
Risk Management for Institutional Funds

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Many investment managers agree that the traditional approach to asset allocation and risk management is “dead.” No consensus has emerged on a new approach, but a risk-driven approach is gaining popularity. Many institutions are exploring the use of a more dynamic asset allocation process. Any new approach should be adopted on the basis of the investment beliefs of the organization, the governance setup of the organization, and the skill set of the staff.

Good risk management for institutional investors should start with the design of the overall asset allocation framework. The investment industry applies a lot of effort to measuring risk by using various sophisticated techniques. One question, however, that is not asked enough is, How does measuring risk affect the investment decision-making process within an institution? The answer to this question starts with designing an appropriate asset allocation framework that allows sufficient flexibility to alter the portfolio in light of new information.

I will start by briefly discussing some of the lessons for risk management and asset allocation that can be drawn from the global financial crisis. I will also discuss what I believe is wrong with the traditional asset allocation approach that is used by many institutional investors. Then I will propose a better way to design the investment decision-making process. I will talk about two aspects of that process: how to determine the long-term neutral asset allocation and how to manage the asset allocation dynamically over time.

Some Lessons from the Global Financial Crisis for Asset Allocators

Over the last 10 years, endowments and foundations of more than \$1 billion have achieved about a 6 percent nominal rate of return (excluding the last fiscal year from July 2010 to June 2011). Pension funds performed slightly worse over this period, achieving about a 5 percent nominal rate of return. In contrast, the U.S. Treasury market overall had a

return over the same period of about 6.1 percent, and long-term Treasuries had an 8.2 percent return. Endowments and pension funds would have done just as well if they had been invested in U.S. Treasuries; it would have been a better match for pension funds' liabilities, and endowments would have had ample liquidity during the global financial crisis. It is interesting that despite all the complexity in those portfolios (e.g., allocating to hedge funds and private equity), institutional investors were not able to outperform U.S. Treasuries over a 10-year period.

In addition to poor returns, a lot of endowments and foundations have ended up with huge amounts of unfunded commitments to private equity and real estate that will take many years to reduce. Because of this liquidity squeeze, they have had to sell investments in the secondary market. In some cases, universities have had to borrow money and cut spending to meet obligations. The effects of these cuts have been very painful.

Pension funds are in trouble as well. The funded ratio—the ratio of assets to liabilities—for the 100 largest U.S. pension plans has dropped to about 80 percent as of the end of 2009. In my opinion, that number is not even accurate because pension liabilities are typically discounted at the Moody's AA corporate bond rate. In my view, pension liabilities should be discounted at an appropriate Treasury rate. At the end of December 2009, Moody's AA bond rate was about 5.44 percent whereas the yield on long-duration Treasuries was about 3.84 percent—in other words, a difference of 160 bps. Assuming that pension liabilities have a duration of about 15 years, the calculation of 15 times another 160 bps means that their funded ratios are actually closer to 56 percent than 80 percent.

Incorporating liabilities into the asset allocation design is important for any institutional investor.

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Considering the funded ratio and the asset allocation of the 100 largest pension funds in the United States, one might expect that pension funds would have varied allocations to equities and alternatives depending on their funded ratios. Research shows, however, that there is basically no relationship between the allocation to equities and alternatives and the funded ratio of pension funds. I believe part of the reason is that funds are focused too much on being comparable with other funds instead of on their true objectives.

