

## Is Dynamic Asset Allocation Always a Good Move?

**T**HOUGH SOME PENSION CONSULTANTS BELIEVE that a dynamic asset allocation is superior to a static asset allocation, it doesn't always produce superior results. The decision to use a dynamic asset allocation will depend on the goals and risks specific to the pension plan and the plan sponsor.

A dynamic asset allocation results when a defined benefit pension plan sponsor changes the plan's asset allocation according to the plan's funded ratio. For example:

- If the plan is 100 percent funded, having a large allocation to bonds is appropriate to protect this funded ratio.
- If the plan is well funded, with a funded ratio of 130 percent, the plan can be more aggressive and allocate more to stocks.
- If the plan is under-funded, more could be allocated to stocks in an attempt to get higher returns to get the ratio closer to 100 percent.

Note that these are strategic asset allocation policies, based on long-term asset return expectations, and should not be confused with tactical asset allocation shifts that attempt to take advantage of short-term market opportunities.

Also note that a dynamic asset allocation policy generally involves less than annual asset liability studies and then, based on the funded ratio, changes the allocation as time passes. This shouldn't be confused with doing annual or continuous asset allocation studies.

It's important to note that dynamic asset allocation doesn't involve changing the efficient frontier asset allocation options. It's just choosing among the efficient frontier asset allocation options over time.

Although dynamic asset allocation would be expected to change the asset allocation over time, it might not result in a current allocation that's substantially different from the one a static asset allocation approach would produce. In theory, a dynamic asset allocation will improve the results of the projection. Therefore, the plan sponsor might be able to be more aggressive now and be more conservative later if things start going poorly. However, any small improvement could be offset by the additional trading costs of changing the asset allocation dynamically or by model errors.

Dynamic asset allocation appears to be market timing under another name and seems to run counter to what would be thought of as good market timing. Typically, under market timing you try to buy stocks

when the price is low and sell when the price is high. In dynamic asset allocation, you buy stocks after the market goes up and stock values are high, because the plan is well funded. When the market drops and stock values are low, the plan would sell stocks and buy bonds to protect the funded ratio.

I took a sample plan that had a 128 percent funded ratio at the beginning of the projection period. (The starting date of the forecast is the year 2000 because the valuation for my sample case happens to be old.) I used the accrued benefit obligation to calculate the funded ratio, since it's common to want to keep this funded ratio above 100 percent. For this study, I set the static asset allocation for this initially well funded plan to have 70 percent allocated to stocks and 30 percent to bonds.

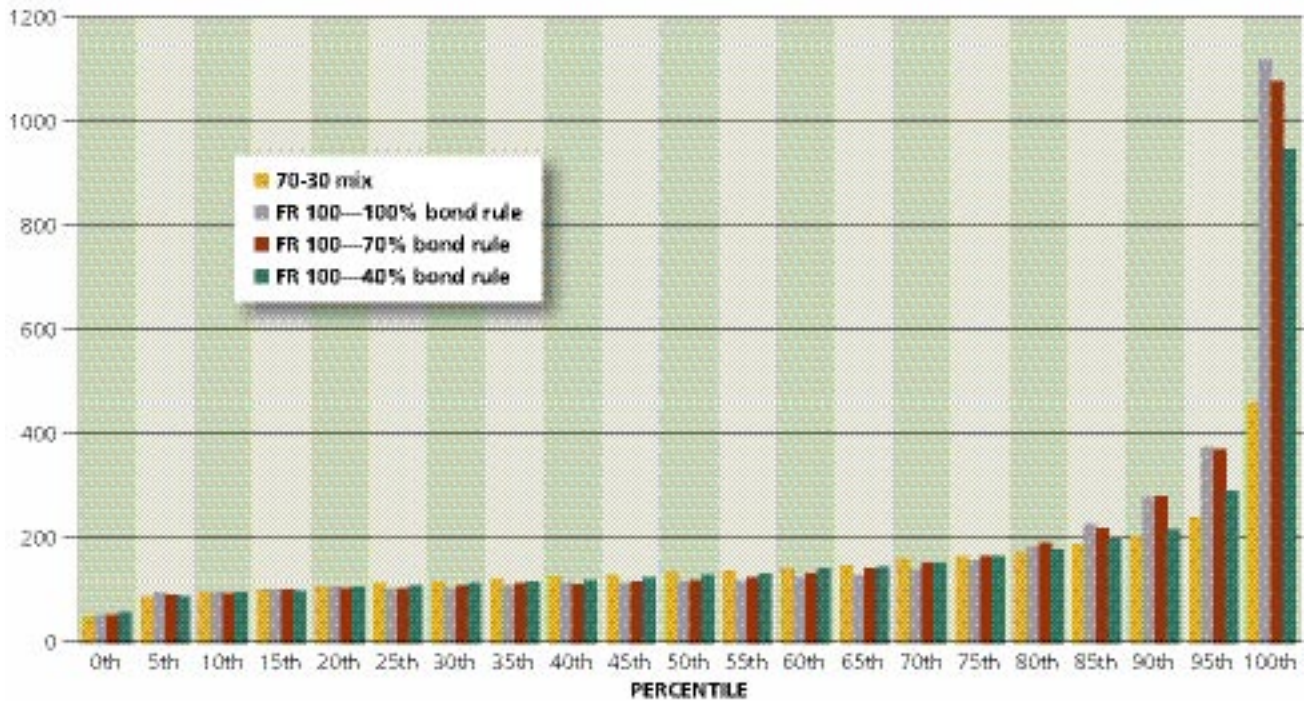
I then did a forecast under four different allocation options:

- Keep a static 70/30 allocation.
- Dynamically allocate 100 percent to bonds if the funded ratio is 100 percent and increase the allocation to stocks as the funded ratio changes, up or down, so that the current 128 percent funded ratio results in a 70/30 allocation.
- Dynamically allocate 70 percent to bonds if the funded ratio is 100 percent and increase the allocation to stocks as the funded ratio changes, up or down, so that the current 128 percent funded ratio results in a 70/30 allocation.
- Dynamically allocate 40 percent to bonds if the funded ratio is 100 percent and increase the allocation to stocks as the funded ratio changes, up or down, so that the current 128 percent funded ratio results in a 70/30 allocation.

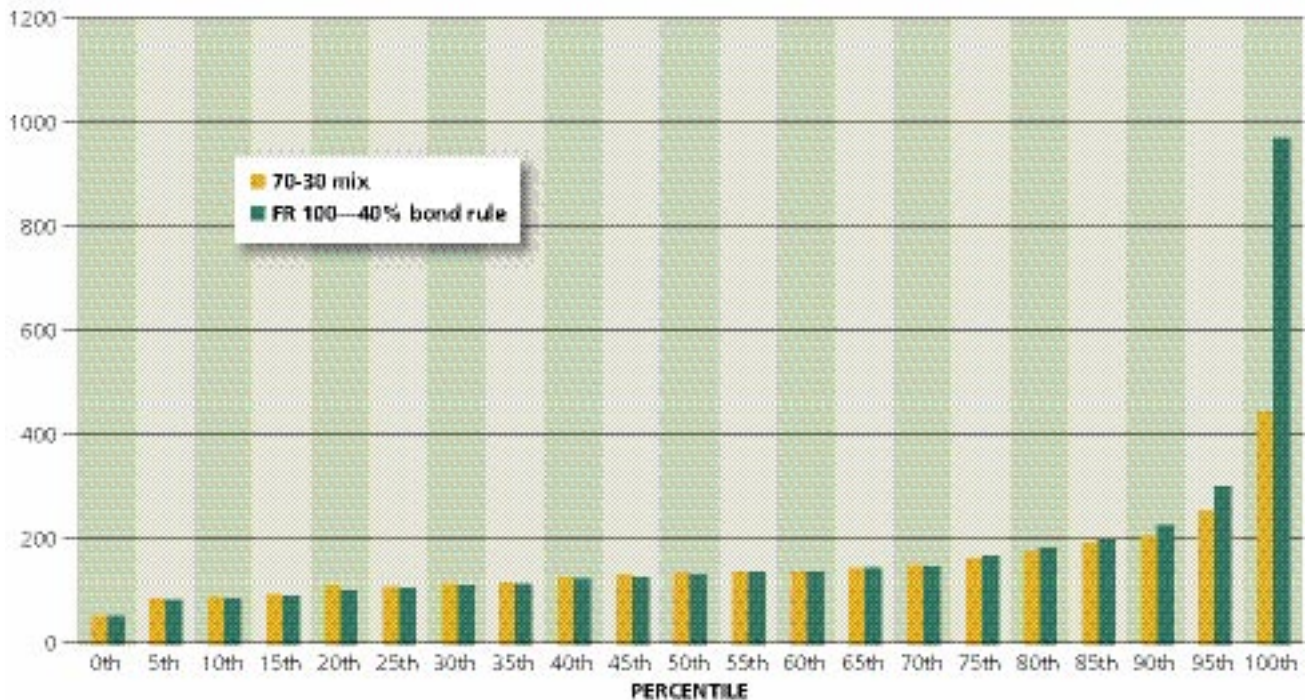
The potential funded ratios at the end of the 10-year stochastic forecast using 2000 trials are shown in chart 1. The 0th percentile shows what I loosely define as the worst-case outcome, the 50th percentile shows the median results, and the 100th percentile shows what I loosely define as the best-case outcome. (No additional trading cost for the different asset allocation approaches was reflected.)

