

# Financial Literacy and Retiree Health Care Cost

**Robert Clark**, North Carolina State University

**Brent J. Davis**, TIAA Institute

**David P. Richardson**, TIAA Institute

15<sup>th</sup> International Longevity Risk and Capital Markets Solutions Conference  
Washington D.C., September 13, 2019

Any opinions expressed herein are those of the authors, and do not necessarily represent the views of TIAA, the TIAA Institute, or any other organization with which the authors are affiliated.

1. Motivation and Introduction
2. Preview of results
3. Survey Sample and Data
4. Financial Literacy Results, Concerns and Savings
5. The expected reliance on (non)guaranteed income

- Healthcare costs in retirement is a major concern of workers.
- Main factors:
  1. Increased number of years in retirement due to rising life expectancy
    - Median average retirement age still near 65 (EBRI, 2019)
  2. Lower incidence rate and benefit coverage of traditional retiree health insurance (e.g. Kaiser Family Foundation, 2018)
  3. Rising healthcare costs and cost uncertainty (Fronstin et al, 2019)

- Retirees left to bear relatively more risk associated with health costs
- Greater financial literacy required of workers as they bear more financial and consumption risks
- When health costs are not considered in retirement, income needed to sustain one's desired standard of living will be underestimated

Our study examines:

- 1) Do older workers include expected retiree health costs in their retirement plans and savings decisions?
- 2) How concerned are workers about their ability to pay for out-of-pocket health costs in retirement?
- 3) Do individuals plan to use guaranteed income to reduce the risk of unforeseen health events on well-being in retirement?
- 4) How is financial literacy related to concerns, expectations and reliance on (non)guaranteed income?

Emerging literature on how health shocks affect i) annuity demand, and ii) role of annuities in providing insurance against late-life consumption risk

- Annuity present value correlated with medical costs (Reichling and Smetters, 2015)
- Retirees can use annuities to hedge health costs when changes to morbidity occur (Ai et al., 2017)
- Optimal annuitization levels lower (higher) in poor (good) health states (Peijnenburg et al., 2017)
  - Greater health risk lowers annuity demand
  - In early retirement, if health risk is low or moderate, optimal to save from annuity income to build savings for future out-of-pocket health expenses

- Large concern for retiree health costs among respondents, financially literate individuals are significantly less concerned
- Few save specifically for health costs in retirement, no difference by financial literacy
- High reliance on Social Security and non-annuitized retirement assets, few plan to use annuities
  - Depends on: financial literacy, health savers, assets, qualifying for employer-based retiree health benefit

- Survey sent to approx. 23,000 full-time employees over 50 years of age in 2016
- Employed at one of 14 higher education systems
- Higher-Ed has wide variability in retiree health benefits (Clark, 2015)
- Access to retiree health insurance may lead to less savings (Clark and Mitchell, 2014)
- Received 2,532 completed surveys



## Survey questions on

- Demographics, retirement, and health benefits
- Retirement, work, longevity, retiree health costs expectations
- Financial literacy, “Big 3” (Lusardi and Mitchell, 2011, 2014)
- How individuals plan to pay for health care in retirement
- Matched survey responses to administrative pension data

Among survey respondents:

## ***Demographics and Income***

- Avg. Age 60.8, 58% women
- Retirement Plan Assets: Avg. \$368,000, Median: \$170,000
- Surveyed Household Income, Median: \$100,000 to \$149,999

## ***Retirement Plan Participation:***

- Defined Benefit: 35%
- Primary DC: 42%
- IRA: 53%
- RHSP: 5%
- HSA: 14%
- Brokerage: 17%
- Keogh: 4%

## ***Retiree Health Benefit Participation:***

- LCI: 21%
- Partner's Retiree Plan: 9%
- Employer's Retiree Plan: 63%
- Previous Employer's Retiree Plan: 9%
- No Retiree Health Benefit: 14%

