

Managing Investment Portfolio Ladders: Part One

To Fiddle Or Not To Fiddle

By Thomas J. Parliment, Ph. D

I'm a recovering market addict.

I'm addicted to the excitement, the unpredictable search for relative value along the yield curve. Give me a Telerate or a Bloomberg (if you dare), a telephone, a big pot of coffee - man, there's just nothing like it. Trouble is, that's not banking.

I realize that running a bank (or a savings institution or a credit union) is a retail operation. As managers, our battles with profitability will be won or lost in the retail markets. After all, loans represent the primary asset of most banks and deposits form their primary source of funding. Decisions concerning product design and innovation, product pricing, and marketing engage the lion's share of a manager's time and energy.

That's not to underestimate the function of investing. But recognize that in most retail financial institutions, investment decisions are made with one eye on liquidity, one eye on loan demand and another eye on yield.

I deal with my addiction by avoiding the urge to buy and sell, sell and buy, buy, buy, sell, sell.. .whew, that was close. In fact, before the recent FASB 115 hullabaloo about categorizing investments as either held to maturity or available for sale, I'd been telling my clients to ladder their investments. When securities are continuously purchased with a maturity of one, two, three or, even five years, they will generate constantly maturing cash flow. These cash flows provide the liquidity for new loans and investments. The energy saved from actively managing portfolios+ can be spent managing customer relationships.

Pretty conservative, huh. Well, what do you expect from a recovering addict? Oh, and my views on managing hold to maturity ladders leaves plenty of room to consider a variety of investments. Corporate Bonds and even CMOs are fair game as long as managers spend the time to learn how to manage the attendant risk.

But FASB 115 has changed all of that. Or has it.

Suddenly an explicit designation of held to maturity seems confining when compared to the more flexible alternative of designating the security as available for sale. After all, the latter designation allows the sale of the security at any time, for any reason. The price of this freedom is the regular marking to market of the security and the acknowledgment that the gains and losses associated with a mark to market position are a special component of the institution's capital account.

On the other hand, choosing held to maturity exposes the institution to swings of the auditor's word of tainting if its managers dare sell any security before its maturity.

It's clear why securities firms would prefer the available for sale category. As long as the capital account is adjusted by changes in market values, institutions are one step closer to the sale of the security. I don't want to appear so jaded as to suggest that lust lurks in the hearts of dealers. Just appreciate that the available for sale status is more conducive to the active portfolio management strategies that are believed to benefit clients. Cough, cough. Turn your head to the right please.

Regulators and accounting firms also jumped on the available for sale bandwagon, believing it to be the true and right course of action and, by the way, so much easier to administrate.

Of course the fast pace of rising interest rates throughout 1994 has sobered many people about the pain of adjusting to the available for sale category. Managers are growing tired of explaining to their directors why retained earnings can't be leveraged because they've been netted-out by unrecognized losses.

Regulators are busy trying to reinvent regulatory capital in order to shore up institutions in the event rates explode. At that point the regulator's caseloads will be overwhelmed with institutions whose reported GAAP capital erroneously shows them to be failing net worth minimums. I say erroneously because FASB fails to consider increases in the value of core deposits as a part of their peg-legged mark to market dictum.

Even securities dealers are realizing that institutions are loath to account for unrecognized losses in their income statements by selling underwater securities and repositioning their portfolios.

Somewhere along the line, it became accepted to equate total rate of return analysis with the available for sale accounting category to as a means to evaluate investment alternatives. They aren't the same thing. Total rate of return analysis can be applied regardless of your accounting methodology. In fact, we're going to do just that. I'm going to put my conservative preference for held to maturity investment ladders through some what if testing. How much performance might be sacrificed by choosing an investment strategy which follows a basic held to maturity ladder versus a strategy which actively sells securities to reposition the portfolio?

Our case study institution, Fort Knox Savings and Keep will illustrate these strategies. FKS&K has a \$140 million portfolio of treasury securities. It has \$40 million in securities due to mature within one year (6/30/94 . 6/30/95), \$50 million of securities maturing within a one to two year time period (6/30/95 . 6/30/96) and the remaining \$50 million of securities due to mature within a time period of two to three years (6/30/96 . 6/30/97). 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.

We are going to be evaluating the relative performance of three strategies from 6/30/94 through 6/30/97. The first strategy is the Static Held to Maturity (HTM) Ladder. To execute this strategy maturing cash flows will be reinvested in the three-year treasury securities throughout the three-year period. Three-year securities were chosen because most of the value in the yield curve could be purchased at the three-year point on the curve, and fit the institutions need for liquidity. These assumptions are arguable but the point is not to sell any securities before they mature.

The second strategy is the Flexible HTM Ladder. To execute this strategy maturing cash flows will be continuously reinvested in two-year treasury securities throughout the three-year period. At the end of the three-year period the portfolio will have been converted from a three-year to a two-year ladder. In this scenario, my investment ladder is hedged against rising interest rates by the decision to shorten the time period. It's a recognition of the fact that laddered portfolios can be extended or shortened based on the preference of the institution, while still maintaining held to maturity status. For that matter, I could have chosen to spread my securities purchases over a range of maturities, still maintaining the held to maturity status. It may improve performance.

