WHITEPAPER

An Insight into a Goals-Based Asset Allocation Framework

NEPC PRIVATE WEALTH

Abstract

A robust asset allocation approach that uses multiple lenses to determine asset mix is vital to an investment portfolio's success. The most prevalent framework to determine asset allocation may only consider the required rate of return and risk tolerance. However, this approach may expose the investor to unintended risks. Careful consideration and alternative asset allocation models add additional insight into optimizing asset allocation. Individuals and families may benefit from an approach that allows them to meet multiple investment objectives over varying time horizons.

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At its core, goals-based asset allocation is an extension of Modern Portfolio Theory, a building block of most portfolio construction processes. Modern Portfolio Theory is used by investors to maximize returns corresponding to a level of risk—but a goals-based asset allocation offers a more intuitive, bottom-up approach to establishing asset allocation targets. The goals-based asset allocation process helps to determine the investor's risk profile in the midst of potentially competing investment objectives.

To be sure, the goals-based approach has its share of critics. A primary shortcoming, they say, is the strategy could result in unnecessary risk-taking through uneven diversification across the portfolio. That said, the goals-based asset allocation process proactively addresses this by developing a client-centric approach and regularly reviewing investment objectives at the portfolio level.

Our paper explores this alternative asset allocation model, which may help wealthy families or individuals align their investments to their numerous goals while helping them redefine their risk tolerance.

What if a client has a large philanthropic contribution due in the near term followed by multiple smaller payments into perpetuity to fund the next generation's lifestyle?

Challenges in the Current Asset Allocation Process

A common approach to determine a portfolio's asset allocation is to use the process outlined in the Modern Portfolio Theory (MPT), which was developed by Nobel laureate Harry Markowitz in 1952. It helps investors construct portfolios, maximizing returns to a given level of risk. MPT defines risk as the standard deviation of returns, which is calculated by measuring the day-to-day or month-to-month volatility of prices over a five-to-seven-year time period. MPT is an integral part of the asset allocation process for institutional investors who tend to have a single long-term investment objective for their portfolios. That said, it may not be well suited to wealthy individuals and families for the following reasons:

(i) **Single-time horizon:** Modern Portfolio Theory assumes that every investor has a single-time horizon. Whether one has near-term or long-term needs, MPT does not provide insights as to how the different time frames will impact an investor's ability to tolerate risk. This limitation is a challenge for most high-net worth investors who have multiple time horizons and financial goals. For example, a wealthy family may be making annual portfolio distributions to support living expenses, but may need a large disbursement to fund a charitable contribution. Many wealthy investors establish multiple goals with the same assets, requiring a modification to the traditional asset allocation process.

(ii) **Narrow definition of risk:** MPT defines risk in terms of standard deviation. It is not necessarily intuitive for individuals to translate the impact of a two-standard deviation event to their personal wealth or goals. Instead, some wealthy individuals and families may define risk in terms of the inability to achieve specified goals. The significant equity market correction in 2008 and early 2009 underscored the difficulty of using standard deviation as a portfolio's main definition of risk amid investors' concerns about the paper loss or actual loss of wealth.

Wealth advisors have tried to navigate the challenge of multiple goals and varying time horizons by identifying the required return to meet the stated objectives. Typically, this is done using a "top-down" perspective or, in other words, by determining the rate of return that can be achieved with a comfortable level of volatility - agnostic of the timing of upcoming events in the individual or family's life. Clearly, this methodology has its limitations for some investors. For instance, what if a client has a large philanthropic commitment in the near term followed by multiple smaller payments into perpetuity to fund the next generation's lifestyle? Though the top-down approach's stated expected return may be high enough to meet the stream of income payments into perpetuity, it may be unable to meet the payment for the near-term estate tax. By only defining risk in the mean-variance framework, the advisor may be taking on too much risk, jeopardizing the client's wealth, or incurring too little risk and, therefore, reducing the family's ability to compound wealth for future generations. To this end, it is essential the portfolio simultaneously weighs near-term spending needs with an emphasis on long-term growth.

Goals-Based Framework

A goals-based asset allocation process is a modified "bottom-up" version of Modern Portfolio Theory. It starts by identifying the appropriate asset allocation for portfolios seeking to fulfill multiple objectives over varying timelines. It directly addresses the requirements of many wealthy individuals and families by allocating capital to personal goals and optimizing the probability of meeting the

Build a Mosaic

1. No single asset allocation approach or model has all the answers
2. Minimize exposure to the shortcomings of any individual approach by using multiple perspectives and approaches
3. All analytical tools have the potential to provide useful insights, but they also include shortcomings

objectives, while managing the assets through a single portfolio with a target asset allocation.

