Due Diligence in Mutual Fund Portfolio Selection – Tools for a Prudent Process

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Abstract

The essence of financial risk management lies in the continual quantification of risk as it applies to investment outcomes. It is a utilization of knowledge whereby human beings have some control over the outcome while minimizing to the extent possible the areas where human beings have absolutely no control over the outcome and the possibilities of effect and cause are not known. The investment world has made great strides and found social utility in understanding risk and attempting to quantify it for personal financial and institutional investment purposes. While “alleviating” risk is impossible, “mitigating” risk is capable of being undertaken. This paper will lay out the need to be forward looking in risk assessment and make the case for quantitative tools being used in due diligence from an advisory capacity.

Introduction

The revolutionary idea that defines risk management as it applies to modern times is that risk can be quantified. That is, it can be understood, it can be measured; it can be utilized proficiently to create positive outcomes. Until the 1600’s, human beings gazed into the future with the assistance of oracles, soothsayers and fortune tellers with the hope of understanding how anticipated events would unfold and that fate would be on their side.

The word ‘risk’ derives from the early Italian *risicare*, which means ‘to dare’. Thus, risk is a choice rather than a fate. The actions we dare to take, which depend on how free we are to make choices are what the financial risk is all about.¹

The ability to quantify what can happen in the future and to choose among alternative courses of action is what risk management (in general) is all about in contemporary society. Risk management guides human beings over a range of decision-making from allocating wealth to

safeguarding public health, from war strategies to planning a family, from paying insurance premiums to wearing your seatbelt, from planting corn as a crop to marketing cornflakes.2

The Greeks understood that more things might happen in the future than will actually happen. They recognized that the natural sciences were the science of the probable. This was pointed out by Aristotle who said, “To succeed in many things, or many times is difficult; for instance, to repeat the same throw ten thousand times with dice would be impossible, whereas to make it once or twice is comparatively easy.”3

Professor Frank Knight published Risk, Uncertainty and Profit in 1921. Knight emphasized uncertainty which split him from the classical economic framework. Classic economic thought at the time emphasized decision-making under conditions with perfect information and certainty or under the established laws of probability. Knight held that the prevalence of surprise in the world is evidence that uncertainty is more likely to prevail than mathematical probability. 4 What Knight was describing is what has become known as the ‘fat tail’ of the bell curve. A concept very much discussed in light of recent financial calamities.

The first true breakthrough in financial risk management in the 20th century occurred with the publication by Professor Harry Markowitz of “Portfolio Selection” in the Journal of Finance in 1952.5 This fourteen page article with three footnotes has become the Bible of what has been dubbed ‘Modern Portfolio Theory.’ His main theme is that a portfolio of securities is entirely different from holdings considered individually. According to Markowitz investment portfolios should be structured to consider expected return a desirable and variance of return undesirable. Markowitz links his thesis to standard deviation, i.e. the greater the variance or standard deviation around the average the less the average return will signify what the outcome is likely to be. Thus, investors diversify their investments because diversification is the best weapon against variance of return. Markowitz had created Modern Portfolio Theory based upon the mathematically calculated ‘Efficient Frontier,’ i.e. creating maximum return expected for minimum risk.

The next significant innovation in financial risk came under the research of Professor William Sharpe in 19646 and the creation of the Capital Asset Pricing Model (“CAPM”). Basically the CAPM theory states that the expected return of a security or portfolio securities should equal the rate on a risk-free security (i.e. U.S. Treasury bond or bill) plus a risk premium. If this expected return doesn’t meet or exceed the required return, the investment should not be undertaken. The

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2 Bernstein, page 2.
security market line plots the results of CAPM for all different risks, called ‘betas’ by Sharpe.\(^7\)
The third component to the puzzle for Sharpe was to understand and quantify that risk is related to reward and provide the Sharpe Ratio for “risk-adjusted” investment returns.\(^8\)

The significance of Markowitz and Sharpe is that Sharpe created the analysis for dissecting the systematic risk of individual securities and created the process for a purchase decision of verifiable, correct and uniform data. Plugged into the Markowitz portfolio math, the Efficient Frontier could now be achieved with acceptable securities with limited risk and upside potential.

Finally we come to the work of three investment managers themselves. Brinson, Beebower and Hood in 1986\(^9\) (“BBH”) developed a study which created shockwaves throughout the investment management world. Based upon empirical data of pension funds they determined that 92% of a portfolio, or fund’s, variability in investment returns was attributed to what they called ‘asset allocation.’ BBH found that the justification for asset allocation is the notion that different asset classes offer returns that are not perfectly correlated; hence diversification reduces overall risk in terms of the variability of returns for a given level of expected return. Consequently, having a mixture of asset classes is more likely to meet the investor’s wishes in terms of amount of risk and possible returns. Brinson and Beebower along with Brian D. Singer would again publish a second paper based upon a second study in 1991 which confirmed the findings of their first paper.\(^10\)

In summary, why is this recitation important? Because it lends context to the statements already made in the Abstract of this paper. Markowitz, Sharpe and BBH uncovered mathematical formulas or data verification of methods. Applied to finance these quantitative approaches can be utilized to prove or facilitate due diligence undertaken to investment advisory selections of mutual funds. Do they guarantee success? No. Do they go along way to mitigating risk and extending due diligence beyond merely evaluating manager tenure and historical performance? Absolutely.

