

BOOK REVIEW

DON'T TRY THIS AT HOME

LIFECYCLE INVESTING: A NEW, SAFE, AND AUDACIOUS WAY TO
IMPROVE THE PERFORMANCE OF YOUR RETIREMENT PORTFOLIO
Ian Ayres & Barry Nalebuff. New York: Basic Books, 2010.

Fredrick E. Vars*

ABSTRACT

Lifecycle Investing represents a seismic shift in retirement planning. It advocates leveraged investing (essentially, borrowing to invest) while recognizing that excessive leverage contributed to the 2008 financial crisis. Contrariness here pays off. The contribution of the book to investment theory cannot be overstated: it identifies and demonstrates the value of a new type of diversification. The danger is in moving from theory to practice. Here, the book falls short in important respects that need to be recognized before do-it-yourself investors go badly astray. On the other hand, the book is overly cautious in its assessment of the legal barriers to implementation with third-party assistance. The book argues that the strategy is “safe,” but may fail traditional legal tests of “suitability” and “prudence.” Easing the legal concerns of investment advisors may allow for responsible exploitation of the advantages of temporal diversification. Still, powerful forces push against the short-term risk-taking involved in the lifecycle approach. This Review identifies some of those forces and suggests both important research questions and implications for all principal-agent relationships. The potential gains from *Lifecycle Investing* are huge, as is the potential for misapplication.

INTRODUCTION

In *Lifecycle Investing: A New, Safe, and Audacious Way to Improve the Performance of Your Retirement Portfolio*,¹ Ian Ayres and Barry Nalebuff are swimming upstream. They write: “Excessive leverage is what got our

* Associate Professor, University of Alabama School of Law; J.D., Yale; A.B., Princeton. Thanks to William Birdthistle, Montré Carodine, Shahar Dillbary, Heather Elliott, Dev Gandhi, Bob Harada, Caroline Harada, Ron Krotoszynski, Grace Lee, Meredith Render, Ken Rosen, Charlie Vars, and Ray Vars for help at various points in this project. Jonathan Kolodziej and Michael Reeves provided excellent research assistance. Thanks also to Dean Ken Randall and the University of Alabama Law School Foundation for generous research support.

1. IAN AYRES & BARRY NALEBUFF, *LIFECYCLE INVESTING: A NEW, SAFE, AND AUDACIOUS WAY TO IMPROVE THE PERFORMANCE OF YOUR RETIREMENT PORTFOLIO* (2010).

economy into the financial mess of 2008.”² Their prescription—more leverage. Specifically, a better way for retirement investors to weather serious downturns in the stock market is to spread market exposure more evenly across time. Young people invest too little of their expected lifetime earnings in the stock market for the simple reason that they do not have the money to invest. The proposed solution is to use leverage (in effect, to borrow) to increase market exposure when investors are young and to decrease it (at least relatively) when they are older.

Ayres and Nalebuff are strong swimmers. Through close analysis of historical stock market data, both domestic and foreign, and through 10,000 hypothetical simulations, they convincingly establish that their strategy can dominate more conventional approaches.³ The strategy, “temporal diversification,”⁴ can be used purely to reduce risk, just like asset diversification.⁵ It also can be employed to increase expected returns.⁶ Or, of course, it can achieve some combination of the two. Temporal diversification is a major contribution to investment theory, and the book, for that reason alone, is a success.

But the book, as the subtitle indicates, promises more than good theory: “A New, Safe, and Audacious Way to Improve the Performance of Your Retirement Portfolio.”⁷ That the approach is both “new”⁸ and “audacious” cannot seriously be questioned, so this Review considers whether the book lives up to the rest of its subtitle. In particular, Part I examines the assumptions made to transition from theory to practice. The assumptions are generally plausible or inessential. Part II attempts to set forth in detail the implementation strategy. This Part concludes that implementation is both too complicated and insufficiently detailed for the average investor. But perhaps expert advice or a pooled fund can solve the problem. Part III examines the legal, structural, psychological, and practical barriers to either solution. The legal barriers in particular are actually less daunting than the authors suggest. That is important because the huge potential gains from lifecycle investing are probably best exploited with expert assistance. The structural and psychological hurdles tentatively identified here suggest important research questions and may have significant ramifications beyond retirement investing to all principal-agent relationships.

