Understanding and Managing Longevity Risk in Retirement

March 2024

PASEF Lunch Talk

©Olivia S. Mitchell
mitchelo@wharton.upenn.edu

Wharton
University of Pennsylvania

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Motivation

- Population aging and longevity increasing.
- Financing longer old age crucially important.
- Yet financial decision-making and financial literacy often decline in later life.
- And financial products can be complex!
- Helping people protect against outliving their assets can reduce regret and economic insecurity in old age.

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What’s to follow:

- Evidence that financial literacy falls in later years.
- Older people heavily discount the future, leading them to undersave and overspend.
- Little understanding of chances of living a very long time.
- In retrospect, many regret the financial decisions made when younger.
- Introducing deferred annuities can help with many of these problems.
- Tools: experiments, life cycle models, and policy simulations.

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The “Big Three” FinLit questions:

Interest Rate: Let’s say you have $100 in a saving account paying 2% interest/year. How much would you have in the account at the end of 5 years?
<$102; =$102; >$102; DK; refuse

Inflation: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy*: > today, = today; < today*

Risk Diversification: True or false? Buying a single company stock usually provides a safer return than a stock mutual fund.

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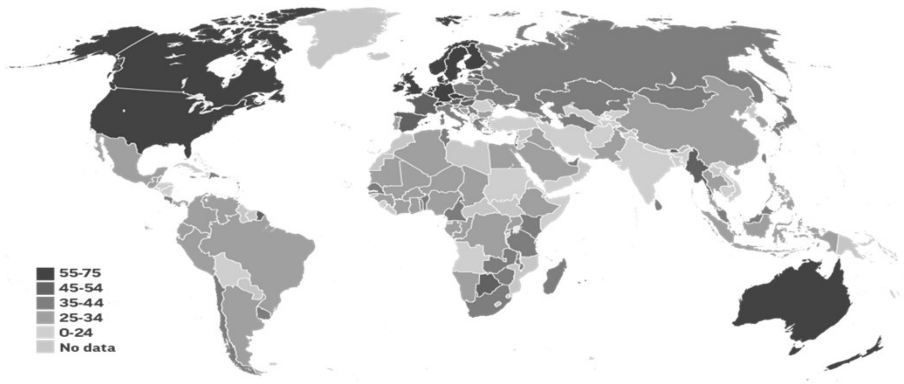
Financial literacy low, globally

% of adults who are financially literate



Only 1 in 3 adults worldwide is financially literate (can answer all questions correctly!)

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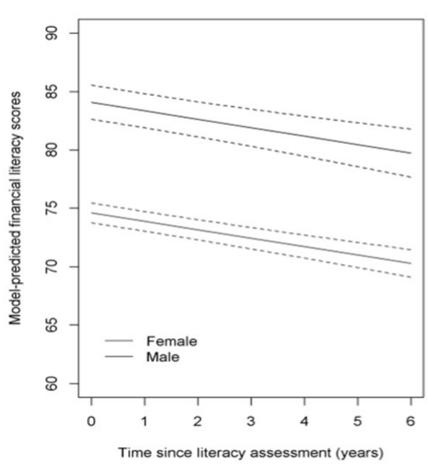
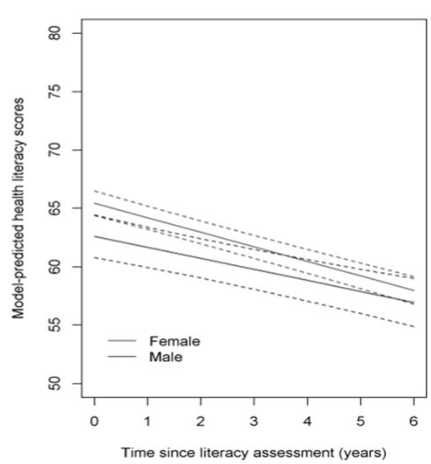
Financial & Health Literacy fall 1% p.a. in later life

Financial Literacy



Health Literacy



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Impatience and Financial Behavior in Later Life

- Much research on inter-temporal decision-making for prime-age/youth; little on older adults.
- Yet older people make many important decisions with major LR impacts:
  - Save/spend
  - Claim/defer Soc Sec
  - Exercise/health care/insurance
  - LTC/annuity, sell home, etc.

