



Commitment Driven Investing: A Foreword

Asset Allocation in Focus

It is broadly recognized that asset allocation is the primary determinant of investment performance. No approach to asset allocation is perfect, and the imperfections of even the most popular approaches are well-known. In recent years, these imperfections have come under renewed scrutiny, as investment performance has been quite disappointing for many institutional and individual investors – DB and DC plans, foundations and endowments. These disappointments have jump-started a broad discussion regarding the asset allocation methodologies that many investors utilize.

Most DB plans, for example, utilize modern portfolio theory (MPT) as the primary tool for portfolio optimization. MPT is a fine economic theory that does well what it is intended to do – a single-period portfolio analysis for a hypothetical investor with indeterminate objectives. MPT was not designed for an investor with specific financial commitments that may extend for decades into the future. As a result, a policy portfolio that is optimal in MPT may not be optimal for a particular plan. In addition, MPT is not helpful in determining the usefulness of certain assets that may be beneficial to DB plans (e.g. matching bond portfolios, illiquid assets, inflation and interest rate hedges).

As another example, most DC plan participants have experienced substantial drops in their account balances recently. Losses have been especially painful for the investors in “near- or in-retirement” target date funds (TDFs). It appears that asset allocation methodologies utilized by many of these funds were inappropriate for the funds’ investors. The lack of theoretical substance in the glidepath design for most TDFs is highly undesirable.

Yet as another example, foundations and endowments have not had much success in the incorporation of their financial commitments into the asset allocation paradigm. Despite numerous attempts to extend the traditional framework to foundations and endowments, a typical foundation or endowment still utilizes MPT, even though MPT cannot incorporate this institution’s specific needs.

Overall, there are significant challenges in the asset allocation arena for major groups of institutional and individual investors. The need for a new approach to asset allocation that takes into account the best interests of the stakeholders of investment programs is clear.



Investing and Financial Commitments

Financial commitments play a special role in investing. Investors do not invest in a vacuum – they contribute to their investment programs and take a multitude of risks mainly to fund their financial commitments. A commitment – a future cash flow the investors strive to fund – is the primary reason a particular investment program exists in the first place. The objective of funding the commitment is the driving force behind the asset allocation and contribution strategies as well as the guiding light for risk taking.

DC plan participants endeavor to achieve secure retirements and contribute to their retirement accounts. DB pension plans promise to make future benefit payments to plan participants. Foundations and endowments pledge support to their causes. These are examples of financial commitments made at the present to have readily available assets in the future.

Over the last several decades, institutional and individual investors have managed their investment programs primarily via the risk/return analysis of their portfolios consistent with MPT. Due to recent experience, a growing number of practitioners are beginning to question the ability of MPT to produce meaningful recommendations to investors. After all, MPT completely ignores a particular investor's specific financial commitments. Regardless of these commitments, MPT performs one-period optimization of *future* asset values assuming that the asset value is known at the present.

For an investor with financial commitments to fund, the challenge is exactly the opposite. The future values – the commitments – are given. The challenge is at the present – to develop optimal asset allocation and contribution policies as related to the funding problem. There is a need for a new framework with a multi-period optimization methodology that incorporates the commitments and delivers optimal solutions *at the present*.

Financial commitments, their magnitude, timing and volatilities are at the core of this framework. To highlight the role of financial commitments, the framework is called *Commitment Driven Investing (CDI)*. A *financial commitment* is defined as a series of future cash flows. It is assumed that the investor's primary objective is to fund the commitment – to ensure that the money is readily available every time a payment is due. It is also assumed that the best interests of the stakeholders of various funding problems are manifested in the following objectives: to minimize the cost of funding the commitment, to minimize the riskiness of funding the commitment, and to maximize the commitment.

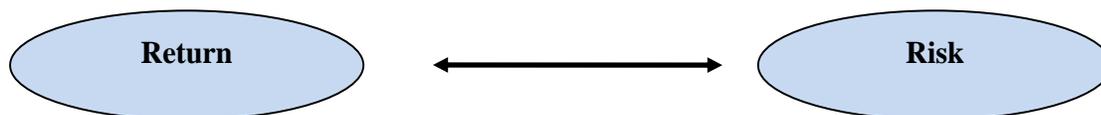


From a Line to a Triangle

In the traditional framework, a hypothetical investor's objectives have two major components: return and risk. The investor may want to minimize risk given expected return, or maximize expected return given risk. The picture is essentially *two-dimensional* (see *Exhibit 1*).

