Exploring bond strategies

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5.4 Summary and conclusions

In section 1.5 we formulated the following objective for this study:

> To develop a simulation model of the asset management system, to use this model to explore bond strategies, and to use the outcomes to express an opinion about the robustness of the outcomes under different yield curve circumstances, for various investor circumstances.

We built a Bond Portfolio Simulation model that is capable of meeting this objective, and we presented a clear overview of the robustness of the results for archetypical strategies under various circumstances. The results we presented in this final chapter can be summarized as follows.

For each archetypical strategy, we presented the results in terms of their robustness in relation to the mean rate of return that is realized on a benchmark, its downside risk characteristics, and its upside potential.

Archetypical strategy 0.0.0 (buy and hold) is not intended to fulfill an objective at all, as our results clearly showed. The test results suggest that the arbitrary manner in which the contents of the portfolio changes over time, appears to have a serious impact on the distribution of the results. The good results in case of downward movements of the yield curve go together with disastrous results in case of upward movements. In terms of downside risk this archetypical strategy definitely takes the number one position in the ranking, as the most risky one. The results strongly suggest that any portfolio manager who has to fulfill a specific return objective, either a fixed or a variable one, should avoid this type of strategy.

For archetypical strategy 0.0.1 (indexing) we find that it is very stable in achieving its objective of tracing an index, for every type of movement of the yield curve. Depending on the nature of the capital market and the type of investor, the difference between the rate of return of the benchmark and that of the portfolio may vary, but for a particular investor, in a particular market, the difference is stable. Although preventing negative returns is not a primary condition in the objective of this archetypical strategy, the investor who uses it should not forget that the downside risk that is related to this archetypical strategy is quite high.

The results of archetypical strategy 0.1.0 (passive immunization) revealed the power of simple immunization. The result of a single immunization action dramatically changes the return distribution compared to that of the buy and hold portfolio (C). All in all, the results show that the impact of specific yield curve movements does not result in serious deviations from the benchmark. In other words: the results are not perfect in terms of immunization, but still

quite robust with respect to all types of yield curve movements, especially if we consider the minimal management involvement that is required.

Nevertheless, the results are only mediocre if compared to those of active immunization (0.1.1). The results for this archetypical strategy show clearly that a constant rate of return can be achieved, and that downside risk can be restricted to almost zero percent. But this time active management is required. An interesting result we found is that the mean rate of return on portfolios that are managed according to the modified rebalance method is *always* higher than that of the portfolios that are managed according to the traditional method. This is a strong indication that our modified rebalance method, using horizon duration, makes sense. On the other hand, due to the somewhat less intense rebalance activities that characteristize this method, the deviation of the rates of return around the mean is slightly higher than that of the basic rebalance method. It is up to the portfolio manager to weigh these results against each other.

We used archetypical strategy 1.0.1 to shed some light on the consequences of using a vision on the future value of interest rates. To be able to model the intensity by which the vision is translated into the contents of the portfolio, we used the lever parameter (P2). The results clearly showed the trade off between risk and return for different values of the lever. The results indicate that a portfolio manager must be very sure of his case if he uses this type of strategy. The price to be paid for an incorrect vision is high. In chapter one we mentioned that this type of strategy is very popular with Dutch institutional investors. Studying the results of fixed income investment funds over 1994 revealed that, for many investors, the vision they applied proved incorrect, and the lever they used too high (ABN-AMRO [1994]). Using a model like the one we presented in this study, may prove useful in reconsidering portfolio management decisions that concern other people's money.

The results we found for archetypical strategy 1.1.1 reveal that using this type of strategy offers a realistic possibility to improve the downside risk characteristics of a bond portfolio, without spoiling all the upside potential. We can state that in case of standard and downward movements of the yield curve, this archetypical strategy outperforms a standard immunization strategy by many basispoints, whereas in case of an upward movement of the yield curve the losses are restricted. The individual ranking results for robustness of mean return, downside risk, as well as upside potential varied from "average" to "good", under all types of yield curve movements, without any really weak spots. There is no other archetypical strategy with the same overall track record of positive characteristics. On the whole it appears that this type of structured portfolio management can be very useful for all kinds of investors.

In general, the results show that active, structured portfolio management must always be preferred to simply buying bonds and keeping them until maturity. In chapter one, we

mentioned that a large number of Dutch institutional investors still prefers the latter. We hope that the results of this study will inspire them to change their mind.