

Marketable Alternatives

Einstein had it right

by Andrew Lo

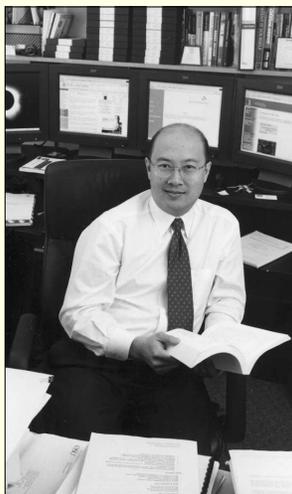
Despite the collapse of Long-Term Capital Management less than five years ago, the memories of those troubled times are apparently gone, replaced by concerns about the economic climate and the dearth of attractive investment opportunities. Not surprisingly, interest in alternative investments has skyrocketed.

Along with opportunities for the alternative investments industry, institutional investors bring new challenges, underscoring the gap between them and hedge fund managers. The challenges revolve around risk management — after all, outsized returns are usually accompanied by outsized risks — and fall into three categories: determining investors' risk preferences, developing risk models for alternative investments, and blending quantitative and qualitative approaches to manager selection and capital allocation. Any complete risk management protocol should address each of these.

Understanding risk preferences

Ironically, despite all of the many tools offered to individual investors — risk-tolerance surveys, “what-if” scenario simulators and lifetime financial-planning software — there is virtually nothing comparable for helping institutional investors determine their collective risk preferences. Perhaps the magnitude of this challenge is too daunting for any single manager or consultant, but without a clear understanding of an investor's risk preferences, it is impossible to manage risks properly or to formulate an appropriate investment policy. That institutional investors are almost always represented by a small group of individuals makes “risk preferences” even more difficult to quantify, which is all the more reason to take up this challenge.

Consider the case of a pension fund that enjoyed a surplus of 5% just two years ago, but finds itself under-



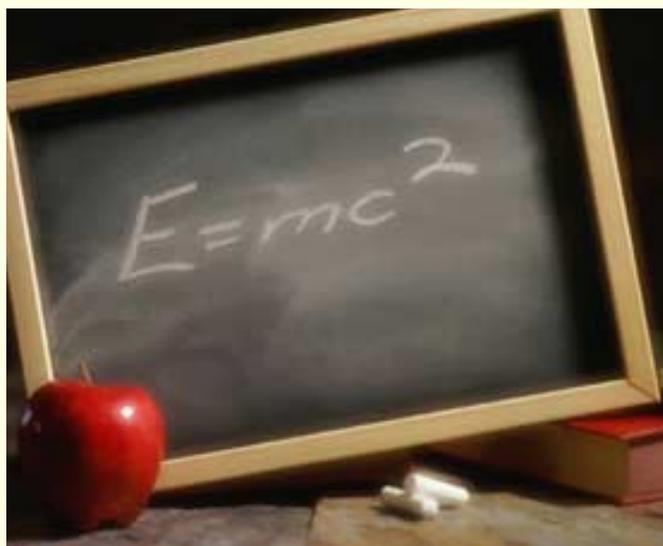
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funded by 3% today. Two years ago, the fund's investment committee was conservative, lowering its equity allocation so as to preserve its sur-plus; faced with a 3% deficit, the investment committee has become more aggressive. This fund's risk preferences have changed significantly as a result, and while academics can debate the rationality of such preference reversals, they are a reality that should be addressed explicitly. By developing a better understanding of the dynamics of group decision-making processes and the risk preferences that they represent, institutional investors will be better prepared to deal with the inevitable swings in market conditions.

Risk models for hedge funds

With an investor's risk preferences in hand, the next challenge is to develop a concrete representation of the risks that are specific to each investment opportunity. This is relatively straightforward for long-only investments involving traditional asset classes, but the risks of alternative investments are more complex in nature and scope. Consider the differences between an equity long/short fund and a fixed income arbitrage fund: for the former, important risk factors include the aggregate stock market, style exposure (value/growth, small cap/large cap), sector exposure, stock-loan limitations, “short squeezes,” earnings surprises, corporate actions, and other types of “event” risks; for the latter, important risk factors include the dynamics of the yield curve, inflation, central banking policy shifts, macroeconomic events, credit spreads, default probabilities, and, for instruments such as mortgage-backed securities, prepayment probabilities and the dynamics of the housing market. There is remarkably little overlap in these two sets of risk factors, highlighting the need for more sophisticated *strategy-specific* risk models.

Finally, there is the dichotomy between the quantitative, process-oriented approach of traditional long-only portfolios — mean-variance optimization, risk budgets and factor-based performance attribution — and the qualitative approach that is the norm for alternative investments. Because of the heterogeneity of alternatives and the wider latitude that hedge fund and private equity managers have in deploying their capital, investors focus primarily on personnel, operational risks and track records. Also, a common heuristic for allocating capital is to give more to managers who have performed well recently, and to withdraw capital from managers with losses, hence the term “hot money.” For certain types of managers, such a heuristic is sensible, but not for others. For example, managers with “mean-reverting” returns — where positive returns tend to be followed by negative returns and vice versa — should be given more capital just after experiencing losses and capital should be withdrawn just after experiencing gains.



Integrated risk management

Rather than choosing between a qualitative and quantitative approach, a better alternative is to integrate the two. This is easier said than done because, very often, such an integration is mistakenly implemented as a series of “manual overrides” to a poorly-designed static

portfolio optimization process. A true integration of the investment process for alternatives might consist of the following five steps:

1. Determining the risk preferences, financial objectives, and constraints (if any) of the investor
2. Selecting those managers for whom qualitative due diligence reviews will be conducted
3. Constructing risk models for the investment styles and funds in the universe
4. Combining the qualitative information from (2) with the risk models developed in (3) to arrive at optimal capital allocations, using either static or dynamic optimization methods that can incorporate qualitative judgments in a consistent and transparent fashion (e.g., a Bayesian framework)
5. Conducting regular performance- and risk-attribution studies to reassess both the qualitative and quantitative aspects of each fund

Unfortunately, many of the tools of traditional investment management — portfolio optimization, risk models, style analysis and performance attribution — are not yet applicable to alternative investments. However, new financial technologies are being developed, so an integrated approach may not be far off.

These new technologies will create additional complexities, but this may well be the cost of doing business in the more challenging area of alternative investments. When chided for the complexity of some of his scientific theories, Albert Einstein replied, “A theory should be made as simple as possible, but not simpler.” The same can be said for managing alternative investments — it should be made as simple as possible, but not simpler. ■

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