In 1952 Harry Markowitz revolutionized investment thinking with what has come to be known as modern portfolio theory (MPT). As is often the case with powerful insights, the key tenets of MPT are so intuitive that it is hard to believe that anyone thought about investments differently pre-1952.

Before Markowitz, the focus was on individual securities. In particular, each security’s risk was assessed in isolation. Fiduciaries were held to standards based on the notion that some securities are inherently imprudent investments regardless of their potential return or the amount invested in them. All this began to change once Markowitz demonstrated the power of diversification and that the risk of the entire portfolio is what really matters, not the risk of each individual security in isolation.

Roughly a decade later, William Sharpe and others translated Markowitz’s framework into a stark prescription for investor’s strategic portfolios: that is, every investor should hold a weighted average of the same two portfolios, one of which is the capitalization-weighted market portfolio.1 In addition, an investor’s portfolio should be the same regardless of the investment horizon. Such was the cutting edge of strategic investment thinking circa 1964.

Investment theory has evolved significantly over the past 50 years—“plus ça change.” However, some of the key advances only recently have begun to be reflected in most practitioners’ (and therefore most clients’) understanding of strategic asset allocation (SAA) decisions—“plus c’est la meme chose.” This may be due, at least in part, to the fact that SAA often is treated as a one-time exercise that adds little or no value to the portfolio. Yet it is widely accepted that SAA is the single most important determinant of whether investors achieve their investment objectives.2

In my view, however, it is adherence to the Markowitz-Sharpe assumption of static investment opportunities that has most hindered a fuller understanding of SAA decisions. Few, if any, other aspects of investment thinking are so firmly wedded to the notion that every future time period will look the same.

This article examines the implications of dynamic investment opportunities and the issue of whether to routinely buy downside protection. Allowing for the fact that investment opportunities evolve over time provides important insights with respect to strategic asset allocation decisions. In particular, it provides a better understanding of the role of the investment horizon, including the real reasons that higher equity allocations are appropriate for longer horizons.

**Stocks for the Long Run**

It is nearly universally accepted that investors’ equity allocations should increase with the length of their investment horizons. This prescription generally is attributed to the notion that equities are less risky over longer horizons. Unfortunately, that notion is inconsistent with the assumption embedded in typical SAA analysis, namely that investment opportunities in every future period will be the same.

To get around this inconsistency, one is often presented with a graph similar to the one in figure 1, which shows the volatility (standard deviation) of return per period for horizons from one to 30 years. The volatility declines sharply from 15 percent at a one-year horizon to 2.75 percent at 30 years. That certainly seems to make a strong case for declining risk and to help justify an increased allocation to this asset over longer horizons. Unfortunately, it is really an illusion generated by a mathematical trick.

Here is the trick. Figure 1 shows the volatility of the average annual return but over different periods. The 15-percent volatility at year one is not really comparable with the 2.75-percent volatility at year 30. To see this, consider a coin-flip. If the coin comes up heads, our return is +1 standard deviation; if the coin comes up tails, our return is –1 standard deviation. If we use the volatility shown for the one-year horizon, this implies we gain or lose 15 percent when we flip the coin. If we use the volatility shown for the 30-year horizon, we gain or lose approximately 82.5 percent (2.75% × 30) when we flip the coin because the 2.75-percent volatility applies to each of the 30 years in the average. Interpreted correctly, figure 1 does not really make the case for lower risk or a higher allocation.

To provide a logically sound basis for the notion that stocks are less risky over longer horizons, we need to allow for the fact that equity values are unlikely to deviate too far in either direction from a trend consistent with underlying economic activity. That is, equity values tend to “mean revert” so that periods of especially strong returns are somewhat more likely to be followed by weak returns and vice versa. Empirical evidence supports this notion, and it seems to
possible, the trend rate of return is assumed to be zero. In the absence of mean reversion, the distribution of cumulative gains or losses spreads out so that at each horizon there is roughly a two-thirds probability of being between the upper and lower black lines. At a 30-year horizon, the range in this example is ±82.5 percent. The shaded area reflects the corresponding distribution of cumulative gains or losses at each horizon assuming the market mean reverts. Extreme gains and losses are much less likely than in the absence of mean reversion. In this example, the shaded area spans a range of ±50.8 percent at 30 years.