2. *Id.* at 35.

3. *Id.* at 37–86.

4. *Id.* at 3.

5. *Id.* at 41.

6. *Id.* at 43.

7. *Id.* at cover.

8. The approach is new, but not the name. *E.g.*, BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET: INCLUDING A LIFE-CYCLE GUIDE TO PERSONAL INVESTING* (1990).

I. ASSUMPTIONS

The book's detailed implementation of its theory makes several assumptions. First, the book assumes Social Security will replace a portion of an investor's final work income according to its current payment schedule.⁹ The authors fully recognize that this assumption is questionable: "We doubt Social Security will go away, but the benefits might all become subject to taxation, and there might be a higher retirement age and lower caps, too."¹⁰ While the book recommends including Social Security for planning purposes, its simulations demonstrating the efficacy of the lifecycle approach wisely exclude Social Security.¹¹

Second, contrary to the book's disclaimer,¹² the lifecycle approach assumes positive future income and savings streams. The potential for a total wipeout in early years is not insubstantial and, without future income, potentially devastating. The lifecycle strategy treats future salary like a bond.¹³ Borrowing against that bond is risky when there is a substantial chance of default. In effect, the person who expects no future income is in the same position as the person on the cusp of retirement. Neither is a good candidate for leveraged investing under the lifecycle approach (or any other).¹⁴ The saving grace here is that the assumption of positive future earnings is reasonable for most young people.

Finally, the jump from theory to practice depends crucially on the following assumption: "[T]he expected return on stock is higher than the expected cost of borrowing."¹⁵ If this assumption fails, lifecycle investing is a great theory with no real-world benefit. "It doesn't make any sense to pay a 10 percent margin rate to buy stock with an expected return of 8 percent."¹⁶ The 8% figure would appear to be in the ballpark for an expected return.¹⁷ Of course, it could be much lower. The book cites a survey of economists who, in 2004, predicted an equity premium of only

9. AYRES & NALEBUFF, *supra* note 1, at 146 (Figure 7.2).

10. *Id.* at 205 n.15.

11. *Id.* at 109.

12. *Id.* at 32.

13. *Id.* at 13.

14. Zvi Bodie, *An Analysis of Investment Advice to Retirement Plan Participants*, in *THE PENSION CHALLENGE: RISK TRANSFERS AND RETIREMENT INCOME SECURITY* 19, 23 (Olivia S. Mitchell & Kent Smetters eds., 2003) ("If one's future labor income is relatively secure, it might be optimal to start out in the early years with a high proportion of one's investment portfolio in stocks, and decrease it over time as suggested by the conventional wisdom." (emphasis added)).

15. AYRES & NALEBUFF, *supra* note 1, at 79.

16. *Id.* at 62.

17. I estimate 8% based solely on the historical index prices since 1951. *S&P 500 Index: Historical Prices*, YAHOO! FINANCE, <http://finance.yahoo.com/q/hp?s=%5EGSPC> (last visited Dec. 1, 2011).

1.7% over the next 44 years.¹⁸ Adding the yield on a ten-year U.S. Treasury bond is one way to calculate the expected return on stock. That yield, as of June 11, 2010, was 3.28%.¹⁹ Of course, while low historically, that number could come down even farther. Nonetheless, adding it to the 1.7% figure yields a conservative estimated return of around 5%. The book generates positive results with an even more pessimistic expectation of 4.26%.²⁰

But it's all relative. Again, the expected return from stock must outstrip the cost of borrowing. The book calculates an average cost of 4% over twelve years for its preferred borrowing vehicle²¹ and cites a figure as low as 1.65% for another.²² Are these low borrowing costs sustainable? While the 1.65% figure in particular seems unlikely to go above 8%, the costs of borrowing have essentially nowhere to go but up²³ and can go above 10% in this area.²⁴ Stocks seem likely to outstrip the cost of borrowing, but if they do not, all bets are off.