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**CHART 1** ABO Funded Ratio 2010

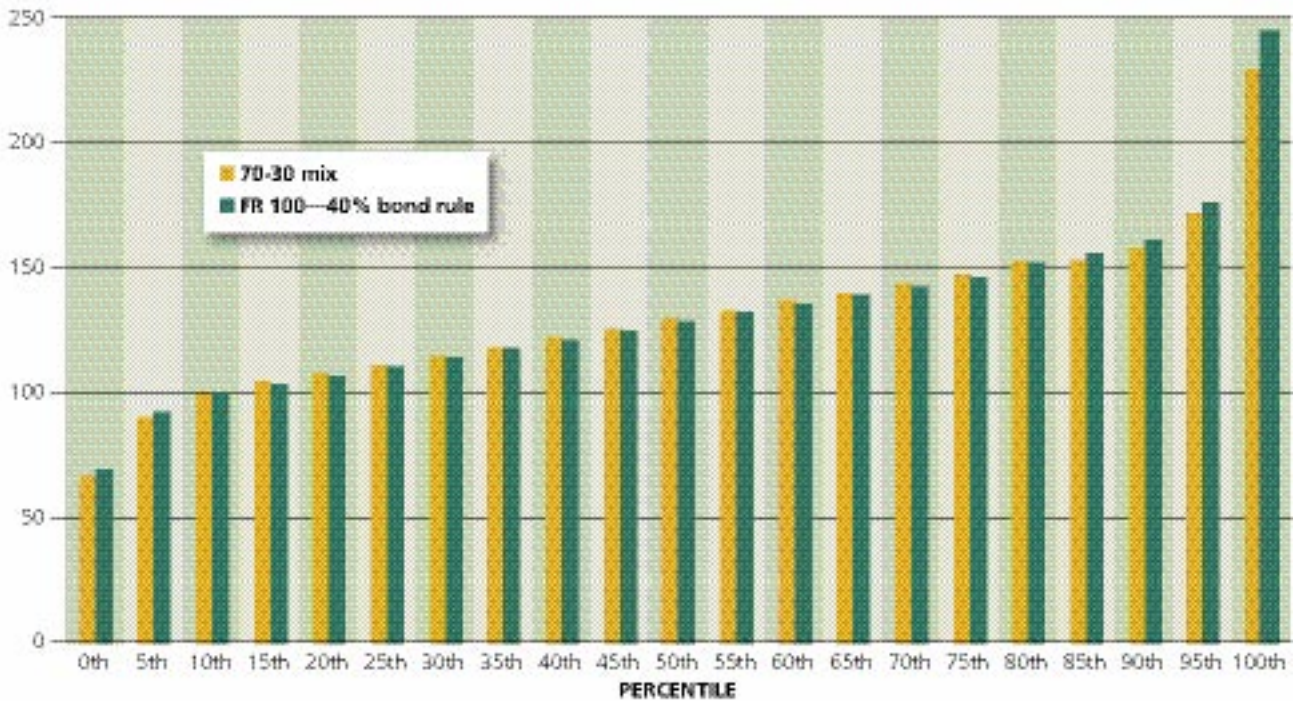


**CHART 2** ABO Funded Ratio 2010

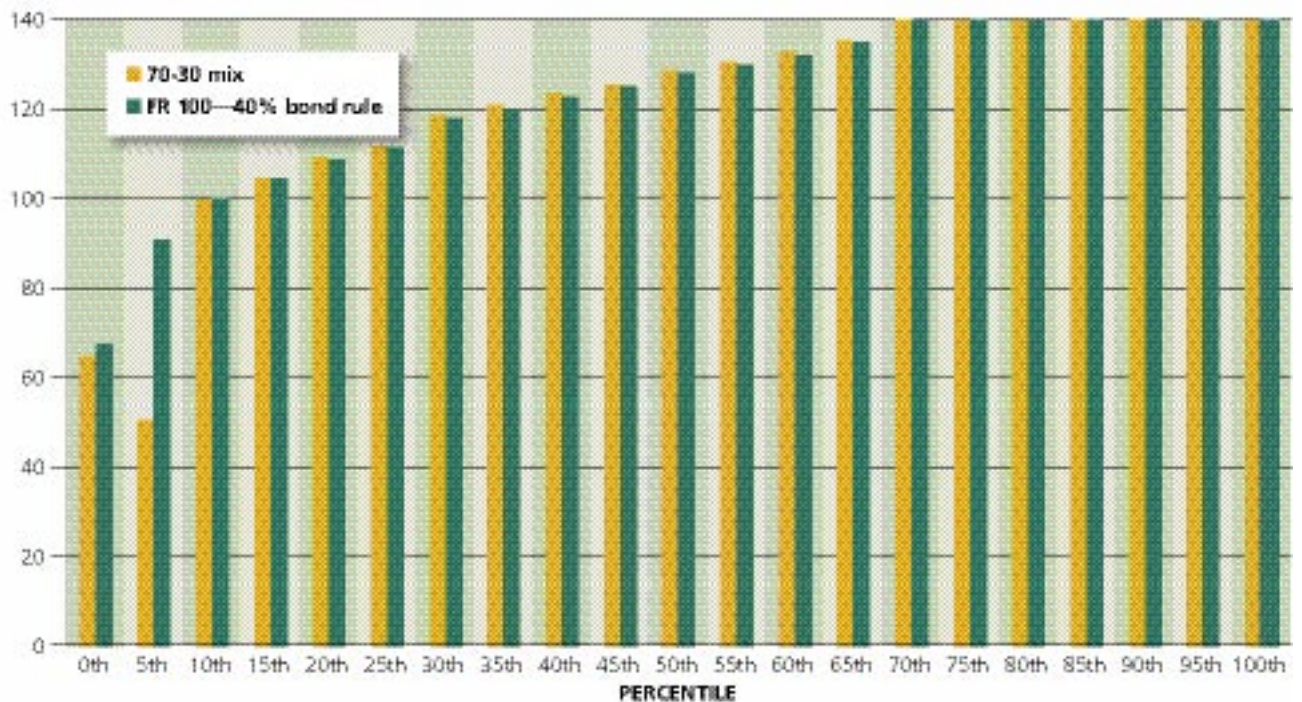




**CHART 3** ABO Funded Ratio 2002

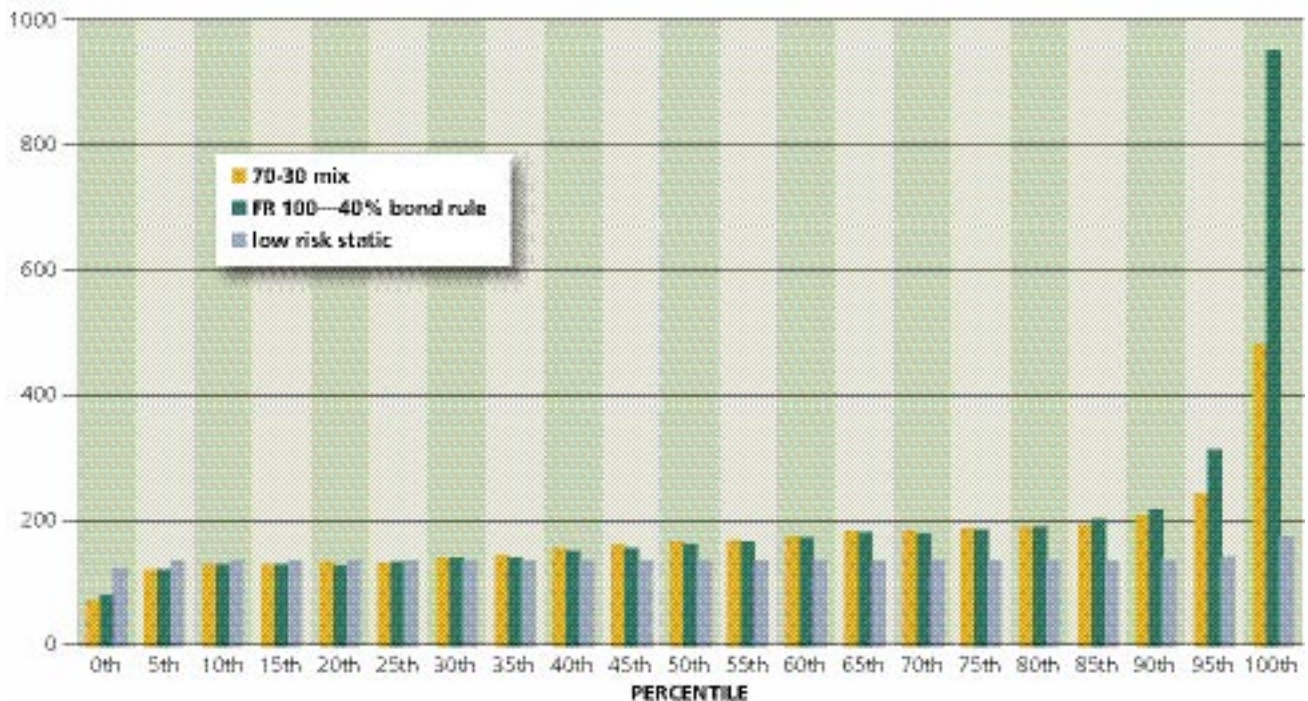


**CHART 4** ABO Funded Ratio 2002





**CHART 5** ABO Funded Ratio 2010



All three of the dynamic asset allocations are expected to perform better than the static asset allocation, up near the 100th percentile, when returns are higher than average. Some do better near the 0th percentile when returns are lower than average. However, the performance, for all the dynamic asset allocations, is worse than the static asset allocation at many of the intermediate levels.