Figure 1 and the no-mean-reversion range of outcomes in figure 2 reflect exactly the same assumptions about the market, yet the impressions they give about risk are quite different.

The main message is that if stocks are less risky over long horizons, it is not because the risk is being averaged over many periods, as suggested by figure 1. It can only be due to dynamic changes in investment opportunities such that equities exhibit mean reversion.

Strategic Not Static

Once we acknowledge that investment opportunities are dynamic, we must rethink the idea of a strategic portfolio because the conventional notion—that of a static allocation designed to meet one’s investment objectives with no adjustments other than occasional rebalancing—is predicated on the assumption of static investment opportunities.

Perhaps the simplest way to think about a strategic allocation in a world of dynamic opportunities is as the portfolio that would be held if all risk/return characteristics were simultaneously at their long-run average values, i.e., the Markowitz-Sharpe static opportunities framework.

The concept of mean reversion can be illustrated with the following simple relationship:

$$r_{t+1} = \mu - \theta x_t + \epsilon_{t+1}$$

Here $r_{t+1}$ is the equity market return in the next period $(t+1)$, $\mu$ is the long-run trend rate of return, $x_t$ is the amount by which the market is currently above ($x > 0$) or below ($x < 0$) trend, and $\epsilon_{t+1}$ is the unpredictable component of return. The expected return over the next period is simply:

$$\mu - \theta x_t$$

Assuming the parameter $\theta$ is positive, the expected return on the market is greater than (less than) the long-run trend return if the market is currently below (above) the trend. Note that $\theta = 0$ corresponds to the special case in which risk and return are the same in every future period, i.e., the Markowitz-Sharpe static opportunities framework.

Figure 2 shows the impact of mean reversion on risk. To keep the figure as simple as possible, the trend rate of return is assumed to be zero. In the absence of mean reversion, the distribution of cumulative gains or losses spreads out so that at each horizon there is roughly a two-thirds probability of being between the upper and lower black lines. At a 30-year horizon, the range in this example is ±82.5 percent. The shaded area reflects the corresponding distribution of cumulative gains or losses at each horizon assuming the market mean reverts. Extreme gains and losses are much less likely than in the absence of mean reversion. In this example, the shaded area spans a range of ±50.8 percent at 30 years.

Figure 1 and the no-mean-reversion range of outcomes in figure 2 reflect exactly the same assumptions about the market, yet the impressions they give about risk are quite different.

The main message is that if stocks are less risky over long horizons, it is not because the risk is being averaged over many periods, as suggested by figure 1. It can only be due to dynamic changes in investment opportunities such that equities exhibit mean reversion.

Strategic Not Static

Once we acknowledge that investment opportunities are dynamic, we must rethink the idea of a strategic portfolio because the conventional notion—that of a static allocation designed to meet one’s investment objectives with no adjustments other than occasional rebalancing—is predicated on the assumption of static investment opportunities.

Perhaps the simplest way to think about a strategic allocation in a world of dynamic opportunities is as the portfolio that would be held if all risk/return characteristics were simultaneously at their long-run average values. In terms of the mean-reversion example above, this would correspond to the equity market being neither above nor below trend.

Importantly, the strategic portfolio defined in this way is not generally the portfolio that would be chosen if risk/return characteristics were fixed at their long-run aver-
age values. Nor should this portfolio be viewed as a static target to which one routinely rebalances.

When we recognize from the outset that investment opportunities are dynamic, the conventional distinction between strategic and tactical asset allocation loses much of its meaning. As opportunities evolve we need to adjust our actual portfolio. It does not really matter whether we label these adjustments as strategic or tactical. Nonetheless, it can be useful to maintain a distinction.

