's ups and downs – is the most important service we provide.

Today's Real Estate Crisis: *Not Enough Affordable Housing*

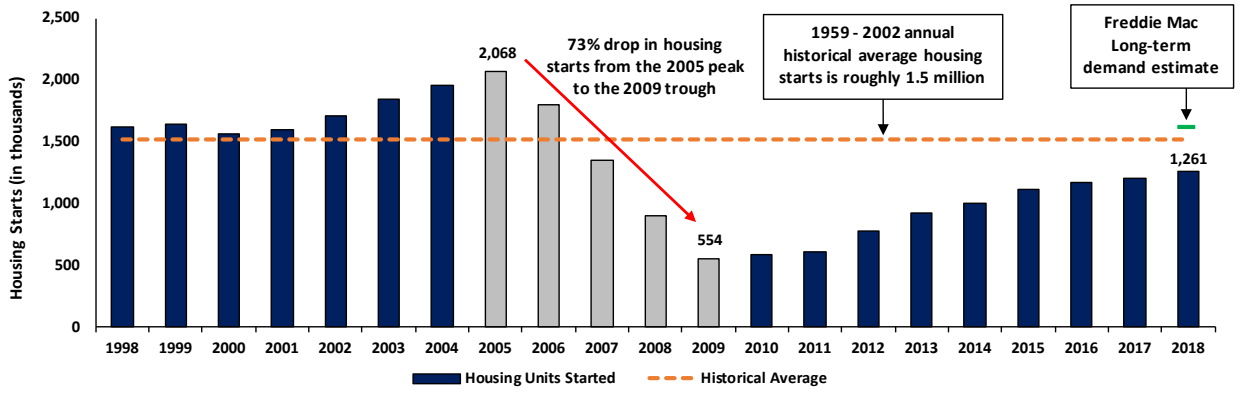
by Jeremy Goldberg, CFA

Real estate is expensive, mortgage defaults remain above average, and the stock market just ended an incredibly volatile year in the red. With "real estate bubble" in the headlines, and the longest bull market in history finally reaching its end, the climate feels a bit reminiscent of the run-up to the Great Recession in 2008-2009.

Fortunately, at least concerning real estate, there's much less to worry about. Yes, home prices are higher than ever. But this is a function of robust demand with weak supply, not oversupply and easy money like during the Great Recession. In fact, the last 12 years of weak housing construction has created a significant shortfall of housing inventory.

Even today after almost a decade of economic growth, Freddie Mac Research estimates that long-term housing demand is 1.62 million units annually, *359 thousand units more than the current annual rate of construction*. As evidenced in Exhibit 1, annual U.S. housing starts have lagged the long-term average since 2007.

Exhibit 1: Housing Units Started



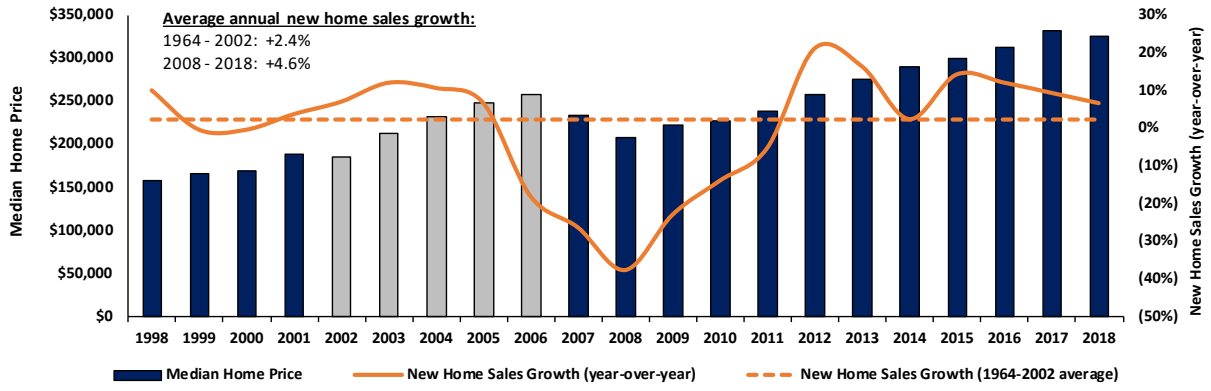
Source: United States Census Bureau as of November 30, 2018

This low supply will continue to put upward pressure on home prices until more homes can be built. But in addition to real estate prices increasing faster than wage growth (the average home price has increased by 48% over the last six years vs. wage growth of only 14%), construction costs have also risen sharply thanks to new laws and regulations (regulatory costs increased 29% between 2011 and 2016) as well as a shortage of skilled labor.[4] So, despite strong demand, the U.S. economy's ability to supply affordable housing remains constrained.