The theory is valid and the big assumptions are unimportant or reasonable, so examining the implementation strategy is worthwhile. Whether the average investor can be expected to master the details of the strategy is particularly important because, the book argues, investment advisors and brokers are likely to be scared off by the perceived riskiness of the approach.²⁵ If that's true, which this Review partially disputes, investors are on their own.

II. IMPLEMENTATION

Do not be fooled by the subtitle and stray unqualified claims in the text²⁶ because the authors "don't think [their] diversifying lifecycle is appropriate for everyone."²⁷ Indeed, a whole chapter is devoted to "contraindications."²⁸ Stated affirmatively, one needs at least \$4,500 to save for retirement above any 401(k) employer-matched amount. In addition to precautionary, rainy-day savings, one must also have no credit card debt,

18. AYRES & NALEBUFF, *supra* note 1, at 79.

19. *Bond Yields*, VANGUARD, <https://personal.vanguard.com/us/FundsBondsMarketSummary> Table (last visited Dec. 1, 2011).

20. AYRES & NALEBUFF, *supra* note 1, at 79.

21. *Id.* at 161.

22. *Id.* at 63.

23. Vikas Bajaj, *Heart-Stopping Fall, Breathtaking Rally*, N.Y. TIMES, Dec. 31, 2009, at B1 ("While the cost of borrowing for the government and others remains historically low today, it could surge higher in the coming years.").

24. AYRES & NALEBUFF, *supra* note 1, at 63.

25. *Id.*

26. *Id.* at 26 ("If you follow our advice, you really can look forward to your retirement.").

27. *Id.* at 133.

28. *Id.* at 117.

one's income cannot be too closely correlated with the stock market,²⁹ and one must be willing to stick to the plan even if one incurs big losses in early years. Who qualifies? The authors estimate "well less than half the population."³⁰ Left unanswered are important questions about how large a correlation must be to be disqualifying³¹ and what percentage of people are likely to stick with a plan after huge losses.

The threshold requirements are, of course, just the beginning. One example will illustrate how the complexity of implementation quickly multiplies. Assuming an individual satisfies the threshold requirements, a series of calculations determine the allocation to stock. The first step is to estimate one's relative risk aversion (RRA). The book gives examples of questions designed to elicit one's tolerance for risk. Wisely, the authors are "not big fans" of such questions³² and "worry that your answers will depend too much on how we frame the question."³³ More pointedly, the authors "don't really trust your answer, and neither should you."³⁴ Still, the book's website includes a tool to "[c]alculate a rough estimate" of RRA based on one objectionable question and refers readers to myrisktolerance.com for more guidance.³⁵ That website charges \$30 to take a 15–20 minute on-line questionnaire, presumably full of individually objectionable questions that are perhaps better in the aggregate.³⁶

Once estimated, RRA is one component of a formula that generates the newly dubbed "Samuelson share," or optimal life-time percentage investment in stock:

$$\text{Samuelson share} = \frac{\text{RETURN}}{\text{RISK}^2 \times \text{RRA}}$$

29. *Accord* Bodie, *supra* note 14, at 23.

30. AYRES & NALEBUFF, *supra* note 1, at 182.

31. The closest the book comes to an answer: "If your income didn't fall *that much* [in 2008 and 2009], then your correlation to the market *probably* isn't too large." *Id.* at 127 (emphasis added). One poll suggests that this criterion alone could exclude more than half of potential investors. See *The Great Recession at 30 Months*, PEW RESEARCH CTR. (June 30, 2010), http://pewresearch.org/pubs/1643/recession-reactions-at-30-months-extensive-job-loss-new-frugality-lower-expectations?src=p_rclatest&proj=peoplepress ("More than half (55%) of all adults in the labor force say that since the Great Recession began 30 months ago, they have suffered a spell of unemployment, a cut in pay, a reduction in hours or have become involuntary part-time workers . . .").

32. AYRES & NALEBUFF, *supra* note 1, at 137.

33. *Id.* at 145.

34. *Id.* at 139.

35. Ian Ayres & Barry Nalebuff, *Resources*, LIFECYCLE INVESTING, <http://www.lifecycleinvesting.net/resources.html> (last visited Dec. 1, 2011).

