Beyond the Status Quo: A Critical Assessment of Lifecycle Investment Advice

2025 AFA Annual Meeting

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What Does This Paper Do? Challenge the Status Quo

Big Picture of the Paper

>> ***What happens if we preserve the empirically relevant features that affect the return distribution?***

1. **Consider US couple optimizes utility over real retirement consumption and bequest within a lifecycle model**
   → *Considers labor income risk, Social Security income, and longevity risk*

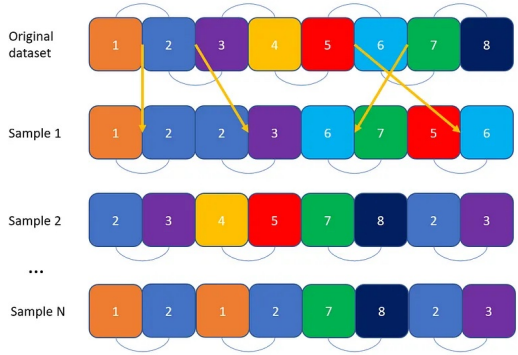
2. **Simulations Using Block Bootstrap**
   → *Preserves crucial time-series and cross-sectional dependencies in asset returns*

3. **Comprehensive Returns for Bonds and International Stocks**
   → *Use Data from 39 developed countries, covering data from 1890 to 2023*

4. **Simulate lifecycle outcomes, static allocation**
   → *Choose a fixed-weight investment strategy with allocations to domestic stocks, international stocks, bonds, and bills*
   → *Our base case is a median investor in Guvenen, Karahan, Ozkan, and Song's (2021)*

Block Bootstrap Solution

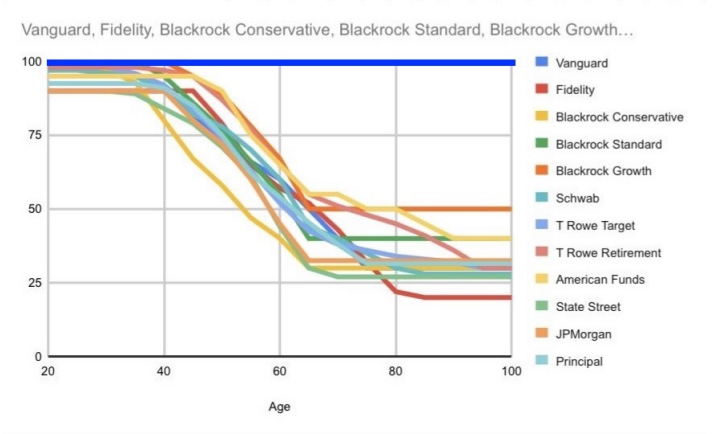
Preserves time-series and cross-sectional dependencies in asset returns



>> ***What are the static asset allocations to maximize utility across stocks, bonds, and bills?***

Challenging Status Quo

All Equity Allocation Outperforms Target Date Fund Strategies



Challenging Status Quo

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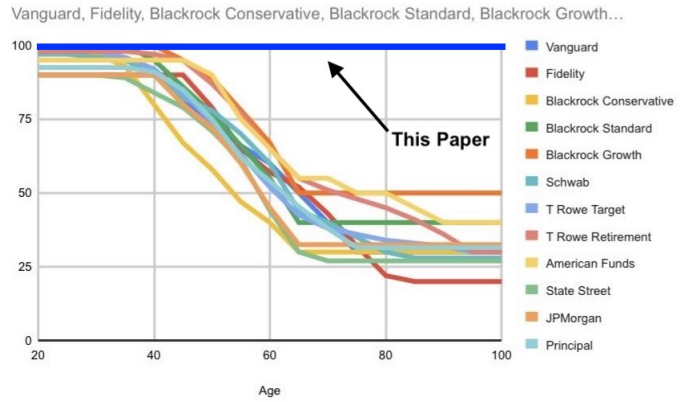


>> ***Couple would optimally invests 33% in domestic stocks, 67% in international stocks!***

Summary of Results

Contrary to the Status Quo!

"Contrary to conventional wisdom, bonds add little to nothing for retirees."