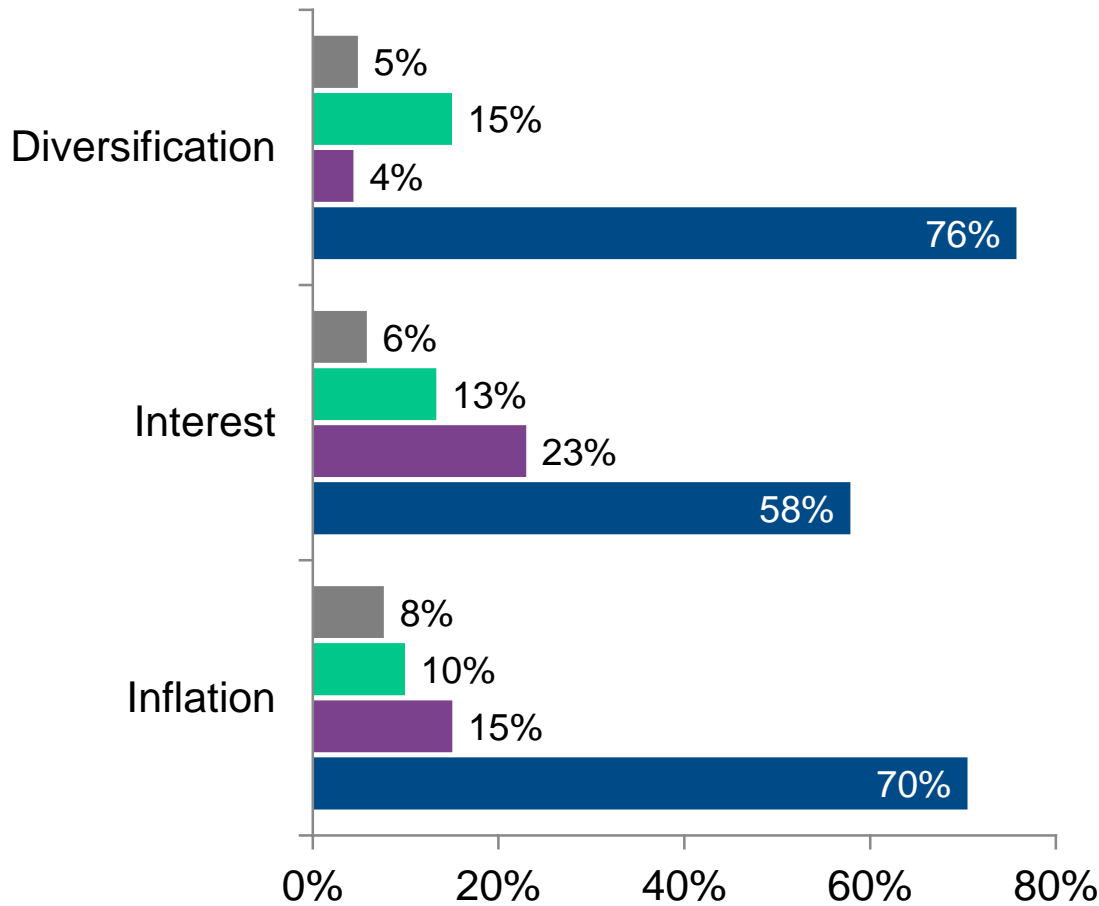
## ***Retirement Age & Life Expectancy***

- 63% have target retirement age (median age 65-69), 22% maybe
- Percent expecting to live beyond age 85
  - 61% for those in excellent or very good health expect, significantly lower (33%) for individuals stating good, fair, or poor health
  - 52% of women, significantly higher than men (47%)

## ***Health Costs Expectations in Retirement***

- Percent expecting annual out-of-pocket health costs to be under \$20,000
  - In *early* years of retirement: 87%
  - In *later* years of retirement: 50%

## Survey results on the Big 3 financial literacy measure



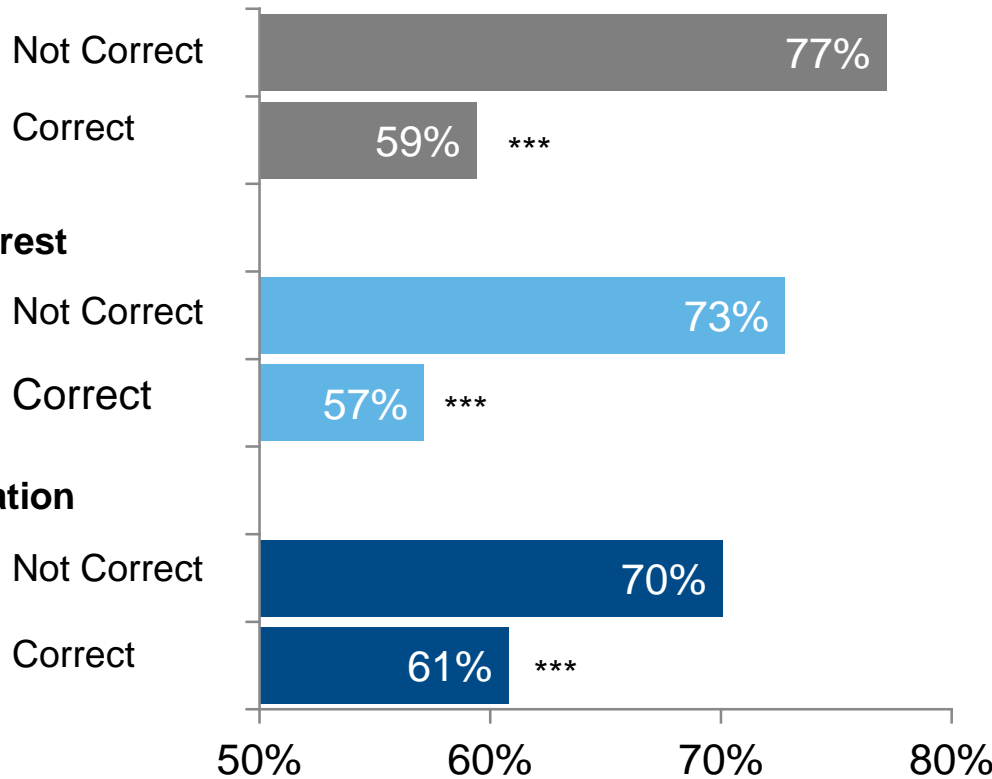
Joint Probabilities	Proportion
Zero Correct	13%
One	15%
Two	27%
Three	45%