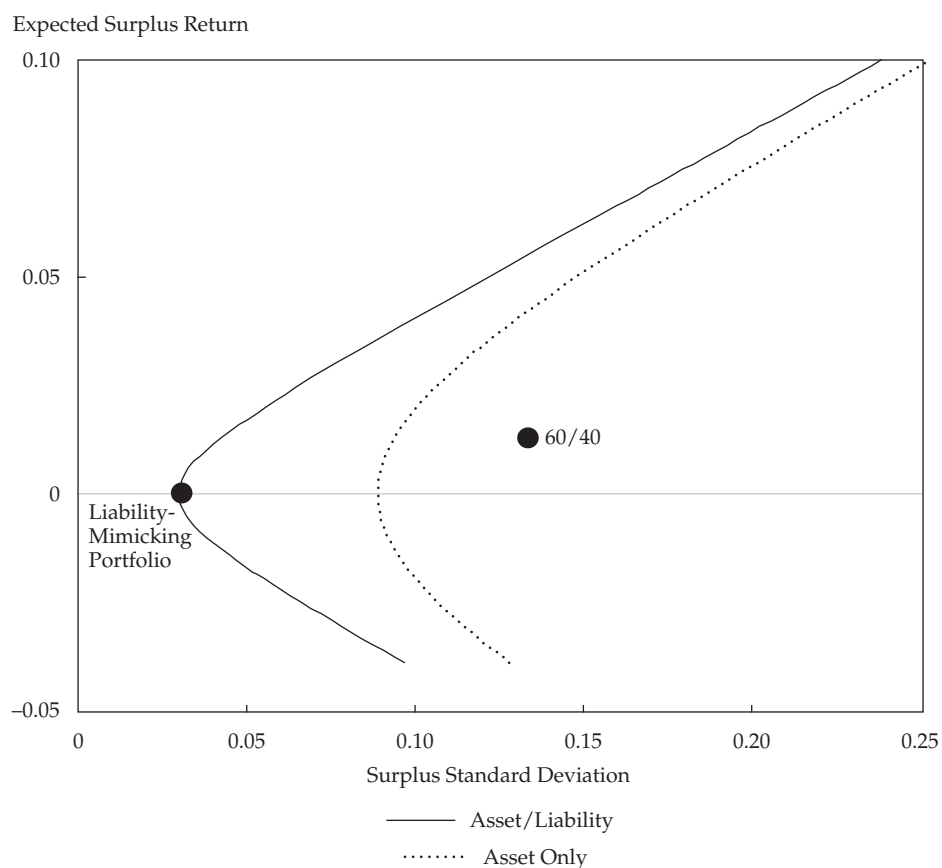
This idea is also reflected in **Figure 1**, which shows the traditional efficient frontier. Instead of focusing on the expected return and the standard deviation, however, the graph shows the expected return relative to liabilities (expected surplus return) and the standard deviation relative to liabilities (surplus standard deviation). By drawing the efficient frontier in asset/liability space, it is clear

that the typical portfolio of 60 percent stocks and 40 percent bonds (60/40) is far from efficient. Yet, that is the portfolio that most closely resembles the asset allocation of many pension funds.

One of the key lessons from the financial crisis for asset allocators is that the assumptions underlying the traditional asset allocation approach are wrong. First, risk management should be a much more integral part of the overall investment decision-making process than it is—not just measuring risk but managing risk. Second, asset allocations should be designed based on the liabilities of an institution and be more fluid and dynamic. And finally, liquidity is important to meet liabilities and unfunded commitments.

I will briefly review the traditional asset allocation approach and then discuss what I believe is wrong with this approach.

Figure 1. Asset/Liability and Asset-Only Efficient Frontiers Along with Two Portfolios



Notes: Expected surplus return is expected return relative to liabilities. Surplus standard deviation is standard deviation relative to liabilities.

Traditional Asset Allocation

In the traditional asset allocation approach, institutional investors start with a long-term return target, such as an 8 percent nominal rate of return per year or a 5 percent real rate of return (over the consumer price index). To achieve the long-term return target, investors make certain long-term expected return assumptions for different asset classes, which are typically based on historical data. These assumptions normally lack forward-looking inputs and typically do not incorporate current valuation levels. This information, together with some historical estimates for correlations and volatilities, is then fed into a portfolio optimizer, and an optimal allocation emerges.

To get reasonable portfolios out of an optimizer, it is often necessary to incorporate constraints and adjustments to the data because, if not, the optimizer would overallocate to hedge funds, private equity, and other illiquid asset classes. After this process is completed, institutional investors tend to rebalance on a calendar basis (e.g., quarterly or monthly) or on the basis of rebalancing ranges set by the board.

The traditional approach to asset allocation raises three concerns. The first is the input assumptions. Expected returns are not constant over time. For example, over the last 10 years, U.S. equities have returned around 0 percent. Many were forecasting an equity risk premium of 4 or 5 percent over bonds 10 years ago. Also, correlations and volatilities can vary considerably over time. For example, the correlation between stocks and bonds, if measured over a long period, has been as high as +0.7 and as low as -0.7. Finally, asset returns are not normally distributed and tail events do occur.

The second concern is with the use of portfolio optimization techniques. These techniques tend to be extremely sensitive to expected return assumptions. Even if the expected return assumption is changed by only 50 bps, the optimizer may suggest a very different portfolio. Because of the obvious uncertainty in the financial world about what the appropriate expected return is, optimization techniques can be quite misleading.

