

Common Sense InvestSense™..Portfolio Optimization

Portfolio optimization is based on the theory that an investor can achieve a better overall, more consistent return by investing in various types of investments that perform differently from each other under various market and economic conditions. According to the theory, known as modern portfolio theory (MPT), the combination of such investments will hopefully result in more consistent returns as the poor performance of some investments will be offset by the performance of other investments in the portfolio.

MPT-based portfolio optimization requires calculations that are confusing and complex. Consequently, it can be difficult for an investor to determine whether the recommendations are suitable and properly calculated. While the calculations involved with MPT-based portfolio optimization may be beyond the average investor, an awareness of the weaknesses cited by critics, of both the theory and its application, may help an investor detect questionable advice and prevent unnecessary financial loss.

1. MPT-based portfolio optimization recommendations are based on assumptions and/or "guesstimates." In the small print at the bottom of many investment advertisements there is a disclaimer that "past performance does not guarantee future performance." The inability to predict the future is generally acknowledged. Yet past performance is exactly what MPT-based portfolio optimization software programs, commonly referred to as optimizers, generally use in producing portfolio optimization projections and asset allocation recommendations.

Optimizers generally use data based on the historical returns and volatility of general asset categories and/or market indices. In some cases, the optimizer may allow a financial advisor to substitute their own risk/return assumptions for the historical data. Either way, the uncertainty and instability produced by the reliance on past performance or the financial advisor's "guesstimates" increase the opportunity for error and financial loss, so much so that at least one financial scholar has described optimizers as valueless "estimation-error maximizers."¹

Supporters of MPT-based portfolio optimization argue that any perceived weakness in using past performance is offset by basing the past performance data on long periods of time, in some cases as far back as the 1920s. Not only is there no proof of the validity of such an argument, but the argument overlooks the fact that historical averages may not accurately reflect current or future market returns and conditions. The validity of such concerns can be seen in the increased volatility of today's markets, with daily swings of one hundred points or more in the Dow Jones Industrial Average becoming a relatively common occurrence.

Optimizers that allow a financial advisor to substitute their own "guesstimates" for historical risk/return data present even greater issues. An optimizer's recommendations are based on the relationship between each investment's returns and volatility, both absolute and relative to other investments and/or investment options. The nature of the calculations results in a bias toward investments with high returns, low volatility and low correlation with other investments. This bias often results in asset allocation recommendations that are unsuitable for an investor given their financial needs, investment objectives, risk tolerance level or other personal investment parameters.

2. The calculations and recommendations produced by optimizers are highly unstable and easily manipulated. Optimizers often paint optimistic pictures of how an investor can improve investment returns and reduce investment risks by making changes in their portfolios. Going behind the numbers and recommendations often results in a less optimistic, more realistic picture.

Given MPT's bias toward high return, low risk investments, an optimizer's projections and calculations can be easily manipulated by simply overstating an investment's return and/or understating an investment's risk factor. Because of the complexity of optimizer calculations, slight changes in any of the inputs can result in significant changes in an optimizer's projections and recommendations. An optimizer can also be manipulated by setting the optimizer's investment options and/or minimum/maximum allocation settings at unsuitable levels to insure that certain changes in the investor's portfolio will be recommended, resulting in sales and/or purchases of investment products and commissions for the financial advisor.

3. The optimizer's "optimal" portfolio may not be in the investor's best interests at all. Optimizers generally take an investor's answers to some sort of investor profile or risk tolerance questionnaire, assign the investor a risk profile based on such answers, and then produce asset allocation recommendations and risk/return projections for the proposed portfolio. Investors are led to believe that the new recommendations represent the best, or optimal, portfolio for them.

While an optimizer's recommendations may be theoretically optimal, reality often shows that the recommendations are not in the investor's best interests at all. This gap between theory and reality can result for various reasons, including the nature and weighting of the questions on the risk questionnaire, the inability of the optimizer to factor in an investor's personal financial factors, and the failure of the optimizer to factor in the costs that would be incurred in implementing the recommendations, including costs such as commissions, fees and taxes.