■ Prefer not to answer ■ Don't Know ■ Incorrect ■ Correct

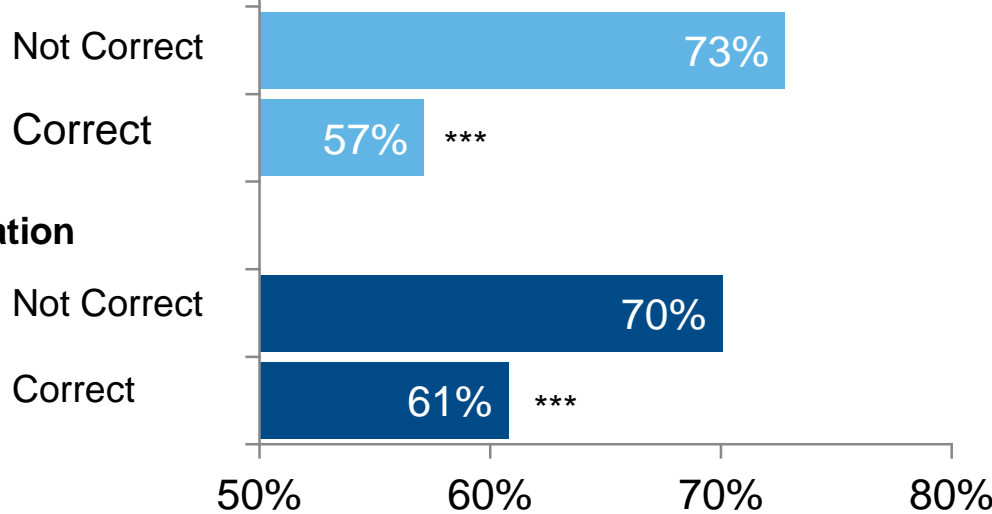
# Concern: Overall

Percent concerned (yes/no) on having enough resources to pay for out-of-pocket health expenses in retirement

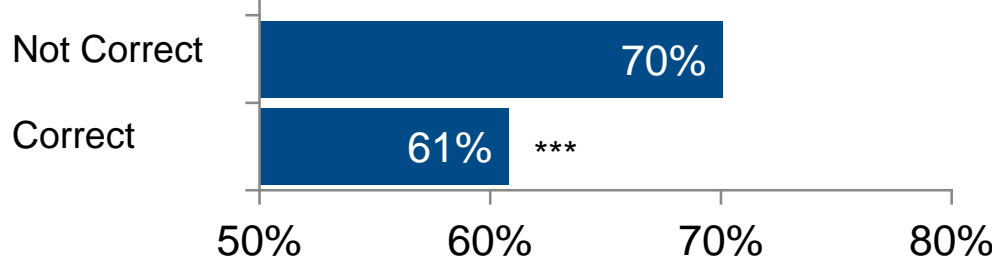
## Diversification



## Interest



## Inflation



Total Correct	% Concerned
0	77% <sup>a,b</sup>
1	76% <sup>a,b</sup>
2	64% <sup>a</sup>
3	56%

a: vs. three (p<0.01)

b: vs. two (p<0.01)

\*\*\* p<0.01. Excludes responses of prefer not to answer for concern.

# Concern: Overall Logit Regressions

Overall concern (yes/no) on having enough resources to pay for out-of-pocket health expenses in retirement (marginal effects shown)