1. **Optimal allocations to bonds are small or zero across specifications**
   - → The couple optimally invests 33% in domestic stocks, 67% in international stocks 0% in bonds, and 0% in bills throughout their lifetimes!
   - → Only when P/D ratios are at an extreme does it imply a *small* allocation to bonds

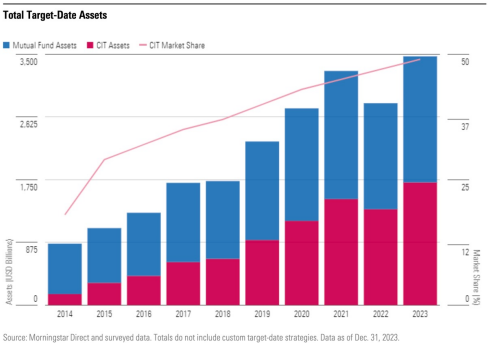
2. **Time-varying strategies generate small, if any, utility gains relative to the optimal fixed-weight strategy**
   - → Age-based strategy, fully in equity while working, only 3% in bonds

3. **Robust to Numerous Specifications**
   - → Insensitive to bootstrap design, risk aversion, strength of the bequest motive, retirement withdrawal strategy, retirement age, contribution rate, and household type (e.g., single versus couple)

Why Does This Paper Matter? Regulatory Implications

Pension Protection Act of 2006 (PPA), Over $3.5 Trillion in AUM

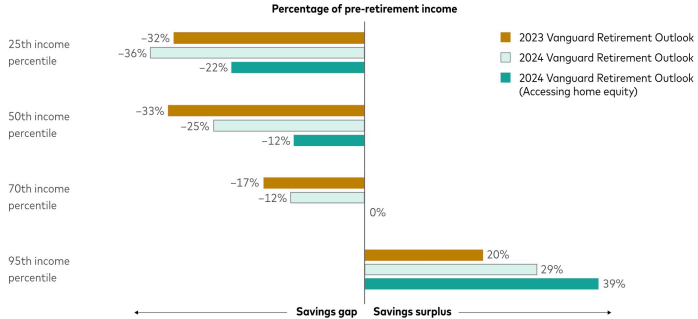
>> ***This was one of the widely supported, bipartisan bills, signed in the past 20 years***



Source: Morningstar Direct and surveyed data. Totals do not include custom target-date strategies. Data as of Dec. 31, 2023.

Why Does This Paper Matter? Retirement Savings Gap

Per capita retirement savings gap or surplus as a percentage of income



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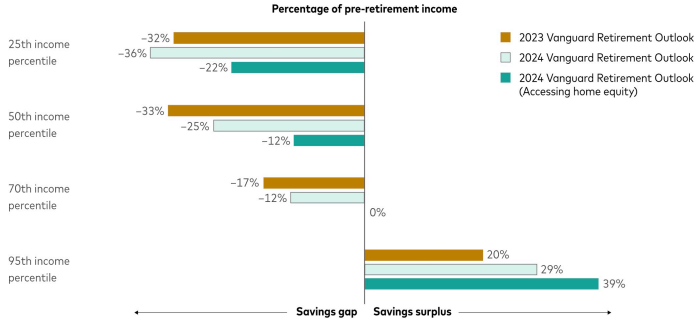
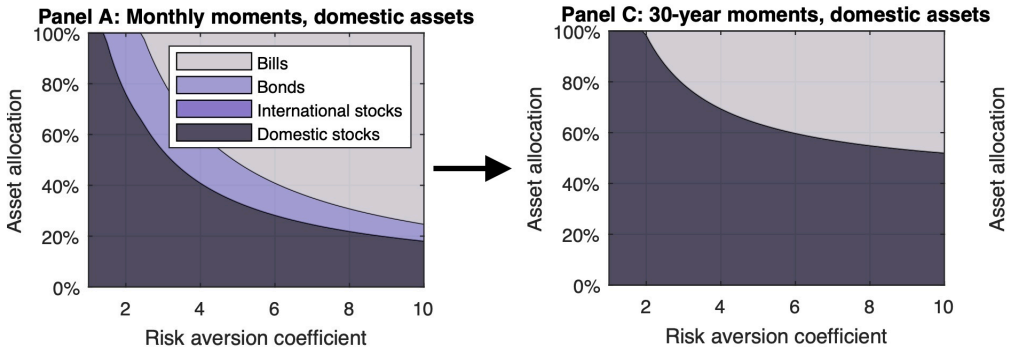


>> ***Given the importance of this question, I want to focus on the interpretability of the results***

Comment 1 – Empirical relevant features or international stocks?

