Commentary

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Risk Management: Asset Allocation

- Asset allocation can help investors reduce portfolio risk without sacrificing potential returns, or increase potential returns without introducing additional portfolio risk.
- Risks that are not diversifiable at the individual asset class level can be partially mitigated at the portfolio level through intelligent asset allocation.
- SEI is a pioneer of goals-based investing, which means that our portfolio construction philosophy and process extends beyond risk appetite and return targets to consider how investors actually plan to use their portfolios.

What can Enlightenment-era cargo shipping conditions tell us about investing? Seafarers were the only game in town at the time for moving large volumes of cargo over long distances. But shipbuilding technology was not yet sufficient to prevent high incidences of shipwrecks, so losses at sea were a regular cost of business for suppliers.

Daniel Bernoulli, an 18th century mathematician, calculated that by splitting a large cargo shipment into smaller loads and sending them on separate ships, one could reduce the severity of potential losses.[1] The greater the segmentation, the more effective the approach proved at minimizing losses, down to a quantifiable floor. Bernoulli even recognized his novel findings were applicable to "those who invest their fortunes in foreign bills of exchange and other hazardous enterprises."

A Less-Hazardous Enterprise

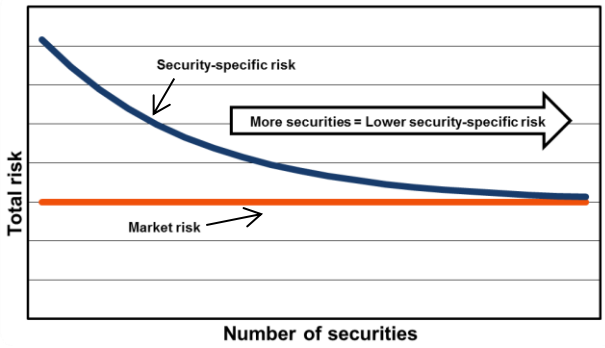
Indeed, allocating capital in a diversified manner can reduce the potential severity of losses. The more optimal the diversification, the greater the potential risk-reduction benefit.

But diversification and asset allocation are invoked so frequently by investment managers that they can begin to sound hollow. Despite that, these powerful concepts should not be taken for granted, since they are the key to understanding risk management at the portfolio level.

We can think of diversification as a quality — an investor can attain various degrees of it. Revisiting our seaborne analogy, a supplier with a large cargo shipment split between two ships would be less diversified than a competitor whose similar-sized shipment was divided among a fleet of ten ships. Although the design and condition of the ships also needs to be considered, and not just in isolation; what challenges will the journey impose?

Diversification can be achieved within an individual asset class *and* across asset classes, although the risk management concerns differ somewhat at each level. For example, by allocating assets among a multitude of large U.S. company stocks as opposed to just a few, an investor can reduce the potential negative impact of company-specific risks on their U.S. large-cap allocation (and, by extension, the whole portfolio). Exhibit 1 depicts risk composition at the asset class level.

Exhibit 1: Total Risk = Security-Specific Risk + Market Risk



Diversification within individual asset classes can only go so far, however. An investor will still experience the overall volatility associated with a given asset class. Recessions, broad-based interest-rate changes, corporate-tax increases and other issues would affect most or all investments in an asset class.

[1] Bernoulli, Daniel. "Exposition of a New Theory on the Measurement of Risk." (1738)

At the portfolio level, diversification can be achieved by allocating among various asset classes. For example, rather than just investing in a 60/40 combination of U.S. stocks and bonds, an investor might also own international developed-market stocks, emerging-market stocks, investment-grade corporate bonds, high-yield bonds, and other asset classes.

What benefit can be derived from a broadened asset allocation?

Risks that are not diversifiable at the individual asset class level can be partially mitigated at the portfolio level, as long as asset classes respond in different ways to those risks. Different asset classes may exhibit different degrees or directions of sensitivity to certain risks. For example, bonds tend to be more sensitive to interest-rate changes than stocks, and the sensitivity is typically negative (bond prices tend to fall as interest rates rise). Asset allocation tries to diversify among a portfolio's various sources of risk.

Ultimately asset allocation can help investors reduce portfolio risk without sacrificing potential returns, or increase potential returns without introducing additional portfolio risk.

Making Assumptions

There are two distinct steps in the development of our portfolio strategies, both of which are undertaken by SEI's aptly named Portfolio Strategies Group (PSG).

