

The Break Down of Modern Portfolio Theory

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Modern Portfolio Theory (MPT) was clearly an important step in the management of a portfolio of assets with readily available prices. Markowitz's theory, which is predicated on several assumptions, posits that an investor will theoretically be able to maximize his expected return while minimizing the variability of returns by investing in a diversified portfolio of assets that have different price movements in a given market. Most importantly, for the first time, portfolio "risk" could be summarized into a number that could then be measured and tracked.

Over the years, with the growth in computer power and better data on sector returns, MPT has become an entrenched part of the business of investment management. To date, consultants, investment advisors and brokerage firms have invested hundreds of millions of dollars in software and databases to generate impressive looking reports for clients describing their asset allocation, performance measurement and their standard deviation of performance relative to their performance benchmark.

However, in 2008 the performance of foundations, endowments and pension funds were challenged as diversification failed and most every market, regardless of risk, produced negative returns. As a result, many foundations and endowments have been forced to curtail their targeted spending policy and pension funds are underfunded. And, while risk *measurement* was addressed to some degree, risk *management* of the portfolio was often not even a part of the investment policy statement. Our fundamental premise is that *asset allocation is not risk management*; it is only one step in a risk management process.

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MPT breaks risk into two parts: systematic risk and unsystematic risk. Systematic risk is the risk inherent in the market. Unsystematic risk is the idiosyncratic risk that exists with the investment of a particular security. An important conclusion of MPT is that one can minimize the unsystematic risk through diversification. Studies have shown that you only need a minimum of 20 securities to substantially diversify a portfolio.

However, MPT does not offer investors a tool to reduce the degree of systematic risk within an asset class. One of the breakdowns in the investment management of foundation, endowment and pension portfolios is that most simply do not attempt to assess the systematic risk that is inherent in a given market. Asking the question "is the S&P 500 over valued?" is not addressed within the context of MPT.

Foundation, endowment and pension fund portfolios are driven by a achieving a targeted spending policy or a funding rate. Thus, their asset allocation is a function of what a consultant views as the expected return of a hypothetical asset allocation. Unfortunately, these asset allocations are often based on flawed assumptions putting portfolio assets at severe risk of loss. During periods of market underperformance, consultants are trained to provide advice that runs along the lines of: since you have a long investment horizon, stay invested because we can never time the market perfectly and the market eventually will come back.

The reality is that few consultants are set up to administer and implement a sophisticated risk management process which is designed to protect portfolio assets from severe market dislocations. In order to move to a "best practice" for the investment management and oversight of a foundation, endowment or pension fund portfolio, we have to move beyond MPT, recognize its inherent weaknesses

and assumptions and implement a risk management process that protects a portfolio from being impaled by market dislocations.

The Underlying Assumptions of Modern Portfolio Theory

In order for Modern Portfolio Theory to function, it requires several underlying assumptions. These assumptions have been challenged in the recent market activity of 2007 to 2009 and include:

1. Investors act rationally. Clearly, the liquidity-lead bull market escalation in asset values from 2002 to 2007 could be described as “irrational exuberance”. The market, which is a clearinghouse for risk and not a measure of risk in and of itself, was not pricing risk appropriately. As more money flowed into the capital markets, leverage increased and expected returns were distorted from reality. As the markets seized up in late 2007 and ultimately collapsed in 2008, investors again acted irrationally as securities were liquidated regardless of relative valuation.
2. There is no friction in the market and capital flows freely between a buyer and seller. As the capital markets seized up in 2008, leverage was forced out of the financial system faster than the system could handle. Examples of this deleveraging included: banks stopped lending to each other; banks stopped lending to businesses and consumers; corporations could not place commercial paper; and corporations could not borrow in the public market. As a result of this unprecedented seizing in our capital markets, the U.S. government implemented several programs that were designed to transfer the leverage in an orderly manner from the private sector to the government. The existence of these programs gnaws at the feet of free market capitalism. They also fly in the face of this important assumption that allows Modern Portfolio Theory any practical application.
3. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period. This implies that historic returns are representative of future expected returns. And, since investment returns are deemed to be random, it is fair to say that expected returns are random as well. This is much like driving a car while looking in the rear view mirror.
4. There is a positive relationship between risk and return. Over long time frames, there has been a positive return to both stocks and bonds. However, this relationship can breakdown over short and intermediate time frames. There is no axiom in the investment business that investment returns will *always* be positively correlated to risk.
5. Investors estimate risk on the basis of the variability of expected returns. Markowitz’s theory assumes that all investors desire to reduce the variability of their investment returns. The value of MPT was that it brought a measure of risk into the analysis of expected returns in financial assets. It accomplished this through the notion that it would be a good thing for investors if the variability of returns was minimized over a measured time period. The variability of returns is measured by the variance or standard deviation. While we would agree that standard deviation is a measure of risk, it is not *the* measure of risk. Investors may have other risk measures, such as a need to maximize the liquidity of a portfolio, the need to protect a portfolio from rising interest rates the need to maximize the income of a portfolio while minimizing its exposure to default risk, or the need to protect the portfolio from permanent value impairment.

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