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Investment Research Perspectives

FORWARD-LOOKING RETURNS

A "Smart, But Humble" Approach for Using Fundamentals to Shape Expectations



Wise Counsel

Executive Summary

Life is a series of trade-offs. In order to get something, you have to give something up. These common phrases apply to many areas of life but they can also be applied to investing. Most investors know that they have to sacrifice some safety and take on risk to achieve better returns. Modern Portfolio Theory (MPT) tries to make the most of that trade-off. It provides a framework for evaluating how we can maximize return while minimizing risk.

Just as a personal trainer takes athletes and provides them with a nutrition and a training schedule to increase results and minimize injury, the same concept can be applied to investing. The trainer is familiar with nutrition labels, effective workouts, and the newest equipment to slowly and surely realize that their efforts are paying off. Implementing this framework doesn't show drastic results overnight, but as sound principles are consistently applied over time, desired results begin to take shape.

This analogy can be applied to investing. When the framework is applied over the long term, we start to see the desired outcomes. This framework includes using our fundamentals-based methodology for forward-looking return estimates and applying those estimates in the portfolio construction and financial planning processes for our clients. This paper provides a summary of how and why we developed our methodology, case study examples, and how we put those returns to work.

Origin of Modern Portfolio Theory

The relationship between risk and reward was first introduced by Nobel Prize-winning economist Harry M. Markowitz in 1952 when he discussed ideas for maximizing return. He mathematically proved that there is a direct relationship between an investment's risk and its return.

He went on to demonstrate that investors should measure, monitor, and control risk at the portfolio level, not at the individual security level. According to MPT, by putting together a basket of risky (or volatile) stocks, the overall risk of the portfolio can actually be less than that of any one of the individual stocks in it.

This concept has been challenged and expanded upon but remains a foundation for portfolio management today.

Modern Portfolio Theory has two basic concepts:

1. Risk and return are directly linked. If you want a chance at greater returns, take on more risk.
2. Diversification across securities that do not behave alike reduces your portfolio's overall risk.

There are mathematical calculations to support these basic concepts, but one can think of this intuitively as well. Different types of assets change in value in different ways. Investors using MPT can build portfolios that aim to control for risk at the overall portfolio level, not at the individual security level, thus benefiting from diversification.

The ultimate goal of evaluating risk and return is to create an efficient portfolio. An efficient portfolio is either a portfolio that offers the highest expected return for a given level of risk, or the least risk possible to achieve a targeted rate of return. This paper discusses how Savant develops expected returns to help construct efficient portfolios.



