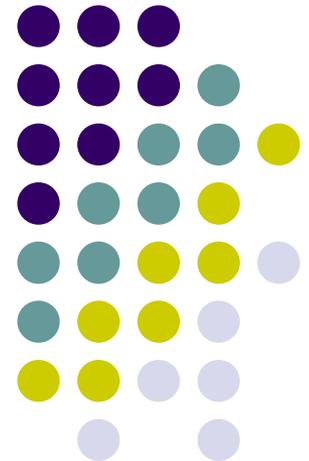


The Future of Life-Cycle Investment Products

Zvi Bodie

Consumer Finance Workshop

April 30, 2009



Key Points



- Life-cycle investing will be about choosing among features of products designed for consumers by financial engineers.
- Technological progress will make these products affordable for middle-class consumers, not just the wealthy.
- Investor education will focus on helping consumers choose appropriate product features they can afford.

The Future of Life-Cycle Saving & Investing



Sponsored by Boston University, Federal Reserve Bank of Boston and the Research Foundation of CFA Institute

Overview

We live in a time of great changes in the way Americans save, invest, and manage the risks to their standard of living. Baby boomers are the most prosperous, healthiest, and longest-lived generation of Americans ever. They also face more choices about saving and investing than their predecessors. More choices mean more decisions. Voluntary tax-advantaged accounts are now available for retirement, college tuition, and health care. It seems everyone is talking about personal finance. Should you open an IRA or 401(k) account? An ordinary IRA or a Roth IRA? How much to contribute? How to invest the funds? How to time withdrawals from the account?

Economists have been studying consumers' optimal saving and investing decisions for many decades. Since the 1950s there has been enormous progress in the underlying theory, and since the 1970s major innovations in the financial markets and advances in technology have facilitated implementation of that theory. Furthermore, in the past two decades, research in behavioral economics and finance has considerably advanced our understanding of how consumers actually make saving and investment decisions. Life-cycle saving and investing have become a science, or at least the foundations have been laid for such a science.

The goal of this conference is to bring together academic researchers, practitioners, and public-sector policymakers to discuss the current state of this science and to explore its implications for households, businesses, and government. By facilitating this dialog, we hope this conference will stimulate the adoption of best practices in the development of both new financial products and future public policies.

[Overview](#)

[Agenda](#)

[Conference Highlights](#)

[Participant Biographies](#)

[Accommodations, Directions,
and Parking](#)

**Read the Financial
Engineering News article:
[The Future of Life-Cycle
Saving and Investing](#)**

**Read the Hogan Financial
Management, LLC article:
[2006 2nd Quarter - Life
Cycle Investing Part 1](#)**

**Read the Hogan Financial
Management, LLC article:
[2006 3rd Quarter - Life Cycle
Investing Part 2](#)**

**Read the Post-Conference
Update by Anna
Bannart: [Expanding](#)**

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Session Topics:

Private Wealth Management, Economics, Investment Industry

Specialty Focus Areas:

Private Wealth Management

Package Contents:

- [The Role of Government in Life-Cycle Saving and Investing](#)
Jeffrey C. Fuhrer, *Federal Reserve Bank of Boston*
Alicia H. Munnell, *Boston College, Retirement Center*
Lans Bovenberg, *Netspar, Tilburg University, Netherlands*
John Shoven, *Stanford University*

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Is Personal Finance an Exact Science?



Paul Anthony Samuelson
Professor of Economics
Massachusetts Institute of Technology

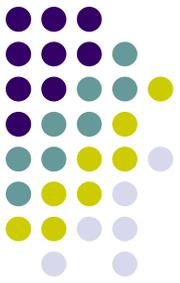
Recorded on 25 October 2006
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Life-cycle investment products today

- Target-date retirement accounts
- Target-date college tuition accounts
- Health saving accounts
- Common characteristics
 - Specific purpose
 - Specific maturity date
 - Tax advantaged because society wants to encourage saving for this purpose
- Most of the money in these accounts is invested in mutual funds

The trouble with mutual funds



- Not matched to the purpose or the target date of the account
- For a matching strategy, the basic building blocks must be denominated in units that match the purpose and have known maturities.