36. *Id.*

where “RETURN” is the expected equity premium—the amount by which stock returns are expected to outperform bonds—and “RISK” is volatility—the expected standard deviation of stock returns.³⁷ Of course, as the authors admit, no one knows future risk and return.³⁸ In the course of two pages, they offer three different sets of numbers.³⁹ Investors, take your pick. To add to the complexity, your picks, along with your RRA, can vary over time.⁴⁰ The next steps—estimating future savings⁴¹ and actually achieving leverage at low cost⁴²—are no less complicated.

Lifecycle investing is too complicated to be a viable option for the average investor. The book falls short in its subtitle’s promise of improving the performance of every reader’s retirement portfolio. But the authors are admirably forthright in stressing that their strategy is not for everyone. The inclusion criteria, however, are a bit ambiguous and omit an implied requirement of high sophistication. For those who do qualify, the details of the proposal may still be overwhelming. Again, the authors acknowledge the problem of complexity and hint at their favored prescription: “a target-date fund . . . that employs leverage in the early years.”⁴³ That, or reliance on a good investment advisor, does seem like the best way to implement lifecycle investing.

III. BARRIERS

A. Legal

Due to legal hurdles, the book is pessimistic about the short-term potential for lifecycle investing through a broker, investment advisor, or fund. The book suggests that brokers and financial advisors could lose their licenses or be liable for losses incurred through lifecycle investing. It asserts that “[b]rokers have frequently been disciplined for recommending margin trades,”⁴⁴ citing one law review article and three cases.⁴⁵ The authorities provide some support for the assertion but should not dissuade well-informed brokers from recommending leveraged investing following the lifecycle approach.

37. AYRES & NALEBUFF, *supra* note 1, at 138.

38. *Id.* at 204 n.6 (“[W]e don’t really know the value of the equity premium.”).

39. *Id.* at 138–39.

40. *Id.* at 139.

41. The authors correctly describe this as “hard work.” *Id.* at 137.

42. LEAPs on SPDRs must be compared to margin loans. *Id.* at 11, 156.

43. *Id.* at 155.

44. *Id.* at 189.

45. *Id.* at 212 n.33.

In *DelPorte v. Shearson, Hammill & Co.*, the court indeed found that margin investing “was unsuitable for the Plaintiff.”⁴⁶ However, the basis for this finding was not that margin investing was risky, but rather that opening the margin account using a forged consent violated the clear and limited instructions of the plaintiff to buy and hold three named stocks for the benefit of her daughter.⁴⁷ Similarly, the problem with the margin investing in *Troyer v. Karcagi* was not some inherent defect in leverage but rather non-disclosure, misrepresentation, and self-dealing.⁴⁸

In re Muth more clearly holds that margin stock transactions were unsuitably risky for four investors,⁴⁹ but none of the investors would have been investing on margin under the lifecycle approach. These four investors were age sixty-four or older.⁵⁰ The leveraged phase of the lifecycle “typically lasts until your mid-fifties.”⁵¹ Furthermore, no lifecycle investor would have bet on one or two stocks, as did Muth. Rather, each would have taken leveraged positions when younger on the diversified S&P. After excerpting from these three cases and others, the cited law review article makes the critical point: “Of course, buying on margin is not per se unsuitable.”⁵²

Indeed, after *Lifecycle Investing*,⁵³ buying on margin may sometimes be required. Failure to diversify can render transactions unsuitable.⁵⁴ To be sure, “diversification” as used in existing case law and statutes refers to asset rather than temporal diversification, but the purpose of any type of diversification is “to minimize the risk of large losses” without sacrificing expected return.⁵⁵ The lifecycle strategy does exactly this: Based on

46. *DelPorte v. Shearson, Hammill & Co.*, 548 F.2d 1149, 1153 (5th Cir. 1977).

47. *Id.* at 1151.

48. *Troyer v. Karcagi*, 476 F. Supp. 1142, 1146–47, 1152 (S.D.N.Y. 1979).

49. *Muth*, Securities Release Act No. 8622, Exchange Release Act No. 52551, 86 SEC Docket 956, 966–67 (Oct. 3, 2005).

50. *Id.* at 960–61. Three of the investors were “unsophisticated,” *id.* at 967, which I have argued would disqualify them from lifecycle investing.