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To investigate impatience in the older population & link to observed behavior:

- HRS experimental survey age 70+;
- Correlate impatience with other SES information on respondents;
- Link economic & health behavior with time discounting.

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Module Q's:

Suppose you were given the choice between receiving a payment today or a payment in 12 months. We will now present to you 5 situations. The payment today is the same in each of these situations. The payment in 12 months differs in every situation. For each of these situations, we would like to know which you would choose.

Would you rather receive $100 today or $154 in 12 months?

1) Today → *go to [step up]* →$100 today or $185 in 12 mos … *and so forth*

2) In12 mos →*go to [step down]* →$100 today or $125 in 12 mos … *and so forth*

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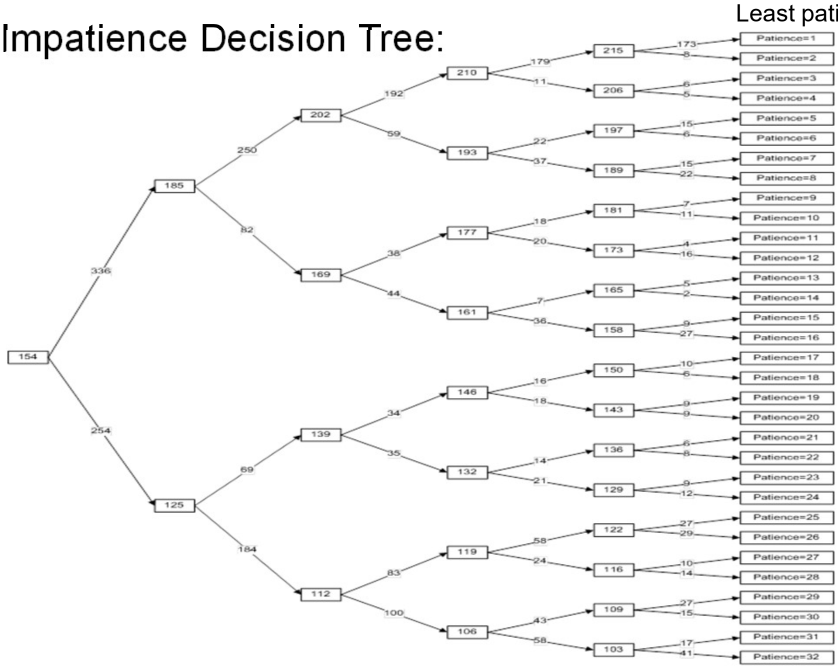
Impatience Decision Tree:

Least patient



Most patient

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Convert to IRR (interest rate setting EPV future money = money amount today):

- Take a respondent with patience score of 25:
  - so $125 >= $Z >= $122.
- This bounds $Z: at least $122, at most $125.

- Solve for IRR s.t. (1+IRR)*$100=$Z
  - IRR = [$X/$100]-1

- Do for upper & lower bounds and average.

If compound twice/yr IRR =2[[($X/$100) ^(.5)]- 1]*

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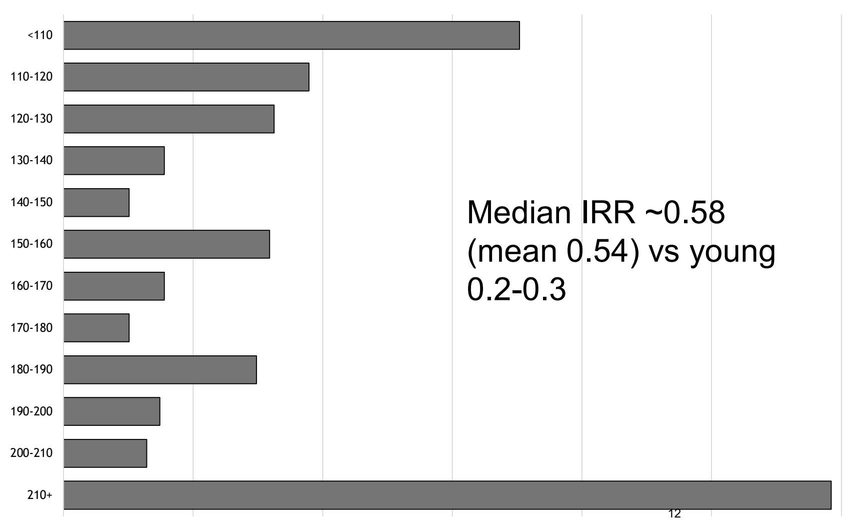
Amounts Americans age 70+ would need in a year instead of $100 now:



Median IRR ~0.58 (mean 0.54) vs young 0.2-0.3

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Heterogeneity

- +15 years of age 70-85 associated w/ a standard deviation higher IRR.
- Whites & more educated more patient: lower IRRs (-0.9 and -0.01)
- Serious health problems & demented less patient (much higher IRRs).

- *Not significant:* sex, marital, optimistic life expectancy, risk aversion, procrastinator, income, religion, Nkids

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IRR and economic outcomes:

- Those less patient have significantly less total wealth and less financial wealth

  (1 sd higher IRR or +0.35 → 69% less).
- Less patient less healthy (BMI + rel to IRR)
- Less patient *do less end of life planning* (regular will, living will, talk to atty, etc)

- *No link between IRR and Social Security claiming age, or retirement planning.*

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Also: longevity awareness is low:

- People have *some idea* of how long they will live, which shapes their savings, investment, annuitization, social security claiming, retirement, drawdowns, etc.
- But there are *systemic biases* in predicting own longevity (many underestimate how long they will live).
- This can undermine retirement security.

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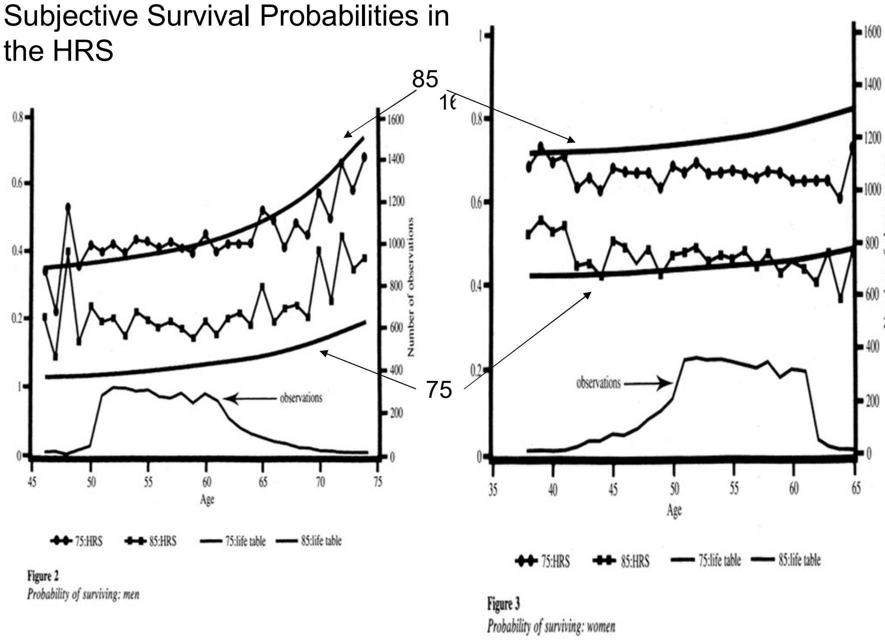
Subjective Survival Probabilities in the HRS



Hurd/McGarry 1995

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Longevity Risk Widely Misunderstood

Online experiment on US respondents age 35-83:

- Measure *subjective* life expectancy & longevity risk assessment, & compare to life tables.
- Ask respondents to advise a “vignette” person facing decisions about health, saving, and other economic decisions.
- Then we explain the risk of living a very long time.
- And assess impact of *enhancing longevity awareness.*

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Baseline vignettes: Annuitization

Next we will describe a financial decision facing Mr. Smith and then we will ask you ask what you would recommend to this person: Mr. Smith is a single, 60-year-old man with no children. He will retire and claim his Social Security benefits at 65. When he retires, he will have $100,000 saved for his retirement, and he will receive $1,400 in monthly Social Security benefits. Imagine that Mr. Smith asks you about how to manage his $100,000 retirement savings. Please indicate which of the two options you would recommend:

1. Withdraw the entire $100,000 all at once from the retirement account, to use as he needs.
2. Receive a regular monthly sum of $500 (equal to $6,000 yearly) for the rest of his life.