The Efficient Frontier

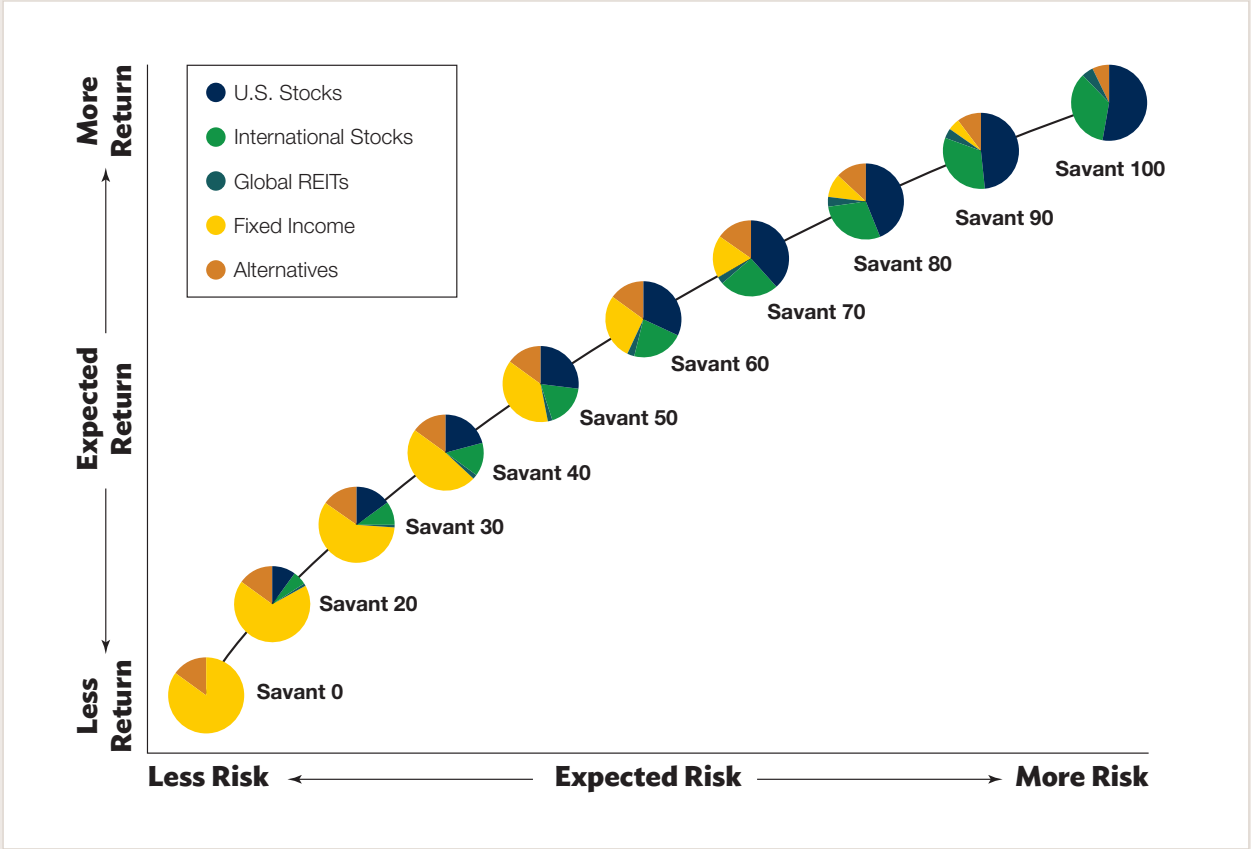
Every possible portfolio can be analyzed based on its return and risk. The efficient frontier is the line that connects all the efficient portfolios that have the maximum rate of return for every given level of risk (see ***Figure 1***).

No point on the efficient frontier is any better than any other point. Investors must examine their own risk and return preferences to determine where they should invest on the efficient frontier. The key relationship to remember is that the only way to increase return is by also increasing risk.

A natural question looking at the efficient frontier is, "what are the return expectations for the given levels of risk?" For many years, the simplest means of determining the optimal portfolios that lie on the efficient frontier was to use historical asset class returns. However, given recent market turbulence and a possibly changed outlook for the future, one must question whether using historical returns is sufficient. Or, is there a better way?

Is there information we know today that can help shape our expectations for the long-term future?

Figure 1:
The Efficient Frontier



Historical vs. Forward-Looking Returns

The question of using historical returns versus some other return forecast to construct an efficient frontier is an important one. In other words, is it enough to drive by only looking in the rearview mirror? Of course not; drivers need to factor in objects in front of them as well as things going on behind them. Savant believes the same thinking can apply to investing.

It is important to factor in things that have occurred in the past, such as historical returns, volatility, and how markets have reacted in different economic scenarios. It is just as important to take into account current circumstances before making important investment decisions about asset allocation and financial planning.

Savant's research in this area resulted in a formal decision framework methodology for developing "forward-looking" or expected returns for the various asset classes we invest in. One important factor in our research was our participation in an industry research group called the "Tactical Think Tank" (see ***Figure 2***).

Our expected returns methodology was developed with the long-standing philosophy that returns are driven in the short term by emotion and unexpected events, while long-term returns are driven by fundamental factors.