Separating between the two in the simulations

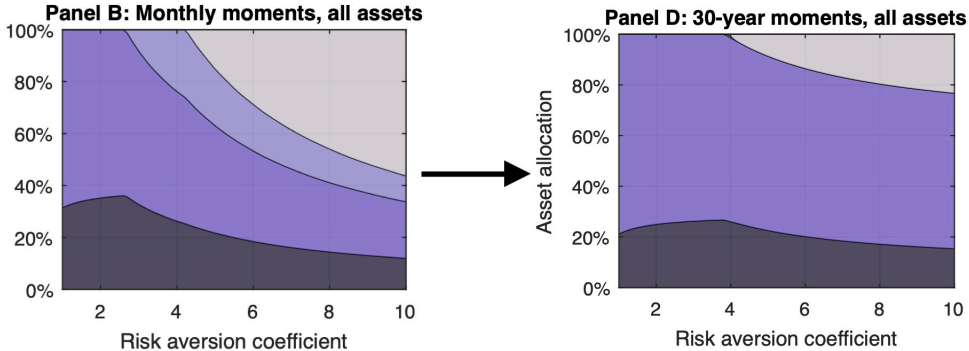
Figure 1: Optimal mean-variance weights, 30-year horizon scaled to a monthly level



Comment 1 – Empirical relevant features or international stocks?

Separating between the two in the simulations

Figure 1: Optimal mean-variance weights, 30-year horizon scaled to a monthly level, with international stocks



Comment 1 – Empirical relevant features or international stocks?

Separating between the two elements of the paper

Can the paper better separate the empirical features from changing the investment opportunity set?

Suggestion 1: Re-implement the block bootstrap without international stocks

- See if this leads to a corner solution of all stocks
- Iteratively adding investment opportunities helps with understanding solution

Suggestion 2: Why stop with international stocks?! Consider other major asset classes

- What about commodities, real estate, and so forth? We have returns going back back many years. This may provide additional benefits to life-cycle investors.
- Why stick to stocks if we are going beyond the status quo?
- What about financial assets that hedge against inflation.

Comment 2 – What is Driving These Results

Providing more economic insights into what are the relevant features

Paper relies on the key empirical properties of real returns for bonds and international stocks over the long run...

Measure	Asset class: Bonds	Asset class: International stocks
Panel A: Moments of annualized real returns		
Mean (%)	0.95	7.03
Standard deviation (%)	9.51	23.26
Panel B: Variance ratios		
VR(1)	1.00	1.00
VR(10)	2.09	0.88
VR(20)	2.26	0.80
VR(30)	2.30	0.75
Panel C: Log real return correlations		
Correlation with domestic stocks (monthly returns)	0.21	0.33
Correlation with domestic stocks (30-year returns)	0.45	0.34
Correlation with inflation (30-year returns)	−0.78	−0.01

>> ***What empirical features are driving these relationships, what more can we learn?***

Comment 2 – What is Driving These Results

Providing more economic insights into what are the relevant features

>> ***Can the paper provide more insight into the relevant features of international stocks and bonds/bills?***

Changing dominant risk factors over longer horizons

- Over 30 years, macroeconomic trends can shift correlations between asset classes in ways that differ from short-term returns.

Nonlinearities in compounding

- Correlation is scale-free in principle, but once you compound monthly returns into multi-decade returns, any non-linearities (e.g., mean reversion, downside risk protection, or "tail" events) can shift how strongly two assets co-move when viewed in multi-decade blocks.

Aggregation and autocorrelation

- Taking 30-year cumulative returns instead of short-term returns can amplify autocorrelation, causing long-horizon returns to diverge more (or less) than expected from simply scaling up the monthly covariance matrix.

