Considerations in Allocating to Alternative Investments

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Introduction

When it comes to allocating to traditional asset classes such as stocks, bonds and cash the popular mean-variance optimization approach is usually satisfactory. Mean-variance optimization depends heavily on the quality of an investor's projections regarding risks, returns, and correlations of asset classes. Good practices include ensuring that such projections meet three criteria:

- *Reflect current market conditions.*
- *Are comparable across asset classes, i.e., consistently measure risk, return, and liquidity.*
- *Are integrated across asset classes.*

However, naively extending this approach does not work when constructing strategic portfolios using alternative asset classes: traditional equity and fixed income blended with hedge funds, managed futures, structured credit strategies, private equity, and real estate. Trying to include them into an optimized portfolio recommendation is no small task.

Developing Projections

Unlike traditional investing, forecasting risk and return becomes challenging when dealing with alternative investments. These have shorter data histories, expose investors to new kinds of risk and, in some cases, offer limited liquidity. Our methodology attempts to purposively remove differences between alternative and traditional asset classes so that investors can evaluate them in a like-for-like fashion. Our approach is threefold. First, we modify the historical characteristics of each alternative asset class to ensure that they are comparable to fixed income and equity. Second, we develop an integrated set of return forecasts using historical relationships among alternatives and traditional asset classes. Third, we add constraints to capture investor preferences.

Risk Forecasts

Alternative asset classes differ from traditional asset classes in several ways, making it difficult to properly characterize risk. The differences, as well as our approach to correcting them, include:

Risk in non-traded, illiquid assets

Alternative asset classes differ from traditional asset classes in several ways, making One of the most difficult problems investors face is how to compare the risk in traded assets, such as fixed income and public equities, to the risk in non-traded assets, such as real estate and private equity. The fundamental challenge is that estimating risk from non-traded assets requires an investor first to "mark to market" the valuations. We have developed a methodology that incorporates information of various kinds to estimate risk on a basis comparable to that of liquid assets. Our methodology suggests that both risk-adjusted returns and diversification benefits from alternative asset classes are less than popularly believed. g it difficult to properly characterize risk. The differences, as well as our approach to correcting them, include:

Restrictions on tradability

Many alternative assets set restrictions on when the investors can exit the investment— referred to as "tradability." These restrictions affect the ability to rebalance, respond to new investment opportunities and meet unforeseen cash requirements. In exchange for these limitations, our research indicates that investors are paid a premium for locking up their assets in addition to the premium they can expect in the long run for taking investing risk. The failure to appropriately account for this premium, however, can lead investors to inappropriate portfolios. Therefore, we recommend a portfolio construction approach that accounts for these restrictions by incorporating tradability into the traditional risk/return tradeoff framework.

Reporting biases

Because industry returns are usually reported for a sample of funds, the performance of many funds—which often, but not exclusively, turn out to be those funds that perform poorly—do not appear in published indices. This reporting bias has the potential to artificially inflate reported performance. Our approach allows investors to correct for bias in returns.

Serial correlation in fund returns

As is the case with the highly illiquid assets such as real estate and private equity, certain hedge fund strategies such as distressed debt are characterized by pricing distortions in reported returns. Serial correlation refers to correlation of returns over time, and typically occurs when assets are traded infrequently. This can lead to an understatement of risk and indeed we find that,when corrected for serial correlation, historical risk increases significantly compared with reported values.

Strategy drift

Alternative investments are often very lightly regulated. Fund managers can and do change their investment focus over time to seek higher returns, introducing potential risks that investors may not be aware of. This risk can be mitigated by aggregating funds into more stable units, thus attempting to limit strategy drift at the portfolio construction stage.

Tail risk

Unlike traditional investments, some alternative investment strategies are peculiarly subject to the risk that realized returns will be significantly below their expected average. For most investors who are particularly concerned about limiting losses, this potential for significantly below-average returns means that traditional measures of risk, such as volatility, might be inappropriate. We employ a framework that allows investors to construct portfolios of alternatives that explicitly account for downside, or tail risk.

Fees

Reported index returns are net of manager fees. However, many investors access alternative investment products, such as hedge funds or private equity, through a fund of funds. This introduces a second layer of fees that the reported returns do not capture. As a result, reported returns overstate the value captured by most investors. We account for this by stripping out fund of fund fees from the historical data.

Appropriate time frame

Over short time periods, returns for an asset class can depend heavily on that asset class's stage in the investment cycle. For example, equity returns look very different in bull markets than in bear markets. To properly characterize the risks and returns of an asset class, investors

must analyze these characteristics over a full investment cycle. However, cycles for certain alternative investment classes, such as real estate or managed futures, are longer than those for equity and fixed income. We adjust the length of historical data used for each alternative asset class depending on the length of the investment cycle.

After modifying the historical data to account for the issues listed above, we use the modified data to compute the risk characteristics – standard deviations and correlations – of each asset class. The differences can be dramatic.

Return Forecasts

Using historical return forecasts to construct portfolios is problematic, because return characteristics are much less stable than risk characteristics. This problem can be circumvented, however, by recognizing that relative returns among asset classes are far more stable. For example, while equity returns may vary substantially over different time periods, the spread between equity and cash is far more consistent over time.

Our approach starts with the forecasts for traditional asset classes described in the previous section. From the basic building blocks listed earlier, we construct forecasts of average returns for alternatives. For each of the alternative asset classes, we begin with a spread-based method, mirroring the approach taken on the traditional side, which calculates the differences between returns in alternative asset classes and related traditional assets.