Figure 2:
Validating Our Thinking

Savant's investment philosophy and process are based on evidence, not by throwing darts or looking into a crystal ball. Part of our job is to continually test and evolve our evidenced-based investing approach. One main question we wanted to answer after the global financial crisis was: Is there a silver bullet that could help us (investors) avoid losses like the ones investors incurred in 2007-2009?



As a result, Savant became part of the "Tactical Think Tank" (TTT) group consisting of 10 of the top independent Registered Investment Advisory (RIA) firms in the country to study whether or not there was a way to "time the market." We went into the collaboration skeptical that anything useful would come of the study, but we wanted to validate our thinking that there was, in fact, no silver bullet. Alternatively, we would improve our process if we were wrong. The group studied both fundamental and technical factors to see what factors, if any, could help forecast future returns or help avoid market downturns like the one in 2008. By fundamental, we mean factors such as P/E (price/earnings) ratios, dividend yields, inflation, bond spreads, P/B (price/book) and market capitalization. Technical factors included moving averages, bull/bear indicators, sentiment indicators, Bollinger bands, and put-call ratios.

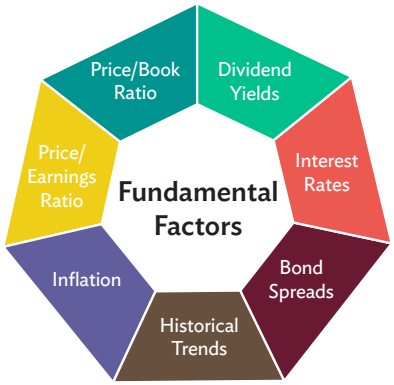
Of all the technical factors that were studied, none were considered conclusive. A few of the factors gave correct buy/sell signals in select time periods, but none were consistent enough to implement. Any minor benefits were offset by costs, higher tax, and additional risk. All 10 TTT members, even those who came into the project expecting a silver bullet, conceded this fact.

The conclusion of the group was that there is nothing we know today that can help predict returns in the short term. Simply put, market timing does not work. No technical factors could have predicted 2008. However, fundamental factors did show evidence that they can be used to shape expectations regarding long-term returns. In the end, the group switched its focus to more fundamental factors to refine long-term expected returns for asset classes.

Fundamental Factors Overview

Savant's forward-looking methodology results in the calculation of expected returns for each asset class we invest in, which we then use as inputs into our efficient frontier construction. There are many fundamental factors that Savant utilizes to calculate expected returns for asset classes, some of which are highlighted in ***Figure 3***. Below we highlight two case studies of how we use fundamental factors in developing expected returns.

Figure 3: Fundamental Factors



Case Study #1 – Stock Fundamentals

One fundamental factor affecting stock returns is valuations. Stock valuations can be measured in different ways, one of which is the price/earnings ratio (P/E). Investors utilize this ratio to determine whether a stock or stock market's price is over- or undervalued relative to the underlying earnings for that company or basket of companies. Using historical regression analysis, Savant found that today's P/E ratio has very little correlation with stock returns in the short term, but there is a much stronger relationship with long-term stock returns.

Figure 4 plots the P/E ratios for the stock market each year and the subsequent one-year period return for the stock market using data starting in 1881 and ending in 2019. The graph shows a weak relationship as evidenced by the flat regression line through all the plotted points. The correlation, or statistical calculation of the relationship, of only 0.20 is very low , and the R^2 is 0.04 giving it little predictive power (R^2 is a measure of the strength of the relationship between two variables, such as P/E and subsequent returns). A correlation of 1.00 would mean there is a direct relationship and they move in lockstep with one another (like synchronized swimmers) and a correlation of 0.00 means there is no correlation. In contrast, ***Figure 5*** shows the correlation is 0.63 for subsequent 20-year periods—a much higher correlation with an R^2 of 0.40.

Other time periods in between 1 and 20 years were also measured as shown in ***Figure 6***. The relationship, or correlation, between the current P/E and future returns gets stronger the longer we extend the subsequent period. In sum, today's P/E ratio provides some information about future long-term returns.