51. AYRES & NALEBUFF, *supra* note 1, at 30.

52. Jonathan Macey et al., *Helping Law Catch Up to Markets: Applying Broker-Dealer Law to Subprime Mortgages*, 34 J. CORP. L. 789, 825 n.196 (2009); *cf. id.* at 822 (“A high volatility, low-priced stock is unsuitable for an elderly individual on fixed income who relies on that fixed income for living expenses. This same security, however, might be appropriate for a young investor with disposable income who can weather the storm of volatility.”).

53. AYRES & NALEBUFF, *supra* note 1, at 138.

54. *George E. Brooks & Assocs.*, Exchange Act Release No. 40329, 67 SEC Docket 1743, 1745 (Aug. 17, 1998); *see also Waggoner Trust v. Mechikoff*, No. 00-00267, 2001 WL 1113033, at *1–2 (N.A.S.D. Apr. 14, 2010) (White & Zweig, arbs.) (finding for one claimant based on an alleged “failure to diversify”); *Brown v. J.P. Morgan Sec. Inc.*, No. 06-02977, 2008 WL 725129, at *1 (FINRA July 7, 2008) (Berkman, Lehrman & Samsel, arbs.) (same); *Franck v. Ameriprise Fin. Servs., Inc.*, No. 07-00117, 2008 WL 639931, at *1 (FINRA Feb. 15, 2008) (same).

55. RESTATEMENT (FIRST) OF TRUSTS § 228 cmt. a (1935).

historical U.S. returns, it can reduce by half the probability of achieving half or less than a given expected total, from 6% under a traditional stock strategy to 3% under the lifecycle approach.⁵⁶ And it does so without sacrificing any expected return (which in the same example stays fixed at \$749,000).

The same analysis should qualify lifecycle investing for favorable treatment under ERISA, which governs 401(k) plans. The touchstones are “suitability and prudence.”⁵⁷ Such terms should be liberally construed.⁵⁸ Two practitioners conclude that ERISA’s prudent-man standard does not significantly constrain derivative transactions.⁵⁹ The problem, as the book points out, is that the lifecycle strategy actually increases the probability of large short-term losses, even as it reduces the chance of such losses in the long run.⁶⁰ Here, the book is uncharacteristically modest, arguing that the history of misapplication of the prudent-investor rule to individual investments rather than the total portfolio indicates that “there is a nontrivial chance that the same rule could be misapplied on an individual-year basis to chill temporal diversification.”⁶¹

But the recent adoption of the portfolio-wide approach by statute in at least forty-six states⁶² demonstrates that courts and regulators now understand the fundamental concept and value of asset diversification. Temporal diversification is merely a logical extension of the principle. The lifecycle strategy is new and audacious but new and audacious in precisely the same way as asset diversification was at the time. (And the underlying theory isn’t even new.⁶³) Decision-makers now understand the basics, so there is good reason to think that the currents against diversification have weakened and that the long history of misapplication and resistance will not be repeated.

56. These figures assume a normal distribution of outcomes and are based on Figure 1. AYRES & NALEBUFF, *supra* note 1, at 5.

57. *Id.* at 191.

58. *In re Dell, Inc. ERISA Litigation*, 563 F. Supp. 2d 681, 692 (W.D. Tex. 2008); *cf.* *Farm King Supply, Inc. Integrated Profit Sharing Plan & Trust v. Edward D. Jones & Co.*, 884 F.2d 288, 291–92 (7th Cir. 1989) (“In keeping with the remedial purpose of ERISA, this Court liberally construes the term fiduciary as used in the Act.”).

59. A. Richard Susko & Mary E. Alcock, *Questions Most Frequently Asked by Traders Regarding Pension Funds Investing in Derivatives and Other OTC Instruments*, P.L.I./TAX, May 1998, at 171, 178–80. Nor are derivative transactions “prohibited” for purposes of ERISA. *Id.* at 180–81.

60. AYRES & NALEBUFF, *supra* note 1.

61. *Id.* at 188.

62. *Id.* at 187.

