Estimating the True Cost of Retirement

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Head of Retirement Research
Morningstar Investment Management, LLC

Agenda

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Relative Importance

Retirement

Home

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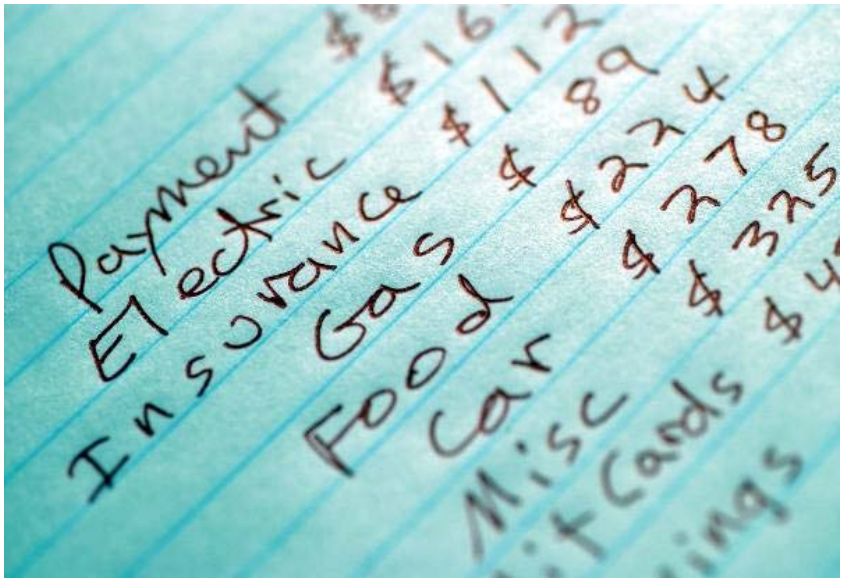
Two Sides of the Equation

Assets



Liabilities

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Assets

The Past as a Guide

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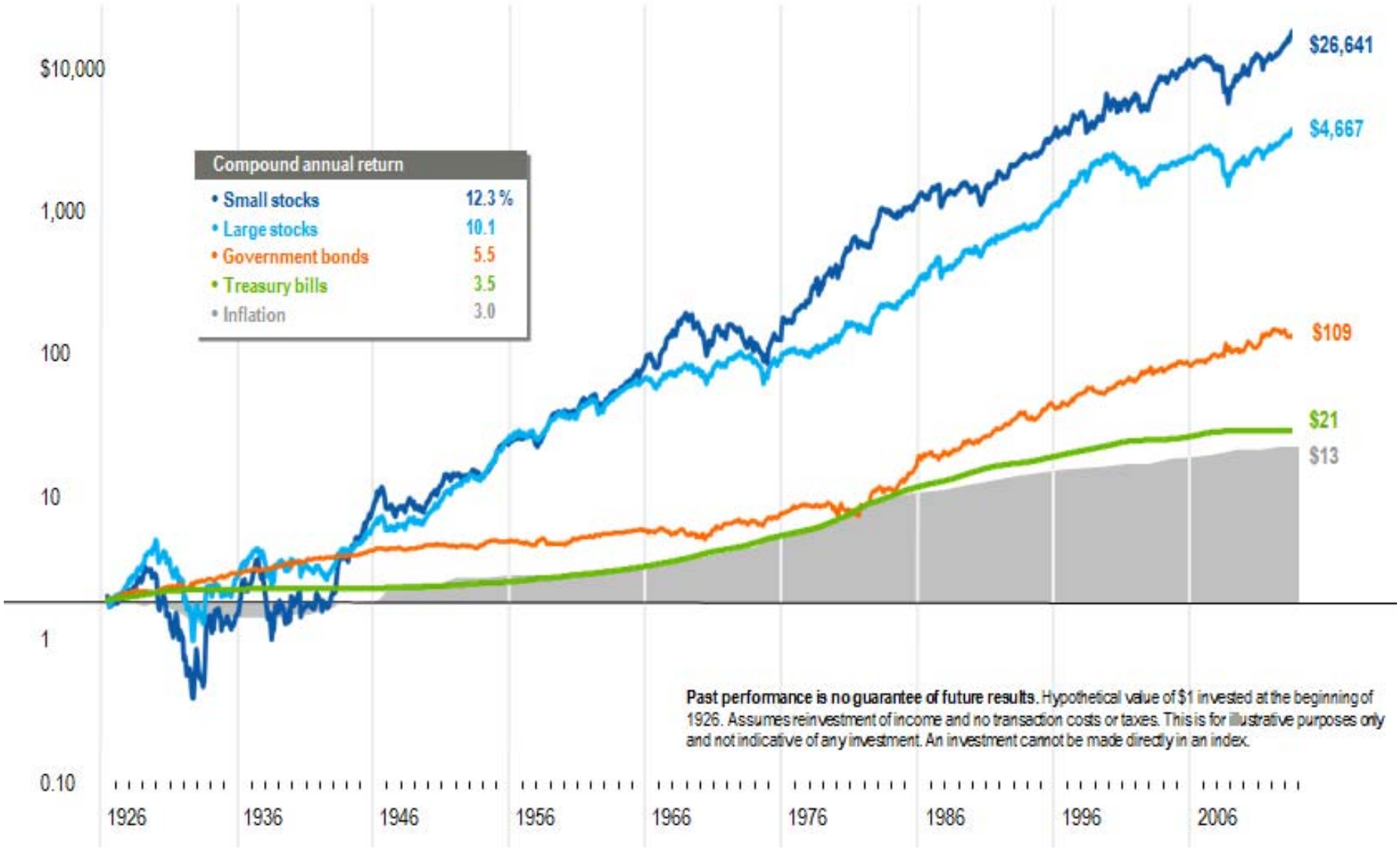
Stocks, Bonds, Bills, and Inflation 1926–2013



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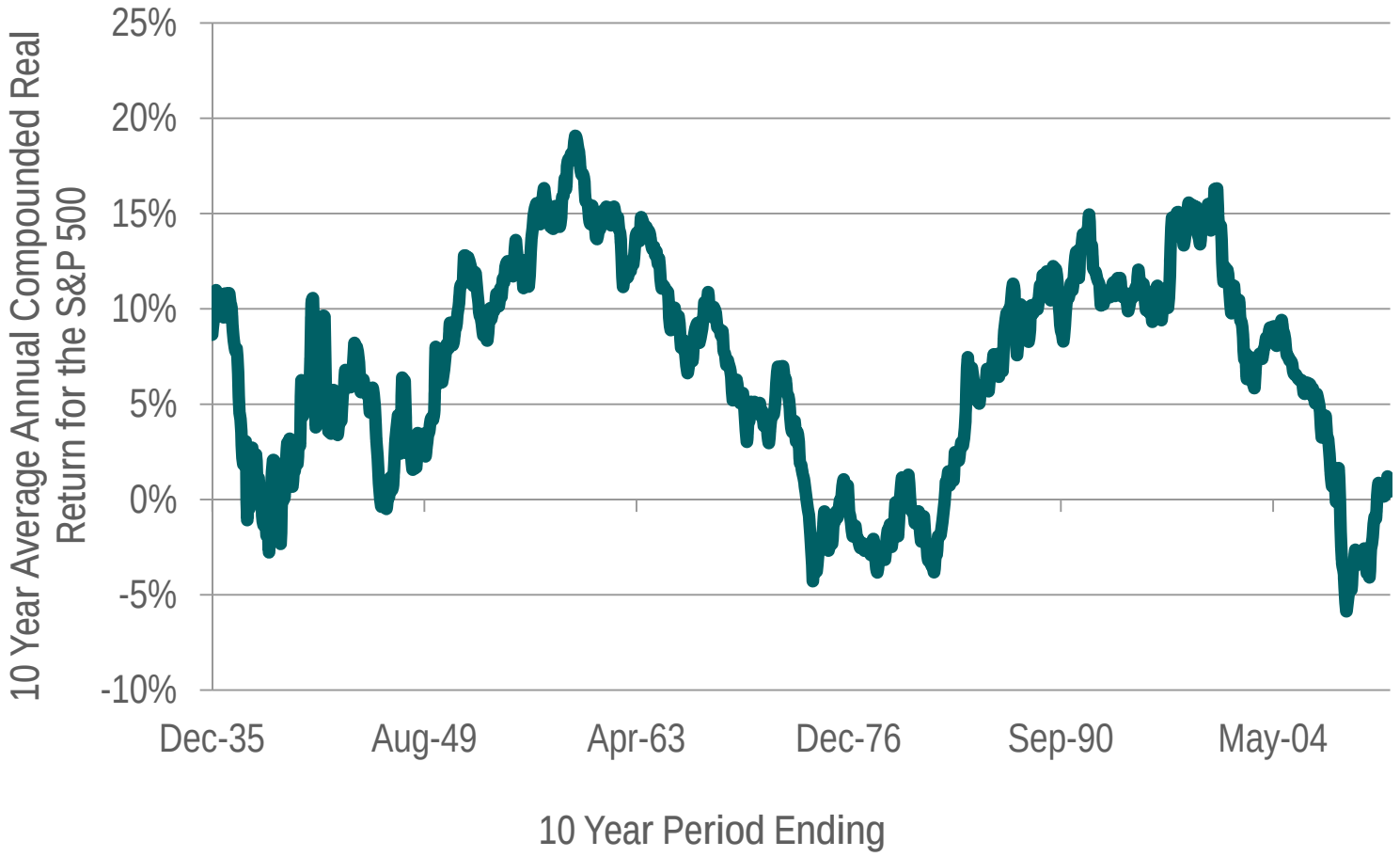
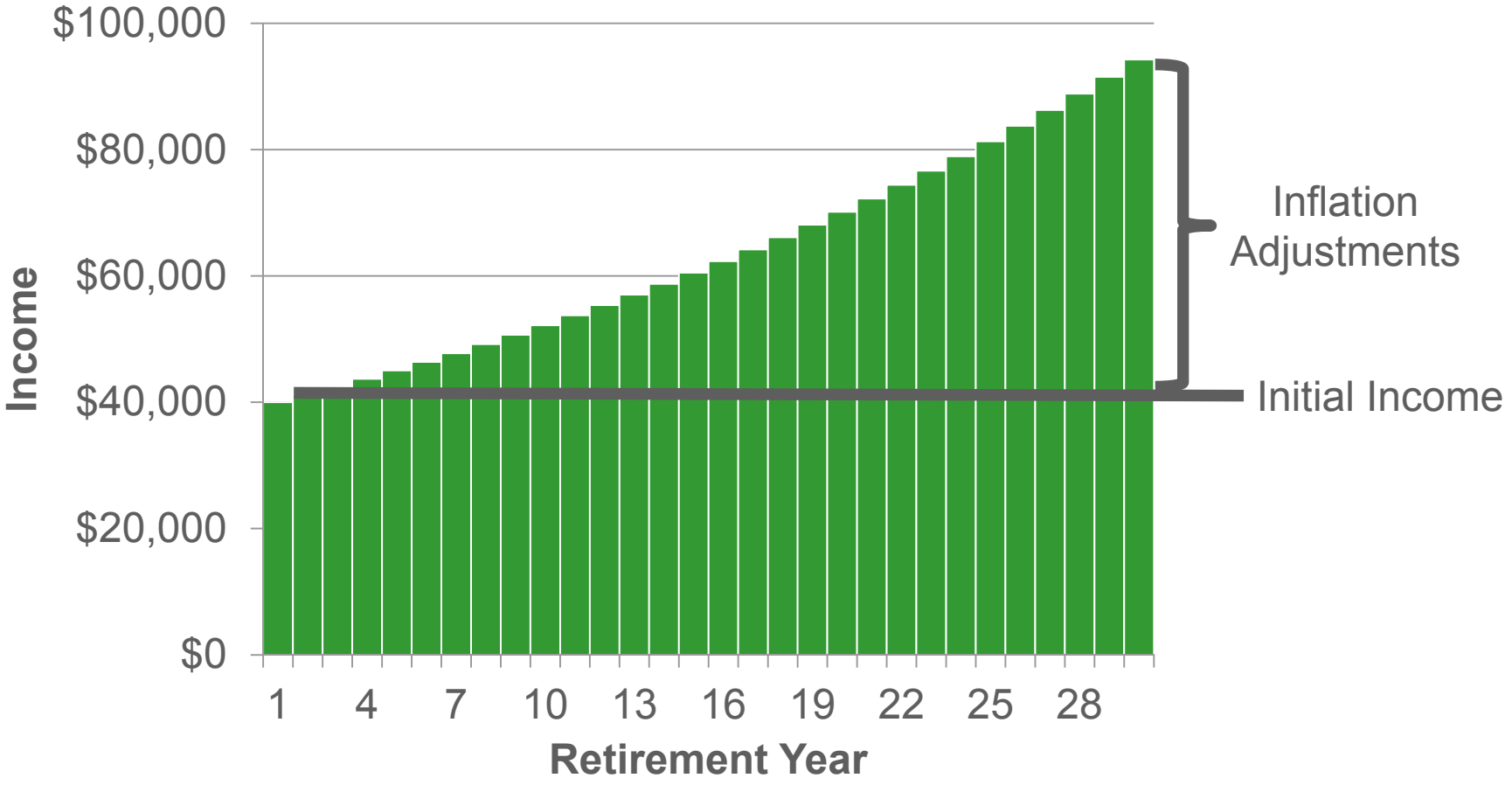
Stocks Return 10% Per Year?



