

## Managing Investment Portfolio Ladders . Part Two

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What did I tell you!

I knew it would happen this way. Just last issue I predicted that the regulators would reinvent %regulatory capital+to avoid capsizing institutions into FASB 115% sea of unrecognized losses+. And they did. By not counting unrecognized losses against their tangible capital requirements, regulators have just informed us that the king really is running around naked, but since we%e all members of a nudist colony, who cares.

I just love saying, %d told you so.+

The focus of this article is to chronicle my failure to get a held to maturity ladder of investment securities to outperform an available for sale and sold portfolio management strategy. Note the emphasis on . . .and sold. Earmarking securities as available for sale is meaningless unless it is supported by an active securities management strategy. I%e lost so many bets to bond dealers over this issue, even Jack Daniels himself couldn% bail me out.

Before I give you the blow by blow account of my battle, let me apologize to all of the HTM aficionados who expected me to win. Maybe you% find a flaw in my methodology. If you do, write and tell me, so I can get back into the ring.

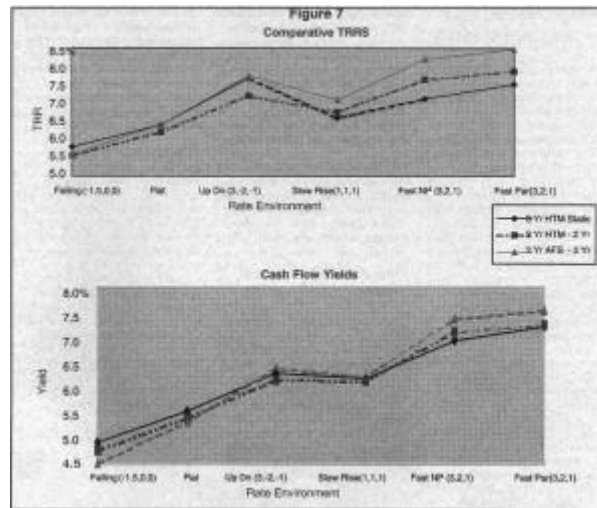
Let% review the case study situation. Fort Knox Savings and Keep (FKS&K) has a \$140 million portfolio of treasury securities. It has \$40 million in securities due to mature within one year, \$50 million in securities maturing within a one to two year time period, and the remaining \$50 million in securities maturing within a two to three year time period. The securities are assumed to be maturing in equal increments within these time periods. FKS&K starts with a balanced portfolio ladder which extends to three years. The relative performance of three strategies over an ensuing three-year investment horizon will be evaluated.

### **The Static Held to Maturity Ladder**

The first strategy we% call the Static Held To Maturity (HTM) Ladder. To execute this strategy, maturing cash flows will be reinvested in three-year treasury securities throughout the three-year investment horizon.

The accompanying Figure 7 displays the relative performance of all three strategies over six different interest rate scenarios with respect to both average yields and total rate of return. The numbers vary slightly from those used in the previous newsletter. After I saw that I was losing the baffle, I panicked and attempted all manner of fine-tuning of the timing of cash flows, attempting to squeeze every bit of accuracy out of the simulation model. It didn% matter.

Maintaining the three-year ladder produces average yields over the various interest rate scenarios that were examined. There is an orderly progression of average yields from 4.933% in the falling-rate scenario to 5.527% in the flat-rate scenario; 6.172% in the slow-rise scenario; 6.946% in the nonparallel, fast-rise scenario; and 7.203% in the parallel fast-rise scenario. A new rate scenario was introduced in this part of the article, one in which the direction of rates changed during the scenario. It assumes a three-percent increase in rates in the first year followed by successive rate declines of two-percent and one-percent in the remaining two years of the investment horizon. The average yield in this Up/Down scenario was 6.293%.



Even though we are examining a held to maturity strategy, we also measured the total rate of return in order to capture the economic value of the strategy regardless of its accounting treatment.

The ranking of the total rates of return is consistent with the ranking of the average yields over all of the rate scenarios except for the Up/Down rate scenario, which produces the greatest TRR. This makes sense, because in this scenario the entire portfolio turns over at interest rates higher than the rates existing at the end of the investment horizon. The value of the whole portfolio is at a premium.