63. UNIF. PRUDENT INVESTOR ACT, 7B U.L.A. 1 (1994); *see* AYRES & NALEBUFF, *supra* note 1, at 4 (“Our strategy is a straightforward application of research done by Nobel laureates Paul Samuelson and Robert Merton.”). A somewhat analogous temporal diversification principle, “dollar cost averaging,” has been around since at least 1958. *Quinby & Co. v. Funston*, 177 N.Y.S.2d 736, 741 (N.Y. Sup. Ct. 1958).

The Uniform Prudent Investor Act (UPIA), which codified a presumptive duty to diversify assets, facilitates courts finding a duty to diversify across time.⁶⁴ Indeed, the UPIA provides that “[a] trustee may invest in any kind of property or type of investment consistent with the standards of this [Act].”⁶⁵ The comment states that portfolios with low risk levels may actually be “inappropriate” in some contexts.⁶⁶ A young person’s retirement savings would seem a paradigmatic example. Asset diversification is generally required, but nothing in the UPIA suggests it is a safe harbor.⁶⁷ The Department of Labor reads ERISA in much the same way:

[B]ecause every investment necessarily causes a plan to forgo other investment opportunities, an investment will not be prudent if it would be expected to provide a plan with a lower rate of return than available alternative investments with commensurate degrees of risk or is riskier than alternative available investments with commensurate rates of return.⁶⁸

If the gains from temporal diversification are real, plan administrators, trustees, brokers, and investment advisors are duty-bound to help clients achieve them.⁶⁹

B. Structural and Psychological

Modern investment law is not a barrier to lifecycle investing (and indeed may require it), but there are at least two powerful forces pushing against it: (1) probability of detection and (2) loss aversion. Again, lifecycle investing tends to increase the probability of short-term losses. The failure to follow the lifecycle approach, according to Ayres and Nalebuff, tends to forego higher long-term gains.⁷⁰ A loss is easy to detect: All one needs to know is that his or her portfolio performed substantially worse than the market. A forgone gain, on the other hand, is more difficult to detect. One needs to know how the lifecycle approach would have performed. At present, there is no transparent market for the approach, so individualized

64. UNIF. PRUDENT INVESTOR ACT § 3.

65. *Id.* § 2(e).

66. *Id.* § 2 cmt. (Abrogating Categorical Distinctions).

67. *Cf. id.* § 3 cmt. (Rationale for Diversification) (“There is no automatic rule for identifying how much diversification is enough.”).

68. 29 C.F.R. § 2509.08-1 (2010).

69. See George Crawford, *A Fiduciary Duty to Use Derivatives?*, 1 STAN. J.L. BUS. & FIN. 307, 331 (1995) (finding such a duty under certain circumstances, although cautioning that leveraged derivatives multiply risk and require “close monitoring”).

70. AYRES & NALEBUFF, *supra* note 1, at 5.

knowledge of comparison cases or complex computations are required to detect the forgone gain.

There is also a powerful psychological reason investors will typically spend less effort trying to detect forgone gains than losses. Loss aversion is the tendency of individuals to weigh losses more heavily than monetarily equivalent forgone gains.⁷¹ Fiduciaries who recognize this tendency in investors will avoid strategies that carry a substantial risk of loss because such losses are more likely to generate lawsuits than equal forgone gains. Even though losses may be only short-term dips on a superior long-term strategy, fiduciaries cannot expect to avoid lawsuits because investors check their returns frequently, resulting in what has been dubbed “myopic loss aversion.”⁷² If the fiduciaries themselves are also subject to loss aversion, the resulting conservative bias may be multiplied. A lawsuit imposes substantial damage to the fiduciary’s reputation beyond the costs of litigation and judgment. Loss aversion predicts these losses will loom larger than the potential for equal improvements in expected return. (And data suggest that there may be no offsetting positive reputational effects based on portfolio performance.⁷³) Thus, the recommended strategies may be even more loss averse than the investors.