Exhibit 2 (following page) depicts the state we've been in since 2008, with home prices increasing every year before slightly dipping in 2018 (blue columns) vs. weak sales growth that doesn't turn positive until 2012 (solid orange line). Specifically, over the last 10 years the median home price has increased 4.6% annually, above the long-term average growth of 2.4%, while new home sales have faltered.

[4] National Association of Realtors as of May 2018

Exhibit 2: Median Home Price vs. New Home Sales Growth



Source: Federal Reserve Bank of St. Louis and United States Census Bureau as of June 30, 2018

Today, the demand is largely driven by a growing population, especially for first-time home buyers. Faced with higher home prices and higher rents, however, first-time home buyers are sitting on the sidelines – living with parents or renting – because of the lack of affordability. Of note, renting relative to purchasing a home and paying a mortgage is significantly more expensive today than it was 10 years ago (price-to-rent ratio). It's no longer an attractive alternative to homeownership because rent may be *as much as or more than* a mortgage on an otherwise equivalent single-family home – plus, renters don't build equity. Still, these young adults have opted to defer a purchase until homes become more affordable, creating the pent-up side of the demand story.

Another factor is marriage and fertility, which as you'd expect has a positive relationship with homeownership. Based on data from the U.S. Census Bureau, the average ages of men and women who get married are now 30 and 28, respectively. This is up from 27 and 25 in 2000, and 23 and 21 in the 1970s. Given this delay in marriage and children, we can expect demand from this cohort to begin rising as Millennials start settling down.

Interestingly, the rising interest rate environment experienced over the last two years has been a catalyst for home buyers. According to Mark Fleming, chief economist at First American, "The fact that rates are rising actually causes demand—particularly first-time homebuyer demand—as they try to crowd into the market and lock in a mortgage rate and price before both go even higher."

To combat weak construction, first-time home buyers could hypothetically target buying homes from seniors (aged 55+) as they transition into retirement communities, nursing homes, etc., like they've done historically. Unfortunately for young buyers, existing homeowners, aware of the current market environment, are reluctant to sell or demand higher prices. Further, seniors increasingly prefer to stay in place, thanks to longer life-spans, better healthcare, and improved education.[5] This dynamic is important because young adults ready to buy homes are entering a restrictive market where certain demographics require a premium to get swayed into selling.

Real estate fundamentals today are vastly different than during the Great Recession. The bubble that burst from 2007-2009 was a result of subprime mortgages, mortgage-backed securities (MBS), and credit default swaps (CDS). *Simply* put (in two very long sentences), during this period lenders offered mortgages to non-qualified applicants, sold these mortgages to investment banks who

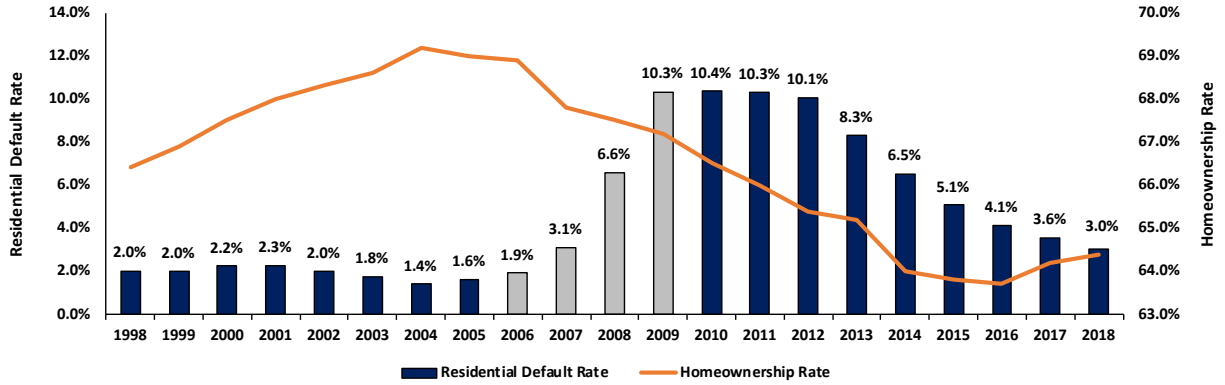
[5] "While Seniors Age in Place, Millennials Wait Longer and May Pay More, for their First Homes" by Linna Zhu and Doug McManus

bundled multiple mortgages into a single investment product called an MBS, sold them to investors, and purchased CDS as insurance against potential mortgage defaults. Then the market collapsed when the non-qualified homeowners defaulted on their mortgages in volumes far beyond what any investment bank imagined, and to cap it all off, insurers of the CDS didn't have enough capital to cover all of the defaults, so insurers failed (such as AIG, but they were bailed out by the government), investment banks failed (such as Lehman Brothers), and soon the effects spread throughout the entire U.S. economy. We can go into more detail at another time – just give me a call!