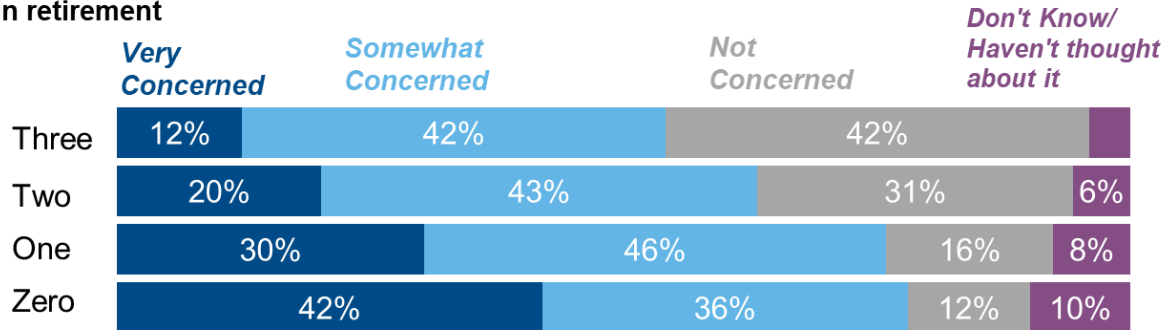
	(1)	(2)	(3)
Age	-0.008 ***	-0.007 ***	-0.007 ***
Married	-0.013	-0.004	-0.005
Assets/\$10k	-0.001 ***	-0.001 ***	-0.001 ***
HH Income >=\$150k	-0.127 ***	-0.134 ***	-0.134 ***
Female	0.089 ***	0.141 ***	0.091 ***
White	-0.006	-0.001	-0.004
Financial Literacy	-0.031 ***	-0.031 ***	-0.031 ***
Very good or excellent health	-0.120 ***	-0.119 ***	-0.118 ***
Ever used tobacco	0.042 *	0.039 *	0.043 *
Target retirement date		-0.023	-0.020
Save		-0.072 **	-0.075 ***
Qualify		-0.131 ***	-0.162 ***
Qualify X Female		-0.071 *	
RHSP assets			0.051
Pseudo-R2	0.134	0.170	0.166
Obs	1,944	1,929	1,931

\*, \*\*, \*\*\* indicated significance at 10%, 5%, and 1% levels, respectively, using robust standard errors. Excludes responses of prefer not to answer for concern.

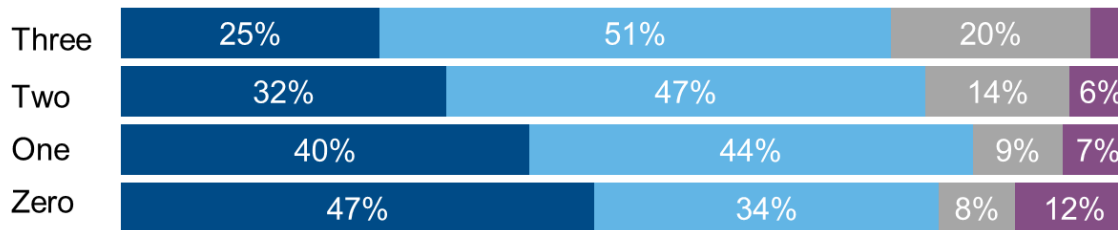
# Concern: Early and Later Years of Retirement

Concern on having enough ability to pay for out-of-pocket health expenses in retirement by financial literacy in:

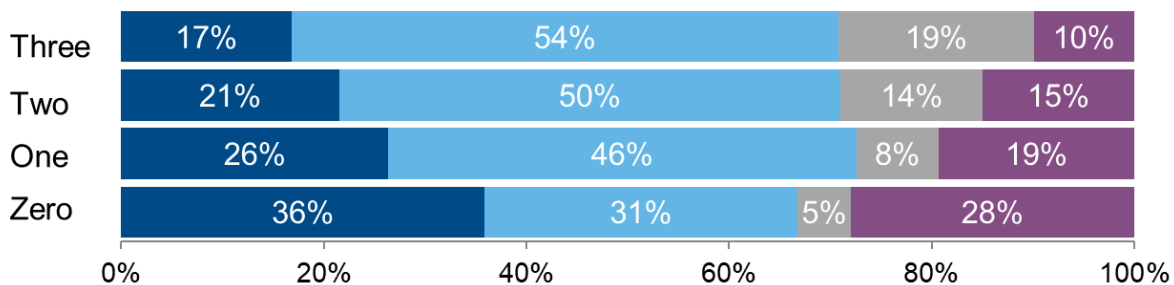
### Early years in retirement



### Later years in retirement

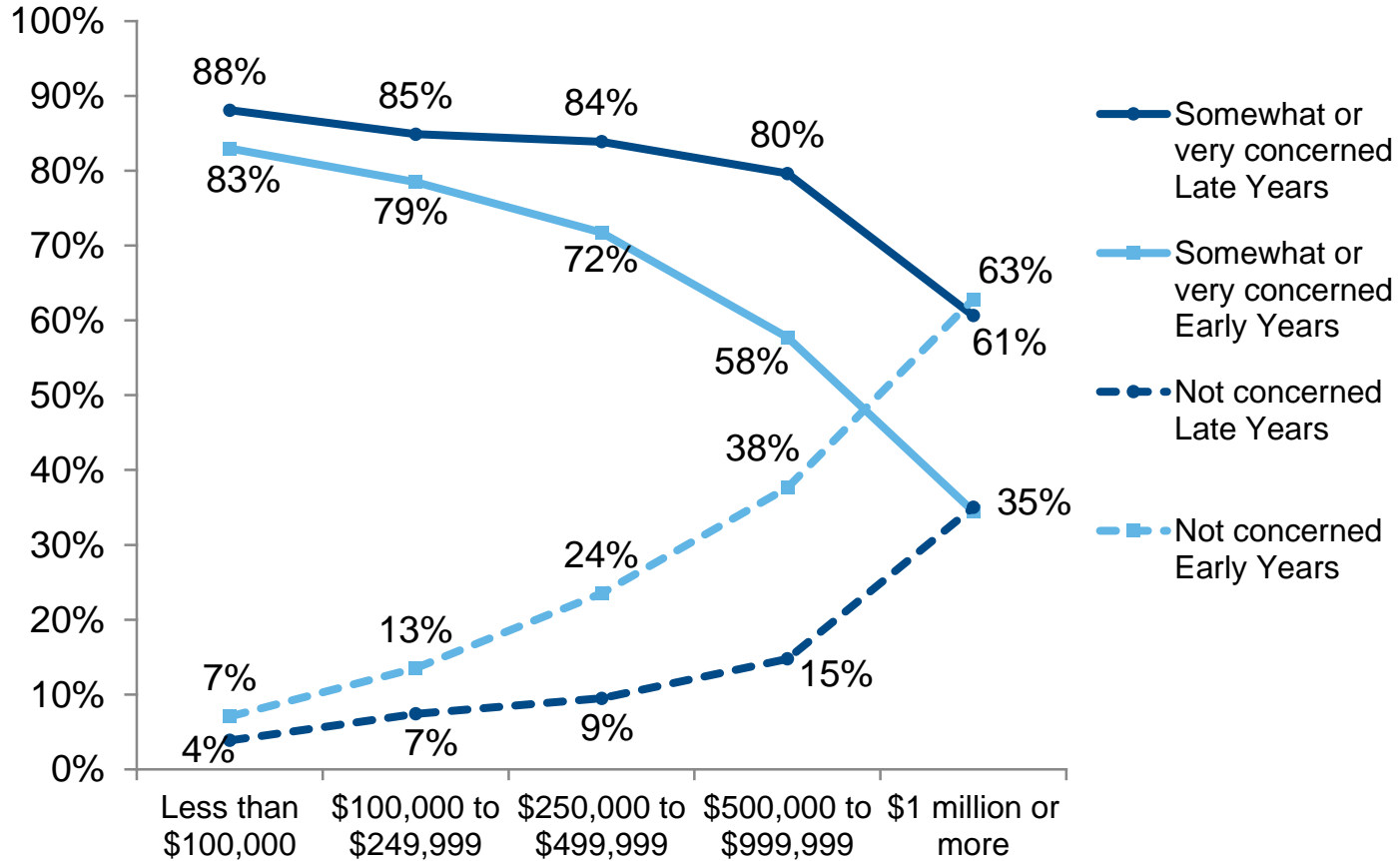


### Chronic/End-of-life



Note: excludes responses of prefer not to answer for concern.

# Concern: Early and Later Years of Retirement



**Surveyed Total Household Retirement Assets**



## Employer-based Retiree Health Benefits

- 63% expect to qualify for a benefit
- Percent having reviewed retiree health benefit coverage by number of financial literacy questions correct:

Zero	One	Two	Three
45% <sup>a,b</sup>	48% <sup>a,b</sup>	57% <sup>c</sup>	62%

a: vs. two ( $p < 0.05$ )  
b: vs. three ( $p < 0.05$ )  
c: vs. three ( $p < 0.10$ )

