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Modern Portfolio Theory: A Comprehensive Guide to Building Diversified Portfolios

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Description

Modern Portfolio Theory (MPT) is a widely recognized investment strategy that aims to maximize returns while minimizing risks through diversification. The theory was introduced by Harry Markowitz in 1952 and has since become a cornerstone of modern finance. This manuscript will provide an overview of MPT, its key concepts, and how it can be applied to build diversified portfolios. MPT is based on the concept of diversification, which involves investing in a range of assets to spread risk and increase the probability of achieving positive returns. The theory assumes that investors are rational and risk-averse, and seek to maximize their returns for a given level of risk. MPT involves two key concepts: risk and return.

Risk is measured by the variance or standard deviation of an asset's returns. The higher the variance or standard deviation, the riskier the asset. Return is the profit or loss made on an investment, expressed as a percentage of the initial investment.

The efficient frontier

MPT is built on the principle of the efficient frontier, which refers to the optimal portfolio that provides the highest expected return for a given level of risk. The efficient frontier is a curve that represents the set of portfolios that offer the maximum return for a given level of risk. Portfolios that lie on the efficient frontier are considered efficient, while those that lie below it are considered sub-optimal.

Portfolio construction

To construct an efficient portfolio, investors must first identify their risk tolerance and investment objectives. The next step is to select a range of assets with different risk and return characteristics. MPT recommends investing in a mix of assets such as stocks, bonds, commodities, and real estate. The idea is to create a portfolio that has a low correlation among its components.

Correlation refers to the degree to which two assets move in tandem. Assets with a low correlation tend to move independently of each other, which helps to reduce risk. MPT recommends investing in assets with a low correlation to create a diversified portfolio.

Once the assets have been selected, the next step is to optimize the portfolio. MPT recommends using mathematical models to determine the optimal mix of assets that provides the highest expected return for a given level of risk. This process involves calculating the expected return and variance of each asset and creating a portfolio that maximizes the expected return for a given level of risk. While MPT is widely used, it has some limitations. One of the key criticisms of MPT is that it assumes that markets are efficient, and all investors have access to the same information.

This assumption may not hold true in the real world, where markets can be inefficient, and information is not equally available to all investors. Another limitation of MPT is that it does not take into account non-financial factors such as Environmental, Social, and Governance (ESG) factors. This can be a concern for investors who want to align their investments with their values and beliefs. Modern Portfolio Theory is a powerful tool for building diversified portfolios that maximize returns while minimizing risks. The theory is based on the concept of diversification and the efficient frontier, which helps investors to identify the optimal portfolio for a given level of risk. While MPT has some limitations, it remains a cornerstone of modern finance and is widely used by investors around the world.

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