For example, to calculate a forward-looking return for each hedge fund strategy, we begin with the spread to cash as a basis. These spreads, as it turns out, have been more stable over the period for which hedge fund return data have been collected. We then estimate the relationship between this spread and other factors that drive hedge fund returns, exposure to equities and exposure to credit. The results of this analysis allow us to tie nominal hedge fund return estimates to our forecasts of the other asset classes by incorporating the forward-looking forecast for cash, equities and credit. Following our earlier discussion, we then adjust these forecast spreads for many other factors—such as survivorship and selection bias, operating expenses which might be incurred at a fund of

funds level and indicative fund of funds fees.

For managed futures, we also use the spread to cash as a basis for forecasting. Here, again, weadjust for fees incurred when they are not presented net of fees. As separate accounts, they are generally reported net of the fees a fund of funds manager would take, for example. As a result, it might seem as if no additional adjustment for fees is necessary. Notwithstanding that point, however, managed futures fees will still differ across various investor types. We therefore make an additional adjustment to the spread-based forecast to account for fees that might be incurred by investors who invest in smaller lot sizes.

Private equity includes several sub-classes, including venture capital, special situations investing and leveraged buyouts amongst others – any non-publicly traded security. Real estate includes investment real estate – which will sometimes involve a judgment call on whether to exclude one's residence. For the private equity classes, including leveraged buyouts, we calculate the spread between returns in each of these categories to the public equity market. We then add this spread to the forecast public equity return to arrive at the forecast. Finally, for real estate, we apply a similar methodology that not only accounts for interest rate movements, but also for vacancy rates and net operating income. This assembly of return forecasts creates a complete set of parameters for use in constructing portfolios: risk, return and correlation.

Constraints

As in any asset allocation exercise, it is necessary to consider constraints on asset categories. This is because models are only approximations of reality, and do not capture the full set of criteria on which investors base decisions. Some of these criteria include:

Tradability

As described earlier, many alternative assets set restrictions on when the investors can exit the investment, which imposes a cost on the portfolio. Therefore, we allow investors to constrain the amount of illiquidity in their portfolios based on their cash flow requirements.

Tail risk

Although, in our earlier discussion we attempted to remove unaccounted tail risk, some residual tail risk might still exist. All things being equal, investors should constrain allocations to asset classes with significant tail risk, as tail risk increases the probability of significant losses. Therefore, our optimization algorithms take negative skewness and excess positive kurtosis effects into account.

Confidence

Even after modeling each asset class, investors will have more confidence in the forecasts of some asset classes relative to others. This can be due to the length of data with which our research methodology operates. Whereas, at most, alternative asset classes tend to have approximately twenty years of data, data at least four times that length are available for many publicly traded assets. Furthermore, some asset classes experience more rapid change in their structure than others. For example, the hedge fund industry has been characterized in the last few years by a decline in returns. In contrast, equities and fixed income have been much more stable. Therefore, our optimization algorithms apply levels of confidence to different forecasts.

Market capitalization

Another indicator that is generally used as a basis for ensuring diversification is the market capitalization of the various asset classes. This is because an asset class's relative market capitalization reflects the market's consensus regarding an appropriate allocation. If the market capitalization of anasset class is small relative to other asset classes, investors should constrain allocations to this class, unless their beliefs regarding future performance differ significantly from the market consensus. Therefore, our default constraints take this into account, but we allow investors to override this

Risk tolerance

In general, investors who are more willing to take risks will be more willing to bear unaccounted for downside risk and uncertainty about forecasts. These investors may generally place less restrictive constraints on their portfolio. Therefore, our defaults allow investors to specify multiple bands of risk tolerance.

Liquidity preference

As with the risk levels, liquidity levels should be selected based on client objectives and tolerance for illiquidity. In general, we do not suggest one absolute recommended liquidity level for a given level of risk.

Rebalance

Given current portfolio and target portfolio one may simulate returns over multiple periods after incorporating (1) cash flow requirements/ contributions and (2) rebalancing costs. Rebalancing occurs when a simulated allocation differs from target allocation by threshold amount. Income/dividends are often used to service cash requirements and rebalancing needs before selling of assets. However, illiquid assets, by their very nature, are impossible to rebalance regularly; one cannot easily reduce a position at any given time, and building a position is usually subject to discrete windows of opportunity. So illiquid allocations are generally not rebalanced each quarter the way liquid assets are. They however do need to be reviewed and considered in the ongoing liquid asset class rebalancing, as the two bear on each other.Rather, the illiquid classes are rebalanced on a multi-year (5-7 years) cycle.

Conclusion

A pre-requisite for constructing any great portfolio is identifying skilled managers that an investor believes can consistently generate alpha. Although investors intuitively recognize the value of alpha, they have historically lacked the tools required to build portfolios that include active managers. ActiveAllocator is trying to address newer challenges by designing a rigorous, integrated and, perhaps most importantly, practical framework for active investing. Extensive testing provides evidence that our framework can significantly improve upon more traditional portfolio construction methods. Our approach is unique in that it:

- *More accurately measures manager alpha and beta on historical basis.*
- *Explicitly forecasts manager performance by combining historical data with other information.*
- *Quantifies unique risks of active managers.*
- *Accounts for these unique risks when constructing portfolios.*

While the details of this approach are outside the scope of this note we have tried to summarize the general principles here.