Chart 2 shows two of these in more detail. Chart 3 shows a shorter horizon, just two years with only the second year having a change due to the dynamic asset allocation decision.

The dynamic asset allocation appears to outperform the static asset allocation at the 5th percentile and below; and at the 85th percentile and above. In the short term, the dynamic asset allocation also outperforms the static allocation at these same levels. In most of the trials between these levels, at the intermediate percentile levels, the static asset allocation outperforms the dynamic asset allocation. Therefore, the dynamic asset al-

location isn't always superior and there's the possibility that the static asset allocation would have performed better.

In addition, a plan sponsor may not be interested in getting large funded ratios that would have no bearing on plan contributions that are probably already zero. Maintaining the funded ratio at its current level or keeping it above 100 percent is a common goal for a plan in this situation. Therefore, let's focus on the allocations below the 140 percent funded ratio as shown in chart 4.

Whether the plan sponsor would prefer the static or dynamic asset allocation depends on the percentile levels the sponsor considers important. We can see from the 0th percentile area of the chart that if the plan sponsor has a goal of avoiding the most severe drops in the current funded ratio, the dynamic asset allocation would be preferred. If the plan sponsor wanted better results in the average or median case, however, we might want to focus our attention on the 50th percentile where the static asset alloca-

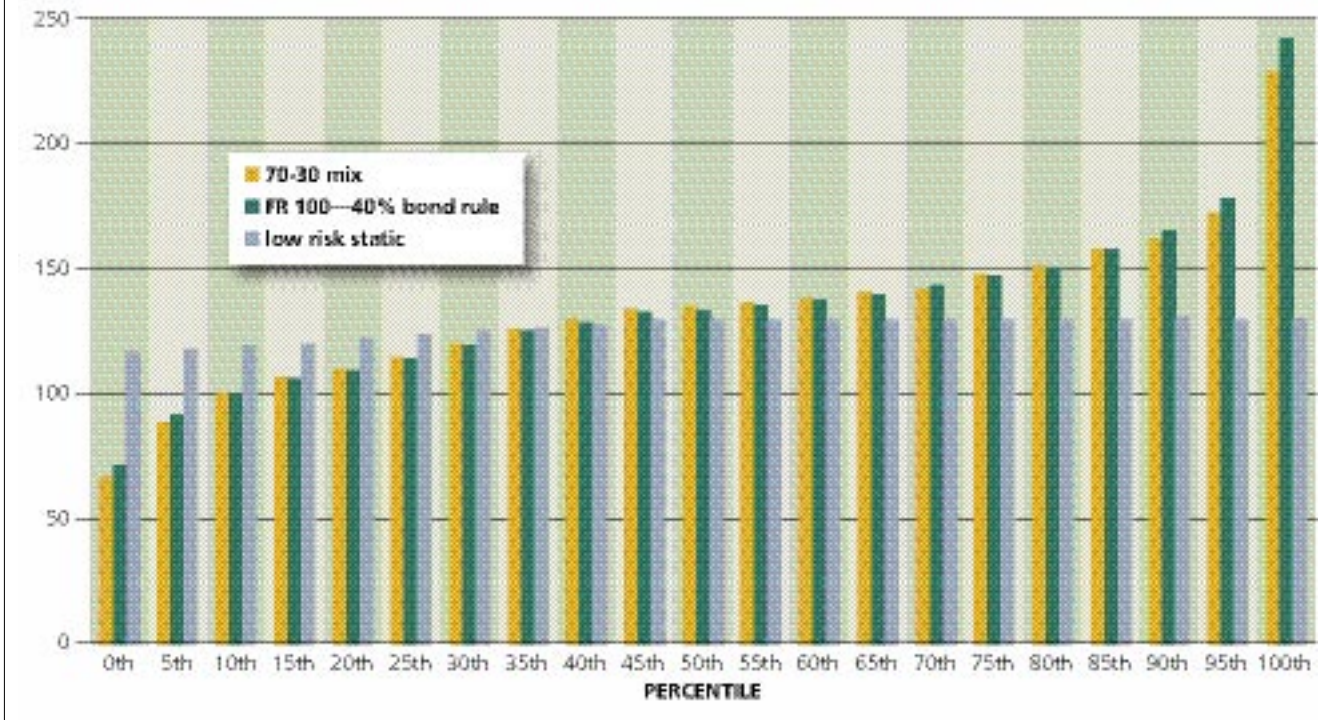
tion would be preferred to the dynamic asset allocation.

