

an asset in BlackRock's overall portfolios, we need to understand the framework they're using to determine the asset allocations of the various asset classes they deploy.

The first thing a firm like BlackRock determines when building an investment strategy is to classify the investor. Typical classifications would include Individual vs. Institutional, and then among Institutional, you have Pensions, Endowments, Foundations, Insurance Company General Accounts, Nuclear Decommissioning Trusts, and you have variations in the size and scope of these. Within the pension category, you have Defined Benefit vs. Defined Contribution, where Defined Benefit Plans are typically the old-school trusts that give a formula (e.g., 2% of final salary per year of service) and Defined Contribution plans are the 401(k) or 403(b) or 457 for schools or governments, whose prevalence and ubiquity dwarfs that of Defined Benefit plans). Defined Benefit plans have the investment risk borne by the company providing the plan, while Defined Contribution plans shift the investment risk (as well as higher fees) to the individual and allow them to select from a menu of mutual funds. As the institutions are bearing the risk with Defined Benefit plans, they have a larger dependency on a manager like BlackRock, which is advising them on how to maximize their returns relative to their risk objectives. Within the Defined Benefit plan space, you generally have Corporations, Multiemployer Plans (Unions), and Governments, each of which is subject to a different set of constraints with regard to their investments.

Depending on the type of institution, the investment objectives will vary a bit. An individual has different liabilities than a company's pension. An individual wants to be able to pay for college, a wedding, and maybe leave an inheritance behind for their children. A pension wants to pay its claims a long time into the future. An endowment wants to be able to spend a certain portion of its trust every year on its mission. These institutions have these slight variations, but they can be basically summarized as follows: They are balancing the desire to be trusted to pay their claims in the future without being a drag on their institution to do so. The way that MPT balances these objectives is by devoting a portion of the portfolio strictly towards the minimization of risk, and another portion to the growth of the asset portfolio. Seems simple. The real keys we need are in the details about what assets are considered to minimize risk and what assets are suitable to grow the portfolio.

Under MPT, the first step of portfolio construction is to determine the risk-free asset. The existence of such an asset sets a starting point and anchor for a spectrum of risk and reward. A pension plan that is already paying off a lot of retirees might see itself on the side of the spectrum closer to the risk-free asset, while a pension with very young employees decades away from retirement might see itself on the other side of that spectrum. The second step of the portfolio construction is to determine the universe of investments that is available for consideration as one of the risky assets. The analyst would plot every asset from the risky universe by risk

(x-axis) and reward (y-axis) and mathematically optimize for the portfolios that best balance risk and reward. This optimization is plotted as the Efficient Frontier in Figure 4.

The second feature of MPT is the Capital Asset Pricing Model (CAPM), which introduces the concept of the “market portfolio” and simplifies the risky assets and the risk-free assets. The spectrum between a 100% risk-free asset and a 100% risky asset is represented by a line called the “Capital Market Line” (CML). When plotted along the axis of risk (x-axis) and reward (y-axis), the 100% risk-free portfolio would be a dot placed all the way to the left of the graph, and the reward would represent the yield of that asset. The line should be upward sloping, showing that the expected return will increase as risk is added. The portfolio with zero risk-free asset but 100% market portfolio will be the up-and-to-the-right endpoint of the CML.

The bridge between the academic exercise of allocating between “risk-free” assets and risky assets is connected by using US Government Bonds as the “risk-free asset” in the model. Everything stems from here. Once the efficient frontier is established, the CML is drawn between the 100% risk-free asset portfolio and the northwest-most tip of the efficient frontier. The point where the CML intersects with the efficient frontier is deemed the optimal allocation of the market portfolio.

While this might seem indirect, the anchor of the government bond being the risk-free asset makes the model