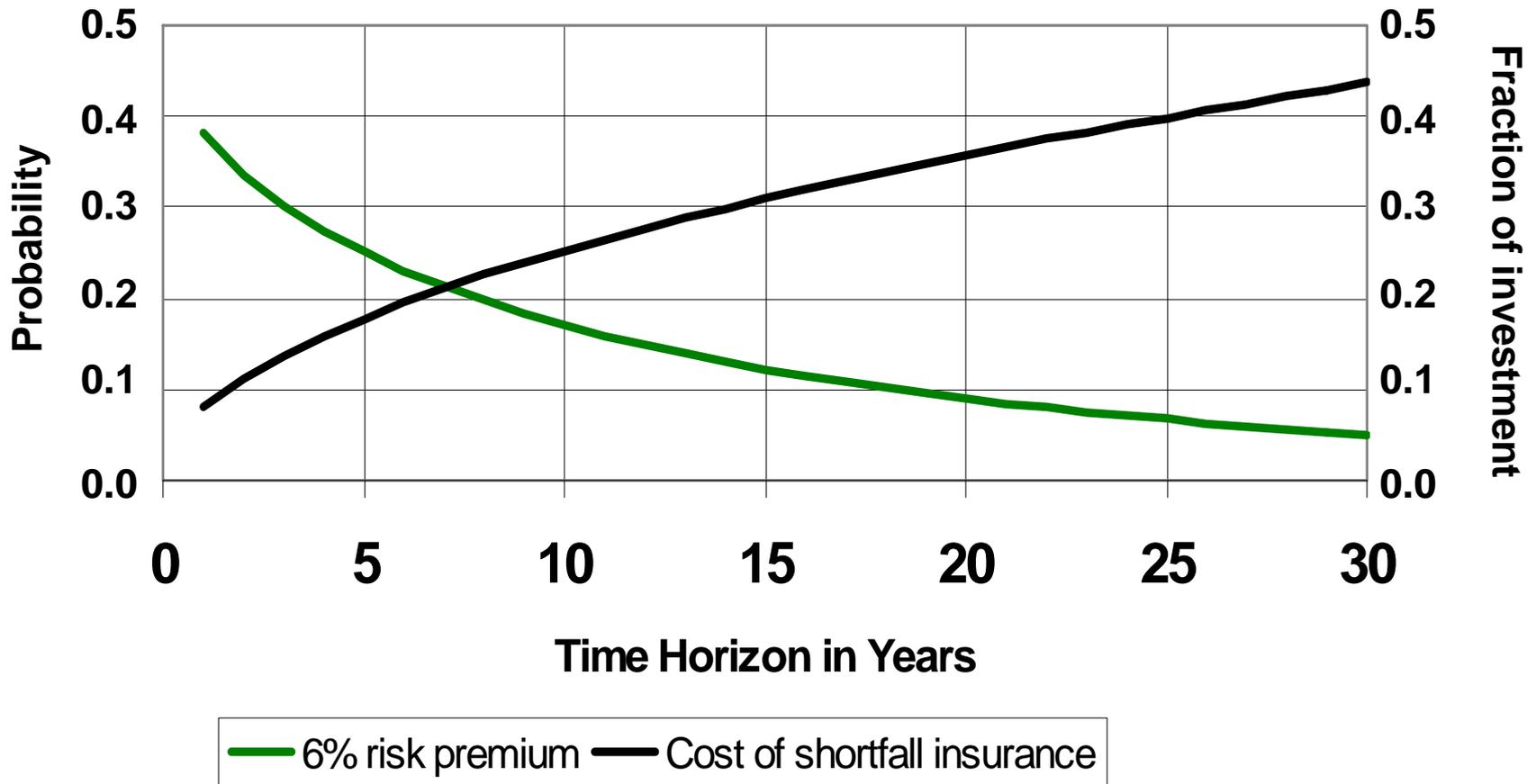
Economic principles



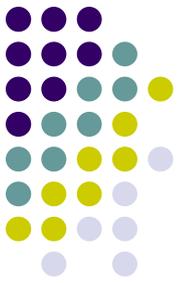
- No free lunch. The present value of achieving a future target cannot be lowered by taking risk.
- But it can be lowered through contingent contracts that only pay off when needed. Example: life annuities only pay off if annuitant is alive.

The fallacy of time diversification

Probability of shortfall vs. cost of shortfall insurance

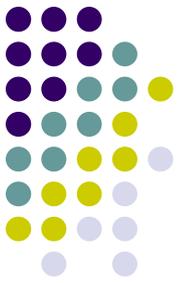


Examples of matching



- Annuities linked to cost of living to achieve a target standard of living in retirement.
- Contracts linked to college tuition.
- Contracts linked to health care costs.