The process begins with the client articulating various personal goals and risk tolerance to investment objectives. For instance, goals may consist of funding a grandchild's educational expenses, luxury items, and/or paying for a business expansion. A tricky part of this conversation is defining risk tolerance around each event. Many investors define risk differently than the covariance or standard deviation calculations set forth under MPT. As a result, this conversation may need to be refocused on the probability of meeting objectives and the level of comfort around potentially delaying an expenditure. For example, a wealth creator may be comfortable with bequeathing $9 million to each child instead of the original objective of $10 million. On the other hand, an unacceptable investment outcome for the client is the inability to meet daily living expenses.

High-net worth individuals and families are typically more concerned about their portfolio's ability to meet their financial objectives rather than the day-to-day volatility of capital markets. Therefore, redefining risk as the probability of not meeting those objectives may result in a more intuitive asset allocation process. For instance, if an advisor informs a client that their portfolio's standard deviation is 12%, an investor will probably be unsure about what that means in practical terms. Instead, if the advisor tells the client that based on the portfolio's asset allocation, the client has a 70% probability of gifting $10 million to each child and a 30% risk of falling short, the client will be able to tell if that is an acceptable outcome or not. By articulating the purpose of the assets and redefining risk in terms of probability, the resulting asset allocation process becomes far more intuitive for investors and helps them define their risk tolerance.

Once the timeline and risk tolerance around each event are defined, the next step is for the consultant to allocate capital to each objective. In the goals-based framework, an optimal sub-portfolio will be developed around individual objectives. The role of the sub-portfolio is to maximize the probability of meeting the identified objective. As shown in the graph on the following page, objectives may include supporting current lifestyle needs, charitable goals or wealth succession. At the end of the day, all investors are constrained by a finite amount of capital and, in conjunction with their consultant, must decide how to allocate assets across their various goals. By identifying how much capital will be designated to each goal, and knowing the level of risk of the underlying portfolio, a probability of meeting the future value of the goal is determined. The entire process is intended to maximize the probability of meeting each objective. In practice, the optimal sub-portfolios are merged and managed as a single portfolio.

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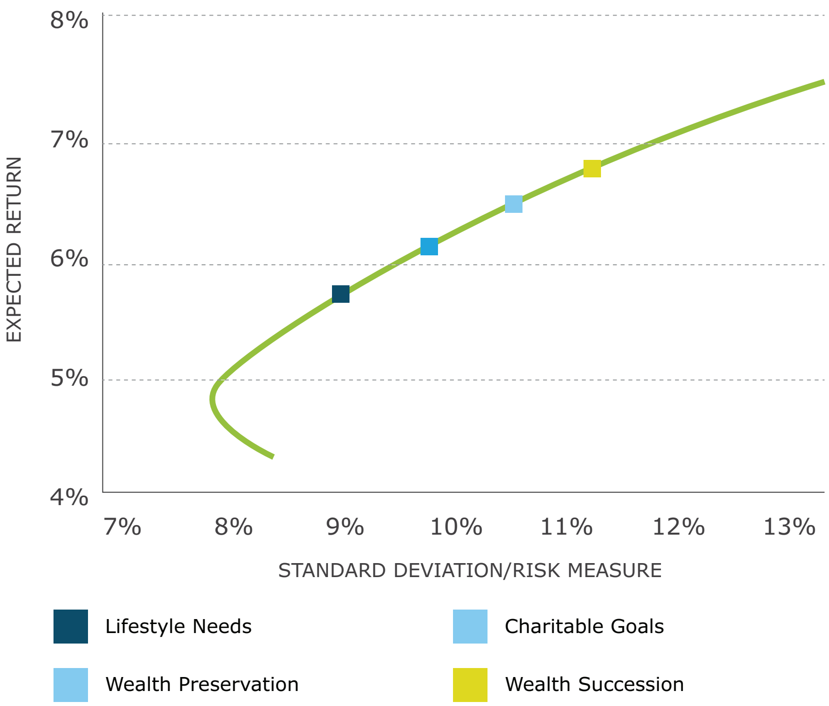
Goals-Based Efficient Frontier



Source: Morningstar Direct, NEPC

By viewing the goals and portfolio in aggregate, the portfolio may balance multiple goals and timelines through a single optimized portfolio without compromising the construction process.

In a practical setting, the goals-based framework is designed in an effort to ensure that non-financial goals, for instance, philanthropic intent, are translated into financial terms. For example, if a family has a liquid portfolio of $250 million, they may identify that they need $5 million annually into the foreseeable future to support their lifestyle, $5 million for home purchases over the next seven years, and $15 million for various philanthropic initiatives in 10 years. Based on the outlined goals, the family requires a 4% annualized rate of return; if they previously felt that they needed to earn 7%, there is a vital gap between the desired 7% return and the needed 4% return that needs to be bridged. A goals-based asset allocation process may help highlight that the family is taking either excessive risk or not enough risk to support the overall portfolio objectives.

