

Tutorial Notes

Class: M.Com, Semester IV (MC 4.3 / EC3)

Subject: Financial Institution & Market

Topic: Mutual Fund and its Risk Measures.

Prepared by: Dr. Aftab Alam

Faculty of Commerce, Karim City College, Jsr.

Mutual Funds

The money pooled in by a large number of people (or investors) is what makes up a Mutual Fund. This fund is managed by a **professional fund manager**.

It is a trust that collects money from a number of investors who share a common investment objective. Then, it invests the money in equities, bonds, money market instruments and/or other securities. Each investor owns units, which represent a portion of the holdings of the fund. The income/gains generated from this collective investment is distributed proportionately amongst the investors after deducting certain expenses, by calculating a scheme's "Net Asset Value or NAV.

There are five main indicators of investment risk that apply to the analysis of stocks, bonds, and mutual fund portfolios.

Alpha

Alpha is a measure of an investment's performance on a risk-adjusted basis. It takes the volatility (price risk) of a security or fund portfolio and compares its risk-adjusted performance to a benchmark index. The excess return of the investment relative to the return of the benchmark index is its alpha.

Simply stated, alpha is often considered to represent the value that a portfolio manager adds or subtracts from a fund portfolio's return. An alpha of 1.0 means the fund has outperformed its benchmark index by 1%. Correspondingly, an alpha of -1.0 would indicate an underperformance of 1%. For investors, the higher the alpha the better.

Beta

Beta, also known as the beta coefficient, is a measure of the volatility, or systematic risk, of a security or a portfolio, compared to the market as a whole. Beta is calculated using regression analysis and it represents the tendency of an investment's return to respond

to movements in the market. By definition, the market has a beta of 1.0. Individual security and portfolio values are measured according to how they deviate from the market.

A beta of 1.0 indicates that the investment's price will move in lock-step with the market. A beta of less than 1.0 indicates that the investment will be less volatile than the market. Correspondingly, a beta of more than 1.0 indicates that the investment's price will be more volatile than the market. For example, if a fund portfolio's beta is 1.2, it is theoretically 20% more volatile than the market.

Conservative investors who wish to preserve capital should focus on securities and fund portfolios with low betas while investors willing to take on more risk in search of higher returns should look for high beta investments.

R-squared

R-squared is a statistical measure that represents the percentage of a fund portfolio or a security's movements that can be explained by movements in a benchmark index. For fixed-income securities and bond funds, the benchmark is the U.S. Treasury Bill. The S&P 500 Index is the benchmark for equities and equity funds.

R-squared values range from 0 to 100. According to Morningstar, a mutual fund with an R-squared value between 85 and 100 has a performance record that is closely correlated to the index. A fund rated 70 or less typically does not perform like the index.

Mutual fund investors should avoid actively managed funds with high R-squared ratios, which are generally criticized by analysts as being "closet" index funds. In such cases, it makes little sense to pay higher fees for professional management when you can get the same or better results from an index fund.

Standard Deviation

Standard deviation measures the dispersion of data from its mean. Basically, the more spread out the data, the greater the difference is from the norm. In finance, standard deviation is applied to the annual rate of return of an investment to measure its volatility (risk). A volatile stock would have a high standard deviation. With mutual funds, the standard deviation tells us how much the return on a fund is deviating from the expected returns based on its historical performance.

Sharpe Ratio

Developed by Nobel laureate economist William Sharpe, the Sharpe ratio measures risk-adjusted performance. It is calculated by subtracting the risk-free rate of return (U.S. Treasury Bond) from the rate of return for an investment and dividing the result by the investment's standard deviation of its return.

The Sharpe ratio tells investors whether an investment's returns are due to wise investment decisions or the result of excess risk. This measurement is useful because while one portfolio or security may generate higher returns than its peers, it is only a good investment if those higher returns do not come with too much additional risk. The greater an investment's Sharpe ratio, the better its risk-adjusted performance.