Harnessing psychology & technology to improve retirement outcomes

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A Brief Intellectual History of Retirement Research

• Franco Modigliani was awarded the Nobel Prize in economics in 1985 for work from the 1950’s (some of it started while he was an assistant professor at the University of Illinois) on the life-cycle hypothesis

• The *life-cycle hypothesis* provided a fully rational model to explain retirement saving & dominated economic thinking for 50+ years
Life cycle hypothesis

- **Income**
- **Wealth**
- **Saving**
- **Start of working life**
- **Retirement**
- **Consumption**
- **Dis-saving**

$\text{Lifetime}$
Life-Cycle Puzzles

• My definition of a “puzzle” in neoclassical economics: When a widely accepted rational model is at odds with empirical observation

• Examples:
  • The equity premium puzzle
  • The retirement-consumption puzzle
  • The annuity puzzle

• Inquiring minds might ask: “Maybe it’s the model?”
Along Comes Richard Thaler & the Behavioral Revolution

- Perhaps we should model how people *actually* behave rather than how our models suggest they *should* behave.

- His work was awarded the 2017 Nobel prize.
Revolution #1: Behavioral Economics
Retirement Behavior as Exhibit A in Behavioral Revolution

- Default options
- Naïve diversification
- Framing
- Procrastination
Revolution #2: Big Data and AI
Early Days of FinTech

- Operational efficiencies (end-to-end processing of transactions)
- Improved user interfaces & experiences
Predictive Analytics Can Help Solve Retirement Plan Challenges

John Hancock has begun using predictive analytics to address defined contribution (DC) plan participant behaviors that could hurt their outcomes.

By Rebecca Moore

John Hancock Retirement Plan Services (JHRPS) has expanded its data analytics capabilities to help plan sponsor clients and advisers make plan and platform decisions to help participants save more for retirement.

Lynda Abend, chief data officer for John Hancock Retirement Plan Services in Boston, explains to PLANSPONSOR that using "predictive analytics" means using data, technology and tools to look at what has happened to anticipate what an individual might do in the future. An example would be considering why participants are taking loans from defined contribution (DC) plans. Predictive analytics looks at which participants are taking loans, what activity were they doing before taking the loan and what activity did they do after taking one. Were participants looking into buying a house then taking a loan? Were they doing a college search then taking a loan? She adds that analytics can determine if there are other participants in a similar situation, and plan sponsors
Firms like Morgan Stanley are using artificial intelligence to manage clients’ money

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KEY POINTS

• Firms ranging from big Wall Street names to Silicon Valley start-ups are testing the waters to see how artificial intelligence can help consumers manage their money and plan for retirement.

• Automating processes can help enhance the work of human financial advisors or replace them altogether — depending on who you ask.

• The next time you receive an email or get automated feedback on how to manage your money, know that artificial intelligence could be behind it.
An AI-Powered ETF Failed Miserably at Beating the Market in 2018 -- Here's What You Can Learn From Its Mistakes

Don't hand over your money to the robots just yet.

Keith Speights (TMFFishBiz)
Jan 6, 2019 at 9:00AM

It turns out that even artificial intelligence can make bone-headed moves.

Financial services company EquBot used IBM Watson, perhaps the most well-known artificial intelligence (AI) system in the world, to analyze thousands of companies on a daily basis to try to pick stocks that can beat the market. The AI system's recommended stocks are included in an exchange-traded fund (ETF), the AI Powered Equity ETF (NYSEMKT:AIEQ) (AIEQ).

I wrote in January 2018 about the AI-powered ETF's top five holdings. At the time, the AIEQ had underperformed the S&P 500 since the ETF began operations in mid-2017. How did the AI system's picks fare against the S&P 500 last year? Not that great.
Many Looming Questions

• Will active fund managers be disrupted out of the market?
• Will financial advisors be replaced by robots?
• Will investment management fees decline?
• Will AI find behavioral patterns that were previously undiscovered?
• Will AI algorithms make objectively good decisions or will it simply incorporate existing biases? (Amazon AI recruiting tool as cautionary tale)