Another issue with portfolio optimization techniques is that most institutional investors have very high expected return targets—for example, 8 or 9 percent for pension funds and a consumer price index plus 5 or 5.5 percent for endowments and foundations—which pushes them out onto the efficient frontier. Inevitably, the result is a portfolio that is heavily biased toward equities. To achieve their target returns, when LIBOR is effectively zero today, institutions will have to take on a lot of equity risk.

The third concern is that the traditional approach focuses on constant weights. A consequence of portfolios with constant weights is that the risk of such portfolios, measured by volatility, will fluctuate quite wildly. In fact, in a 60/40 mix, the volatility measured on a 26-week rolling basis has been as low as 3 percent and as high as 20 percent. Also, many institutions expect that the strategic asset allocation is going to be the main factor in achieving their desired 8 or 9 percent rate of return. Thus, they give up on other potential investment decisions that they could make to try to add value.

I will now expand on and evaluate each of these concerns.

Asset Class Returns, Risk, and Correlations

Table 1 shows returns from a range of different asset classes over five-year rolling periods. Focusing on the 1980s, non-U.S. equities outperformed U.S. equities from 1985 to 1989. At the end of the 1980s, the popular investment approach was to diversify internationally, which is what a lot of institutional investors did. Of course, over the next 5–10 years, U.S. equities outperformed non-U.S. equities. Investors were making decisions looking in the rearview mirror.

Then, at the end of the 1990s, investors were again looking in the rearview mirror and seeing strong returns from hedge funds and private equity, and they directed investments into those asset classes. Some early adopters had already entered those asset classes, but a large number of pension funds and the less sophisticated institutions all started allocating to hedge funds and private equity. Over the following five years, returns from those asset classes were disappointing.

In 2004–2005, again looking in the rearview mirror, investors became interested in commodities, noting the strong returns from commodities over the previous five years. Of course, over the next five years, commodities provided disappointing returns.

Now, investors are looking in the rearview mirror again at emerging market equities because of their strong performance over the past five years. Emerging market equities may or may not turn out to be a poor-performing asset class, but investors seem to rely too much on past performance and think too little about asset classes on a forward-looking basis.

Asset class returns depend on valuation levels. Historically, when the price-to-earnings ratio (P/E) is less than 8, subsequent 10-year equity returns have been almost 15 percent on average; when the P/E is more than 28, subsequent 10-year equity

Table 1. Returns for Various Asset Classes during Selected Five-Year Periods

	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005–2009
<i>Equities</i>						
Developed equities	12.7%	26.1%	5.2%	19.4%	–0.9%	4.1%
EAFE equities	11.3	33.1	3.7	13.4	0.5	5.9
U.S. equities	14.7	19.8	9.5	27.3	–1.9	2.0
Emerging equities	na	na	21.5	5.4	6.8	18.9
<i>Fixed income</i>						
World long-term government bonds	na	12.6%	7.7%	11.5%	8.8%	5.0%
U.S. long-term government bonds	10.6%	15.2	8.3	9.2	10.3	6.1
Global TIPS	9.1	6.9	4.7	8.8	7.8	4.9
U.S. TIPS	7.5	9.4	7.4	6.2	10.6	4.8
Corporate bonds	13.5	12.7	8.2	8.0	8.6	5.1
High yield	na	na	11.1	9.2	7.9	6.7
<i>Commodities</i>						
Dow Jones–UBS index	–0.5%	14.8%	4.4%	5.1%	12.8%	4.1%
S&P GSCI index	3.3	19.0	4.5	6.2	15.3	1.1
<i>Hedge funds</i>						
Directional hedge funds	na	na	19.2%	24.5%	6.5%	4.9%
Absolute return	na	na	13.4	11.5	6.8	5.0
Private equity	na	7.1%	12.9	31.7	3.1	10.4
Real estate	na	8.2	0.0	11.4	9.6	5.0

Notes: EAFE is Europe, Australasia, and Far East. TIPS are Treasury Inflation-Protected Securities. GSCI is the Goldman Sachs Commodity Index now owned by Standard & Poor's.

returns have been 1.5 percent on average. In the institutional investment world, however, too little discussion is devoted to valuation levels when deciding on the strategic asset allocation.

Volatilities and correlations can vary significantly over time and are far from constant. For example, considering the correlation between developed market equities and emerging market equities, investors could have achieved diversification 15 years ago from adding emerging market equities to their portfolios. Today, that correlation is more than 0.9 and the diversification benefits are gone. The same could happen with frontier market equities. Frontier market equities today have about a 0.5 correlation with developed market equities. But as more money is put into those asset classes and they become more institutionalized, that correlation will continue to go up.