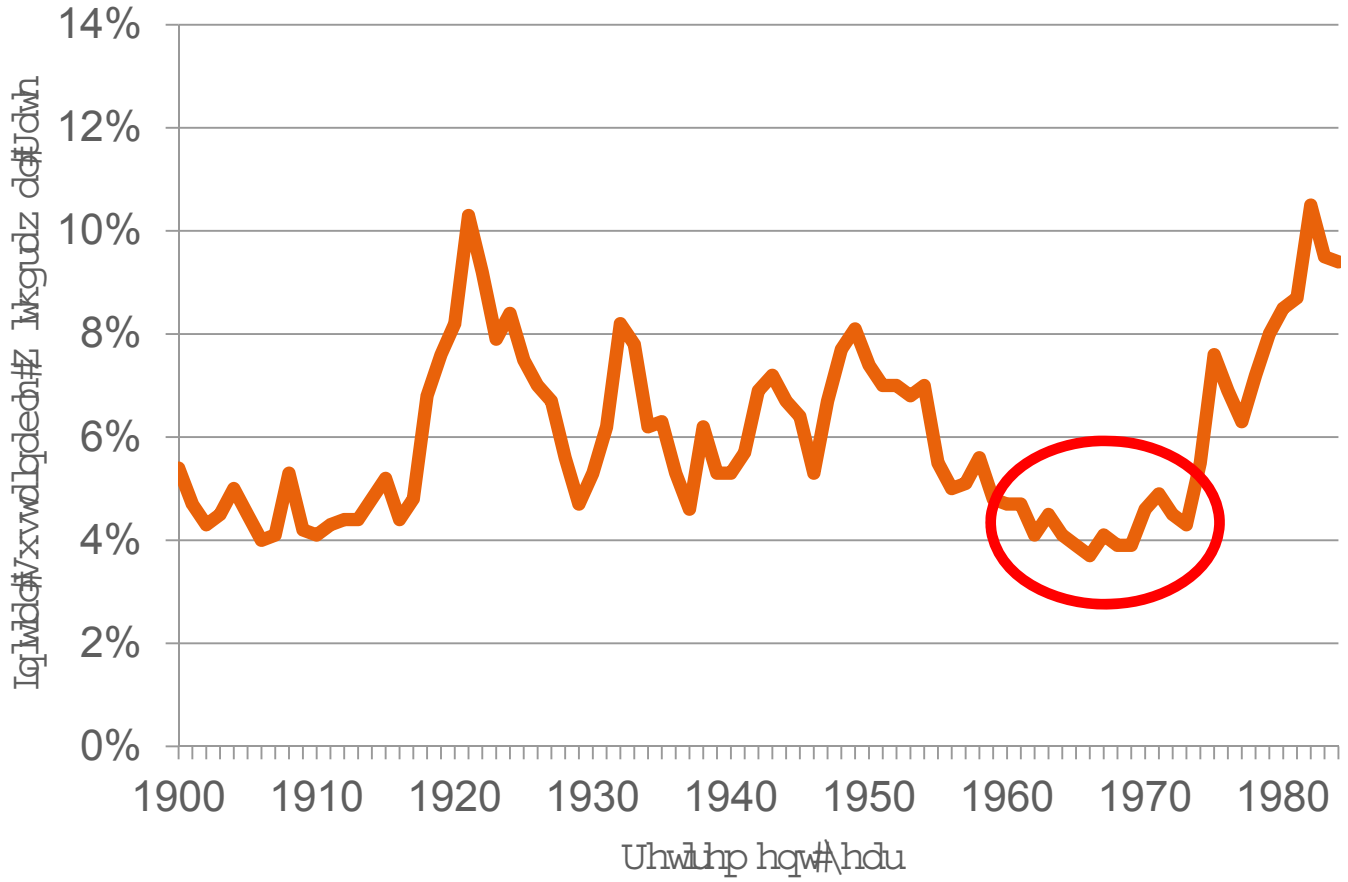
Source: Ibbotson

How Much Do I Have to Save for Retirement: the 4% Rule



For illustration only. Source: Author's Calculations.

Where the 4% Rule Comes From… Historical US Data

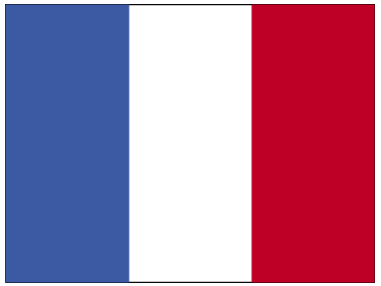


An International Perspective on Historical Returns

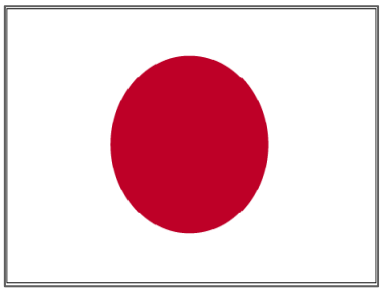
1.28%

1.84%

2.34%

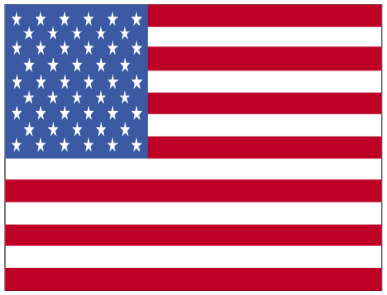


2.72%



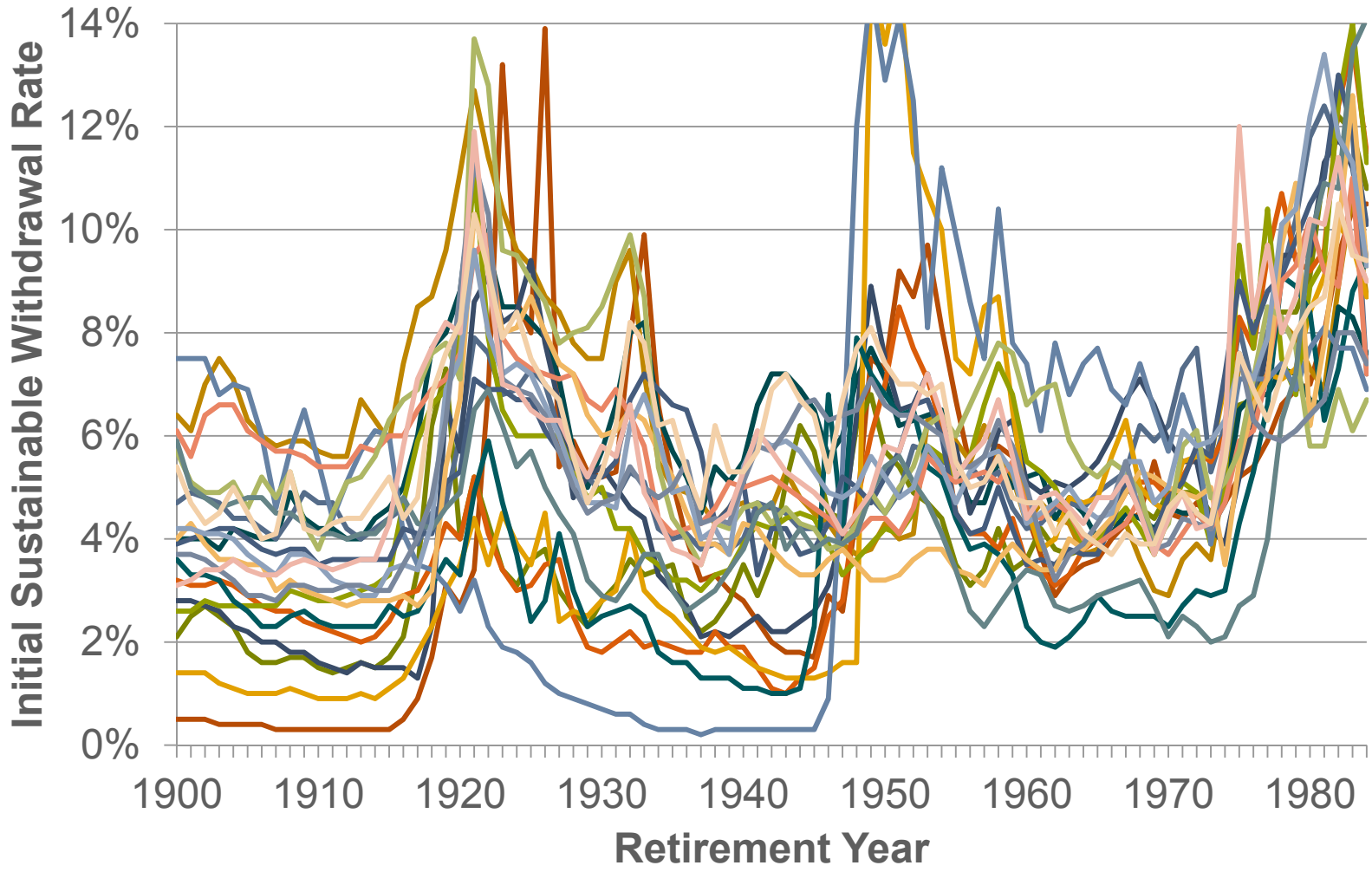
4.06%

5.01%



Average annual compounded real return for a 60% stock, 40% bond portfolio: 1900 – 2013.
Source: Dimson, Marsh, and Staunton, Morningstar Direct.

An International Perspective



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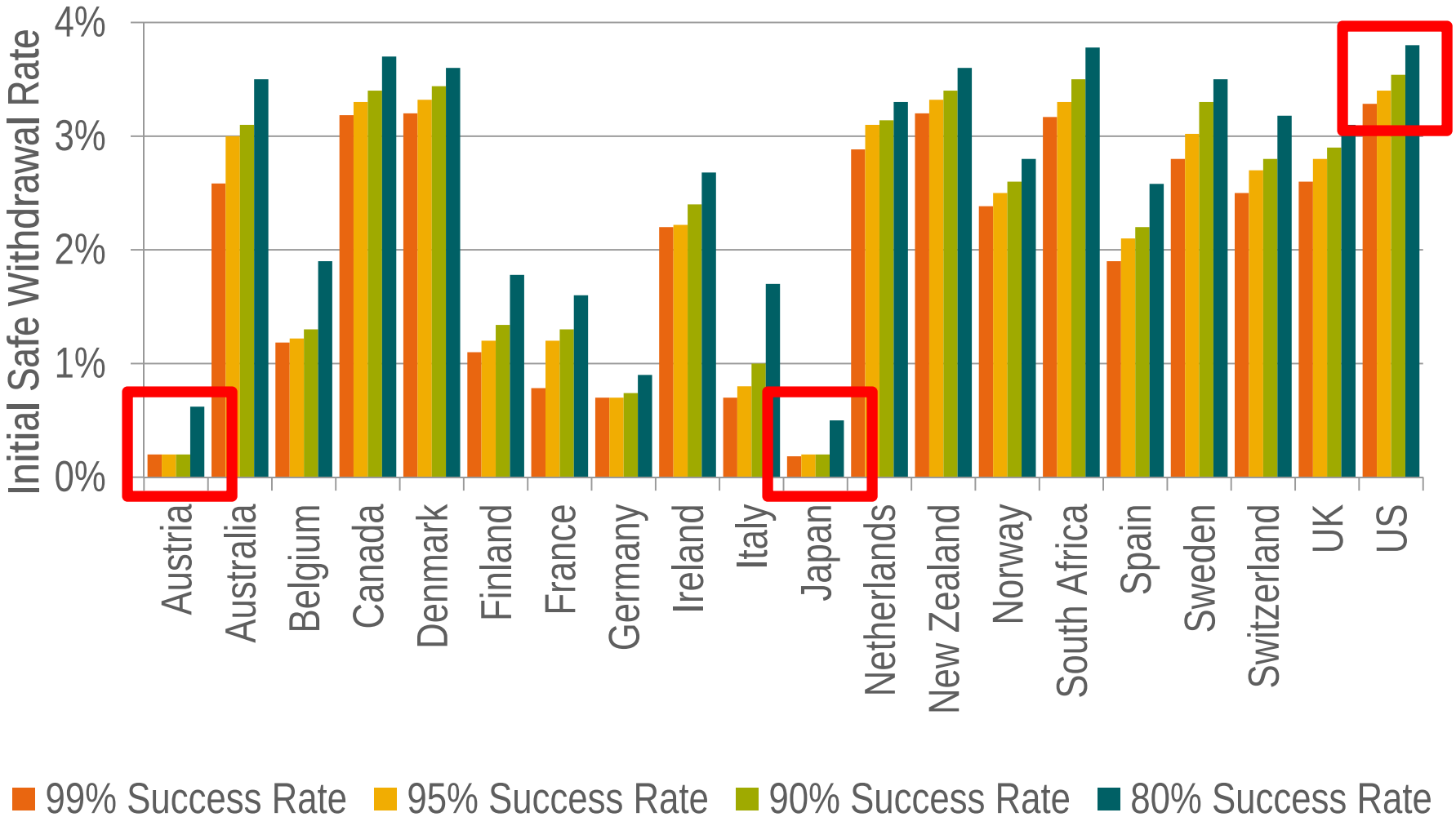
An International Perspective