There are, however, a few reasons to question whether this multiplier effect is substantial. One study shows that accountability—knowing that one will have to justify one’s choices—can significantly reduce loss aversion.⁷⁴ An investment advisor generally has to explain recommendations to a client. This accountability may reduce the investment advisor’s degree of loss aversion. Other studies have found that agents do not manifest loss aversion⁷⁵ when contracting either with their principals,⁷⁶

71. See generally Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263 (1979) (explaining loss aversion); see also Ian Ayres & Fredrick E. Vars, *When Does Private Discrimination Justify Public Affirmative Action?*, 98 *COLUM. L. REV.* 1577, 1617 n.139 (1998). The coefficient of loss aversion has been estimated to be between 1 and 2.5. Ferdinand M. Vieider, *The Effect of Accountability on Loss Aversion*, 132 *ACTA PSYCHOLOGICA* 96, 97 (2009).

72. Shlomo Benartzi & Richard H. Thaler, *Myopic Loss Aversion and the Equity Premium Puzzle*, 110 *Q. J. ECON.* 73, 73 (1995).

73. Cf. William A. Birdthistle, *Investment Indiscipline: A Behavioral Approach to Mutual Fund Jurisprudence*, 2010 *U. ILL. L. REV.* 61, 100 (“[N]umerous studies demonstrate that fees are correlated with negative mutual fund performance.” (internal quotation marks omitted)).

74. Vieider, *supra* note 71, at 98.

75. Both studies actually assessed the endowment effect: the tendency to demand a higher price for an item already in one’s possession than one is willing to pay to acquire the same item. Loss aversion is a leading explanation for the endowment effect on the theory that giving up an item is coded as a loss and acquiring it as a gain. Jennifer Arlen et al., *Endowment Effects Within Corporate Agency Relationships*, *J. LEGAL STUD.* 1, 1 (2002); James D. Marshall, Jack L. Knetsch & J.A. Sinden, *Agents’ Evaluations and the Disparity in Measures of Economic Loss*, 7 *J. ECON. BEHAV. & ORG.* 115, 115 (1986).

or their own assets.⁷⁷ Perhaps more to the point, another study finds that instructing subjects to “treat [a decision] as one of many monetary decisions, which will sum together to produce a ‘portfolio,’” along with other instructions, reduces observed loss aversion with respect to the decision.⁷⁸ The study calls this “thinking like a trader,”⁷⁹ but this is also exactly how modern law requires investment fiduciaries to act.

These tentative observations demand further empirical examination. Parsing out the effects of investor loss aversion, advisor loss aversion, and advisor perception of investor loss aversion is critical in understanding the behavior of actors in these relationships. Are these effects significant in comparison to the differential probabilities of detecting losses and forgone gains? Properly designed experiments could assess the roles of these factors and others. The theory and answers are significant not merely for investment strategies but for principal-agent relationships more broadly. Are there systematic flaws in relying on litigation to police agent behavior? Loss aversion and detection problems suggest that the answer is yes. Again, more research is needed.

C. Practical

Is a lifecycle target-date fund practical? Two current investment vehicles suggest a mixed answer. A typical target-date fund (TDF) operates almost exactly like the lifecycle strategy but starts with an initial stock percentage of, say, 90 rather than 200.⁸⁰ “It is estimated that roughly 200 billion was invested in TDFs in 2008”⁸¹ Despite recent controversy in light of poor performance during the 2008 financial crisis,⁸² TDFs are not just permissible under ERISA but are specifically authorized to be designated as the default investment option.⁸³ Other than tailoring and the psychological barrier of 100%, little separates the already wildly popular TDF from a leveraged lifecycle fund.

However, both tailoring and leverage create serious potential problems. The recommended percentage exposure to stock in a given year varies not

76. Marshall, Knetsch & Sinden, *supra* note 75.

77. *Id.*; Arlen et al., *supra* note 75, at 1.

78. Peter Sokol-Hessner et al., *Thinking Like a Trader Selectively Reduces Individuals' Loss Aversion*, 106 PROC. NAT'L ACAD. SCI. 5035, 5039 (2009).

79. *Id.* at 5035.

80. AYRES & NALEBUFF, *supra* note 1, at 38, 63.

81. SEC, DEP'T OF LABOR, PUBLIC HEARING ON TARGET DATE FUNDS AND OTHER SIMILAR INVESTMENT OPTIONS 77 (June 18, 2009) [hereinafter PUBLIC HEARING ON TARGET DATE FUNDS], available at <http://www.dol.gov/ebsa/pdf/TDFhearingtranscript.pdf> (testimony of David Certner, AARP).