Often, a simple metric, such as correlation, is used to capture the comovement between asset classes, but that approach neglects the fact that correlations can actually be nonlinear. In extreme events, there is more tail dependence or, in the case of equities versus fixed income, actually less tail dependence.

Finally, as I mentioned earlier, portfolio optimizers are extremely sensitive to expected return assumptions. Different expected return assump-

tions will produce very different optimal asset allocations. Investors can basically arrive at any asset allocation they want using portfolio optimizers.

Designing a Better Approach

To improve the investment decision-making process, let me propose three departures from the traditional approach. The first departure is for investors to try to diversify across broad risk-driver groups or risk factors rather than across narrowly defined asset classes. The second is to use time diversification by basing asset allocation on, for example, valuations and/or risk considerations. The third is to use innovative investment techniques to add value.

Diversify across Risk Factors. Investors should not think about diversification in terms of asset class labels. For example, earlier I mentioned developed world equities versus emerging market equities; they have different names, but their correlation is quite high. Rather, diversification should be considered in terms of the risk drivers of different asset classes, and investors should try to diversify across those risk drivers.

Another useful approach is to think about what kind of economic environments are conducive for different asset classes and diversify the portfolio across different economic environments. Most institutional portfolios are a bet on a single economic environment, which is good economic growth. As soon as the economy turns down, most portfolios suffer. So, investors should think about diversification across economic environments and risk drivers.

As a first step, investors may want to distinguish between four risk-driver groups. The first category is equity strategies, which includes predominately equity risk exposure and credit risk exposure—for example, developed market equities, emerging market equities, private equity, equity-directional hedge funds, and high yield. The second category is fixed-income strategies. This category includes predominately interest rate risk exposure that investors are trying to capture by investing in government bonds. Interest rate risk can, however, come packaged together with credit risk, as investors have seen recently in Greece, Ireland, and Portugal. The third category is real assets or inflation hedges, such as commodities, real estate, and inflation-linked bonds. The last category is absolute return strategies, sometimes referred to as diversifiers. The objective of diversifiers, such as certain hedge fund strategies, is to have a low correlation with other risk factors (notably, equity beta) in the portfolio. This category is sometimes more art than science because factor exposures of hedge funds can vary over time.

Time Diversification. Investors should not just think about diversifying across risk drivers but also about time diversification—in other words, making the asset allocation process more dynamic and taking advantage of extreme valuations. For example, if credit spreads are extremely low, it may make sense to reduce the allocation to credit instruments in the portfolio. I am not suggesting altering asset allocations on a month-to-month basis, but certain extremes in the markets make changes necessary.

Time diversification can come in different forms both across and within the four risk-driver groups. The idea of time diversification means tilting based on, for example, valuations across and within broad risk drivers or based on what point the economic cycle is in. An example of tilting across the risk-driver groups could be underweighting fixed income based on the current low level of bond yields in the developed world. An example of tilting within the risk-driver groups could be overweighting emerging market equities when valuations appear sufficiently more attractive compared with developed market equities.

Innovative Investment Techniques. The third departure that I propose is to use alternative investment techniques to try to add value—for example, de-risking portfolios at certain times when the risk environment looks sufficiently elevated, which is something that investors do not do often. Recently, James Montier wrote an interesting article that examined tail hedges.¹ Montier argues that using cash is more effective than using tail hedges. When risks are elevated, rather than buying a complicated tail hedge that may or may not pay off because the markets are uncertain, investors should instead reduce their equity exposure and hold more cash.

Another innovative technique to consider is moving away from market capitalization indices. Although market cap indices have some academic basis for equities, in fixed income they make absolutely no sense. It seems illogical to allocate the largest amount of money to countries or companies that have issued the most debt.

An example of an alternative to market capitalization benchmarks is described in the work of Robert Arnott with Research Affiliates on fundamental indexation.² There are many points of debate around fundamental indexation because of the inherent value bias, but investors would be remiss not to explore such techniques.