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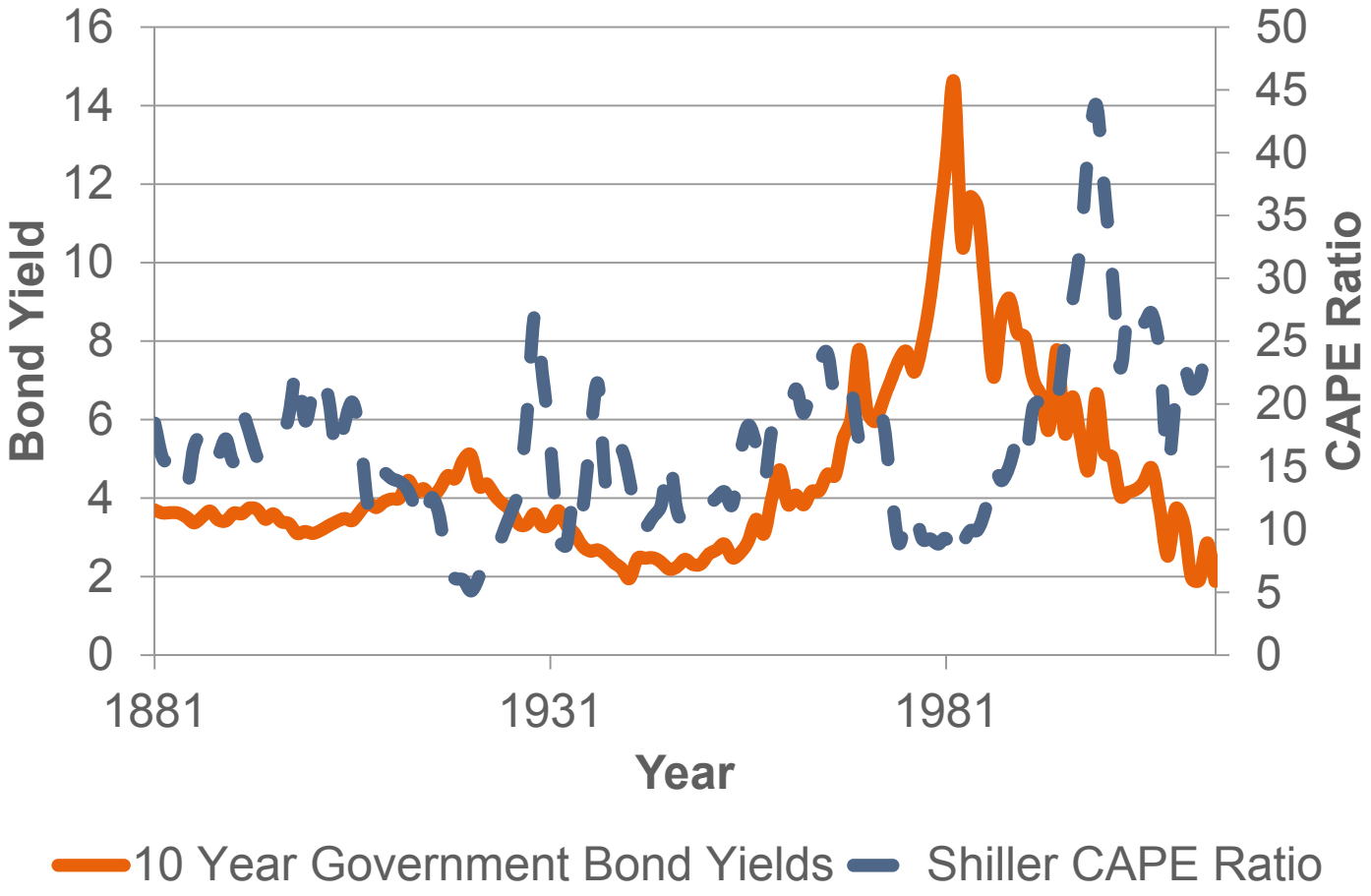
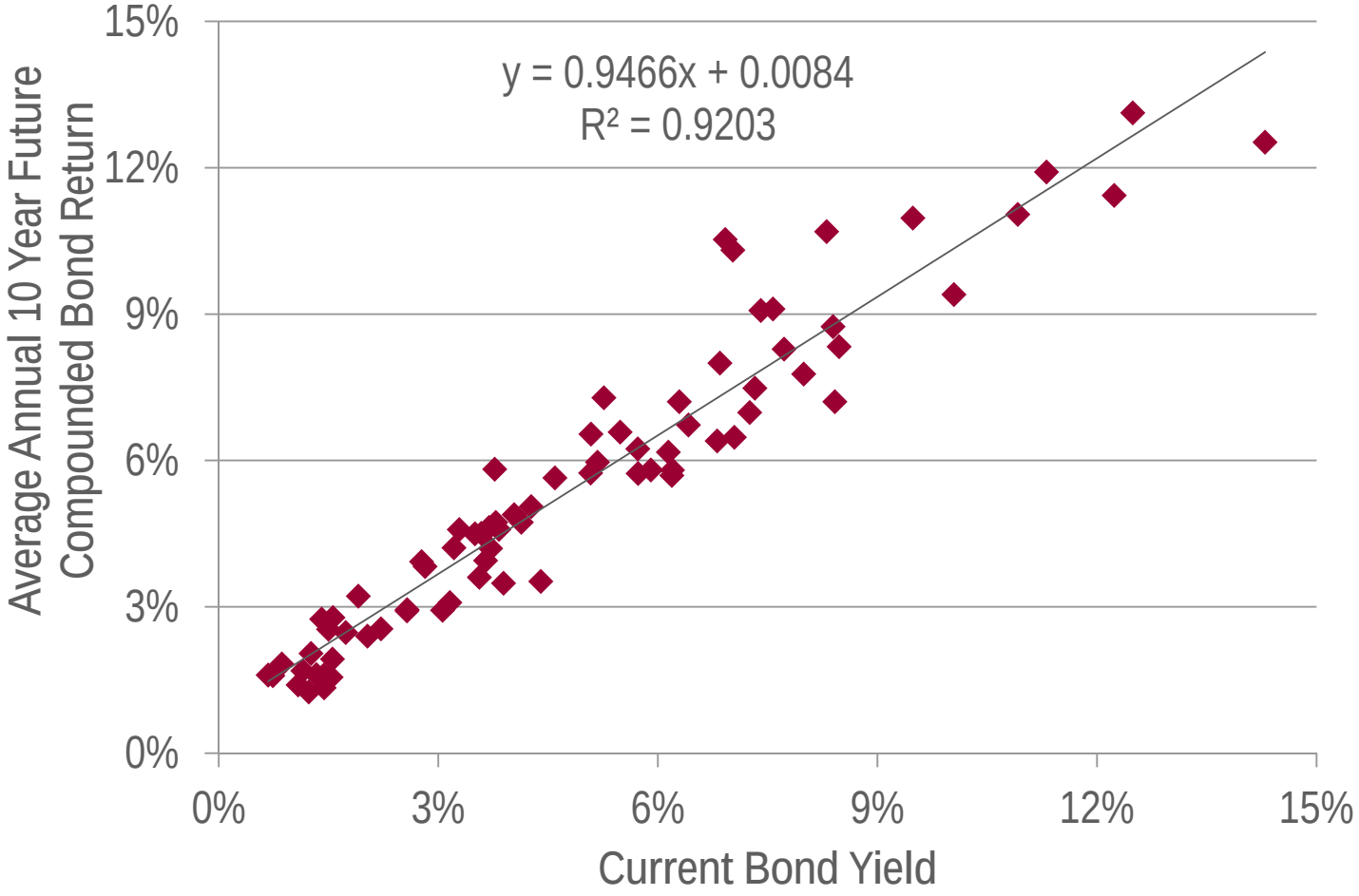
Where Are We Today?



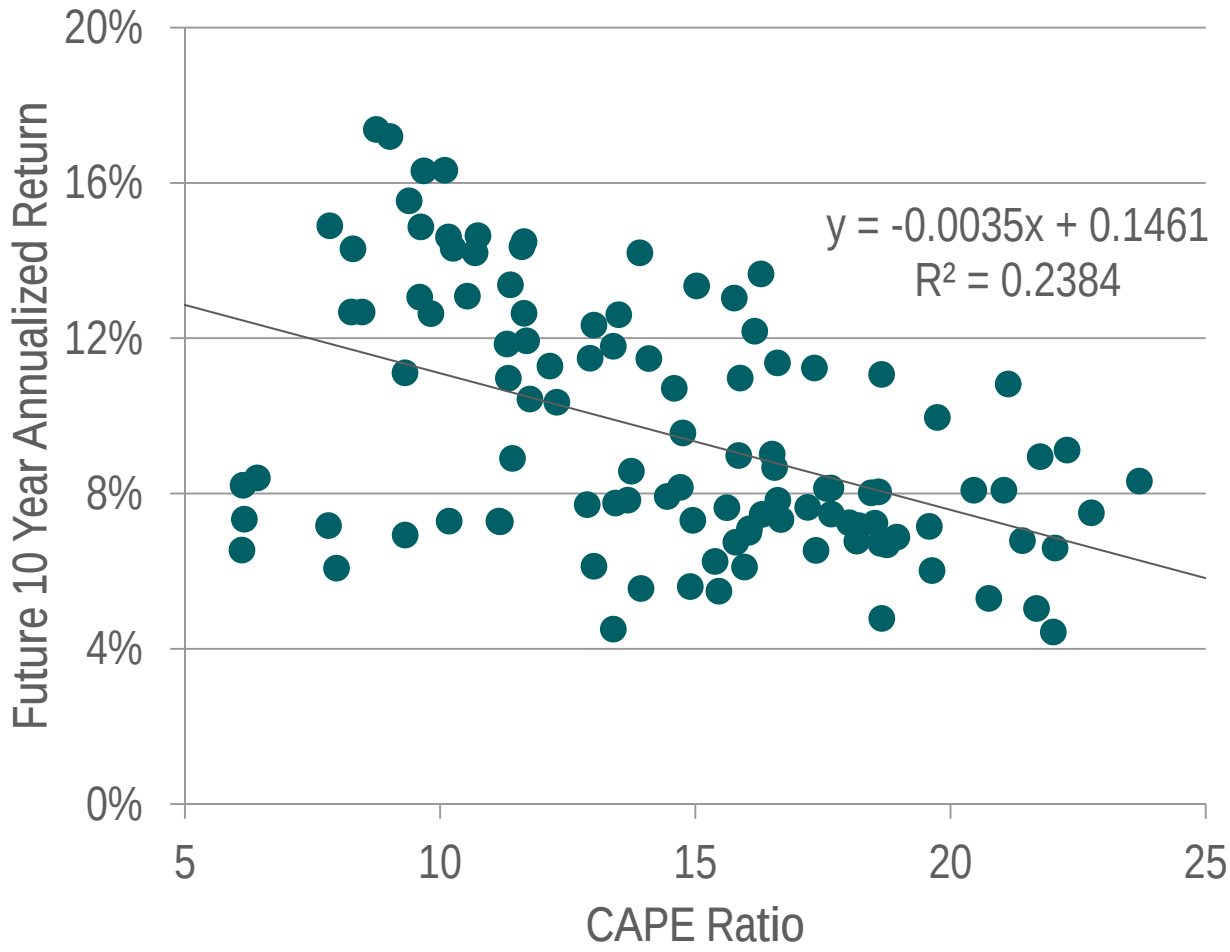
Source: Robert J. Shiller

Bond Yields and Future 10 Year Bond Returns



Source: Ibbotson

CAPE Ratios and Future 10 Year Stock Market Returns



Source: Robert J. Shiller

A ‘Build Up’ Approach to Forecast Asset Class Returns

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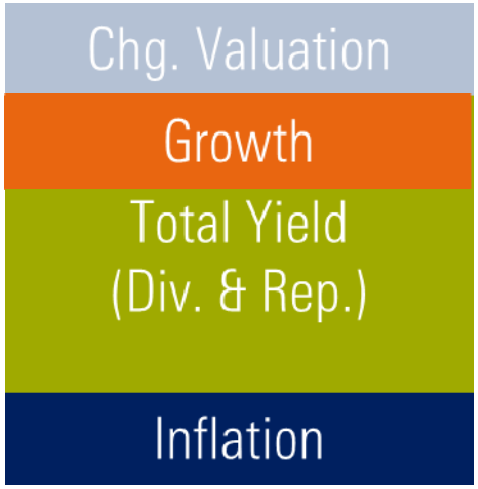