So, now that we know there is a relationship, we can use today's P/E ratios and compare them to historical P/E ratios for different stock markets (such as U.S. large-cap stocks or international stocks) to determine if those stock markets are over- or undervalued relative to their historical norm. This gives us some sense of the strength of growth that stock prices might have over the long run. For example, ***Figure 7*** shows the P/E ratios of U.S. stocks during the most extreme periods relative to the long-term historical average of 17.0. As shown, the 10- and 20-year returns following those high P/E periods were typically low or negative. In contrast, when P/E ratios were low, the subsequent stock returns were better than average. This provides information as to the direction that the stock market returns are likely to take. As such, Savant factors this into our long-term expected returns.

Other examples of fundamental factors that have strong correlations to future stock returns are price/book ratio and dividend yield. Savant uses a combination of fundamental factors in our expected return calculations for stocks.

Figure 4: Correlation of P/E and Subsequent 1-Year Stock Market Returns 1881-2019

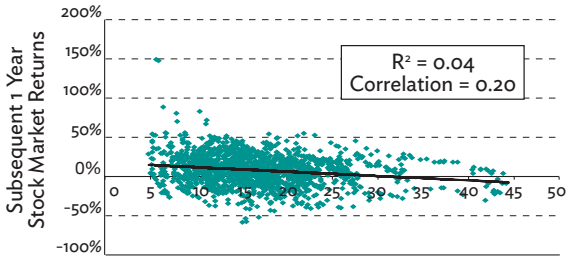


Figure 5: Correlation of P/E and Subsequent 20-Year Stock Market Returns

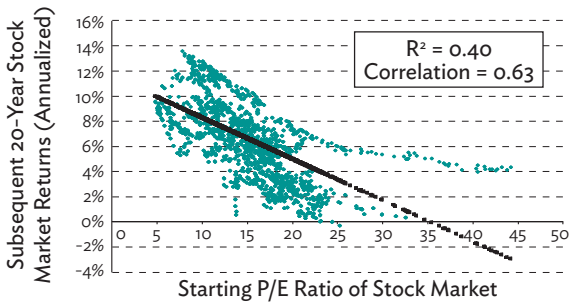


Figure 6: Correlation of P/E and Subsequent Stock Market Returns

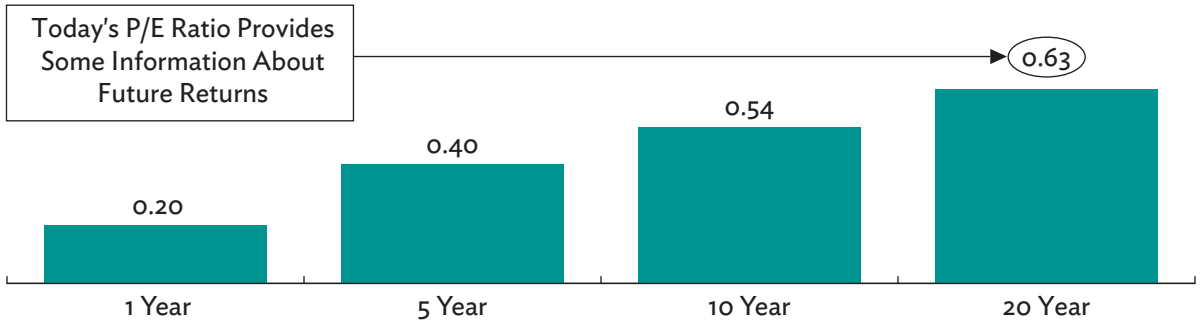


Figure 7: Stock Returns Following High and Low P/Es

		U.S. Stock Returns (After Inflation) Following High and Low P/E Ratios	
	P/E Ratios	**10 Years**	**20 Years**
High P/E Ratios			
Dec 1999	44.2	-3.2%	4.3%
Sept 1929	32.6	-1.5%	0.3%
Jan 1966	24.1	-1.8%	1.9%
Low P/E Ratios			
Dec 1920	4.8	16.4%	9.5%
June 1932	5.6	9.6%	10.8%
Aug 1982	6.6	14.2%	10.8%

Data for Figures 4-7 is from Robert J. Shiller website 1/1881 - 12/2019. Price/earnings ratio (P/E) is the 10-year trailing, inflation-adjusted P/E ratio. Stock market returns are real (inflation-adjusted) total returns for the S&P 500 Index.