Strategic adjustments may be viewed as arising from fundamental changes that tend to evolve slowly and affect a broad spectrum of asset classes. To be concrete, we can view these as being driven by the business cycle. On the other hand, tactical adjustments may be viewed as arising from shorter-term and perhaps less-pronounced changes affecting the relative attractiveness of a narrower set of asset classes. There is no clear dividing line between these categories, but in my view it is a useful way to think about responding to the markets.

**Optimal Inefficiency**

One of the most important advances in strategic investment thinking occurred when Merton (1973) showed that investors should not, in general, merely adjust period-by-period to changing opportunities but rather should actively hedge against adverse changes in future opportunities. The essential insight is that investors should choose a portfolio that will, on average, generate especially strong returns when future opportunities turn out to be poor and vice versa.

We can use our simple mean-reversion model to help illustrate this point. If the equity market tends to mean revert, then strong returns today are likely to lead to lower expected returns, i.e., less-attractive opportunities, in the near future. Conversely, poor performance today most likely will lead to higher expected returns (better opportunities) in the near future. This tendency for higher returns to be followed by lower returns and vice versa is what accounts for the stabilization of long-term outcomes shown in figure 2.

The upshot is that because equities tend to mean revert, they offer a hedge against adverse changes in future opportunities and we should hold more of them at any point in time than we would solely on the basis of current conditions. Of course this argument applies to any asset class that helps hedge against adverse changes in our opportunity set. For example, all else the same, taxable investors should hold more municipal bonds because they are likely to do well if tax rates increase.

Figure 3 illustrates the fact that hedging considerations imply selecting a portfolio that is actually inefficient based solely on current opportunities. In figure 3, the point labeled “myopic portfolio” lies on the curve showing the highest expected return available at each level of risk, measured by standard deviation. Points above and to the left of this curve are not obtainable. Points in the shaded area are inefficient because other portfolios have a higher expected return and/or a lower level of risk. The myopic portfolio represents the portfolio that would be selected this period if we simply adjusted period-by-period to current opportunities without considering the likelihood of future changes. The portfolio labeled as “optimal” reflects incorporating hedging against changing opportunities. As shown, this generally requires moving to a portfolio that is inefficient with respect to short-term conditions but is better in terms of longer-term performance.

Let us suppose that figure 3 represents the opportunities when the risk/return characteristics of all assets are at their long-run average values. The myopic portfolio would be the portfolio we would choose if opportunities were fixed at those values, and the optimal portfolio would be the strategic portfolio as defined above. Due to the hedging component, these portfolios are not the same. Drawing once again on our mean-reversion example, the strategic portfolio would have a larger equity allocation than the myopic portfolio.

The ability to hedge against adverse changes is more valuable the longer one's investment horizon. Thus, the longer the horizon the larger the impact of dynamic investment opportunities on the strategic portfolio. With respect to equities, all else the same, the longer the horizon the larger the equity allocation.

**Downside Protection**

We now turn to the question of whether one should routinely buy downside protection. Buying put options and principal-protected structured notes are two basic ways of buying protection. More generally, any strategy that implicitly or explicitly sells as the market declines and buys as the market rises is a form of buying protection. Since this implies buying at high prices and selling at low prices, it entails a cost. Hence, investors who routinely buy protection must be willing to underperform most of the time in exchange for avoiding occasional larger losses. Conversely, sellers of protection can expect to outperform most of the time in exchange for absorbing those same occasional large losses.

It might seem that investors who are more tolerant of risk should sell protection to investors who are less tolerant of risk. But this is not
quite correct. Most investors become less tolerant of risk as their wealth declines and correspondingly more tolerant of risk as their wealth increases. The key question is not whether one is on average more or less tolerant of risk than other investors but whether one’s tolerance for risk declines faster than other investors’ as wealth declines.3 Those whose risk tolerance is most sensitive to changes in wealth should buy protection from those whose risk tolerance is relatively insensitive to changes in wealth.