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Information treatments:

Please note that American men, 65 years old, will survive 18.1 more years on average.

OR

Please note that 22.3% of American men, 65 years old, will survive to the age of 90 or more.

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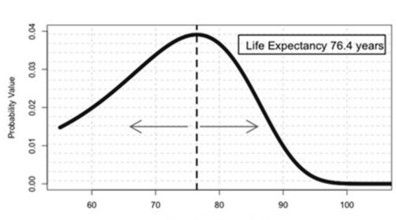
What we find:

- Giving people <u>life expectancy</u> information has *no effect* on subjective survival probabilities, nor on advice given regarding saving and annuitization (longevity insurance).
- Providing information about peoples' <u>likely longevity</u> *does change* subjective survival probabilities & boosts annuitization advice, especially if initially underestimated survival chances.
- SO people are aware of mean survival expectations but poorly informed about the tails of the survival distribution.



Relevance to US: Is same retirement age for all reasonable, in view of lower life expectancy of minority people?

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Later Life Regret

- 60% of older US survey respondents regret not having **saved more** during their working years.
- Yet few older Americans **buy**:
  - Long-term care insurance
  - Longevity insurance (annuities)

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We ask:

- Which financial decisions do most older people regret?
- Who regrets?
- Does providing information on longevity chances shape financial regret in later life?

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Experimental HRS Study *(N=1,612, mean age 71)*

- Control group (C).
- Treatment group (T1) asked *only* about own *subjective* survival probabilities ("chances of living to age X and X-5").
- Treatment group (T2) asked about own subjective survival probabilities *and* given *objective survival data* from life tables (by age/sex).

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Regret re financial decisions:

- Think about your saving over your life: do you think that what you saved was *too little, about right, or too much?*
- If you could do it all over again, do you think you would *save more for retirement to avoid depending on others?*
- If you could do it all over again, do you think you would have *worked longer, stopped at about the same age, or stopped working sooner?*

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Regret re insurance protection:

- If you could do it all over again, do you think you would have *delayed claiming Social Security until later, in exchange for higher benefit payments?*
- Do you currently have *Long Term Care insurance? (for nursing home care). If no→* If you could do it all over again, *would you purchase more Long Term Care Insurance?*
- If you could do it all over again, do you think you would have *purchased a lifetime payment from an insurance provider?*

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Results:

Undersaving regret	0.52
Fin. dependence regret	0.09
Quit work too soon regret	0.34

>half regretted saving too little; only 1.5% regretted too much

1/3 quit too soon; 6% regretted working too long

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Experimental findings:

- Providing longevity information boosted lifetime income regret by 42% vs average.
- Also increased regret re early social security claiming, and undersaving.
- Helps understand why giving people longevity information gets them to alter financial decisions.
- Women much more likely to regret no LTC, no annuities, and being financially dependent.
- Blacks more likely to regret all financial decisions (except depending on others).

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Putting the pension back into DC retirement accounts

- US Social Security is mandatory life annuity.
- Defined benefit pensions used to pay annuities, but most today do not.
- Defined contribution plans, as a rule, have never paid lifetime income.

→What's the optimal role for longevity protection – and default annuities - in a DC world?

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Secure Acts of 2021 and 2022:

- Boosted age when must begin taking withdrawals from tax-qualified account from 70 to 72, & rising to 75.
- Created "New Safe Harbor" for prudent selection of a "guaranteed retirement income contract."
  - ✓If plan fiduciary satisfies conditions, sponsor has no liability for any losses due to insurer inability to pay

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Life Cycle Model of a US Household

