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Building a Better TDF 101

by Dr. David N. Esch

April 2, 2015

The market for Target Date Funds (TDFs) has exploded in the last few years. These funds are popular among investors because they provide a sense of risk protection at a low cost. However, many issues have been rightly noted about these funds. Much has been written about the problems of TDFs in the articles in the bibliography, and in previous posts on our blog. They are often composed of mediocre or poor underlying investment strategies, and suffer from lock-in, unresponsive to changing market or personal situations.

Many factors determine the lifetime performance of a retirement fund. Esch and Michaud (2014) show that, ignoring market performance, the overall lifetime risk taken by a glide path is the most important determinant of expected terminal wealth. However, even more important in determining realized wealth (as opposed to expected or average wealth) is the performance of the markets, specifically of asset classes with greater exposure in different segments of the glide path. That the match between exposure and markets is such an important factor in determining wealth accumulation would tend to justify a more dynamic strategy of tailoring the risk exposures to current market conditions as time passes.

TDFs are likely to be a part of the landscape of financial products for the foreseeable future because their qualified default investment alternative (QDIA) status has been upheld by the SEC/DOL, and they seem to be attractive to a large market of retirement investors. There are in fact rational justifications for glide paths when used thoughtfully as an investment vehicle:

- *Risk Protection for Contributions*

For an endowment case in which a lump sum of money is invested, the glide path has no effect on the level of expected terminal wealth, all else being equal. However, most real people fund their retirements in periodic installments rather than all at once. In the case where a regular contribution is made, the terminal wealth is maximized, among the class of linear glide paths, by a gently descending glide path (Esch and Michaud 2014). In the case where the contributions increase over time, the wealth-maximizing glide path becomes steeper. This can be thought of as keeping the dollars at risk at a more consistent level over the lifetime of the investor

- *Risk Protection during Distribution*

During a distribution phase it does make sense to lower the overall portfolio risk, since the investor typically has less human capital available which can be

converted to financial capital. Thus it makes great sense to keep holdings at a lower risk level.

- *Transition Between Risk Levels*

When switching from higher risk to lower risk it makes sense to decrease risk gradually rather than trade abruptly into a low risk strategy. This is consistent with planning for a longer lifetime narrative arc and preparing for retirement over a timeframe of years rather than days.

With these arguments in mind, we might set about in thinking how to construct a better retirement investment vehicle, which avoids some of the problems of traditional TDFs.

- Professional financial advisors do add value to an investment strategy. We believe that a professional manager's timely advice is worth the cost for most investors. Retirement funds should not be locked in and forgotten, unresponsive to markets. Glide path segments should be thought of, rather than locked-down unchangeable trajectories, as building blocks to be assembled on the fly into a bespoke investment plan that is responsive to market and personal considerations. Investor circumstances and fund performance should be reassessed and evaluated periodically, and fund risk level targeted appropriately either on a constant risk target or a descending glide path, depending on the phase of the investment.
- TDFs are often built on poor underlying strategies. Glide paths could instead be constructed from globally diversified risk-managed funds that balance asset classes appropriately and manage risk effectively. The logical endpoint of this evolution is that a glide path fund could be built from portfolios on the Michaud efficient frontier.

So, for advisors looking for a better way to manage a client that is interested in glide paths or target date funds, and for lifespan investors looking for a flexible system of globally diversified strategic investments, New Frontier has built the Matrix family of funds and launched them on the MidAtlantic platform. These include glide path funds as well as target-risk funds as building blocks, which can be put together to provide a customized smooth-transitioning investment trajectory for clients. These funds will maintain the advisor-client relationship with various easy-to-use guides and tools to recommend the perfect investment vehicle for clients saving for retirement or other lifetime goals.

Bibliography

- Brinson, Gary, L. Randolph Hood, and Gil Beebower. 1986. "Determinants of Portfolio Performance." *Financial Analysts Journal* 42(4): 39-44.
- 1991. "Determinants of Portfolio Performance II: An Update." *Financial Analysts Journal* 47(3): 40-48.
- Chernoff, Joel. 2003. "Markowitz Says Michaud Has Built a Better Mousetrap." *Pensions & Investments*. December 22.
- Esch, David. and Michaud, Robert. 2014. "The False Promise of Target Date Funds." *Journal of Indexes*, (17)1: 50-59.
- Lintner, John. 1965. "Security Prices, Risk and Maximal Gains from Diversification." *Journal of Finance*, December.
- Markowitz, Harry. 1959. *Portfolio Selection: Efficient Diversification of Investments*. New York: Wiley, 2nd edition, Cambridge, MA: Blackwell.
- Michaud, Richard. 1976. "Pension Fund Investment Policy." Presented to the Institute for Quantitative Research in Finance, Spring Seminar.
- 2003. "A Practical Framework for Portfolio Choice." *Journal Of Investment Management*. 2nd Quarter.
- and Robert Michaud. 2008a. *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*. 2nd edition. New York: Oxford University Press.
- 2008b. "Estimation Error and Portfolio Optimization." *Journal Of Investment Management*. 1st Quarter.
- Rubinstein, Mark. 1973. "A Comparative Statics Analysis of Risk Premiums." *Journal of Business* 46(4): 605-615.
- Sharpe, William. 1964. "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk." *Journal of Finance* (19):425-442.
- Smetters, Kent. 2009. "Optimal Portfolio Choice over the Lifecycle of Social Security." Presented to: Institute for Quantitative Research in Finance. Wharton, March.

This note was posted as an entry on New Frontier's investment blog on April 2, 2015. Read this entry and other posts at: blog.newfrontieradvisors.com.