Case Study #2 – Bond Fundamentals

For bonds (fixed income), there are two main fundamental factors that inform our expected return methodology: 1) yields/interest rates and 2) inflation. Savant evaluates the level of interest rates and inflation relative to historical norms and the expected direction of each based on current circumstances.

For example, in the early 1980s, interest rates and inflation were both at record highs. Bond investors at that time could expect reasonably high returns going forward simply due to the high income payments received from holding bonds. Also, since bond prices rise when interest rates fall, bond investors could also expect to benefit if interest rates declined from record high levels. On the other hand, if interest rates and inflation are both low (such as in 2019), investors might expect lower returns for bonds going forward. Low interest payments provide lower return from income, and an increase in interest rates and/or inflation would serve to put downward pressure on bond prices.

These two case studies of stocks and bonds provide simple examples of how comparing current fundamentals to history provides us better perspective on the current environment than just assuming the future exactly resembles the past. Of course, there could be many asset classes in your portfolio. Each of these asset classes has unique fundamental factors that need to be considered and evaluated. Savant evaluates each asset class in the context of our comprehensive forward-looking return model. Different fundamentals drive different asset classes. Our forward-looking return model recognizes these important differences. We believe this allows us to provide both a more informed and confident perspective about markets and better overall advice.

Putting Forward-Looking Returns to Work

Since the beginning, Savant has held five time-tested investment beliefs that have never changed:

1. **Diversification works**
2. **Asset allocation is primary determinant of investment performance**
3. **Minimizing expenses enhances return**
4. **Tax management is critical**
5. **No one can consistently time markets**

These investment beliefs permeate all areas of the investment process and define how portfolios are developed. Even though we use forward-looking returns, we still do not believe that anyone can consistently time the markets. Our forward-looking return process and model looks at long-term expectations of what the markets could do over 15-20 years – not next year. It assumes that markets continually go through cycles but eventually revert back to "normal."

Savant has several ways the expected returns for asset classes impact the work we do for clients.

1. More precise asset allocation using forward-looking returns

The use of forward-looking returns has a meaningful impact on how we build portfolios. The inputs used for each asset class (expected returns, volatility, and correlations) impact how much we allocate to each asset class.

The long-term forward-looking returns are of course only estimated expectations, but the use of fundamental data as inputs helps shape those expectations beyond a more naïve, or historical view only. Savant believes this is best described as a Smart, But Humble approach. In other words, Savant is fully aware of the dynamic process underlying the various economic and financial market circumstances ("smart"), but we modestly decline to forecast the market ("humble") in the short term—instead focusing on long-term fundamentals and expected returns. The Smart, But Humble investor sets a strategic policy that accounts for the uncertainty present in the current regime, while avoiding low-breadth tactical or short-term bets. This avoids sometimes costly and unnecessary short-term speculation, yet leverages the long-term growth markets offer investors over time.

2. Help clients better assess their ability/willingness to assume risk based on expected returns

Economic conditions are always changing, making it very important to evaluate long-term return projections for each asset class. As expected returns change, so does the efficient frontier of investment portfolios. The efficient frontier can shift up, down, or even change its shape depending on changes in market conditions.