Most risk tolerance questionnaires are totally worthless due to the nature of the questions themselves and/or the weighting given to the investor's answers to such questions. Asking an investor how they would feel if their portfolio lost half its value seems rather foolish. Other questions, while reasonable, offer little real insight and increase the potential for misinterpretation. Asking an investor how many years of investment experience they have does not properly differentiate between the widow who has twenty years of investment experience with certificates of deposit and treasuries and the former executive who has twenty years of investment experience with stocks and various other investment products. The optimizer may see twenty years of investment experience and thus designate the investor as a sophisticated investor, incorrectly assuming experience equals knowledge and sophistication.

The weighting of such questions is equally troublesome. The unethical financial advisor could simply weight the questions in such a way to ensure that certain recommendations result and the likelihood of product sales/purchases increases. Equally weighting the questions may seem to be the most obvious way of preventing such abuse; however some answers and personal factors outweigh others in choosing a suitable, effective investment portfolio.

For example, an investor may indicate that they are not comfortable with market/investment risk and they simply want to preserve their capital. While this position may leave the investor exposed to other risks, such as loss of purchase power due to inflation, this position does not violate any securities rules or regulations and should be respected by a financial advisor. In such situations, the investor's position alone determines what is suitable or unsuitable, regardless of the remaining answers on any risk tolerance questionnaire. For such an investor, any equity product would be realistically inappropriate, regardless of what may be theoretically recommended.

Likewise, an optimizer may completely overlook the fact that an investor's statement that their income is sufficient is based on the fact that their current portfolio produces the needed income. An optimizer could, and often does, misinterpret the investor's answer and recommend unsuitable reallocations that would significantly reduce or eliminate the needed portfolio income.

Optimizers do not factor in the costs that would be incurred by an investor in following the optimizer's recommendations. When costs such as commissions, fees and taxes are factored in, investors often discover that the recommendations are not in their best interests at all. One tactic used by unethical financial advisors is to tout that a recommended move would be tax-free without mentioning that the move would result in new commissions for the financial advisor. This is a tactic often used in connection with annuities and tax-deferred accounts such as 401(k) accounts and IRAs. These costs can significantly reduce the performance of an investor's account.

4. There are legitimate questions regarding the value of MPT and portfolio optimizers. Few would dispute the value of diversification or the rationale of combining investments with low correlation to reduce investment risk exposure. The issue, however, is how to do so to protect an investor's best interests. Historical trends suggest that effective diversification could be as simple as investing equal amount in growth investments and value investments or investing equal amounts in a stock market index, such as the S & P 500, and bonds.

Various financial scholars have become increasingly critical of the basic concept of MPT and its current application, including optimizers.² Critics have generally cited the inherent biases and overall instability of

the calculations and recommendations produced by MPT and optimizers, leading one critic to label optimizers as "estimation-error optimizers."³ The overall value of MPT and optimizers has also come under increased scrutiny in light of recent studies that have shown that the correlation of some investments actually increase during times of market volatility, thereby reducing or failing to provide the risk reduction benefit touted by MPT.

5. Many financial advisors and money managers do not rely on MPT or portfolio optimization.

Many financial advisors recognize the weaknesses and problems associated with MPT and optimizers. Consequently, the human element, their knowledge and experience, is the primary planning tool of such financial advisors in order to avoid the unsuitable projections and recommendations often produced by optimizers. The use of the human element is the only way to ensure that the investor's personal investment parameters are properly considered in creating suitable investment recommendations.

The willingness and ability to perform the needed human element functions is what separates the true financial planning and investment professional from the "black box" planners and advisors who simply accept whatever projections and recommendations an optimizer produces. These "faux" planners and advisors often have little or not interest in the quality of the advice being, as they simply see optimizers and asset allocation as marketing tools to sell insurance and investment products.