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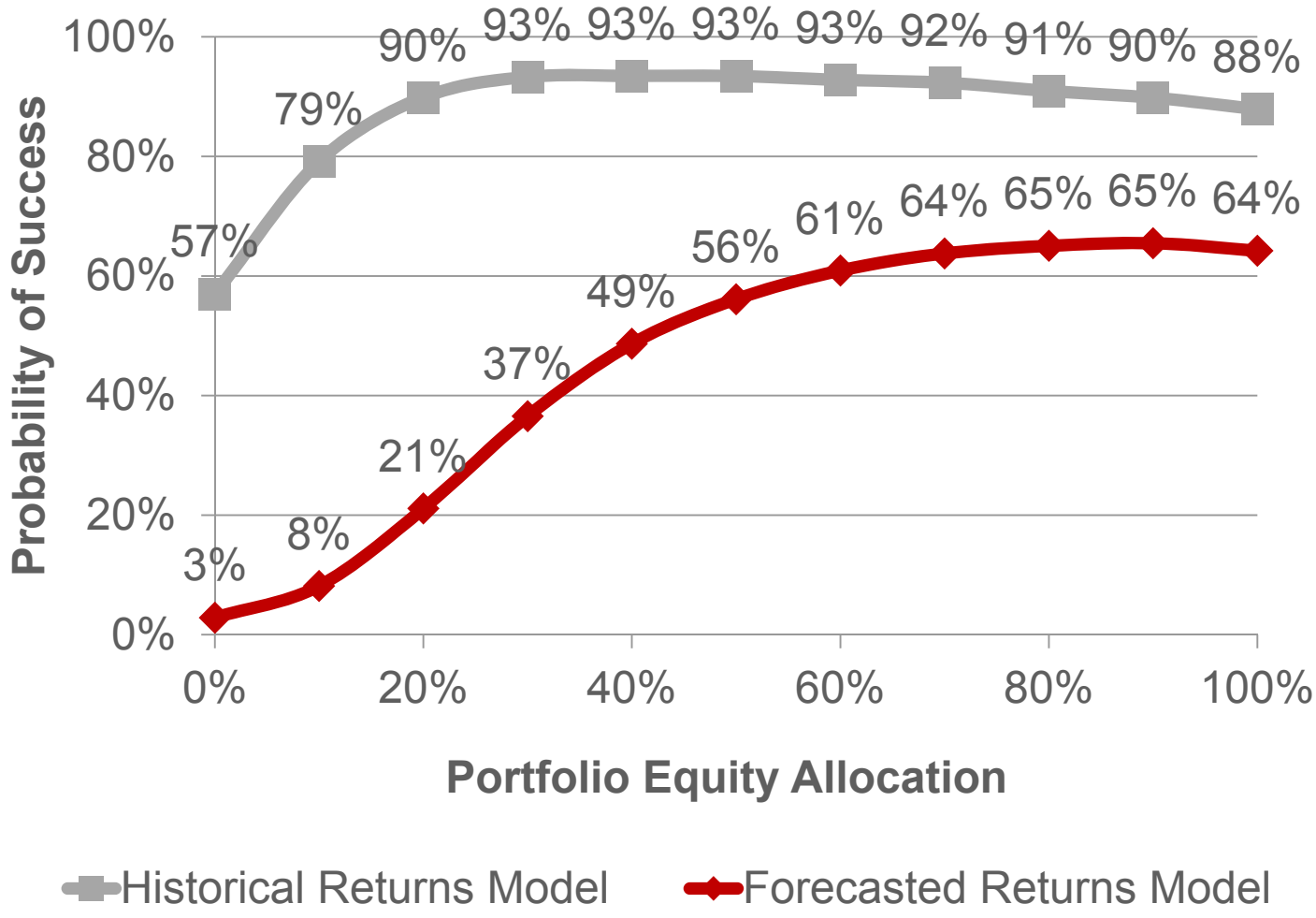
Our Best Guess on Returns (2015 CMAs)

	Arithmetic			Geometric		
	Simulation Years			Simulation Years		
Asset Class	**1-10**	**11-20**	**20+**	**1-10**	**11-20**	**20+**
US Large Cap Growth Equities	3.32	7.14	7.24	0.98	4.80	4.90
US Large Cap Value Equities	3.95	8.67	8.78	1.86	6.58	6.69
US Mid Cap Equities	3.93	9.15	9.28	1.68	6.90	7.03
US Small Cap Equities	3.68	9.08	9.21	1.22	6.62	6.75
US REITs	2.99	8.81	8.91	0.57	6.39	6.49
Intl Equities	6.30	7.54	7.63	4.02	5.26	5.35
Emerging Markets Equities	10.48	9.76	9.90	7.78	7.06	7.20
Long Term Bonds	0.77	1.91	3.91	-0.88	0.26	2.26
Intermediate Term Bonds	0.38	1.92	3.04	-0.76	0.78	1.90
Short Term Bonds	-0.16	1.60	2.69	-1.10	0.66	1.75
High Yield Bonds	1.92	4.12	5.66	0.24	2.44	3.98
Intl Bonds	-0.22	2.42	3.93	-1.89	0.75	2.26
Cash	-1.06	0.58	1.02	-1.74	-0.10	0.34

The Safety of The 4% Rule, Past versus Future



Source: “Low Bond Yields and Efficient Retirement Income Portfolios” by David Blanchett, Journal of Retirement

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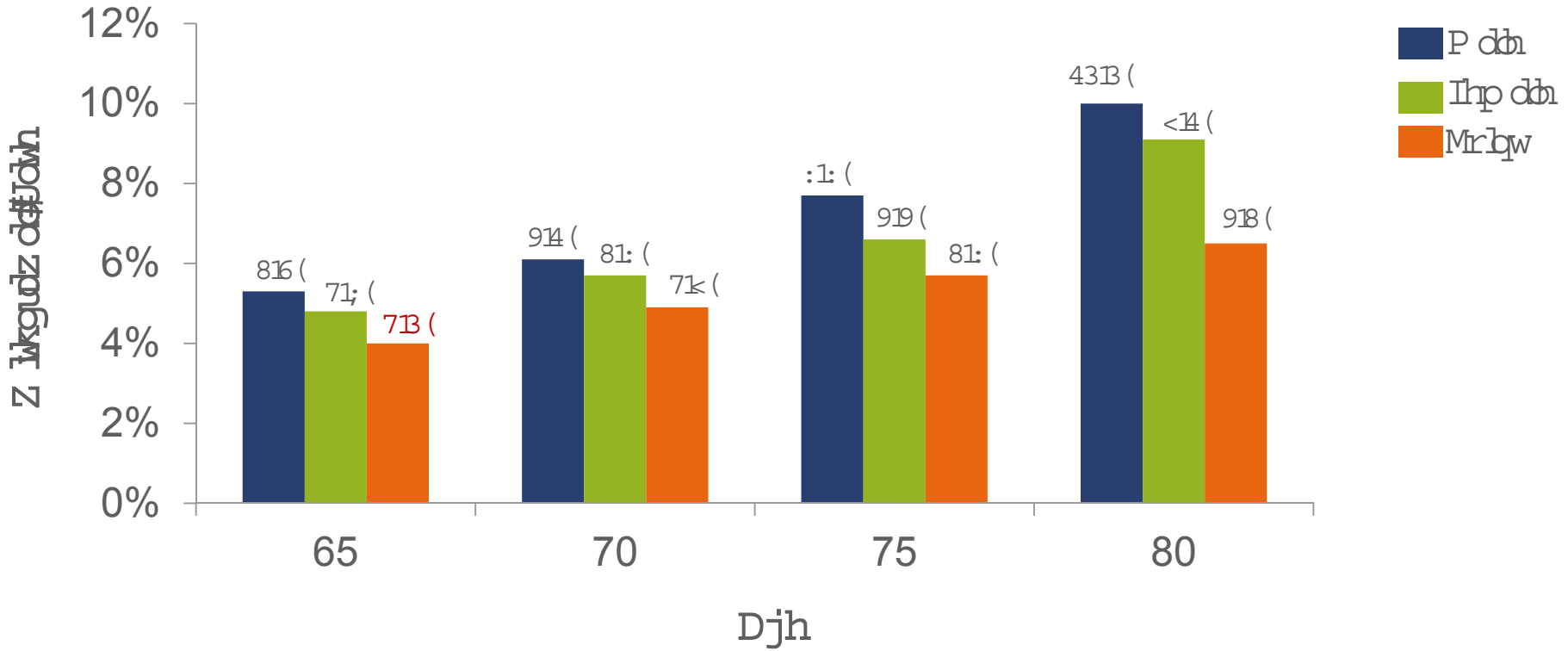
Is 4% Safe?

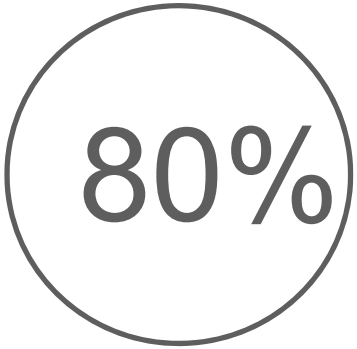
A More Colorful Perspective of 4%



Source: “Low Bond Yields and Efficient Retirement Income Portfolios” by David Blanchett, Journal of Retirement

The Retirement Liability

Common Liability Assumptions



Replacement Rate

Need Change

Retirement Period

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Replacement Rate

Estimating a Replacement Rate

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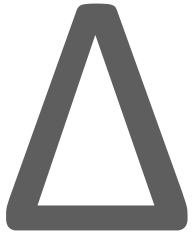

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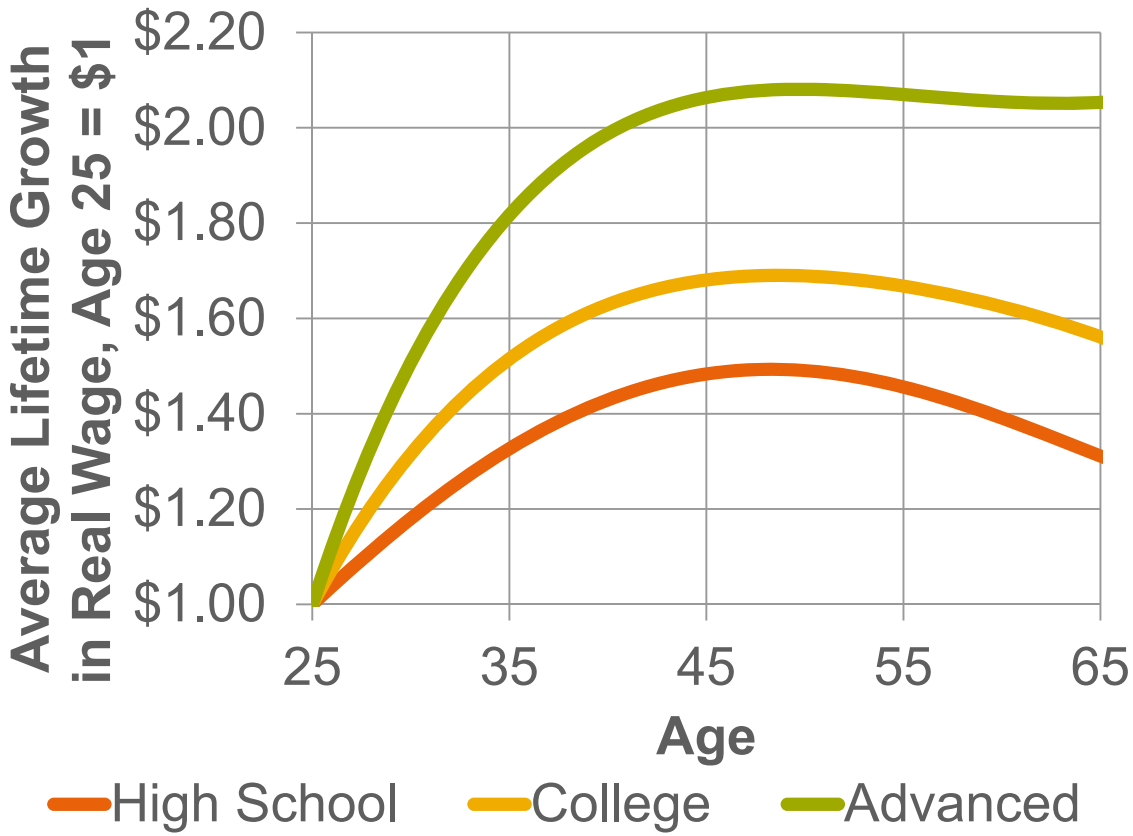
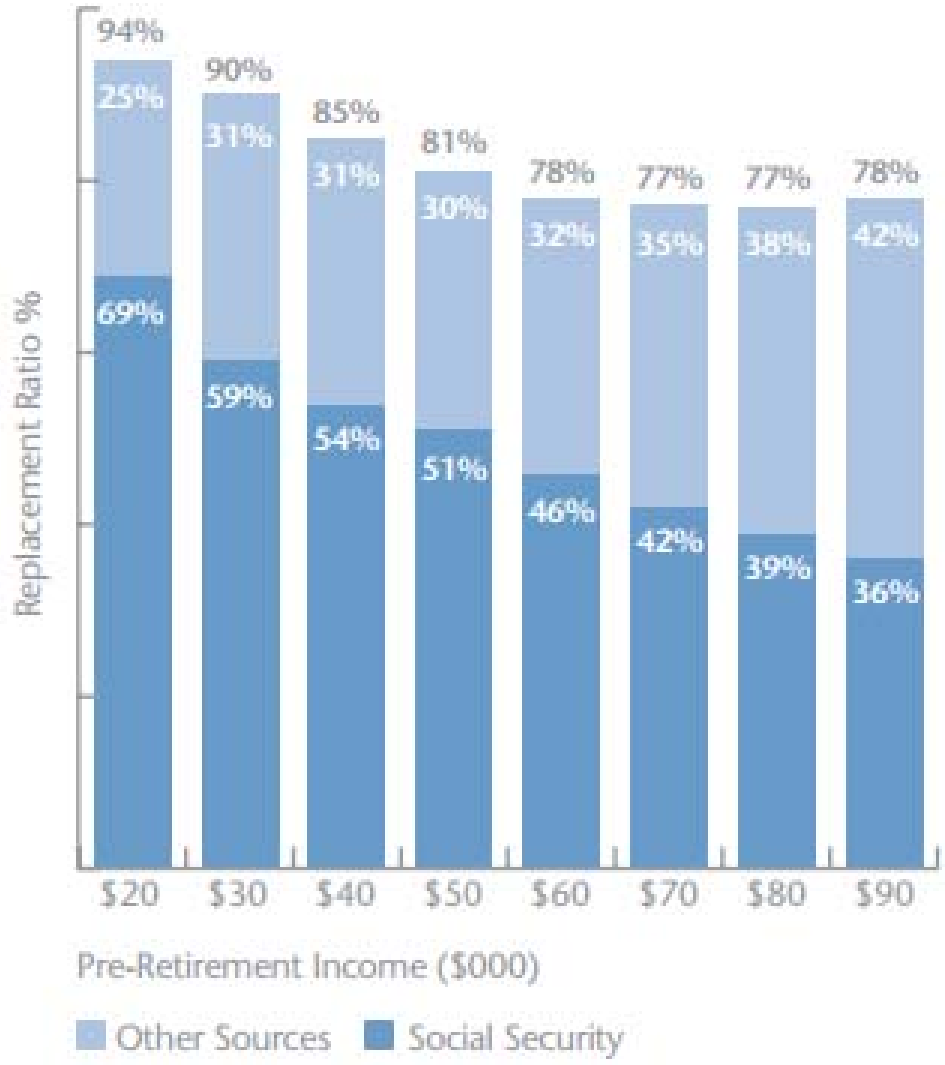
Source: “Estimating the True Cost of Retirement” by David Blanchett, White Paper