In addition to using the goals-based asset allocation framework as a building block to identify a required return, it may also be employed to facilitate communication. Some key questions to aid dialog: Is the portfolio designed to meet current-expected required returns, future-expected required returns or unforeseen circumstances? Is the family comfortable pursuing the higher expected return–the 7% in the above example–while acknowledging the potential losses in the event of a market correction? By communicating these goals and establishing a framework around the risk tolerance of each event, wealthy individuals and families can better visualize the portfolio's probability of meeting the collective objectives and can collaborate with their investment advisor to determine their true appetite for risk.

A Disciplined Process to Meet Goals

Even while availing of the benefits of a goals-based framework, it is still critical to employ a mosaic approach to asset allocation by using other analytical tools, for instance, mean-variance analysis and risk budgeting to complete the picture. Ultimately, no single asset allocation approach or model has all of the answers. It will be important to stress test the portfolio through scenario and liquidity analyses to minimize exposure to the shortcomings of any single approach.

Limitations of a Goals-Based Framework

Initially, academics were reluctant to accept a goals-based asset allocation framework. They argued that breaking down investments into sub-portfolios would result in a portfolio taking unnecessary risks to achieve the expected return. That is, to view each investment as serving an individual purpose would lead to a "mental accounting" framework that would result in an undiversified portfolio. However, this argument ignores that wealth is transferrable across these sub-portfolios. For example, if the allocation to the wealth succession goal is outperforming forecasts, the excess returns could be transferred to support lifestyle needs, thereby reducing that sub-portfolio's risk of not meeting objectives in the event of a drawdown. In this scenario, the client's fungible wealth would help improve the total portfolio's probability of meeting its collective goals. The goals-based asset allocation process proactively addresses this by mapping each investment to individual sub-portfolios while managing the assets at a total portfolio level.

Structuring a portfolio to maximize the probability of meeting a goal and defining risk in terms of standard deviation are mathematically equivalent.

In addition, the so-called mental accounting challenge under the goals-based framework has been rebutted by none other than Markowitz, the architect of the Modern Portfolio Theory. In a 2010 paper, *Portfolio Optimization with Mental Accounts*, authors Sanjiv Das, Markowitz, Jonathan Scheid and Meir Statman addressed whether mental accounting resulted in a biased portfolio.

They concluded that structuring a portfolio to maximize the probability of meeting a goal and defining risk in terms of standard deviation are mathematically equivalent. They do note, however, that this mathematical equivalence is largely predicated on the belief that investors are better at defining their goals in terms of dollars and probabilities of meeting objectives rather than "their risk-aversion coefficients," that is, a desired standard deviation.

In addition, the following tenets can help ensure the successful implementation of the goals-based asset allocation process:

(a) **Client-centered:** Remaining focused on clients' needs and their personal objectives, recognizing milestones in the families' lives and proactively communicating whether their investments are in line with their goals will help ensure the appropriate management of wealth. The investment consultant must truly perform the role of a trusted advisor.

(b) **Regular review:** The current asset allocation strategy, portfolio assumptions and the client's personal goals must be reviewed regularly. This will reveal whether the prior year's outlined objectives are appropriately aligned with the investments and will help enhance the governance framework around the current year's asset allocation process. Failure to review the portfolio at least annually may result in the program's inability to meet its stated objectives. As capital markets evolve, the investment consultant may also recommend adjustments to the target allocation to ensure portfolio risk is still in-line with investor's risk tolerance.

(c) **Investment discipline:** The consultant needs to understand why each investment was selected for the portfolio to help ensure that the client's financial goals can be met. The consultant also needs to convey this to the client. The portfolio is more likely to achieve its targets by focusing on the investment objectives at the portfolio level than the near-term performance of individual managers.

Conclusion

Private wealth clients are likely better served if the asset allocation process is refocused around their objectives and needs. Some investors are more likely to think in terms of how their wealth will meet their goals over multiple time periods and are better served by defining risk as a probability of not meeting a target. Meeting multiple objectives over varying timelines presents a challenge to MPT assumptions. A goals-based asset allocation process—based off a modified version of Modern Portfolio Theory—makes the asset allocation process far more intuitive for wealthy individuals and families. Combining a goals-based approach with an array of additional rigorous analytical tools, such as mean-variance analysis, risk budgeting and liquidity analysis, can help ensure an appropriate asset allocation strategy is selected.

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