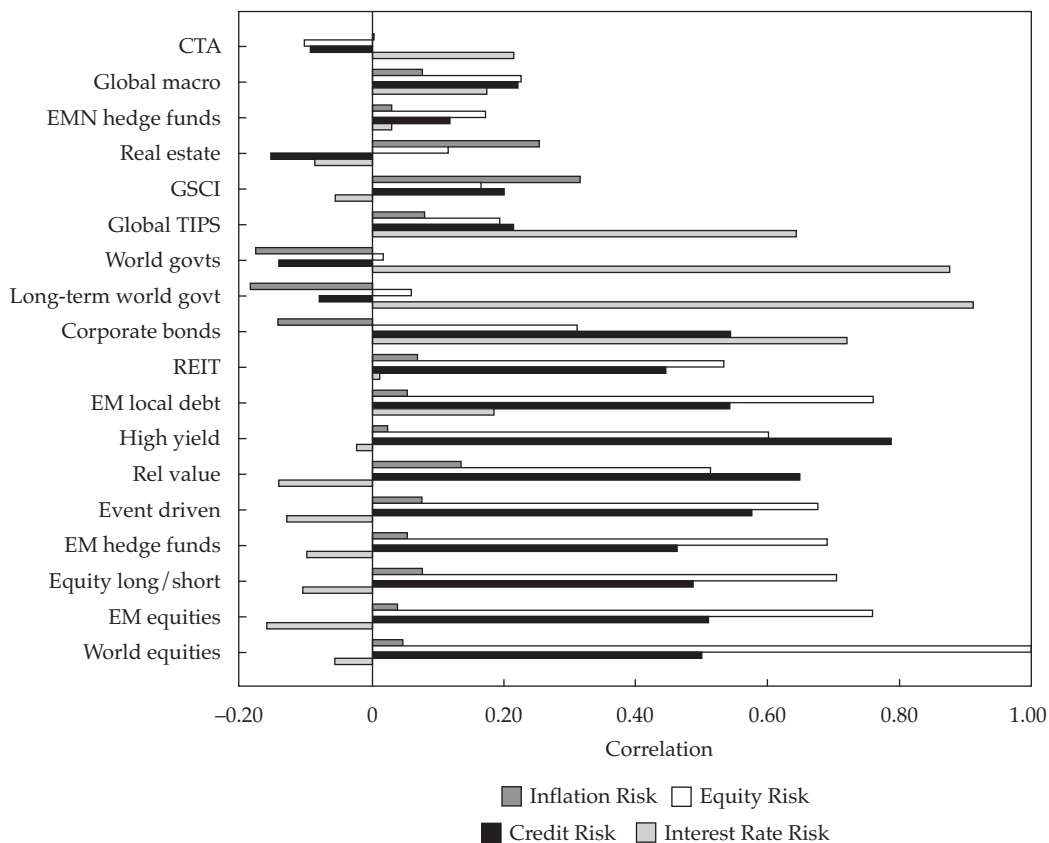
Risk-Factor Approach

Turning back to risk factors, **Figure 2** shows the correlations of various risk factors. It shows a range of different asset classes and measures the correlation for each of the asset classes with four risk factors: equity risk, credit risk, inflation risk, and interest rate risk.

Adopting a risk-factor approach is more of an art than a science. Most of the equity and credit asset classes have significant levels of equity and credit exposure. Other asset classes are exposed to the interest rate risk factor, and still other asset classes have exposure to the inflation risk factor. Certain types of strategies—commodities trading advisers (CTAs), global macro, and equity market neutral (EMN) hedge funds—tend to have a relatively low correlation with those risk factors, on average. The data are monthly from about 1990 to about 2010.

¹James Montier, “A Value Investor’s Perspective on Tail Risk Protection: An Ode to the Joy of Cash,” GMO white paper (June 2011): www.gmo.com/America/.

²Robert D. Arnott, Jason C. Hsu, and John M. West, *The Fundamental Index: A Better Way to Invest* (Hoboken, NJ: John Wiley & Sons, 2008).

Figure 2. Correlation of Asset Classes with Selected Risk Factors

Note: CTA is commodities trading advisers, EM is emerging market, and EMN is equity market neutral.

The constraint is that the hedge fund data from Hedge Fund Research only go back to 1990.

Another consideration in a risk-factor approach is that different asset classes perform differently depending on the economic environment and the part of the economic cycle the economy is in. Equity-related asset classes perform poorly during stagflationary periods and perform well during recoveries or when the economy is overheating. Fixed income does well during recessionary periods. Real assets perform poorly during recessionary periods and perform well during stagflationary periods. Absolute return hedge funds do well regardless of the economic cycle.