Earnings Curves



Replacement Rates For Various Households



Source: “Replacement Ratio Study” by Aon Consulting

Retirement Consumption

What Drives Retiree Spending?

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The Retirement Consumption Puzzle

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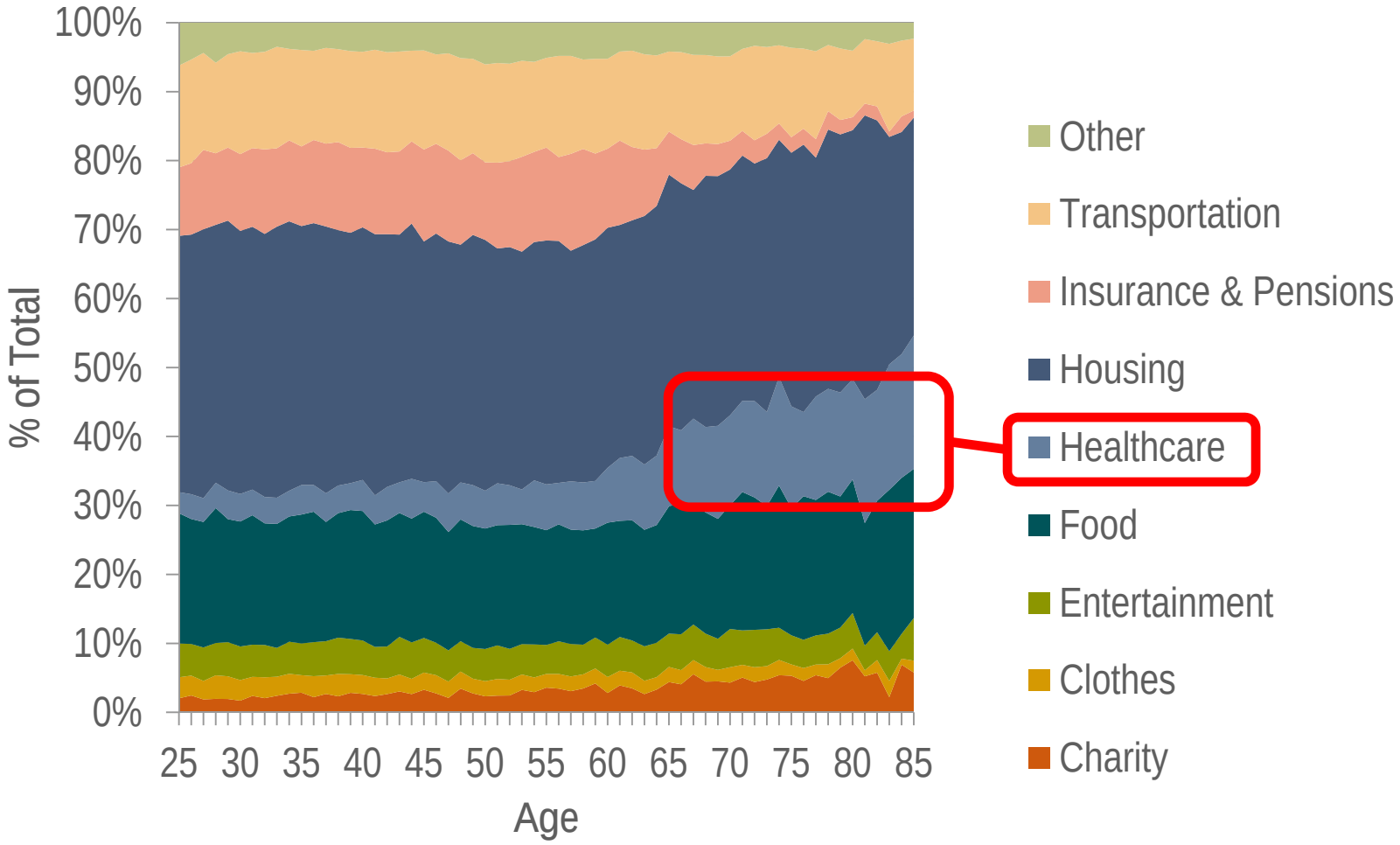
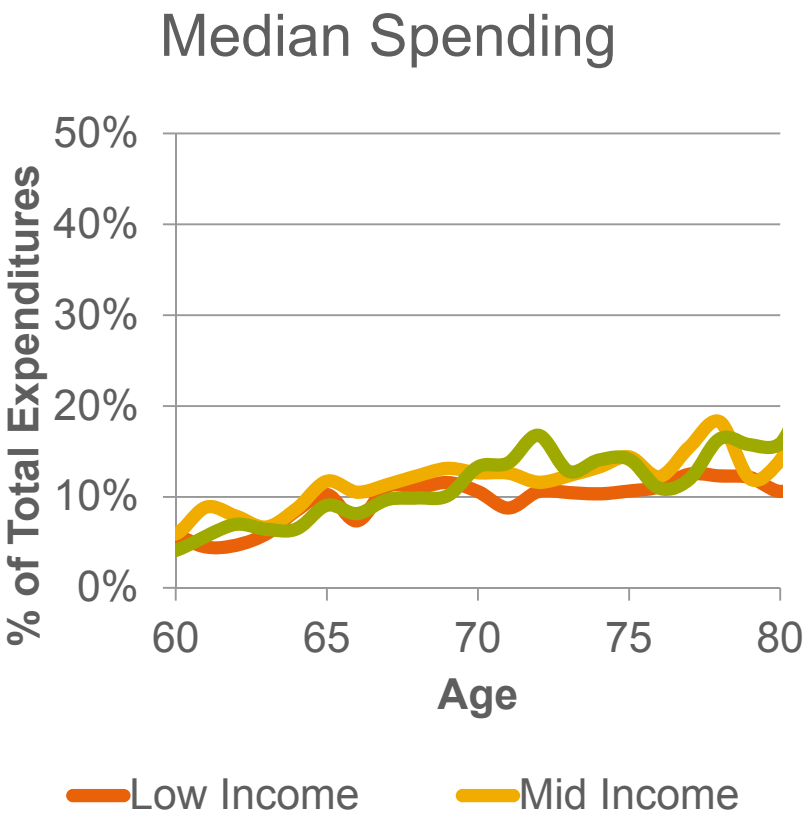
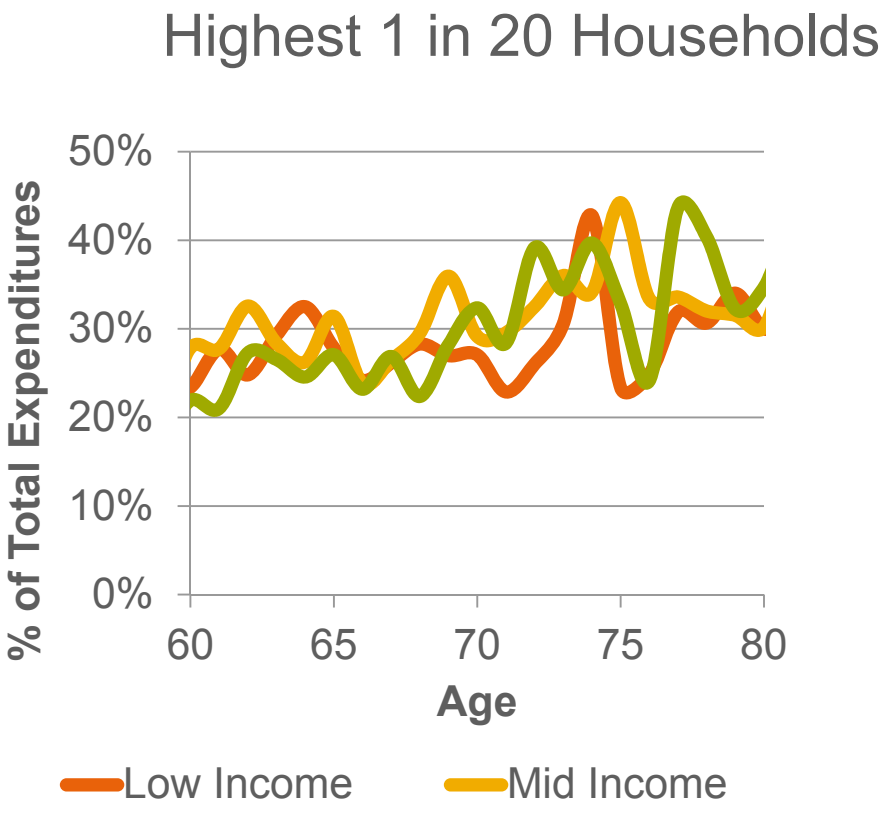
Expenditures as a Percentage of Total Household Consumption by Age



Source: “Estimating the True Cost of Retirement” by David Blanchett, Morningstar White Paper

Medical Spending for Different Income Levels

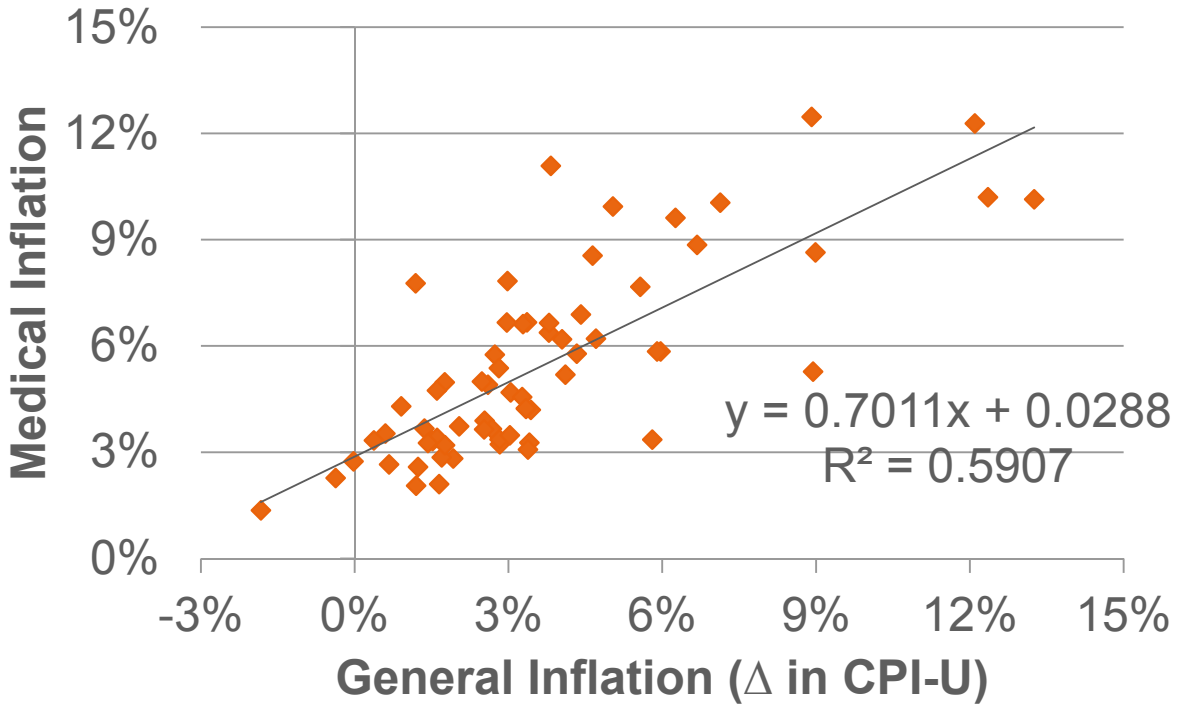




Source: “Estimating the True Cost of Retirement” by David Blanchett, Morningstar White Paper

General Inflation (CPI-U) versus Medical Inflation

- Medical inflation has averaged +5.42% per year from 1948 to 2012, versus +3.63% for the CPI-U, therefore, has been growing about 50% faster than general inflation



Source: Bureau of Labor Statistics.

