

# Portfolio Management and The History of Risk

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The investment management of foundations, endowments and pension fund portfolios was challenged by the capital markets in 2008. According to Callan & Associates, the median endowment portfolio declined by -25% for the year, compromising spending policies and funding commitments across the country as a result. On the heels of a 26 year secular bull market, asset allocation of portfolios had become heavily weighted toward equities, returns on fixed income were dismal in a low interest rate environment and risk management was virtually non-existent. Somewhere along the way, a consistently assumed positive total rate of return replaced actually earning the targeted spending policy as the primary investment objective. 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.

Investment managers, fiduciaries, and clients need to re-examine asset allocation and risk measurement in order to better execute a process of effective risk management of their portfolios. This article is the first in a series which are intended to place the concept of investment risk in its appropriate historical context and then to propose alternatives to current accepted risk measures which have recently been demonstrated to be insufficient.

## The Prudent Man Rule

For over a century, the overriding tool for risk management of an investment portfolio was known as the Prudent Man Rule. With its origins going back to 1830, the Prudent Man Rule was the result of a judge's decision in a lawsuit over the estate of John McLean in Boston, Massachusetts. John Mclean had died in 1823 and left \$50,000 in trust to his wife for her to live off the "profits and income". After her death, the trustees were to distribute half the remainder to Harvard College and the other half to Massachusetts General Hospital. When Mrs. McLean died in 1828, the estate was valued at \$29,450. Harvard and Massachusetts General Hospital promptly brought suit against the Trustees for mismanagement of the McLean portfolio.

In rendering his decision, the judge concluded that the trustees had conducted themselves "honestly and discreetly and carefully, according to the existing circumstances, in the discharge of their trusts."<sup>1</sup> The judge continued with what became immortalized as the Prudent Man Rule:

Do what you will, the capital is at hazard. ....All that can be required of a trustee to invest is that he shall conduct himself faithfully and exercise a sound discretion. He is to observe how men of prudence, discretion, and intelligence manage their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested.

The Prudent Man Rule has been the standard for risk management of investment portfolios, particularly trust portfolios, for over 120 years.

## Harry Markowitz and "Portfolio Selection"

The June, 1952 edition of the *Journal of Finance* included a fourteen page article titled "Portfolio Selection" by an unknown 25 year old graduate student from the University of Chicago named Harry Markowitz. The paper, which was a result of Harry Markowitz's dissertation, was so innovative in its approach to the analysis of risk and return in the management of investment portfolios that it ultimately earned Markowitz a Noble Prize in Economics in 1990.

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<sup>1</sup> Harvard College v. Armory, 9 Pick. (26 Mass.) 446, 461 (1830).

As the story goes, one day while waiting for his professor to discuss a topic for his doctoral dissertation, Markowitz struck up a conversation with a stock broker sharing the same waiting room. At this chance meeting, the stock broker encouraged Markowitz to research and apply a mathematical discipline to the problems investors faced in the stock market. Markowitz's initial work, which was articulated in his article "Portfolio Selection", has influenced portfolio management and security valuation through the development of the Capital Asset Pricing Model (CAPM) and Modern Portfolio Theory (MPT). Prior to Markowitz, the study of price movements in publicly traded securities was limited and lacked mathematical rigor.

Markowitz created a useful theoretical construct for the analysis of the volatility of returns in conjunction with the expected returns for a portfolio of risky assets. An important insight from Markowitz's work is that the proper diversification of a portfolio will help to reduce the variability of returns. Modern Portfolio Theory allowed for the quantification of the variance of an asset's historic returns and then link this term to a measure of portfolio risk. However, in practice the assumptions underlying MPT are questionable and controversial.

One of the compelling elements of Modern Portfolio Theory is that it utilizes the variance of portfolio returns as a measure of risk. This was an important step for financial market and portfolio analysis because it was the first time that risk was solidified into a single number. In Markowitz's original treatises, he makes no mention of "risk"; he does however identify variance of return as the "undesirable thing" that investors try to minimize while maximizing expected return. We maintain that the use of standard deviation is a measure of risk, but not *the* measure of risk. Variance is a statistical measure of how widely the returns of a portfolio differ from their average return. Variance and standard deviation are essentially the same calculation and we use the terms synonymously. The greater the variance (or Standard deviation) around the average, the less the average return will signify about the expected outcome.

### Value at Risk

Risk management is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events.<sup>2</sup> Value at Risk (VaR) is one tool that attempts to quantify and manage portfolio or firm risk beyond a statistical measure. There is a difference between the measurement of risk and the management of risk. While MPT is a useful tool for portfolio management, it is limited by its underlying assumptions. MPT provides no direction for the assessment of market risk (systematic risk) or the management of risk beyond diversification of assets. VaR moves beyond MPT in the management of risk.

VaR was developed as a result of the market crash of 1987 as a systematic way to segregate extreme events (measured qualitatively) from everyday price movements (which are measured quantitatively). One of the major problems with a statistical approach to measuring the risk by calculating the variance of returns is that it does not adjust for *the direction* of an investment's movement: a stock can be volatile because it suddenly jumps higher, not just because it moved lower. VaR attempts to provide a measurement tool which converts the potential for a major portfolio loss into the amount of dollars at risk under a worst case scenario. Thus, VaR is not a *relative* measure of variability of returns to the benchmark's variability. VaR is represented as both a risk measure and a risk metric. Since VaR summarizes the risk of possible losses and arranges those distributions into a range of probabilities, VaR serves as a metric for risk analysis.

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<sup>2</sup> Douglas Hubbard "The Failure of Risk Management: Why It's Broken and How to Fix It" pg. 46, John Wiley & Sons, 2009