That broken system is not what we see in today's real estate market. For now, the answer can be explained by Exhibit 3. Prior to defaults skyrocketing above 10% in 2009, there was a massive increase in homeownership, peaking at 69.2% in 2004. Since then, the homeownership rate trended downward until bottoming in 2016 and picking up slightly over the last two years. As of October 31, 2018, the homeownership rate stood at 64.4%, well below the level seen even prior to the turn of the century.

Also of importance is the residential default rate. Peaking at a whopping 10.4% in 2010, defaults have declined to 4.1% in 2016, 3.6% in 2017, and are currently running at a modest 3.0%. While we are still not at pre-Great Recession levels, the default rate has been trending down, which is good news!

Exhibit 3: Residential Default Rate vs. Homeownership Rate



Source: Federal Reserve Bank of St. Louis as of October 31, 2018

The current supply/demand imbalance in the real estate market feels like an anomaly, but it's hard to envision the path back to a more normal environment. Maybe demand from young adults will energize builders, but this demographic is increasingly shifting toward apartments and single-family rentals. Maybe the supply will come from the 55+ cohort, but as discussed, this group is staying in place for much longer than empirical evidence suggests. Yes, construction has been slowly increasing; maybe it will grow faster – although it has a long way to go. Maybe regulatory reform will reduce the costs of building a home. Maybe the Fed will lower interest rates. Or maybe the economy will enter a recession, and that is what ultimately pulls down home prices.

There are an infinite amount of "maybes," and at this point, it's unclear to us which will bring supply and demand back into equilibrium. That said, the nationwide problem of unaffordable housing isn't going away anytime soon.

Welcome Aboard Jeremy and Jordan!

We are extremely pleased to announce two new members to the Professional Advisory Services team. Both twenty-somethings, their youthful exuberance will be welcome here.

Jeremy Goldberg, CFA: Jeremy serves a dual role as a Portfolio Manager and a highly skilled Research Analyst. After graduating from Stetson University in 2014 with a Bachelor of Business Administration in Finance, Jeremy furthered his education at the Olin Business School at Washington University in St. Louis, earning a Master of Science in Finance degree. He started his career doing equity research for Raymond James & Associates before moving to California, where he worked as an Investment Associate for Mozaic LLC, a firm focused on very high net worth families. Jeremy added several professional designations along the way, completing the General Securities Representative Exam (Series 7) and Research Analyst Qualification Exam (Series 86/87). What is most valuable for our clients is Jeremy's talent as a Chartered Financial Analyst. The CFA charter is a globally recognized graduate-level investment credential that requires a bachelor's degree, four years of qualified investment work experience, letters of recommendation, and mastering three levels of highly skilled analysis, each culminating in a six-hour exam. Very few individuals in the investment industry have the intellect, dedication and aptitude to achieve the prestigious CFA designation.

Jordan Bieber: Jordan's primary role is to serve as a Portfolio Manager, which consists of daily interaction with clients along with overseeing individual portfolios. Additional duties include providing investment analysis to monitor our existing holdings, and searching out new investment ideas. Jordan too earned a Bachelor of Business Administration in Finance from Stetson University in 2014. He began his financial career with Merrill Lynch, working as a Financial Advisor and Investment Specialist for just over 3 years. While with Merrill he earned his General Securities Representative Exam (Series 7) and Uniform Combined State Law Exam (Series 66). Jordan also achieved the credentials as a Chartered Retirement Planning Counselor (CRPC) and is presently completing coursework to become a Certified Financial Planner (CFP).

We are particularly excited that Jordan Bieber represents a third generation of family representation at PASI. We can only imagine how proud our founders, Ron Jaffe M.D. and Ken Ligon Sr., would be to see how their legacy has grown, and that PASI's clients will continue to benefit from the continuity, stability, and personal service that has earned their confidence and trust for over 40 years.

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. Professional Advisory Services, Inc. acknowledges its responsibility 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 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.

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.

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.

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.

Revised 11/18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INVESTMENT MANAGEMENT