Different Inflation Baskets

- From December 1982 to December 2012 the average annual change in the CPI-E has been 3.07% versus 2.92% for CPI-U

	Expenditure Weights			Δ from CPI-U	
Expenditure group	CPI-U	CPI-W	CPI-E	CPI-W	CPI-E
Apparel	3.5%	3.6%	2.4%	0.1%	-1.1%
Education and communication	6.7%	6.7%	3.8%	0.0%	-2.9%
Food and beverages	15.0%	15.7%	12.8%	0.7%	-2.2%
Housing	40.2%	39.2%	44.5%	-1.0%	4.3%
Medical care	6.9%	5.6%	11.3%	-1.3%	4.4%
Other goods and services	5.3%	5.1%	5.4%	-0.2%	0.1%
Recreation	5.9%	5.5%	5.3%	-0.4%	-0.6%
Transportation	16.5%	18.7%	14.5%	2.2%	-2.0%

Source: Bureau of Labor Statistics.

2016 Inflation for Social Security Retirement Benefits

	Sept14-Sept15 Δ	Weights CPI-W	CPI-E	CPI-U
Food and beverages	1.45%	15.7%	12.8%	15.0%
Housing	2.13%	39.2%	44.5%	40.2%
Apparel	-1.46%	3.6%	2.4%	3.5%
Transportation	-7.39%	18.7%	14.5%	16.5%
Medical care	2.49%	5.6%	11.3%	6.9%
Recreation	0.86%	5.5%	5.3%	5.9%
Education and communication	-0.34%	6.7%	3.8%	6.7%
Other goods and services	1.74%	5.1%	5.4%	5.3%
	Weighted Average	**-0.12%**	**0.43%**	**0.09%**

Source: Bureau of Labor Statistics.

Base Expectation of Retiree Spending???

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Inflation Risk: The Three “Stages” of Retirement

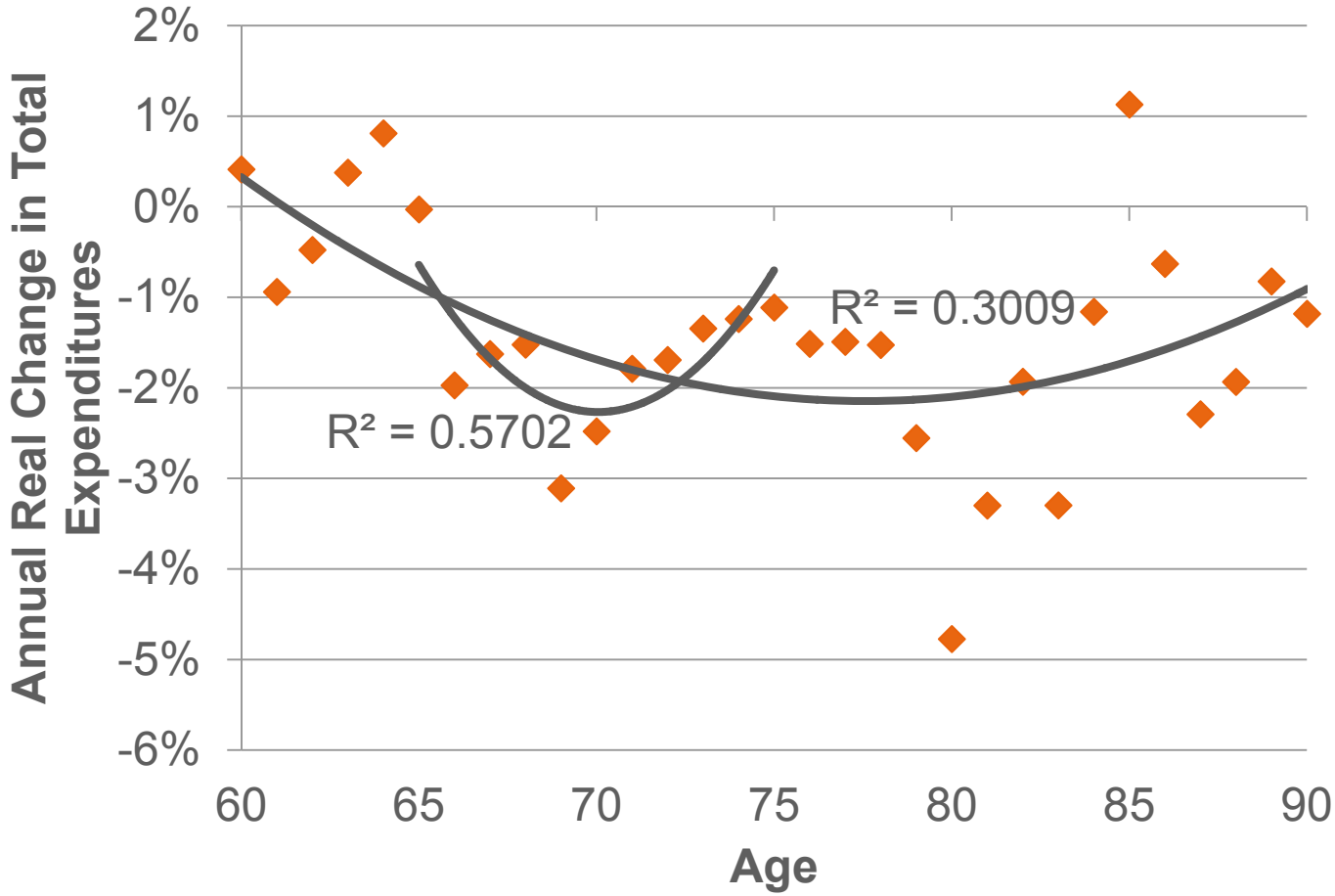
Go-Go: Retirees maintain lifestyle, travel, the group that does not consider themselves "old".

Slow-Go: Between the ages of 70 and 84, brought on by the body saying “Slow Down,” 20%-30% budget decline.

No-Go: 85+, significant changes in retirement lifestyle is generally brought on by health issues.

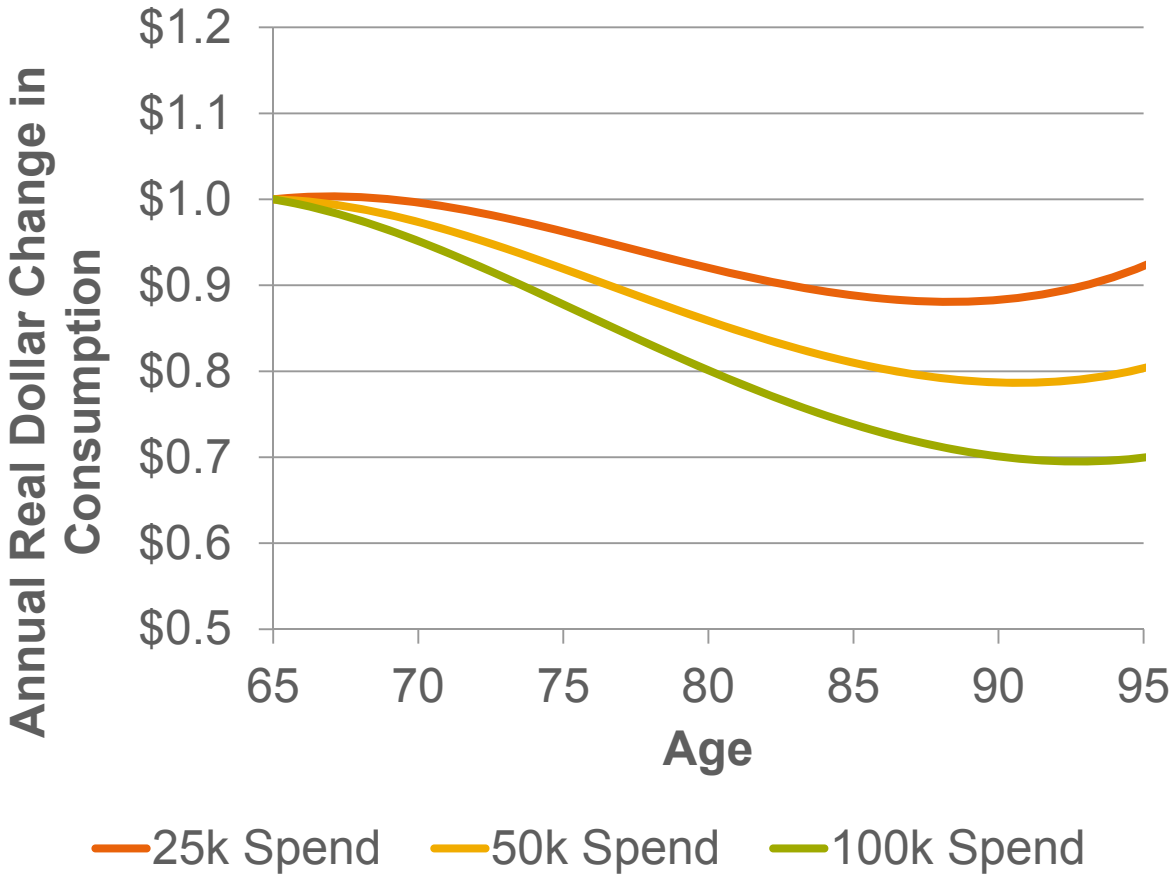
Source: "The Prosperous Retirement, Guide to the New Reality", Michael Stein

Annual Real Change in Expenditures for Retirees



Source: “Estimating the True Cost of Retirement” by David Blanchett, Morningstar White Paper

Lifetime Real Income Need, Age 65 Retiree



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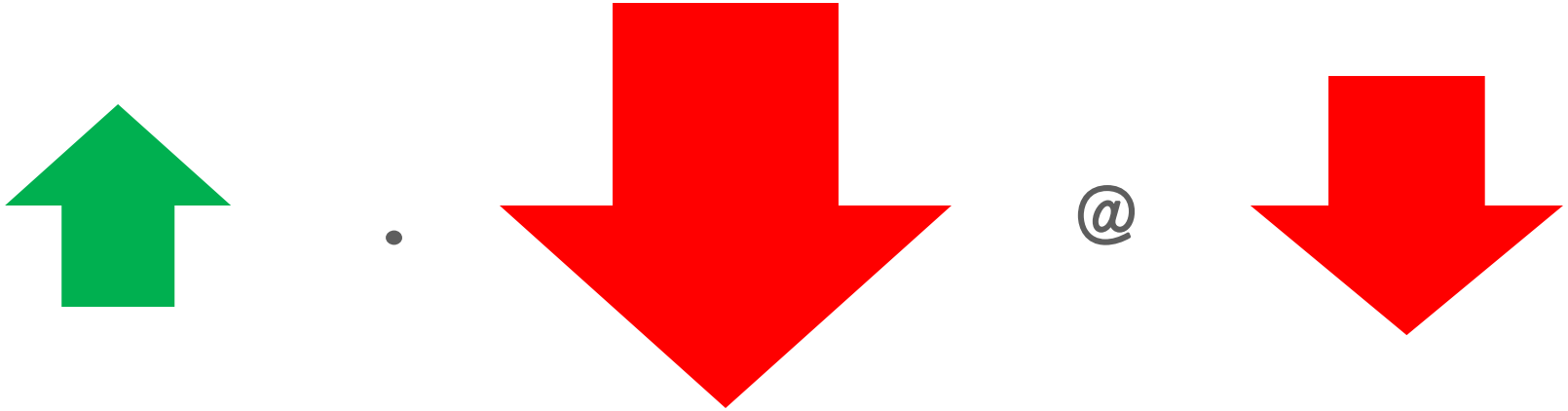
Actual Retiree Spending



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Spending Less: Why?