Let's look at an example focusing on a series of portfolios consisting of two asset classes, U.S. large cap stocks and U.S. intermediate-term bonds. In order to find where a two asset class portfolio will plot on the efficient frontier, we must know four things: the percent weight of each asset class, expected return for each asset class, expected risk (standard deviation) for each asset class, and the correlation between asset classes. ***Figure 8*** shows how the shape of the efficient frontier can change due to changes in expected return for stocks and bonds.



As shown, the riskier portfolios in Scenario 1 (those with 60% or more in stocks) did not offer much additional expected return above the more conservative portfolios, but they were expected to have much higher volatility. In contrast, the efficient frontier in Scenario 3 is much steeper, meaning that the expected return for riskier portfolios is much higher than that of conservative portfolios. In other words, the equity risk premium is much higher in this scenario as investors require a higher return to take on more risk.

Evaluating the shape and steepness of the efficient frontier can help investors determine where exactly on the efficient frontier they should invest. For example, an individual with a long time horizon who can tolerate more risk might determine somewhere between 60% and 80% in stocks as their "sweet spot" to grow their portfolio for the long run. However, it is not an exact science when it comes to determining what allocation an investor should choose within the "sweet spot." Factoring in how the current efficient frontier is shaped can help Savant clients make more informed asset allocation decisions.

3. Better inputs into financial planning models

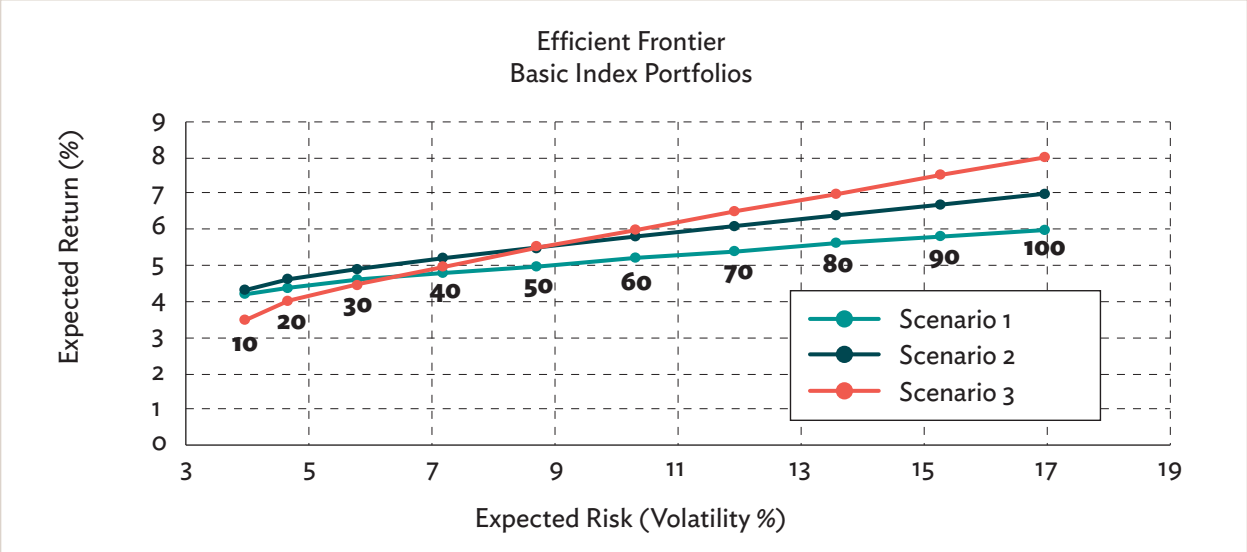
Answering the questions above can be very subjective, but in order to do so and ultimately arrive at a decision, one must have good inputs into a model to make sure the various scenarios are as realistic as possible.

To help answer these questions, Savant uses its expected risk and return calculations in our financial planning model to run Monte Carlo analysis. This analysis provides probabilities of success given different scenarios. It calculates 10,000 iterations of potential investment outcomes and the probability of success for the assumed set of circumstances. This analysis, informed by our forward-looking return expectations in combination with individual advisor expertise, helps Savant clients make decisions about their financial futures.