## Saving specifically for health costs in retirement

- 16% said yes, no significant difference by financial literacy

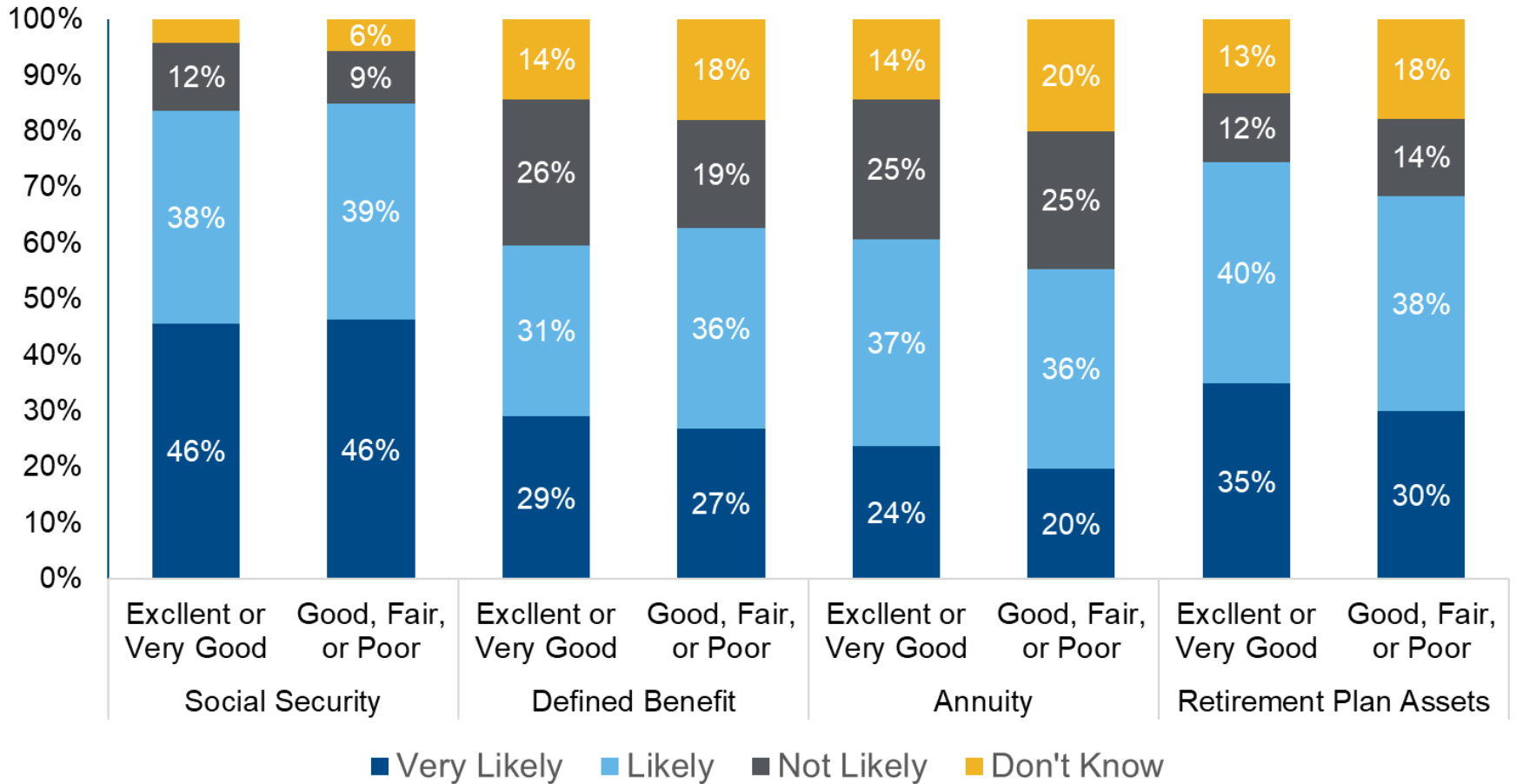
Save specifically for out-of-pocket health expenses in retirement  
(marginal effects shown)

	(1)	(2)	(3)
Age	0.003 ***	0.002	0.004
Married	0.003	0.007	0.001
Assets/\$10k	0.000	-0.000	-0.000
HH Income \$150k	0.007	0.009	0.002
Female	-0.037 **	-0.022	-0.021
White/Caucasian	-0.012	0.017	-0.021
Financial Literacy	-0.002	-0.000	-0.007
Very good or excellent health	0.011	-0.017	-0.021
Ever used tobacco	0.000	-0.003	-0.004
Target retirement date		0.093 ***	0.100 ***
Concern (Yes/No)		-0.056 ***	-0.056 ***
Qualify		0.025	0.033
RHSP Assets			0.071 **
HSA			0.143 ***
Pseudo-R2	0.016	0.029	0.059
Obs	2,424	1,931	1,881

\*, \*\*, \*\*\* indicated significance at 10%, 5%, and 1% levels, respectively, using robust standard errors.