Investors should think about not only traditional investment activities but also broader investment activities. The traditional approach is typically organized around a strategic asset allocation with tactical asset allocation and manager selection playing a relatively minor role. For most institutional investors, more than 95 percent of the risk comes from the strategic asset allocation. I would argue that investors should take a broader approach and

focus on drivers of performance other than just strategic asset allocation.

The main point is that rather than having such a large emphasis on strategic asset allocation, which is probably reviewed only every three to five years, investors should consider dynamically changing their asset allocation based on long-term valuation signals as well as risk considerations. The long-term asset allocation will always be a significant component of the total risk and return. Perhaps a more balanced outcome can be achieved by also dividing the decision-making process among other value drivers, such as valuation-based tilting, risk-based tilting, and better benchmark construction. Also, such alternative ideas as fundamental indexation, smarter rebalancing techniques, and manager selection may deserve consideration.

Neutral Allocation

Even in the alternative approach to asset allocation outlined earlier, the neutral or long-term asset allocation plays a significant role. The question is, How do we determine a neutral allocation? Many inves-

tors have been reconsidering that question as a result of the global financial crisis.

One approach is the risk-factor approach that I have presented. Another popular method is to use risk parity. The idea behind risk parity is that instead of allocating capital, investors can try to create a better-diversified portfolio by allocating equal amounts of risk to different asset classes. The risk parity approach is becoming more appealing; some pension funds have in fact started to move in this direction.

The risk parity approach is built on the principle that markets are not predictable but that, in the long run, the Sharpe ratios of different asset classes are essentially the same. If the Sharpe ratios are the same, then investors should allocate the same amount of risk to each asset class. For example, because equities typically have 15–20 percent volatility and fixed income has 5 percent volatility, investors should add leverage to their fixed-income portfolios. In this way, fixed income has the same level of risk as equities and they both contribute an equal amount of risk to the portfolio.

When investment managers show backtests of the risk parity approach, they typically focus on results over the last 20 years. Of course, fixed income has done very well over the last 20 years with yields falling, and thus, risk parity outperforms the traditional 60/40 mix. The issue today is that interest rates are at extremely low levels: Should investors add leverage to their fixed-income portfolios at these low interest rate levels?

We backtested risk parity over the 1950–70 period because during that period, interest rates trended up. The results of this backtest were that although risk parity outperformed the traditional approaches for the last 20–30 years, when interest rates in the United States went up in the 1950–70 period, risk parity underperformed the 60/40 mix.

The risk parity approach is a good starting point intellectually, but valuations need to be taken into account.

Dynamically Managed Asset Allocation

There are two alternative ways to dynamically manage asset allocations: a risk-driven approach and a return-driven approach. The risk-driven approach aims to target a constant level of risk rather than targeting a constant set of weights in an attempt to better control the overall risk of the portfolio. For the return-driven approach, investors try to tilt toward asset classes that are undervalued and tilt away

from asset classes that are overvalued; or considering the economic environment, investors should tilt toward asset classes that they think will do well in the current part of the economic cycle. Let me discuss the risk-driven approach in more detail.

Risk-Driven Approaches. There are three alternative ways to implement a risk-driven approach: dynamic risk parity, constant-risk or risk-controlled strategies, and the use of risk triggers. Each of these strategies requires the use of some amount of leverage and daily or weekly risk management.

The dynamic risk parity strategy is similar to the risk parity approach discussed previously, but investors update their volatility and correlation assumptions and rebalance to the new equal risk-weighted portfolio.

The objective of the constant-risk or risk-controlled strategy is to target a constant level of volatility. Over time, however, the constant-risk strategy results in a more stable return stream compared with a constant-weight portfolio while producing at least the same level of returns.