We first establish capital market assumptions (CMAs)* — asset-class-level projections for returns, risk (i.e. volatility of returns) and correlation. The inputs that PSG employs to generate these expectations will inevitably change over time, so our CMAs are subject to periodic reviews and updates.

The development of CMAs provides meaningful insight on the sensitivities of each asset class by demonstrating how we expect them to interact. Correlations tell us how one asset class might be expected to perform alongside another asset class, which is critical to portfolio construction.

Our correlation assumptions are purposefully conservative, as correlations between many asset classes will tend to rise during periods of market distress, reducing the expected benefits of diversification when they are needed most.

And while asset-class return expectations are a necessary prerequisite to portfolio strategy development, we believe the investment portfolio deserves equal scrutiny under a risk-weighted lens.

Recall our 60/40 portfolio from earlier, with 60% of its capital committed to U.S. stocks and the remaining 40% to bonds. Rather than considering this portfolio in *capital-weighting* terms, let's look at its *risk-weighting*.

Given that bonds are generally considered lower-risk investments relative to stocks, a dollar invested in bonds generally contributes far less risk to a total portfolio than a dollar invested in riskier assets such as stocks. The equity market risk associated with the 60% allocation to U.S. stocks would represent far more than 60% of the portfolio's total risk.

Portfolio Optimization and More: A Question of Balance

CMAs serve as the construction materials with which we build our portfolio strategies. PSG begins with a target return or risk level, and then seeks to create a portfolio with the optimal combination of asset classes to attain that target.

The traditional industry approach is to either maximize expected return for a given risk tolerance, or minimize expected risk for a desired rate of return. While we certainly incorporate this approach in portfolio construction efforts, we are also a pioneer of, and longstanding adherent to, goals-based investing. The next paper in this series will address the subject in detail, but with goals-based investing we essentially take a more nuanced view of risk and human behavior.

We believe it is also important to strike a better balance among a portfolio's overall sources of risk than traditional approaches to asset allocation tend to do, as plain vanilla stock and bond portfolios tend to be overexposed to certain risks and underexposed to others.

In short, if asset allocation is a balancing act, then our CMAs and optimization approach enable us to measure and target a suitable balance. Read Allocation the SEI Way for a more extensive look into our asset allocation philosophy and process.

Risk Management: Goals-based Investing

Our series on SEI's approach to risk management will continue with a paper that explores the risk considerations inherent in developing goal-based investment strategies.

We also plan to conclude this series over the coming months with a look at how SEI's enterprise-level risk management capabilities support our investment and portfolio management operations.

*Please see Important Information regarding SEI's Capital Market Assumptions at the end of this paper.

Important Information

This material represents an assessment of the market environment at a specific point in time and is not intended to be a forecast of future events, or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice and is intended for educational purposes only.

There are risks involved with investing, including loss of principal. Diversification may not protect against market risk.

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Important Information regarding SEI's Capital Market Assumptions

SIMC develops forward-looking, long-term capital market assumptions for risk, return, and correlations for a variety of global asset classes, interest rates, and inflation. These assumptions are created using a combination of historical analysis, current market environment assessment and by applying our own judgment. In certain cases, alpha and tracking error estimates for a particular asset class are also factored into the assumptions. We believe this approach is less biased than using pure historical data, which is often biased by a particular time period or event.

The asset class assumptions are aggregated into a diversified portfolio, so that each portfolio can then be simulated through time using a monte-carlo simulation approach. This approach enables us to develop scenarios across a wide variety of market environments so that we can educate our clients with regard to the potential impact of market variability over time. Ultimately, the value of these assumptions is not in their accuracy as point estimates, but in their ability to capture relevant relationships and changes in those relationships as a function of economic and market influences.

The projections or other scenarios in this presentation are purely hypothetical and do not represent all possible outcomes. They do not reflect actual investment results and are not guarantees of future results. All opinions and estimates provided herein, including forecast of returns, reflect our judgment on the date of this report and are subject to change without notice. These opinions and analyses involve a number of assumptions which may not prove valid. The performance numbers are not necessarily indicative of the results you would obtain as a client of SIMC.

We believe our approach enables our clients to make more informed decisions related to the selection of their investment strategies.

For more information on how SIMC develops capital market assumptions, please refer to the SEI paper entitled "Developing Capital Market Assumptions for Asset Allocation Modeling." If you would like further information on the actual assumptions utilized, you may request them from your SEI representative.