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The Length of Retirement

Longevity Risk

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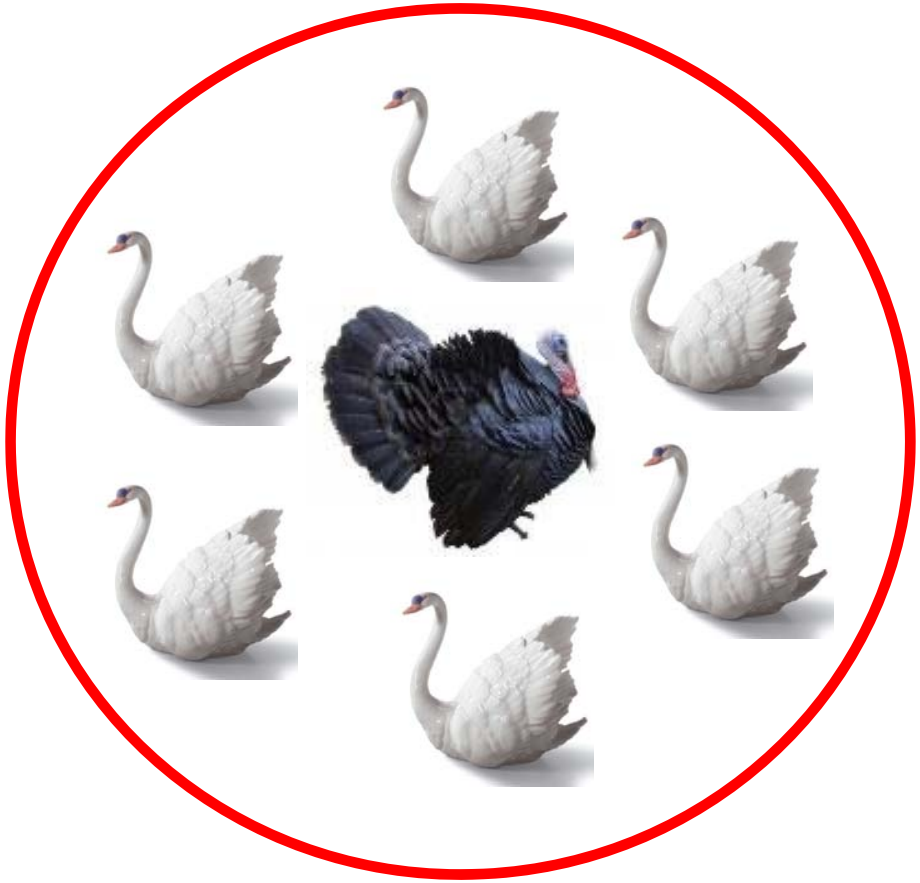
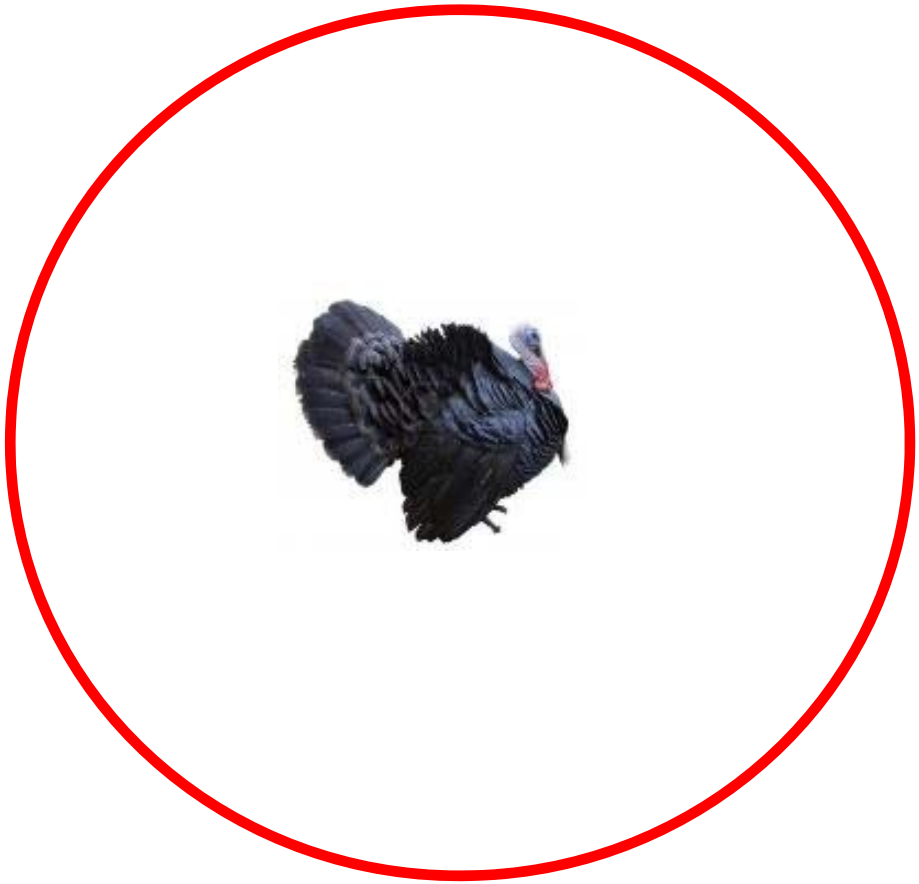
Inefficient Retirement Planning

Defined Benefit Plans



Defined Contribution Plans



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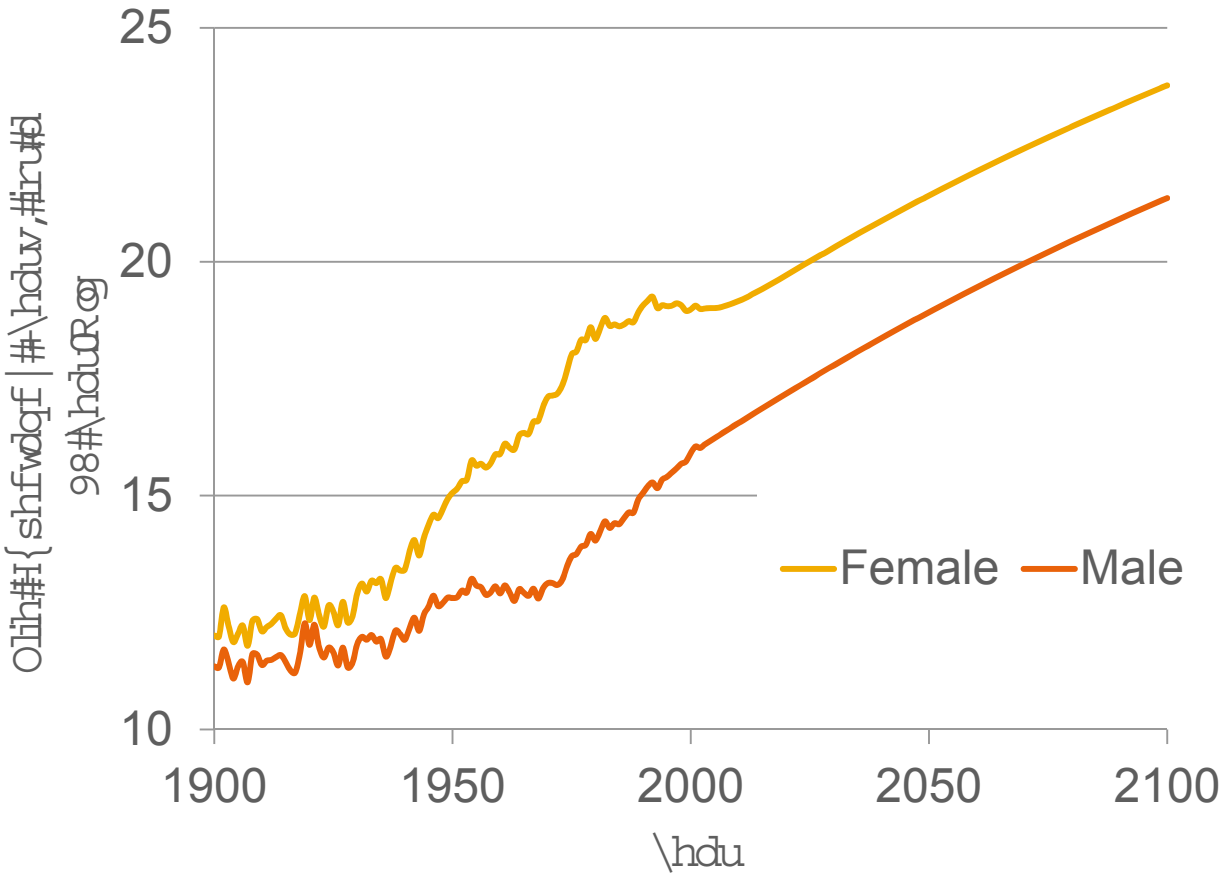

Source: Social Security Administration

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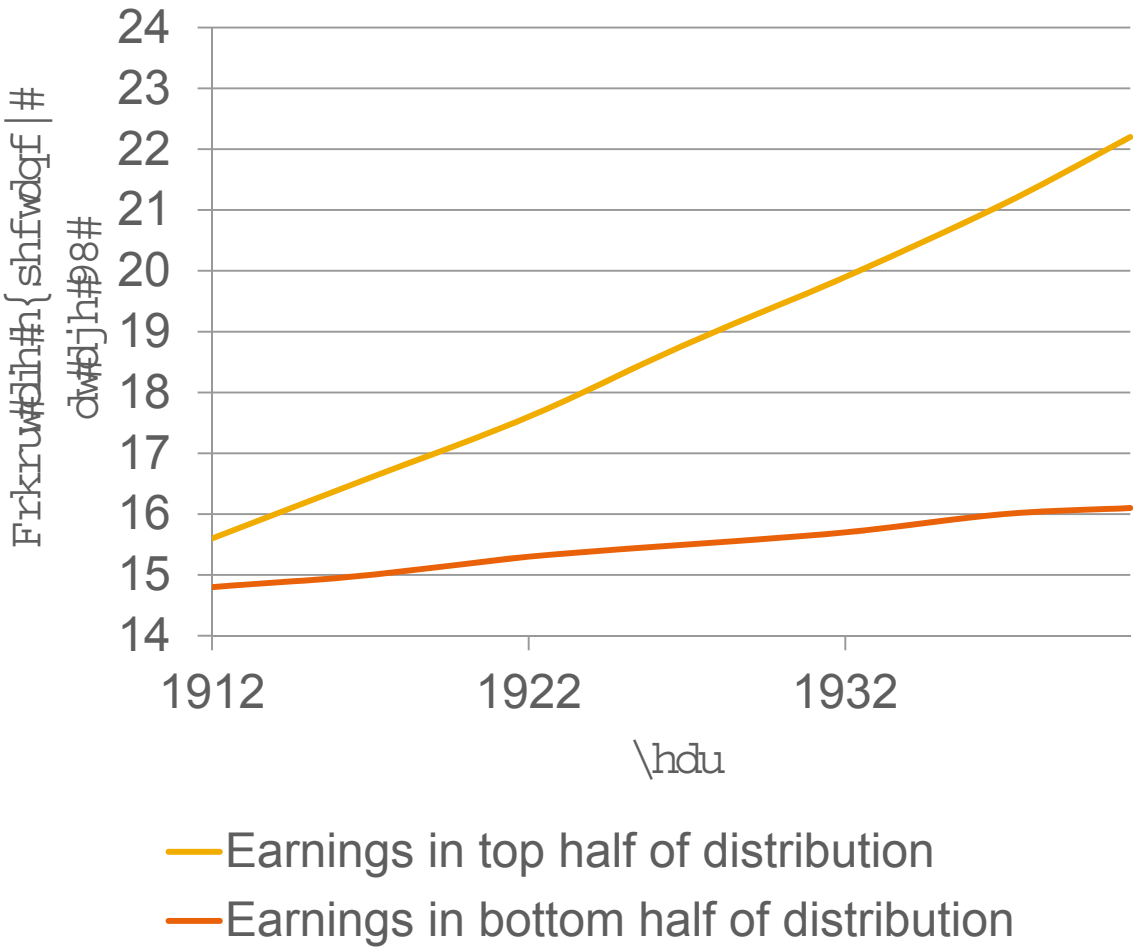

Source: Waldron (2007)