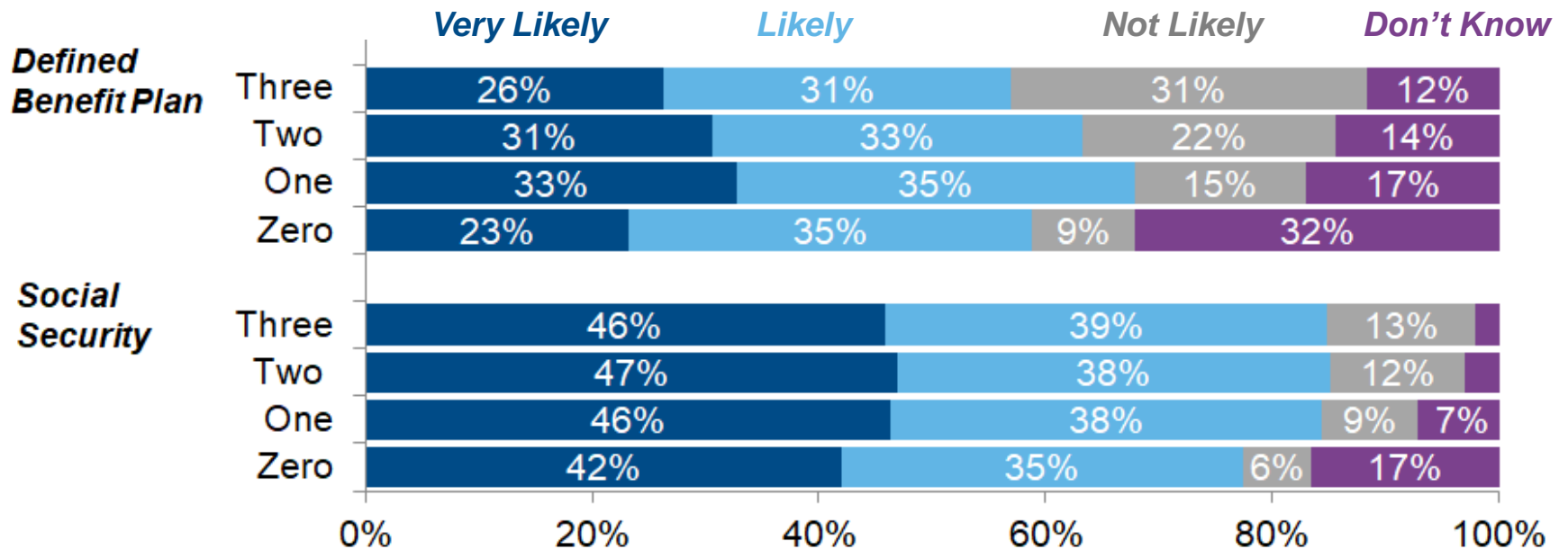
# Use of (non)guaranteed income

Which resources individuals expect to rely on to pay for out-of-pocket health costs in retirement, by health status



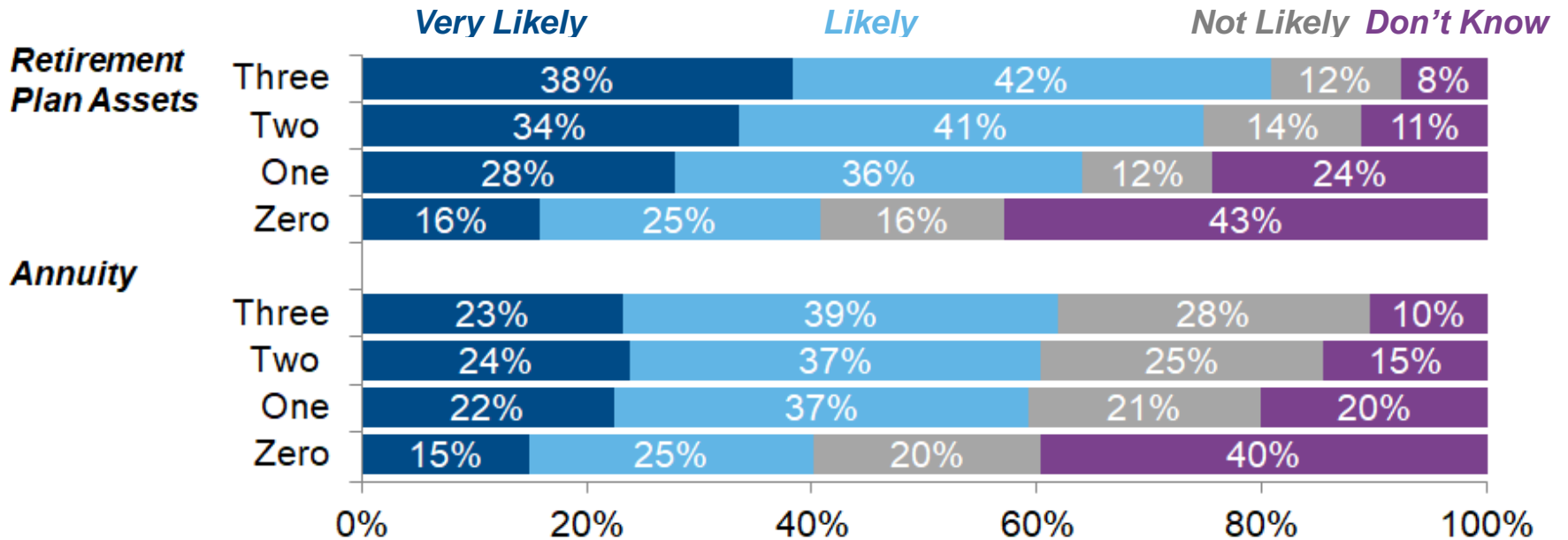
# Use of (non)guaranteed income

Which resources individuals expect to rely on to pay for out-of-pocket health costs in retirement, by number of financial literacy questions answered correctly



# Use of (non)guaranteed income

Which resources individuals expect to rely on to pay for out-of-pocket health costs in retirement, by number of financial literacy questions answered correctly



# Use of guaranteed income: Logit regressions

Logit (mar effects)

Estimating those who are either Very Likely or Likely to rely on:

	Social Security	Defined Benefit	Annuity
Age	0.006 ***	0.006 ***	0.010 ***
Married	0.015	0.001	0.062 **
Assets/\$10k	-0.000	-0.002 ***	0.000
HH Income >=\$150k	-0.032 *	-0.046	-0.050 *
Financial Literacy	0.013	-0.034 ***	0.038 ***
Female	0.012	0.009 **	0.009
White/Caucasian	0.010	-0.061 *	-0.003
Save	-0.025	0.042	0.116 ***
Concern (Yes/No)	0.104 ***	0.025	-0.009
Qualify	-0.041 **	0.102 ***	0.075 ***
HSA	0.006	-0.025	-0.026
RHSP Assets	-0.002	-0.079	-0.035
Defined Benefit Plan	0.001	0.278 ***	0.058 *
Prm Defined Contrib Plan	0.008	0.058 **	0.062 **
Obs	1,853	1,433	1,352
Pseudo-R2	0.049	0.103	0.039

\*, \*\*, \*\*\* indicated significance at 10%, 5%, and 1% levels, respectively, using robust standard errors.

# Use of non-guaranteed income: Logit regressions

Logit (mar effects):

Estimating those who are either Very Likely or Likely to rely on:

	Retirement Plan Assets	RHSP	Other Savings
Age	0.005 ***	-0.005 *	0.004 *
Married	0.026	0.033	0.049 **
Assets/\$10k	0.010 **	0.000	0.000
HH Income >=\$150k	0.046 *	0.009	0.071
Financial Literacy	0.010 ***	-0.028 **	0.048 ***
Female	-0.030 **	-0.031	-0.007
White/Caucasian	0.043	-0.131 ***	-0.077 **
Save	0.092 ***	0.205 ***	0.190 ***
Concern (Yes/No)	-0.018	0.004	-0.082 ***
Qualify	0.046 *	0.212 ***	0.048 **
HSA	0.007	0.229 ***	0.011
RHSP Assets	0.088 **	0.234 ***	0.061
Defined Benefit Plan	-0.015	0.000	0.038
Prm Defined Contrib Plan	0.085 ***	-0.002	0.066 **
Obs	1,490	1,174	1,392
Psuedo-R2	0.113	0.135	0.087

\*, \*\*, \*\*\* indicated significance at 10%, 5%, and 1% levels, respectively, using robust standard errors.

- High level of concern, Low level of 'bucket' saving
  - Former varies by financial literacy, but not the later
- Reviewing employer-based retiree health benefit converge varies by financial literacy
  - Understanding retirement benefits are essential when creating a financial strategy
- Using (non)guaranteed income to finance retiree health expenditures
  - Financial literacy appears to plays a key role
  - Less financial literate individuals more likely not to know which resources they will use



- Greater annuity utilization could provide additional insurance against consumption risk, especially in later life
- Health insurance literacy important for understanding Medicare and health/insurance related terminology (McCormack et al. 2009)
- Future research could address the affect and importance of both financial literacy and health insurance literacy on:
  1. Financing retiree health expenditures
  2. Annuitization decisions at retirement
  3. Health insurance and health savings account decisions

- Ai, J., Brockett, P. Golden, L., and Zhu, W. (2017). Health state transitions and longevity effects on retirees' optimal annuitization. *Journal of Risk and Insurance*, 84(S1), 319-343.
- Clark, R. (2015). Retiree health insurance and the retirement plans of college and university faculty. *The Journal of Retirement*, 2(3), 55-66.
- Clark, R., and Mitchell, O. (2014). How does retiree health insurance influence public sector employee saving? *Journal of Health Economics*, 38, 109-118.
- Fronstin, P., VanDerhei, J. (2019). Savings Medicare Beneficiaries Need for Health Expenses in 2019: Some Couples Could Need as Much as \$363,000. EBRI *Issue Brief*, No. 481.
- Kaiser Family Foundation (2018). Employer Health Benefits Annual Survey.
- Lusardi, A., and Mitchell, O. (2011). "Financial Literacy and Planning: Implications for Retirement Wellbeing." In *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*. O.S. Mitchell and A. Lusardi, Eds. Oxford: Oxford University Press: 17-39.
- Lusardi, A., and Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44.
- McCormack, L., Bann, C., Uhrig, J., Berkman, N., and Rudd, R. (2009). Health insurance literacy of older adults. *Journal of Consumer Affairs*, 43(2), 223-248.
- Peijnenburg, K., Nijman, T., and Werker, B. (2017). Health cost risk: A potential solution to the annuity puzzle. *The Economic Journal*, 127(603), 1598-1625.
- Reichling, F., and Smetters, K. (2015). Optimal annuitization with stochastic mortality and correlated medical costs. *American Economic Review*, 105(11), 3273-3320.
- Retirement Confidence Survey (2019), Employee Benefit Research Institute (EBRI).