Let's look into why this happens. In the trials that produce results in the intermediate range, the annual returns are a combination of bad, average, and good. Assuming the returns are bad, then good, the allocation to stocks is reduced after the bad return year and the plan then misses out on some of the good stock market returns in the later years.

If the returns are first good, then bad, the allocation to stocks is increased after the good year, only to suffer more losses when the bad market returns occur. Therefore, the dynamic asset allocation in this case ends up as bad market timing.

In the trials near the 100th percentile results, good returns happen in just about every year. Therefore, the allocation to stocks is increased as the funded ratio increases. This increase in the allocation to stocks under the dynamic asset allocation pays off, as almost every year has good stock market returns. In the trials near the 0th percentile, bad stock mar-

**CHART 6** ABO Funded Ratio 2002



ket returns occur in almost every year. Therefore, the dynamic asset allocation decrease in the allocation to stocks in this case avoids losses in the later years.

In order to achieve the advantages of the dynamic asset allocation, the plan sponsor has to be willing to stick to this policy, even though some might think the market has bottomed out and it's time to get back into the stock market. This dynamic asset allocation will work for those who see bad stock market returns year after year and are worried that the trend will continue.

The biggest surprise, however, is perhaps the very limited protection that dynamic asset allocation offers. At the most severe market conditions, the funded ratio was improved only by a few percent. Fortunately, there are other options available that we've overlooked until now.

If the plan sponsor's main concern is avoiding extreme losses, for example, there's a low-risk static option with 100 percent fixed income that matches liability

duration. In charts 5 and 6, we see that if we include this option, it significantly outperforms the dynamic asset allocation in protecting the funded ratio against the most severe reductions.

Therefore, the reasons to select a dynamic allocation over a static allocation would have to involve more than just protecting against the most severe reductions in the funded ratios. Charts 5 and 6 demonstrate that the dynamic asset allocation can have relatively good results during times of bad market returns and relatively good results during times of good market returns. Therefore, the reason to select this dynamic allocation over either of the two static allocations would be if the plan sponsor wanted to reduce severe losses while maintaining some upside potential.

In conclusion, a dynamic asset allocation approach:

- Doesn't change the available efficient frontier asset allocation options. Rather, it chooses among the efficient frontier op-

tions over time.

- Could be successful if emotions are kept in check and the resulting dynamic asset allocation isn't changed in an attempt to time the market.

- May not change the current asset allocation selection at the time of the asset allocation study. However, it will have an impact on future allocations, assuming a new study isn't performed to reflect revised return expectations or revised goals.

- Doesn't always outperform a static asset allocation approach. However, a dynamic asset allocation can offer options not available with static asset allocations. A dynamic approach is appropriate when the goal is to lessen the impact of several years of negative market returns while maintaining some upside potential, and the plan sponsor is willing to accept some lower median returns.

- Doesn't appear to be the best approach when the goal is to protect against severe market losses.