The role of guarantees



- *Caveat emptor* -- Can a client trust a firm that does not guarantee its products?
- Risk is most efficiently managed by the investment firm, not by the client.
- A guarantee transfers risk from the client to the investment firm.
- If risk is truly small, then the cost of the guarantee will be low.
- If the cost of the guarantee is high, then the risk is obviously *not* small.

Structured investments



- Standard design: Guaranteed minimum plus upside participation.
- Options: Caps, multiple indexes.
- Decomposing a structured investment into bonds, calls, and puts.

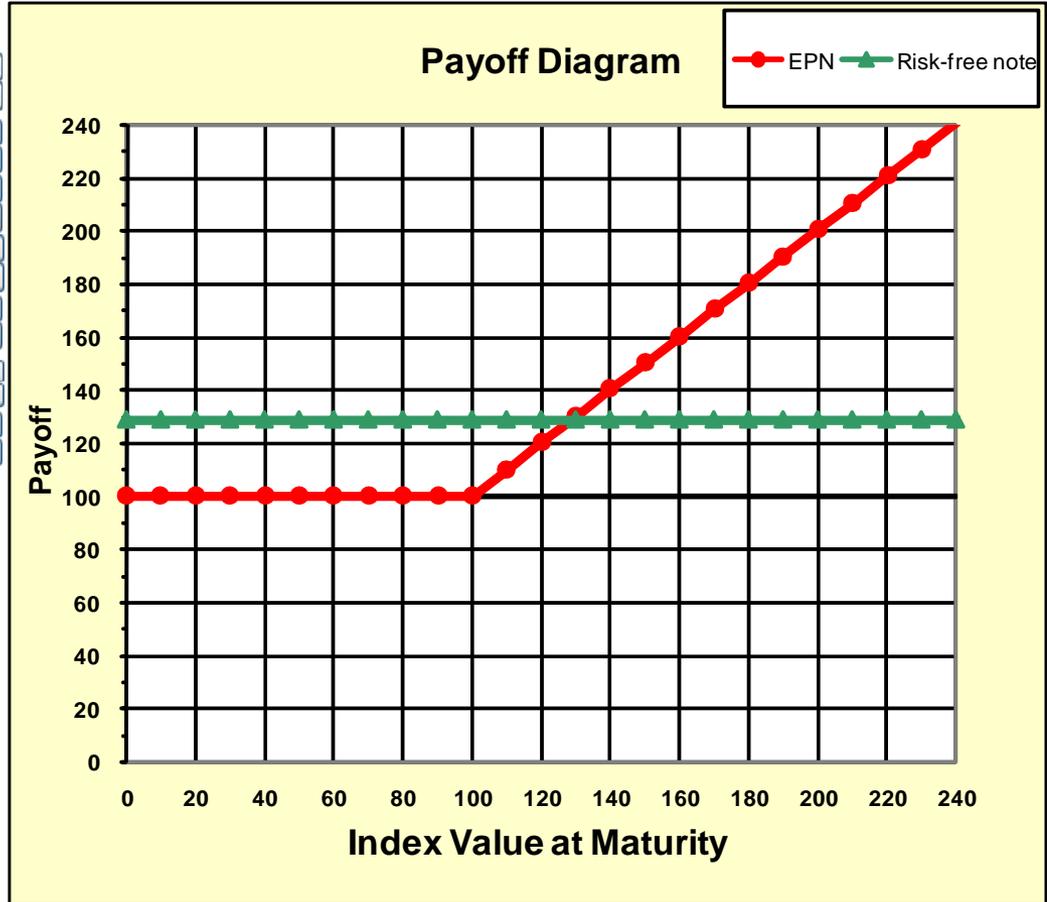
Equity Participation Notes

Inputs:

Volatility	20%	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Risk-free interest rate	5%	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Dividend yield	2%	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Current value of index	100	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Strike price	100	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Maturity in years	5	<input type="button" value="▲"/>	<input type="button" value="▼"/>
Max loss of principal	0%	<input type="button" value="▲"/>	<input type="button" value="▼"/>

Outputs:

Price of embedded call	22.01
Participation rate	100.5%



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