82. *Id.* at 78; AYRES & NALEBUFF, *supra* note 1, at 63.

83. 29 C.F.R. § 2550.404c-5(e)(4)(i) (2010).

just based on the target retirement date but also on past savings, changing risk tolerance, and expected future income. Leverage creates perhaps an even more intractable dilemma. The book's own discussion of existing leveraged mutual funds illustrates the problem.⁸⁴ Such funds, commonly referred to as leveraged exchange-traded funds (ETFs), rebalance daily. This is essential to the funds because they promise two or three times the leverage to everyone who buys a share. The problem: "Volatility lowers returns for a portfolio that is rebalanced on a daily basis, since [sic] this strategy sells when the market is down and buys when it is up."⁸⁵ What is true for daily rebalancing is true for rebalancing generally.

The book recommends rebalancing whenever the market moves ten percent or at least quarterly or yearly.⁸⁶ The 10% rule requires constant market monitoring and can generate frequent rebalancing. With rebalancing comes the same reduced return effect observed in leveraged ETFs. The quarterly or yearly approaches would seem preferable. The book's simulations achieve positive results with either monthly or yearly balancing.⁸⁷ But the received wisdom regarding leveraged ETFs suggests that rebalancing should be avoided altogether. Regulators and some commentators recommend against holding leveraged ETFs overnight;⁸⁸ other commentators recommend against holding leveraged ETFs in volatile markets or for more than three days.⁸⁹

CONCLUSION

Lifecycle Investing offers an ingenious new approach to retirement investing. The theory is plainly sound; the devil is in the implementation. By far the most important assumption is that stock market returns will be greater than the cost of leverage. This appears to be a reasonable assumption at present, but if it fails, the *Lifecycle Investing* project fails with it. Moreover, the details of the proposal suggest that implementation is beyond the sophistication level of the average investor. Legal restraints may discourage investment advisors and pooled funds from filling the breach,

84. AYRES & NALEBUFF, *supra* note 1, at 163–65.

85. *Id.* at 164.

86. *Id.* at 165, 167.

87. *Id.* at 207 n.10.

88. FINRA Regulatory Notice 09-31, FINRA.ORG, <http://www.finra.org/Industry/Regulation/Notices/2009/P118953> (last visited Dec. 1, 2011) ("[L]everaged ETFs that are reset daily typically are unsuitable for retail investors who plan to hold them for longer than one trading session, particularly in volatile markets."); Aaron Hoddinott, *Leveraged ETFs—Caveat Emptor*, PINNACLE DIGEST, <http://www.pinnacledigest.com/articles/leveraged-etfs-caveat-emptor> (last visited Dec. 1, 2011).

89. Toni Turner, "Juice" Your Trading Profits Using Leveraged ETFs, <http://www.traderslibrary.com/tradesecrets/manuals/9681125.pdf> (last visited Dec. 1, 2011).

but these restraints are actually less serious than the book suggests. Unacknowledged structural, psychological, and practical hurdles are the greater impediments. The importance of these factors in this context requires empirical examination, but the theoretical points hold for agency relationships across the board.

Where does this leave the subtitle? The strategy is “safe,” as promised, so long as the critical stock return and borrowing cost assumption (and an investor’s nerves) hold. Whether the strategy will “improve the performance of your retirement portfolio” depends on the key assumption and also on who you are. The book forthrightly explains why the strategy is not right for everyone. Add to that the strategy’s dizzying complexity, and a relatively small subset of the population are good candidates. Nearly all investors can benefit from expert assistance, which should be more available than the book suggests. Another possible solution to complexity, a pooled fund, may be impractical.

In sum, the book promises somewhat more than it delivers, but it still delivers a great deal. The book opens new doors in personal finance and is bound to be debated for years to come. That debate gets a jump-start from the book itself. Many of the criticisms offered in this Review can be gleaned from the book. That ultimately is, in addition to the important contribution to investment theory, the book’s second great virtue: highlighting its assumptions for all to evaluate.