6. Proper implementation is just as important as portfolio optimization. Commercial portfolio optimizers usually only make recommendations in terms of broad, general asset categories (e.g., large cap growth, small cap value). Assuming that the recommendations are suitable for the investor, the financial advisor must then choose specific products that are consistent with the assumptions used in producing the risk/return projections and asset allocation recommendations in order to properly implement the recommendations. Unfortunately, far too often this is an area that financial advisors overlook, exposing an investor to unnecessary financial loss due to unsuitable investments. (See InvestSense's white paper, "The Asset Allocation Quality of Advice Matrix - What You Don't Know Can Hurt You!" in the "Research" Section.

There are various reasons for inconsistencies between an optimizer's recommendations and a financial advisor's implementation recommendations. Commercial optimizers do not generally offer a financial advisor the option of going back and recalculating an investor's portfolio based upon the advisor's recommendations. The amount of data that would be required on all the various investment options makes such an option impractical for commercial optimizers. Such inconsistencies can also result from an advisor's lack of experience, an advisor's lack of due diligence in researching the investments recommended, or the lure of higher commissions. Financial advisors who are affiliated with an insurance company or broker-dealer may be required to recommend certain proprietary investments whose qualities are inconsistent with the assumptions used by the optimizer and unsuitable for the investor.

Investors who work with financial planners, investment advisors, financial consultants, or other financial advisors will probably receive various colorful charts and risk/return projections that have been generated by MPT-based portfolio optimizers or similar investment calculators, such as Monte Carlo simulators. Monte Carlo simulations are somewhat different from optimizers in that they usually present an investor with various risk/return scenarios instead of just asset allocation recommendations.

Unfortunately, Monte Carlo simulations suffer from the same limitations and weaknesses as MPT-based optimizers, as will any computer-based investment advisory program. Computers are helpful in the financial advisory process, but providing suitable financial and investment advice requires the human element to ensure that an investor's financial needs, investment objectives, risk tolerance level and other personal investment parameters are properly considered.

Further proof of this need for the human element can be seen in the various asset management and separate account programs offered by many investment advisors. These programs are often touted as providing investors with personalized investment information and services as compared to the impersonal investment services provided by mutual funds. Investors are usually asked to choose among several categorized and standardized portfolios. The investment advisor then affiliates with a third party investment advisor who produces periodic MPT-based asset allocation recommendations for each of the standardized portfolios

As evidence of their realization of the need for the human element, the third party investment advisors usually include a provision in their contracts with investment advisors that provides that it is the responsibility of the investor's investment advisor, not the third party investment advisor, to determine the suitability of the standardized portfolios and any recommendations. Many investment advisors fail to recognize the significance and consequences of such a provision, namely (1) that the third party advisor realizes that MPT has serious weaknesses; (2) that MPT is not the regulatory standard by which legal suitability is determined; and (3) that trying to fit every client into one of several mass produced, standardized portfolios increases an advisor's potential liability exposure.

By adding such a provision, the third party investment advisor effectively transfers both the suitability determination and the corresponding liability exposure to the investor's investment advisor. From an investor's perspective, this calls for an investor to exercise even greater care before choosing their financial advisor or deciding to participate in such an investment program. Investors who fail to do so may find themselves with cookie-cutter portfolios that are unsuitable for them, exposing them to unnecessary financial risk.

Conclusion

The concept of portfolio optimization is an enticing, but difficult, goal. The theories and premises upon which most portfolio optimization is based present a number of issues due to the inherent biases and relative instability of the projections and recommendations produced. Given the significance of the issue involved, one's financial security, an investor should always seek more than one opinion and have an objective, independent third party, such as a fee-only financial advisor, review asset allocation recommendations prior to actually investing their money or making any changes in their investment portfolio.

© 2002 InvestSense, LLC. All rights reserved.

This article is not designed or intended to provide legal, investment, or other professional advice since such advice always requires consideration of individual circumstances. If legal, investment, or other professional assistance is needed, the services of an attorney or other professional advisor should be sought.