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Developing Capital Market Assumptions for Asset Allocation Modeling

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Snapshot

- Estimating and monitoring capital market assumptions are integral parts of SEI's strategic asset allocation process.
- We design our assumptions to be long-term in nature and intend for them to reasonably reflect a wide range of return behaviours that asset classes can potentially exhibit through uncertain market conditions.
- Estimating these assumptions requires an extensive analysis of the key drivers of risk and return in each asset category. The resulting assumptions include estimates of annual return, volatility, and correlations by asset class, as well as prospective ranges for these values over various time horizons.

Developing asset-class return expectations

We use a combination of empirical and forward-looking analyses to set our asset-class return expectations. Empirical analysis ensures that our assumptions reflect historical performance. Although historical performance does not predict future results, history does reveal fundamental similarities and differences between individual asset classes and markets. We employ a variety of models to analyse historical data and isolate the fundamental characteristics of asset classes; to the extent that a given set of historical data may be skewed by unsustainable trends or events, we quantify and remove the effects of those trends. Before finalising a return expectation, we review the resulting quantitative return estimates for each asset class—along with a qualitative assessment of long-term relationships between asset classes. Our qualitative analysis is targeted toward offsetting the misleading effects of unsustainable short-term valuations or trends on historical data and capturing structural changes that are not yet reflected in the historical data. Ultimately, capital market assumptions at SEI are meant to reflect return levels and behaviour that we believe are likely to prevail over long time periods.

Global equity returns

To derive empirical estimates for global equity, we use discounted-cash-flow models that consider several measures of growth, such as dividend growth, earnings growth, sustainable earnings growth and economic growth. Our use of economic, accounting and empirical growth estimates provides what we believe to be a reasonable range within which to calibrate long-term assumptions. We also examine multiple time periods in order to assess the relevance of various trends. By applying the same real-return estimate globally to each equity market, our approach reflects the convergence of global markets. It also shows that historical returns are not statistically different across markets when adjusting for inflation and volatility.

Global fixed-income returns

For global fixed income, we derive empirical estimates by using a bottom-up, four-factor model that considers yield, credit, convexity and yield-curve roll-down. This is combined with a top-down approach that adjusts historical realized annual returns to counter the impact of interest-rate changes over the period. We construct return assumptions for asset classes such as high-yield and emerging-market bonds by using a return premium over investment-grade bonds. The estimated return premium is based on historical yield spreads and historical return premia, adjusted for default loss rates and the impact of changes in bond ratings.

Historical data

The empirical models that we use for estimating asset-class returns are based on a variety of data sources and time periods. While all available information is taken into account, we often place a greater emphasis on specific sub-periods that we believe are most representative of current markets. For example, historical data from 1974 to the present are relevant for evaluating the major currencies because 1974 marked the end of the Bretton Woods system of fixed exchange rates (a post-World War II agreement among major developed nations that pegged the value of currency to the value of gold in order to facilitate international trade).[1] However, many emerging markets have changed currency regimes more recently, which limits the amount of relevant historical data from which we can make inferences.

In our view, data limitations can be mitigated by evaluating asset-class returns on a global basis. By combining and contrasting historical performance across different markets, we can more readily distinguish performance driven by fundamentals from performance better attributed to chance. For markets without a long history of data, we can often extend inferences from other markets with shared characteristics.

Developing asset-class risks and correlations

Over a given measurement period, the variance and covariance of return distributions are more influenced by the mean return than they are by short-term inefficiencies and valuations. Consequently, we can use history to a larger degree for risk and correlation assumptions than for return assumptions. However, risks and correlations do change as economic fundamentals change; therefore, it is important to focus on the most relevant periods of history and make qualitative adjustments where appropriate. To accomplish this, we review risks and correlations on a rolling basis in order to observe changes over time and capture the relative peaks during times of market dislocation.