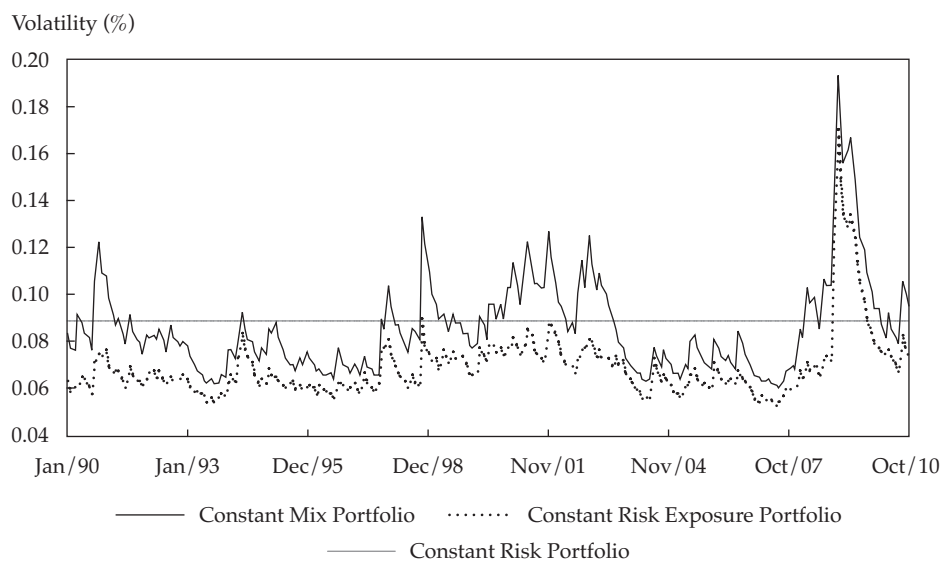
The use of a risk-triggers strategy means more loosely maintaining a constant level of volatility of a portfolio. This approach involves monitoring certain risk triggers, and when they exceed certain levels, portfolio risk is scaled down.

Illustration of Constant-Risk Strategy. Exhibit 1 shows an illustrative portfolio. The portfolio is rebalanced on a monthly basis to maintain a constant set of weights, and the risk contribution of each asset class is calculated to determine how much each asset class contributes to the overall portfolio risk over time. The black line in **Figure 3** shows the annualized volatility of the portfolio as a percent, which varies significantly over time and particularly spiked during 2008.

Exhibit 1. Illustrative Weights of Asset Classes in a Diversified Portfolio

Asset Class	Weight
World equities	30%
Absolute return	10
Commodities	5
Treasury Inflation-Protected Securities	5
World governments	10
Corporate bonds	10
High yield	5
Equity hedge funds	10
Emerging market equities	15

An alternative to maintaining constant weights is to keep the risk contributions from each asset class

Figure 3. Annualized Volatilities of Three Different Asset Allocation Approaches

constant. Although the asset classes do not contribute equal amounts for risk, the goal is to keep the risk exposures constant and let the portfolio weights vary over time. The dotted line in Figure 3 shows that keeping risk contributions constant will reduce portfolio volatility a little bit, but in 2008, the spike in volatility is still significant.

Another approach is to keep both the risk contributions and the volatility of the portfolio constant. The gray line in Figure 3 represents the *ex ante* level of volatility; of course, *ex post* volatility may vary a little bit. If volatility is high, the portfolio is deleveraged, and if volatility is low, leverage is increased.

Table 2 shows summary statistics for each of the three approaches (i.e., constant mix, constant-risk exposure, and constant volatility). Note that the constant-volatility approach delivers slightly better returns, comparable levels of risk, and a higher Sharpe ratio. More importantly, however, it reduces the maximum drawdown from 35 percent in the constant-mix portfolio to about 27.6 percent in the constant-volatility portfolio.

Table 2. Summary Statistics of Three Alternative Asset Allocation Approaches

Statistic	Constant Mix	Constant-Risk Exposure	Constant Volatility
Mean	8.90%	8.74%	10.27%
Standard deviation	9.52%	7.71%	9.39%
Sharpe ratio	0.49	0.59	0.64
Skewness	-1.02	-1.08	-0.79
Kurtosis	3.34	4.06	1.37
Max drawdown	-35.0%	-28.0%	-27.6%

Managing Dynamic Asset Allocation. Adopting a dynamic asset allocation approach comes with a set of challenges, including institutional challenges, behavioral challenges, and technical challenges. Determining whether certain dynamic asset allocation strategies will work in an organization also depends on the investment beliefs of the organization. Once these beliefs are determined, an investment approach that is consistent with those beliefs should be adopted. Examples of investment beliefs and consistent approaches include a belief in mean reversion and thus a decision to adopt a value-based approach or, alternatively, the beliefs that market timing is futile and that costs should be minimized and thus the adoption of a passive approach.

In moving to a more dynamic approach to asset allocation, the governance structure of an organization matters too. Unfortunately, committee decision making is often not the best approach to making investment decisions. At too many pension funds, the boards have the ultimate say over which managers are hired or fired, which is a poor use of the scarce time resources that boards have to spend on investment issues.