The third strategy is the Available For Sale Portfolio. To execute this strategy \$50 million of securities maturing between 6/30/96 . 6/30/97 will be liquidated and the proceeds will be reinvested in a two-year ladder. A little over \$2 million will be invested in one-month treasuries, \$2 million in two-month treasuries, and so on all along the yield curve until the entire \$50 million is invested. This will result in a two-year laddered portfolio. My portfolio will have immediately converted from a three-year to a two- year ladder, instead of the gradual transformation achieved via the Flexible HTM strategy. It's fair to observe that a sale and repurchase transaction occurs only once during the three-year cycle.

The performance of the three strategies over the five different interest rate scenarios shown is evaluated in Figure 3. Rate environments include: A falling-rate scenario in which rates drop 1.5% in the first year and stay flat for the remaining two years of the investment horizon; A flat rate scenario for all three years; A low rise+scenario in which rates rise by 1.0% each year; A fast, parallel, rising-rate scenario in which all rates along the yield curve increase by 3.0% in year one, 2.0% in year two, and 1.0% in year three; and, A fast, nonparallel, rising-rate scenario in which rates between one and two years on the yield curve move by 90% and rates between two and three years on the yield curve move by 80% of their movement in the fast, parallel rising-rate scenario.

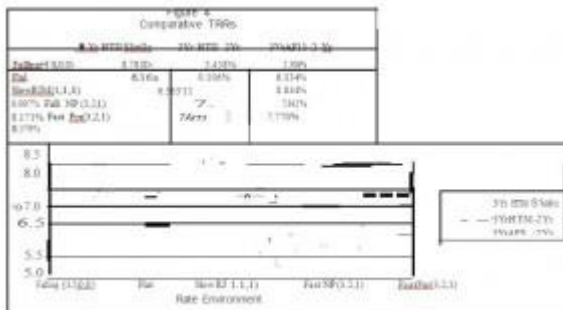
The table in Figure 3 (Page 9) and the graphs in Figures 4 and 5 compare the performance of the three strategies. Two measures of performance are reviewed: the average yield achieved by each of the strategies (reflecting the impact on the income statement), and the total rate of return

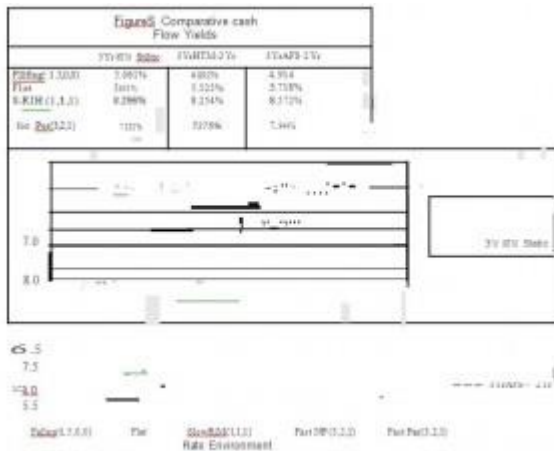
of each strategy (which factors in the mark to market value of the portfolio at the end of the three-year investment horizon).

**Figure 3
Laddered Portfolio Performance**

3 Yr HTM Static	Initial Mkt Value	Final Value	TRR	Avg. Yield
Falling (-1.5,0,0)	138,584	164,044	5.783%	5.061%
Flat	138,584	166,751	6.362%	5.653%
Slow Rise (1,1,1)	138,584	167,701	6.563%	6.296%
Fast NP (3,2,1)	138,584	169,987	7.045%	7.067%
Fast Par (3,2,1)	138,584	172,052	7.477%	7.322%
3 Yr HTM - 2 Yr				
Falling (-1.5,0,0)	138,584	162,535	5.458%	4.892%
Flat	138,584	165,552	6.106%	5.525%
Slow Rise (1,1,1)	138,584	166,081	6.644%	6.254%
Fast NP (3,2,1)	138,584	174,295	7.942%	7.225%
Fast Par (3,2,1)	138,584	173,463	7.770%	7.275%
3 Yr AFS - 2 Yr				
Falling (-1.5,0,0)	138,584	162,780	5.506%	4.914%
Flat	138,584	166,621	6.334%	5.718%
Slow Rise (1,1,1)	138,584	169,757	6.997%	6.572%
Fast NP (3,2,1)	138,584	175,407	8.171%	7.767%
Fast Par (3,2,1)	138,584	176,422	8.379%	7.944%

The numbers and the graphs speak for themselves. In all but the flat and falling rate scenario, the AFS Portfolio strategy performs better than the HTM alternatives with respect to both yield and total rate of return. Big surprise? I hope not. The sale and repurchase strategy allows a faster response to several rising-rate scenarios in which interest rates are moving steadily in one direction. If the AFS strategy is going to compare favorably to HTM ladders, it will be in these situations. The surprise is that the performance advantage isn't bigger!





Note the superior performance of the shorter two-year HTM ladder vs. the three-year HTM ladder. The shorter-term ladder equates to faster response times in a uniformly rising-rate environment.

The real test of the relative performance of the HTM vs. the AFS strategies will occur when the investment horizon over which we do our evaluation includes multiple changes in the direction of interest rates. In order for an AFS strategy to generate responses to the changing direction of rates, multiple sales and repurchases will be required. This, in turn will generate greater transaction costs and increase the probability that I get caught zigging when I should be zagging.

I'm not ready to admit defeat for my HTM ladders, yet. Stay tuned.