Exhibit 1

The Risk-Return Line

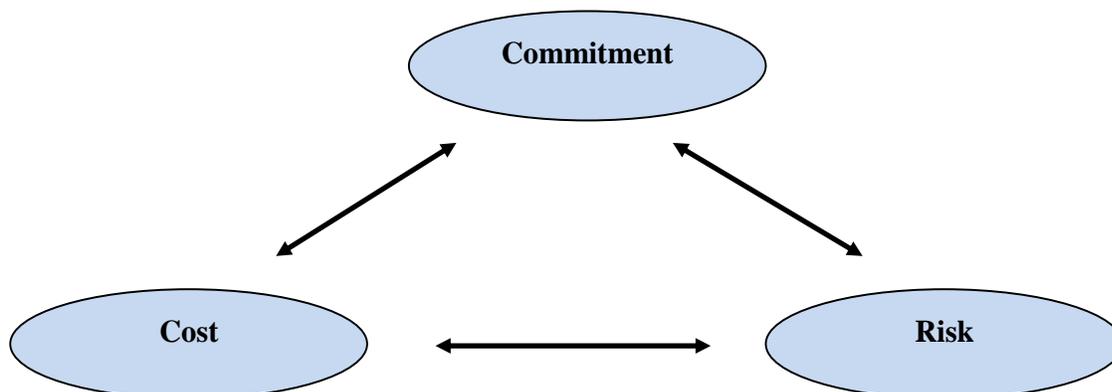


The presence of specific financial commitments alters the investor's objectives dramatically, as it adds another dimension to the objectives. For example, the stakeholders of a DB plan, given its pension commitment, may want to *minimize the cost of funding the commitment*. A foundation or endowment with a commitment to its mission may want to *minimize the riskiness of funding the commitment*. A DC plan participant that wishes to maximize the standard of living in retirement essentially endeavors to *maximize the sustainable commitment*.

Thus, the investor's objectives have three major components: commitment, cost, risk. The components of the funding problem form *the funding triangle*, and the picture is essentially *three-dimensional* (see *Exhibit 2*).

Exhibit 2

The Funding Triangle





Asset allocation may appear to be hidden in the funding triangle, but only seemingly so. Asset allocation plays a major role in the management of all components of the triangle. Asset allocation is one of the most important means of the optimization of the funding triangle. Asset allocation is in fact one of the main aspects of CDI.

The optimization objectives embedded in the two-component risk-return line are formulated according to the principle “given one component, optimize the other.” Namely, the objectives “given return, minimize risk” or “given risk, maximize return” generate optimal portfolios. It is important to note that both objectives lead to the same set of optimal portfolios – the classic mean-variance efficient frontier.

In the funding triangle, the situation is similar, although somewhat more complicated. The optimization objectives embedded in the funding triangle are formulated according to the principle “given two components, optimize the third”. One of the most consequential properties of the funding triangle is, under certain conditions, different optimization objectives lead to the same set of optimal investment strategies.

The glidepath design for target date funds is one of the most important applications of CDI. Given saving rates (“cost”) and risk aversion levels (“risk”), the CDI multi-period optimizer generates the optimal glidepath that maximizes the standard of living in retirement (“commitment”). It can be proven that, under common assumptions, this glidepath is the only solution to the standard of living maximization problem.

Conclusion

This paper gives a short introductory presentation of the rationale behind *Commitment Driven Investing*. This paper is a mere foreword – it just scratches the surface. More details about CDI, its scientific underpinnings, quantitative tools and optimization methodologies will be presented in further publications from *CDI Advisors Research*. The applications of CDI to the development of the cost-risk optimal policy portfolios for DB plans, the optimal glidepath design for target date funds, the asset-“commitment” analysis of foundations and endowments will be presented as well.

For more information, see *D. Mindlin, [Commitment Driven Investing: An Introduction](#)*.

For questions, comments, or more detailed presentation of the issues discussed in this article, contact **Dimitry Mindlin, dmindlin@cdiadvisors.com**.