Risk

It is well established that investors are more concerned about the risk of significant losses than they are with the potential for outsized gains. Accordingly, asset-class risk assumptions are meant to capture the frequency and severity of losses. Our approach estimates the risks directly by assessing the potential extreme market scenarios that could occur and then deriving the standard deviation that's consistent with those risks. This involves following a handful of procedures, including ensuring that we factor in the worst two-year historical return over a given time period. To further adjust the final result, we use metrics such as skew, kurtosis and the impact of serial correlation.

Correlation

During an economic downturn, correlations among risky assets tend to rise while correlations between "safe" assets and risky assets tend to fall. We consider several different scenarios for correlations, including a baseline scenario as well as other stress scenarios in which correlations are typically assumed to be higher than the baseline. Under our stress scenarios, we raise correlations halfway between their baseline levels and 1.00 (perfect positive correlation). We generally seek to set baseline correlations high enough that the corresponding stress correlations approach the highest historical correlations over rolling periods. This method seeks to ensure that assets that tend to experience sharp losses simultaneously are not unduly rewarded for their illusory diversification advantages.

[1] https://www.nber.org/system/files/chapters/c6876/c6876.pdf

Foreign currency

We maintain one set of expectations for each asset class in local-currency terms and another set of assumptions for each currency. Our currency assumptions include expected returns and risks as well as correlations among currency pairs and between currencies and assets. The combination of currency and asset-class assumptions provides the inputs necessary to calculate asset-class risk and correlation assumptions under different base currencies. The impact of foreign currency on return assumptions is based on capital-market theory. Under the uncovered interest-rate parity condition, interest-rate differentials determine the expected exchange-rate changes. This implies that the expected return from currency hedging will be zero over the long-term. Therefore, in most cases, return assumptions are largely unaffected by foreign currency translation. There are some exceptions to the uncovered interest-rate parity condition, primarily in emerging markets. Deviations may be appropriate when persistent risk premia are embedded in the global interest-rate markets and can be captured by foreign currency hedgers.

Other considerations

For asset classes that exhibit signs of infrequent valuation, true underlying pricing activity may be masked by stale pricing. We statistically adjust for this by using a de-lagging (or, “unsmoothing”) methodology in order to more accurately represent the pricing activity. Making this adjustment increases overall risk and absolute correlation with other asset classes. We use historical monthly and quarterly returns to estimate risk and correlation where available. Annualised monthly (and quarterly) risk and correlation figures reflect our reporting and rebalancing frequency; therefore, in our view, these are appropriate gauges of investor perceptions.

Expectations for active management

Asset-class alpha

Our method for generating expected alphas is similar to other aspects of our process. The inputs are:

- Historical analysis of achievable alphas for each asset class over a variety of market conditions
- Analysis of reward by asset class given the level of active risk (for example, expected information ratios)
- Qualitative review of structural changes in each asset class that might affect the historical value-add when projected into the future

The historical analysis primarily uses rolling three- and five-year manager-universe distribution data, focusing on the top-two quartiles of alpha in each universe. We verify the historical alpha number by using a “rewarded risk” measure. For this, we apply a realistic, high-quality information ratio (usually in the area of 0.50) to a distribution of expected tracking errors in order to obtain alpha estimates for a given manager universe. Such an information ratio would be consistent with high-quality managers across many asset classes.

Developing a better understanding

The result of our analyses is a series of inputs that produce a picture of how we believe portfolios are likely to behave through time. Rather than accurately predicting performance, the benefit of this is in having a better understanding of the relationships between assets classes.

Because the characteristics of asset classes are constantly changing, we also examine stress assumptions. We employ a dynamic model to manage the numerous assumptions required to estimate portfolio characteristics under different base currencies, time horizons and inflation expectations.

Important Information

CMAs are not predictions of how asset classes will perform or reliable indicators of future performance; instead, they are expected long-term characteristics of asset classes. Different tools and models can simulate various market conditions using these assumptions as inputs. CMAs are used in the strategic asset allocation process, for asset/liability studies, and in proposal-generation systems. All assumptions are pre-tax and gross of any fees or expenses related to investing.

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