Risk tolerance is, of course, subjective. Changes in risk tolerance are even more difficult to assess objectively. Actually comparing those changes across investors is probably hopeless. Nonetheless, it is important to understand the connection between changes in risk tolerance and the decision to buy (or sell) downside protection. Simply being risk averse (who isn’t?) is not a good reason to routinely pay for downside protection. One’s tolerance for risk needs to be especially sensitive to changes in wealth to justify the expense of buying protection.

Virtually all ways to explicitly buy downside protection involve specific valuation dates. That is, one is actually paying to protect the value of the portfolio on a specific date. This can be advantageous if there is a reason to care about the value of the portfolio on specific future dates. For example, a large distribution or expenditure may occur on a specific date. In that case, one would have a good reason for being more sensitive than the average investor to losses on that date. It is typically more difficult to rationalize why one’s risk tolerance is more sensitive to fluctuations in wealth than the average investor’s on arbitrarily selected, let alone all, future dates.

Selective use of downside protection strategies is a valuable component of managing portfolio risk. Buying protection when others are willing to sell it at bargain prices makes good sense. Routinely devoting a meaningful portion of a long-term portfolio to fully priced protection strategies is much more difficult to justify. If one is willing to routinely sacrifice return, then it probably makes more sense to adjust the risk profile of the strategic allocation rather than routinely pay for protection.

Note that we are only addressing the issue of broad portfolio protection here. Managing specific risks such as those arising from concentrated stock positions is a different issue.

A Brief Recap

Incorporating the fact that investment opportunities evolve in an imperfect way and that one’s risk tolerance changes fundamentally alters the strategic portfolio. In addition, it implies that the best strategic portfolio is generally not efficient in terms of period-by-period risk (i.e., volatility) and return.

The notion that investors should allocate more to equities over longer investment horizons can be justified rigorously based on the empirically supported and intuitively appealing idea that the market tends to be pulled back toward a long-run trend rate of return. This means that investors will tend to generate high returns when future opportunities turn out to be poor. Thus recognizing that opportunities change fundamentally alters the strategic portfolio. In particular, it implies that the best strategic portfolio is generally not efficient in terms of period-by-period risk (i.e., volatility) and return.

The subtitle, “Plus ça change, plus c’est la même chose,” translates from French as, “The more things change, the more they stay the same.”

A Brief Recap

Incorporating the fact that investment opportunities evolve in systematic albeit imperfectly predictable ways requires a different way of thinking about SAA decisions. The conventional notion of a static allocation designed to meet one’s investment objectives with no adjustments other than occasional rebalancing no longer makes sense. Similarly, the distinction that typically is made between strategic and tactical asset allocation loses much of its meaning because both must now reflect the need to adjust the portfolio to changing opportunities.

When investment opportunities are dynamic, investors should hedge against adverse changes in future opportunities by tilting their portfolios toward asset classes that will tend to generate high returns when future opportunities turn out to be poor. Thus recognizing that opportunities change fundamentally alters the strategic portfolio. In addition, it implies that the best strategic portfolio is generally not efficient in terms of period-by-period risk (i.e., volatility) and return.

The notion that investors should allocate more to equities over longer investment horizons can be justified rigorously based on the empirically supported and intuitively appealing idea that the market tends to be pulled back toward a long-run trend rate of return. This means that investors will tend to generate high returns when future opportunities turn out to be poor. Thus recognizing that opportunities change fundamentally alters the strategic portfolio. In particular, it implies that the best strategic portfolio is generally not efficient in terms of period-by-period risk (i.e., volatility) and return.

The subtitle, “Plus ça change, plus c’est la même chose,” translates from French as, “The more things change, the more they stay the same.”

Endnotes

1. If there is a riskless asset, as Sharpe (1964) assumed, then this asset is combined with the market portfolio. If there is no riskless asset then, as Black (1972) showed, the second portfolio can be selected so that it is uncorrelated with the market portfolio.
2. The classic reference is Brinson et al. (1986). A more nuanced analysis can be found in Ibbotson and Kaplan (2000).
3. The seminal work on this issue is Leland (1980).

References