This is inherently a backwards looking exercise, but would provide insight into the applicability results

Comment 3a – Pre-Retirement Considerations, Go Beyond the Status Quo

Can the paper challenge conventional advice?

$$\max_{\{w\}} \quad \mathbb{E}_0[U(C,B)] = \mathbb{E}_0\left[\sum_{t=T_{ret}+1}^{T_{max}} \frac{\left(C_t/\sqrt{H_t}\right)^{1-\gamma}}{1-\gamma} + \theta\frac{(B+k)^{1-\gamma}}{1-\gamma}\right],$$

$$D_{t+1} = \begin{cases} 0 & \text{for } t \le T_{ret}, \\ \min\{\frac{1}{12}(r_w W_{T_{ret}}), W_t\} & \text{for } t > T_{ret}, \end{cases}$$

$$C_{t+1} = \max\{D_{t+1} + SS_{t+1}, SSI_{t+1}\} \quad \text{for } t > T_{ret},$$

$$B = W_{T_{max}},$$

$$S_t^i = \begin{cases} \frac{1}{12}(r_c Y_\tau^i) & \text{for } Y_\tau^i \ge Y_{min}, \\ 0 & \text{for } Y_\tau^i < Y_{min}, \end{cases}$$

$$S_t = S_t^f + S_t^m.$$

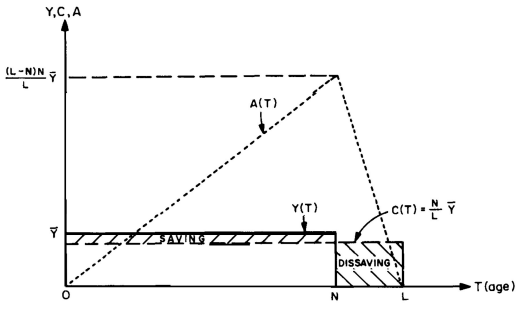
- **The paper uses a pre-retirement savings rate of 10%**
  - → *Based on Poterba, Rauh, Venti, and Wise's (2005, 2009), and Vanguard (2024)*
- **Post Retirement Consumption Rate of 4% of Wealth**
  - → *Seven of the 12 books offering explicit retirement spending advice recommend the 4% rule, Choi (2022)*

>> Can the paper test if these rule of thumbs optimal?

Comment 3b – Pre-Retirement Considerations, Conform to the Status Quo

Can the paper match pre-retirement empirical observations?

"Given the simulation design, the (unmodeled) consumption and potential survivor benefits from Social Security during the pre-retirement period are independent of the retirement investment strategy."



INCOME, CONSUMPTION, SAVING AND WEALTH AS A FUNCTION OF AGE

Modigliani (1954)

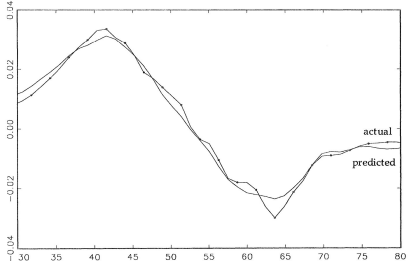


FIGURE 8. ACTUAL AND PREDICTED CONSUMPTION GROWTH, BY AGE CONTROLLING FOR DEMOGRAPHICS, RETIREMENT, AND UNEMPLOYMENT

Banks, Blundell, Tanner (1998)

Comment 3 – Pre-Retirement Considerations

Possible for Large Discontinuity

Can the paper consider consumption/utility of couples in the pre-retirement period

Suggestion 1: Can you challenge the status quo / rule of thumb?

- It is unclear that the status quo r_w and r_c are optimally chosen
- Finding they are optimal (or not) is a contribution

Suggestion 2: The paper could model the consumption choices of investors

- Finding a similar discontinuity in consumption around retirement would help match some of the empirical research

Excited for this paper!

Contribution to a very deep literature

Important results and contribution to a a very old and deep literature

- Amazing Data – Brings a lot of historical data (39 countries, from 1890 onwards) and Block Bootstrapping to account for correlation in the return data
- Interpretability of Results – Would focus on understanding what empirical features are driving the results
- Important Policy Implications – We may want to update possible QDIA for investors