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Putting it All Together

When it comes to investing, risk and reward are inextricably entwined. The phrase "no pain, no gain" – are words that come close to summing up the relationship between risk and reward. Don’t let anyone tell you otherwise: investment risk cannot be alleviated or eliminated when investing. It can only be mitigated. All investments involve some degree of risk. Investments in stocks, bonds, or mutual funds have risk of loss attached to the act of investment itself. It is important to have a healthy respect for risk. It is also important to understand that risk mitigation devices such as efficient frontier, asset allocation and Sharpe Ratio go a long way to mitigating risk – but it does not guarantee successful returns.

The reward for taking on risk is the potential for a greater investment return. If investments have a financial goal with a long time horizon, a portfolio is likely to make more money by carefully investing in asset categories with greater risk, like stocks or bonds, rather than restricting your investments to assets with less risk, like cash equivalents. On the other hand, investing solely in cash investments may be appropriate for short-term financial goals.

By including asset categories with investment returns that move up and down under different market conditions within a portfolio, an investor can protect against significant losses. Historically, the returns of the stocks, bonds and cash have not moved up and down at the same time. Market conditions that cause one asset category to do well often cause another asset category to have average or poor returns. By investing in more than one asset category, an investor reduces the risk of losing money and the investment portfolio’s overall investment returns will have a smoother ride. If one asset category’s investment return falls, another investment category will be in a position to counteract your losses with better investment returns than the underperforming mutual fund or investment.

While simple in nature, the above statements are important insight. The Efficient Frontier, Asset Allocation and Sharpe Ratio are tools that reflect quantitative mathematics to lessen the risk of “hoping for the best” that so much investment advisory activity is based upon from “static” information. By static information, we mean manager tenure, historical performance, fund holdings etc.

In “putting it all together” for use in investment advisory practice the approach to portfolio construction becomes an attempt to create not just diversified asset allocations – but instead the idea of risk parity or the balancing of investment risk exposures across all economic scenarios.

13 U.S. Securities and Exchange Commission, Id.; Sharpe, Id.; Brinson et. al., Id.
14 Id.
15 U.S. Securities and Exchange Commission, Id.
16 Id.
by volatility. The “wow” moment is in using the tools to create smoother portfolio rates of return by determining risk appetite (efficient frontier); diversifying investments among asset classes and alternative investments (asset allocation) and finally choosing investments in those classes that will deliver the best reward for the risk incurred (Sharpe Ratio).

The fact is that there are really only three moving parts in investment product. Investment return can be looked at as:17

- Return on Cash
- Excess return of a market above the cash rate (beta)
- Manager selection or alpha

Investment advisory services and the industry in general, blurs the distinction between the “moving parts”, above which makes it hard to accurately assess the attributes of any one part or the whole. This is not to say that other things like expenses and fees are not important – they are. What we are saying is that pure return is a function of those three “moving parts.”

The characteristics of betas and alphas are distinct. Betas are few in number and cheap to obtain (i.e. an index fund). Alphas (investment manager strategy or objective) are unlimited and expensive. The most important difference is the ‘expected return.’ 18 This is where the tools already discussed come into play to delineate and provide the due diligence to recommendations.

Betas in aggregate and over time outperform cash. That betas rise over time relative to cash is a function of time horizon. If in analyzing a mutual fund or investment and the return of cash and beta is stripped out, alpha becomes a zero sum game. If one investor A buys investment X and investor B sells investment X – they both cannot be correct.19

Why the tools discussed (efficient frontier, asset allocation and Sharpe Ratio) are important in this discussion is that fixing the beta (volatility) to achieve the maximum return for the least risk (efficient frontier) is the key. By completing the asset allocation with risk-adjusted investments that fit into the allocation model and are efficient is the effective use of mitigating risk. It is more important that trying to “invest in the market well.”

Summary & Conclusion

Overconfidence and bias can push individuals to play, tinker and change things that they don’t understand. This very often leads to overcomplicating and turning a blind eye in the name of “financial engineering.” Nobody knows what the future holds. Therefore, proper asset allocation

18 Id.
19 Id.
(diversification), fixed to an acceptable rate of return with minimum standard deviation, i.e. risk (efficient frontier) and complimented with risk-adjusted return-reward for the risk taken (Sharpe Ratio) allows for a balanced approach over the long-term.

Due diligence in the today’s investment advisory practice demands the use of, understanding of and ability to communicate quantitative tools for the purpose of mitigating investment risk to the extent possible. Prudence, which is the standard of fiduciary conduct, necessitates their use.

As investment returns move around they will undoubtedly go up and they will undoubtedly go down. What the average investor needs is a good, reliable asset allocation for the long run. As we have seen, non-correlated alternatives have a place along with quantitative tools to analyze traditional asset classes. Quantitative tools like the efficient frontier, asset allocation and Sharpe Ratio are the tools that we have right now for investing in an uncertain world.

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