There are three different ways to organize the governance structure around dynamic asset allocation. The first is to make dynamic asset allocation part of the normal rebalancing process and use the tactical ranges that boards typically provide to investment staff. The drawback of this approach is that the amount of discretion given to staff by investment boards is typically very small. Although a lot of intellectual effort can be spent trying to

manage the asset allocation dynamically, small changes of 2–3 percent in asset class weights typically have a very limited effect on overall portfolio returns and risks. Another challenge is that traditional measures used for assessing the success of tactical positioning (such as the information ratio and the tracking error) may not be appropriate in the context of dynamic asset allocation.

A second governance arrangement would be to make dynamic asset allocation part of the strategic asset allocation (SAA) process and review the SAA on a yearly basis. The advantage of this arrangement is that the board is involved in the process and that responsibility is shared between the board and the investment team. The drawback is that this arrangement may blur accountability and boards may not act quickly and decisively enough to take advantage of opportunities or to de-risk the portfolio.

A third governance arrangement is to set up dynamic asset allocation as a separate dedicated investment activity through a partnership between the investment team and the board. In this way, the board approves the concept of dynamic asset allocation, but the responsibility and accountability remains with the investment team. Boards may, however, be reluctant to give a lot of leeway to the investment team. Consequently, the transition from a static to a dynamic asset allocation approach will likely involve a progression from the first governance arrangement eventually to the third governance arrangement.

Conclusion

There is broad consensus in the industry that the traditional approach to asset allocation is “dead.” As of yet, no consensus on a new and superior approach has been found. In my view, institutional investors should not try to look for the silver bullet, but rather, they should adopt an investment approach that suits the investment beliefs of the organization and the current governance arrangement, as well as the skill set of the investment team.

I have discussed various alternative approaches. The first alternative is a risk parity approach, which regards risk as a more important consideration than return. Although it is risk driven, the portfolio is still static. Other alternatives include adopting a constant-risk strategy in which the volatility of the portfolio is kept constant or using a dynamic version of risk parity.

Finally, institutions may want to explore a return-driven dynamic strategy. The core idea of this strategy is that at market extremes, changes are made to the portfolio by reducing exposure to asset classes that are overvalued and increasing exposure to asset classes that are undervalued. A valuation-based approach does come with a range of challenges, but they are not insurmountable.

This article qualifies for 0.5 CE credits.

Question and Answer Session

Arjan B. Berkelaar, CFA

Question: How much credence do you give to market-cap-weighted indices?

Berkelaar: Market-cap-weighted indices originated with the capital asset pricing model (CAPM). On the basis of CAPM, if all the assumptions are valid, the market-cap-weighted portfolio is an optimal portfolio. This result, however, really only applies to equities. The CAPM was not developed for fixed income. So, from an academic point of view, market-cap weighting in equities makes sense.

In the late 1990s, the S&P 500 Index was heavily skewed toward technology stocks. Investors were buying the S&P 500 and not really thinking about the fact that the index had a large exposure to technology stocks, which subsequently crashed.

The problem with a market-cap-weighted index is that it becomes a momentum strategy. Momentum works very well until the trend reverses. From a practical perspective, I would say market-cap indices do not make sense for equities, despite the fact

that there may be an academic justification for it. This perspective is certainly not the case for fixed income, in which market-cap weighting makes absolutely no sense.

Question: Is your approach a complete departure from the traditional benchmark approach?

Berkelaar: It is not a complete departure from the traditional benchmark approach. To me, the idea is to use a range of alternative benchmarks in an attempt to outperform a market-cap-weighted index. We are not manufacturing alpha by changing the design of a benchmark but rather adopting alternative passive indices that are purely quantitative and do not involve any judgment. Even with an alternative benchmark, the objective should be to try to outperform it in the long run.

Question: Now that the yield on bonds is lower than the yield on equities, are equities a straight buy?

Berkelaar: The problem with looking at yields is that it is just

one component of the total return. Investors have to be careful focusing only on yields. A number of drivers are part of the total return as well as the risk side of the decision.

Question: Would you advocate the risk-driven approach for all investors?

Berkelaar: There are two ways to think about dynamic asset allocation: the return-driven approach and the risk-driven approach. There are different approaches even within the risk-driven category. One is the idea of equal risk allocation or risk parity. Another idea is to keep the level of volatility constant.

I am not suggesting that a risk-driven approach is the best for everyone. I think investors have to ask what the governance arrangements are in their particular institution, what amount of leeway they have, and what the investment beliefs and philosophy are of the institution. The main point is that different techniques exist to think about asset allocation.