4. Provide advice with the understanding that these are estimates.

The use of long-term forward-looking return estimates can be a useful tool when building portfolios to optimize risk and return in addition to helping clients select appropriate asset allocation models. We use the estimates with the knowledge that hypothetical returns have limitations and should not be the sole input for decision making, instead the use of a multi-faceted approach is most prudent.

Figure 8:
Market Fundamentals Can Change The Efficient Frontier



Expected return, volatility, and correlation assumptions are for illustrative purposes only and are not the opinions of Savant Wealth Management



Final Thoughts

In theory, developing an efficient portfolio using expected returns is a good foundation, but it needs to be applied to each investor's portfolio. This requires expertise, time, and technology. Furthermore, we know market risks and returns are continually changing, so the efficient frontier is not a static curve. It requires ongoing evaluation over time. We believe application of Savant's forward-looking return framework and methodology allows us to offer more proactive advice and better match your long-term return needs with your risk preferences.

About Savant Wealth Management

Savant Wealth Management is a leading independent, fee-only firm that has been serving clients for more than 30 years. Since inception, we have been committed to one key principle: all financial advice should be offered in the best interest of the client. We offer our clients wise counsel to help them achieve their financial goals.

As a trusted advisor, Savant offers investment management, financial planning, tax and consulting, retirement plan, and family office services to financially established individuals and institutions.

Important Disclosures

Savant Wealth Management ("Savant") is an SEC registered investment adviser headquartered in Rockford, Illinois. Past performance may not be indicative of future results. Different types of investments involve varying degrees of risk. Therefore, it should not be assumed that future performance of any specific investment or investment strategy, including the investments and/or investment strategies recommended and/or undertaken by Savant, or any non-investment related services, will be profitable, equal any historical performance levels, be suitable for your portfolio or individual situation, or prove successful. Savant is neither a law firm, nor a certified public accounting firm, and no portion of its services should be construed as legal or accounting advice. You should not assume that any discussion or information contained in this document serves as the receipt of, or as a substitute for, personalized investment advice from Savant. A copy of our current written disclosure Brochure discussing our advisory services and fees is available upon request or at www.savantwealth.com. The scope of the services to be provided depends upon the needs of the client and the terms of the engagement.

Savant's 20-year (long-term) asset class return estimates were developed using various methodologies. For each of the asset classes, there is a stated methodology. For some asset classes, we use an average of several methodologies to avoid placing too much emphasis on any one input such as historical risk premiums. Savant may change the methodology from time to time based on further research or other pertinent information.

The index portfolio return estimates reflect forward-looking expectations based on the outputs from Savant's proprietary expected return methodologies. The results that were calculated by means of the application of forward-looking return estimates from Savant's proprietary expected return methodologies use an asset allocation comprised of the asset classes indicated and, as such, the corresponding results have inherent material limitations, including: (1) the portfolio results do not reflect the results of actual trading using client assets, but were achieved by means of the proactive application of each of the referenced portfolios, certain aspects of which may have been designed with the benefit of hindsight; (2) forward-looking performance may not reflect the impact that any material market or economic factors might have on the adviser's use of the hypothetical portfolio if the portfolio was being used during the period to actually manage client assets; and, (3) for various reasons (including the reasons indicated above), Savant's clients may experience investment results (return and/or volatility) during the corresponding time periods that are materially different from those portrayed in the index portfolio.

Sources used for reference:

Dopfel, Fred. 2009. "The New Policy Portfolio." Barclays Global Investors, Investment Insights, Volume 3, Issue 2. Shiller, Robert J. and Campbell, John Y. 1998. "Valuation Ratios and the Long-Run Stock Market Outlook." Journal of Portfolio Management, Winter 1998. Shiller, Robert J. and Campbell, John Y. 2001. "Valuation Ratios and the Long-Run Stock Market Outlook: An Update." National Bureau of Economic Research Working Paper 8221, April 2001.

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