### The Flexible HTM Ladder

The second strategy to be examined is the flexible HTM ladder. To execute this strategy, maturing cash flows will be continually reinvested in two-year treasury securities throughout the three-year investment horizon. Because we chose a shorter-term security, the portfolio will have been converted from a three-year ladder to a two-year ladder at the end of the three year period. This speeds-up the turnover of the securities while giving-up the spread between the two and three-year treasury.

As one might expect, the shorter, more quickly maturing securities ladder produces slightly lower average yields than the three-year ladder in the falling and flat-rate scenarios, while producing slightly higher average yields in the rising rate scenarios.

However, the total rates of return of the two-year ladder show considerable improvement over the TRR of the three-year ladder in the fast-rising rate scenarios. This occurs because a greater proportion of the total portfolio is repriced sooner at higher rates.

The one performance exception occurs with the Up/Down scenario in which the TRR of the two-year ladder, (7.194%), is substantially lower than the 7.683% TRR achieved using the three-year ladder. Why? Well, the faster rate of turnover ensures that a greater proportion of the portfolio reprices downward as interest rates fall during the last two years of the scenario. There is less of a premium in the portfolio.

Also, note that when comparing the relative performance of the three and two-year ladders, greater volatility is probable in the TRR of the shorter, two-year ladder.

### **The Two-Year AFS Ladder**

The third strategy is the available for sale two-year ladder. To execute this strategy, \$50 million of securities due to mature during the third year of the three-year portfolio ladder will be liquidated and the proceeds will be reinvested in a two-year ladder. Remember, we invested \$2 million in one-month treasuries, \$2 million in two-month treasuries, and so on, until the entire \$50 million was invested. This resulted in a two-year laddered portfolio. The portfolio was immediately converted from a three-year to a two-year ladder, instead of the gradual transformation achieved using the flexible HTM strategy.

Once again, we witness that in all but the flat and falling rate scenarios, the AFS strategy performs better than either of the HTM alternatives with respect to both yield and total rate of return. The sale and reinvestment allows a faster response to several rising-rate scenarios in which interest rates are moving steadily in one direction. And, as we noted in the last issue, it will be in these situations that the AFS strategy will compare favorably to HTM ladders.

The AFS portfolio performs slightly better with respect to yields than either HTM ladder, even in the Up/Down scenario, in which rates change direction. And with respect to the TRR, the AFS strategy performs slightly better than the three-year HTM ladder and about one-half percent better than the two-year HTM ladder.

When you think about it, this result makes sense. After all the AFS strategy generates a faster response. Because the portfolio can be sold immediately, it can fund a quick infusion of two-year treasuries. And, the more securities that move to a premium when rates fall, the greater the likelihood of generating a higher total rate of return.

Of course, the results of the AFS strategy also shows a greater degree of volatility. Both average yields and TRR figure a range of about three percent among the six scenarios.

### **Rationalization and Sour Grapes**

Can we rationalize these results?

Some of you will say that since securities were sold only once during the three-year investment horizon the transaction costs of the actively traded portfolio have been underestimated. Others will say that the assumption of only one change in the direction of interest rates during my Up/Down scenario is less than overwhelming in its complexity. And they would all agree that I am far more likely to get caught zigging instead of zagging by assuming multiple sales throughout a period of multi-directional rate changes, over a specified investment horizon.

Perhaps. But maybe these more complex scenarios are just variations of the six situations that we examined.

I am not lying if I continued to sound surprised by these results. Scads of analyses comparing the relative performance of laddered versus actively managed portfolios have been conducted over the years, using far more sophisticated research methodology. In fact, such an analysis is a standard of many MBA educations at universities across the country. Their results are the same as ours: the actively managed portfolio has a slight edge in performance.

This difference in performance may be enough to turn the heads of portfolio managers of pension funds, mutual funds, or any other high concentration of investment securities. But I question whether the benefits of an actively traded portfolio outweigh the costs in time, nervous frustration and the potential for volatility of both income and capital at a retail lending institution. As a result, I recommend that my clients develop a portfolio ladder in which maturing cash flows are reinvested at the point of the yield curve which captures the greatest relative value.

Now that's rationalizing. Or is it?