- Objective: Optimal consumption, savings/investment in taxable/nontaxable accounts; @65 may buy DIA with 401(k) assets
- Fin assets: risky stocks, bonds, max age 85 DIA
- Risky labor income: to age 66 by sex & 3 education levels from PSID; > age 66 Soc Sec benefits based on lifetime earnings & official rules
- Institutional rules:
  - Taxation: progressive income taxation (US rules)
  - Social Security: contribution caps, benefits, PIA
  - 401(k) plan: RMD rules, contribution limits
- Preferences: CRRA function *(age 25-100).*
- Regimes: old/new RMD rules w/ & w/o defaults

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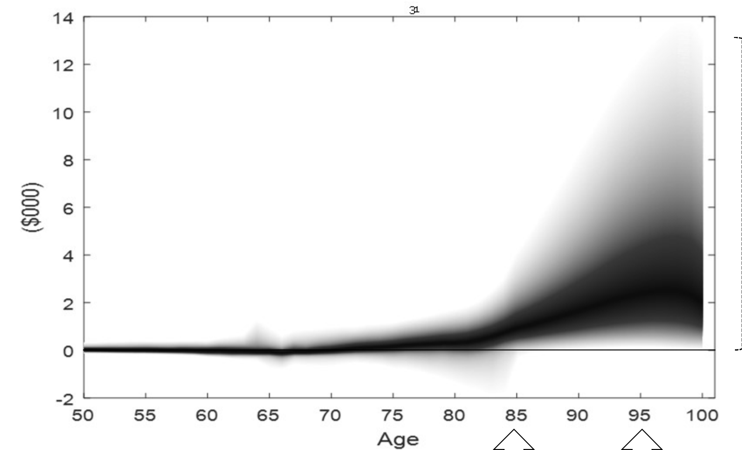
Consumption Differences: With minus w/o DIA



Most consume much more

At 85: retiree with deferred annuity consumes ~$1K/yr more & $4K more by age 95.

What about a default solution?

Objective:

- Auto investment of 401(k) / IRA assets into a DIA
- Akin to investment defaults in saving phase

Parameters:

- What % of accumulated 401(k) assets into DIA ?
- At which age & deferred to what age?
- Depending on which (observable) individual factors ?

- Proposed solution:
  - Mean default percentage (=10%) for those with over $65K in 401(k) assets.

Welfare gains ($) w/ 10% > $65K threshold default

	Female	Male
Coll+	12,820 (5.8%)	32,938 (12.7%)

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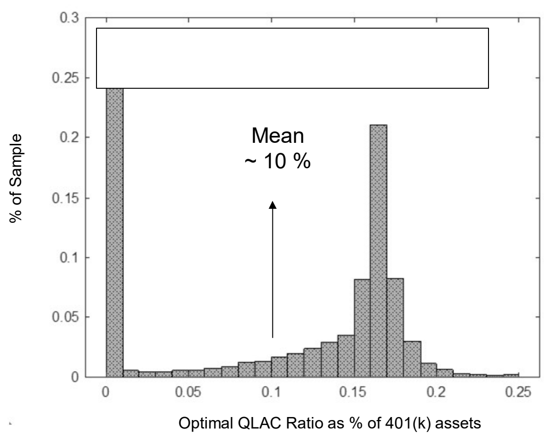
Probability distribution of optimal DIA ratios

200,000 simulated lifecycle profiles for population weighted according to education / gender subgroups



~ 25% not interested in DIA; mostly with low 401(k) assets.

<u>Future research:</u> Can we improve the default rule ?

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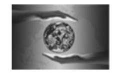
Takeaways:



- Set aside ~10% of plan balances @65 for default fixed DIA paying from age 85.
- From age 66*, w*elfare gains ~ 6-14% of retirement accruals.
- If US employers defaulted workers into DIAs at 10% for >$65K, results similar to optimal annuitization.
- When mortality differs by education, welfare gains smaller for less educated but still positive.

- Variable DIAs even more attractive.
- Payout defaults important for real-world consumers: US; Pan-European Pension Accounts (PEPP); Australia?

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Conclusions:

- We're making headway tackling the "nastiest problem in finance:" *striking a balance between having enough income to meet current needs and having enough to get through the lifetime.*
- Many useful tools: experiments, life cycle models, and policy simulations yield useful insights.
- Next steps?
  - ✓ Healthcare costs in later life & aged care
  - ✓ Guarantees & other insurance products
  - ✓ Cognitive aging

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