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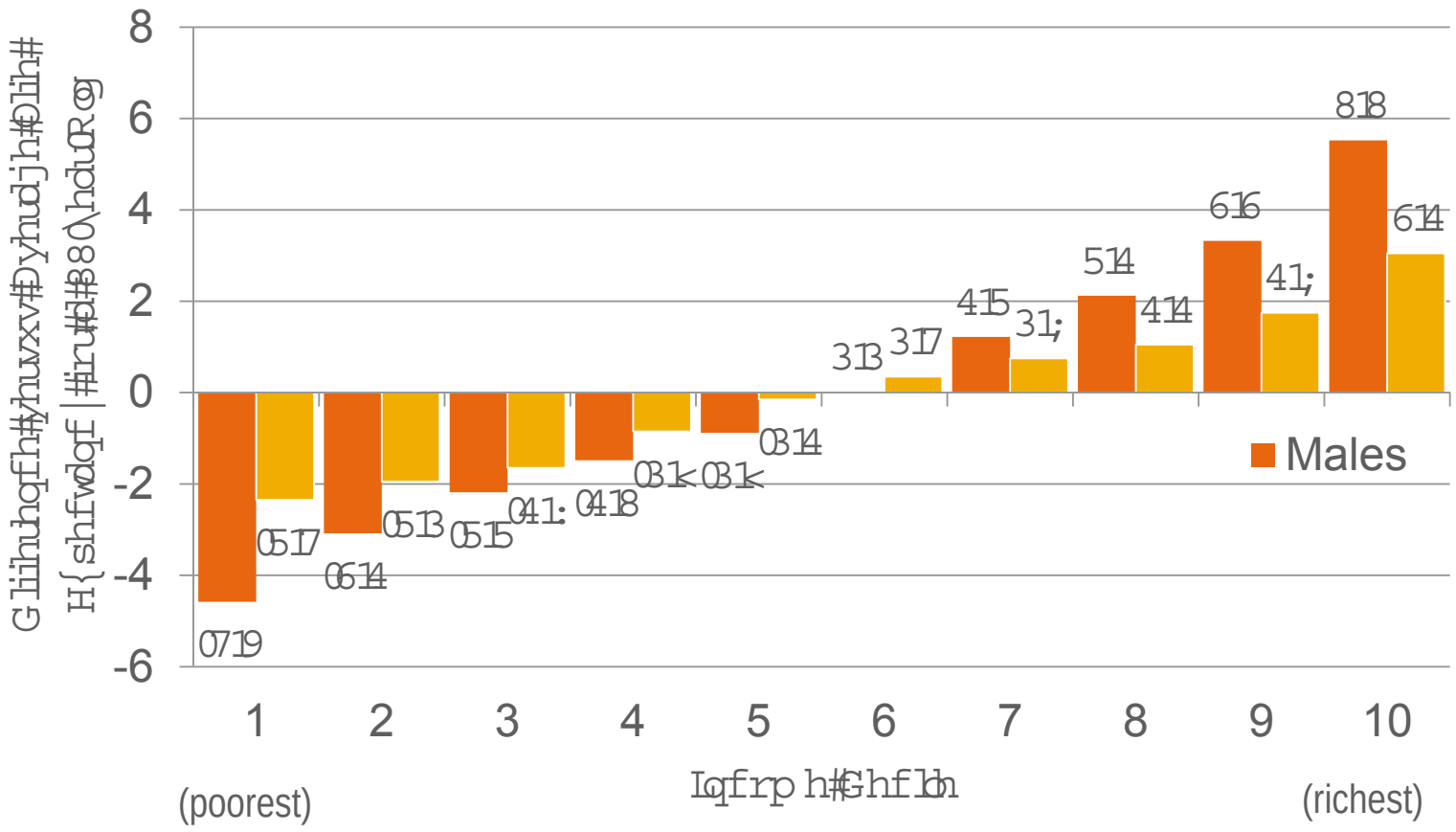


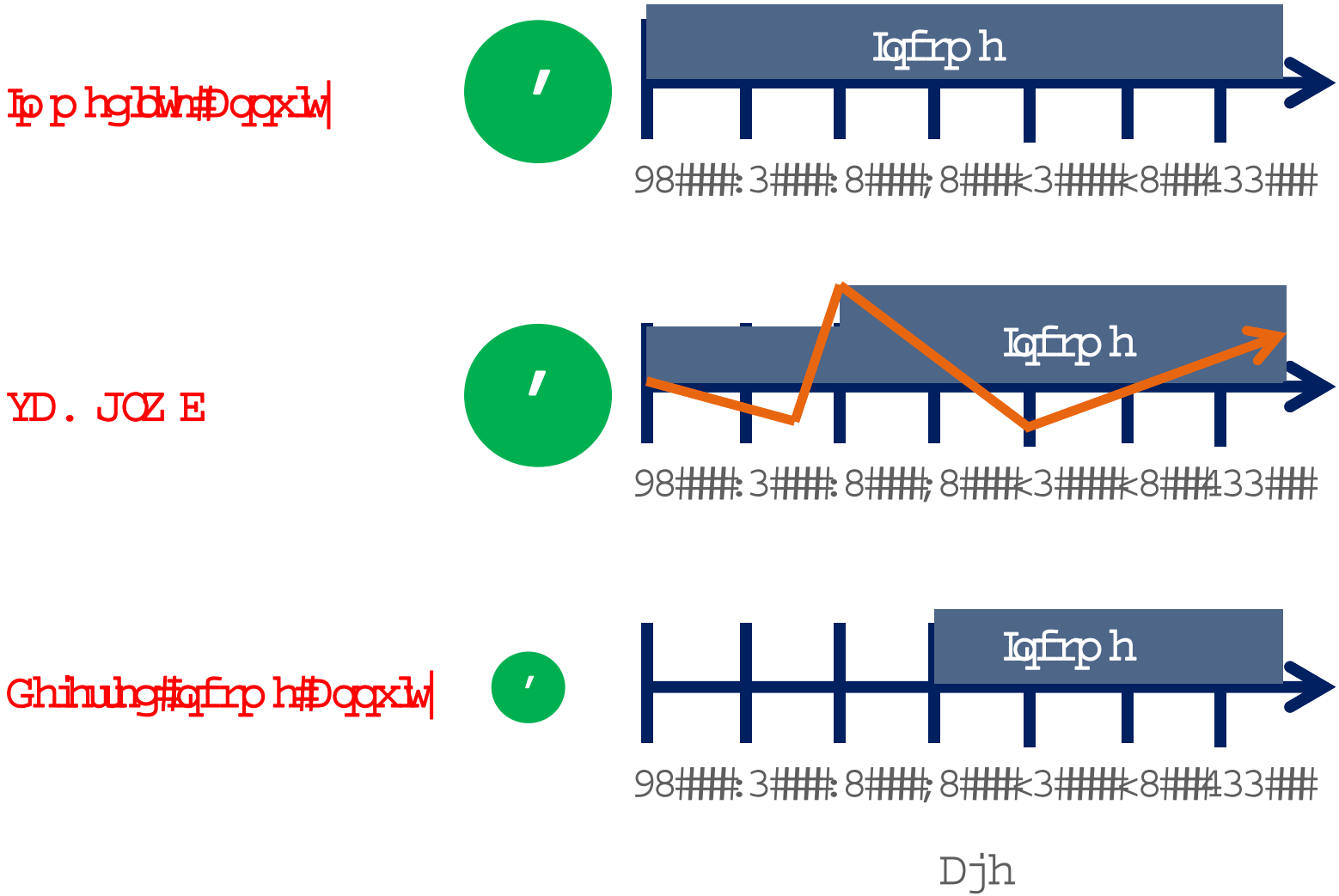
Source: Bosworth and Burke (2014)

What the are Odds?... The Probability of a 65 Year Old Living to Age 95

	Male	Female	Both	≥1
Average American	7%	13%	1%	19%
Healthy American	20%	29%	6%	43%
Healthy American in 2028	25%	33%	8%	50%

Source: Social Security Administration, Society of Actuaries

Annuities… The Only Way to Guarantee Income for Life



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The Best Annuity Around

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A Better Retirement Spending Model

Building a Better Model

Spending Smile

Changes in Spending Varies by Consumption Level

True Failure

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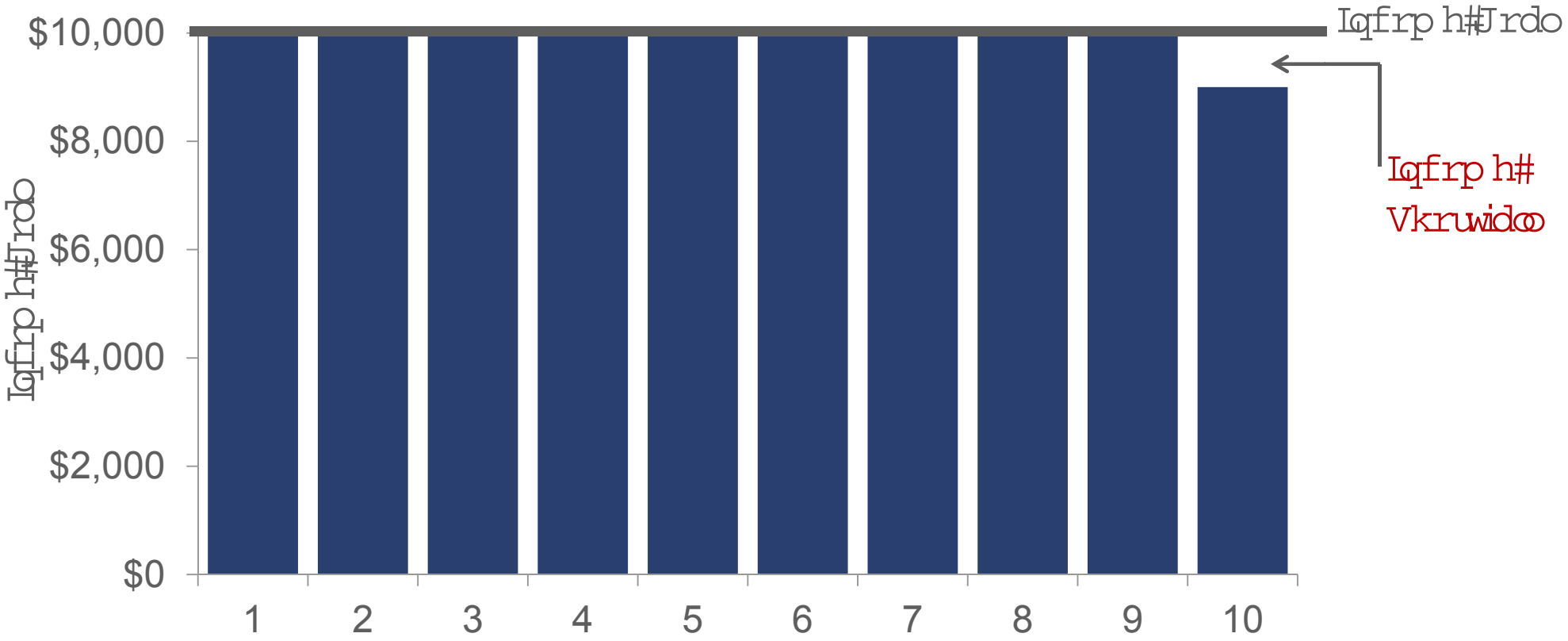
Is this “Failure”?



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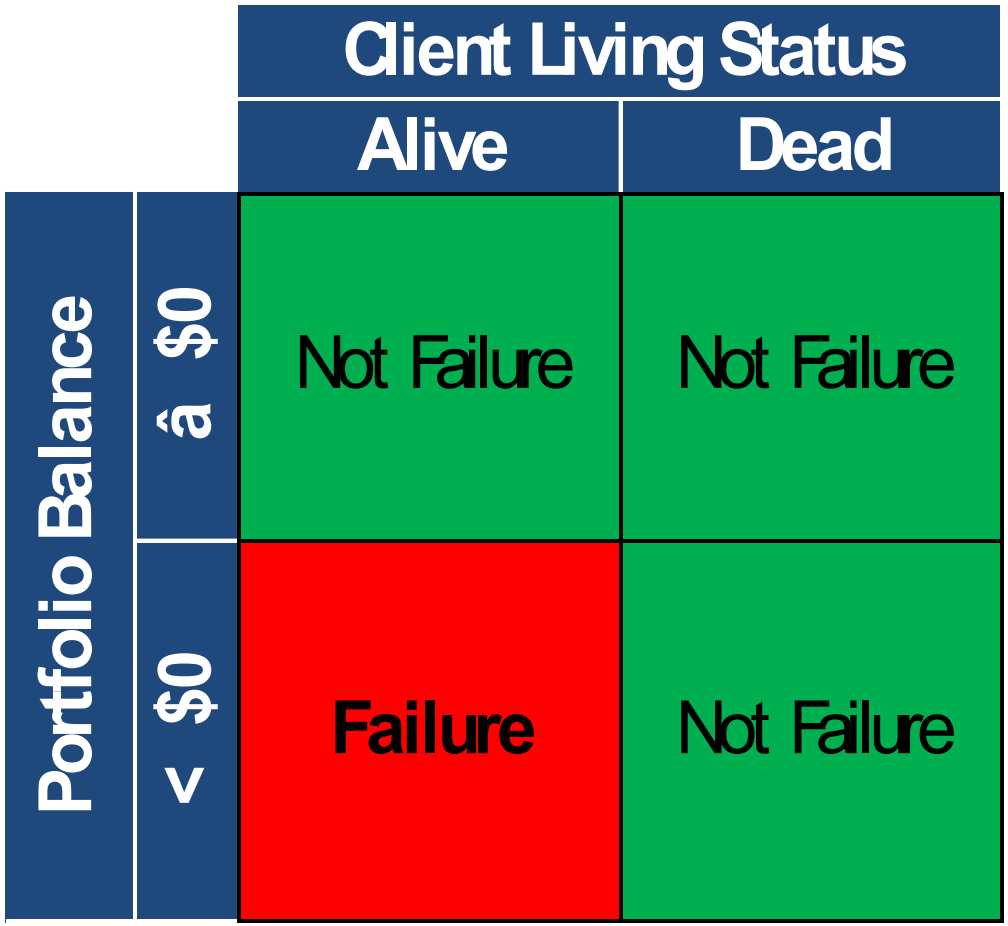
What is Failure?



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Probabilities of Success for Different Scenarios

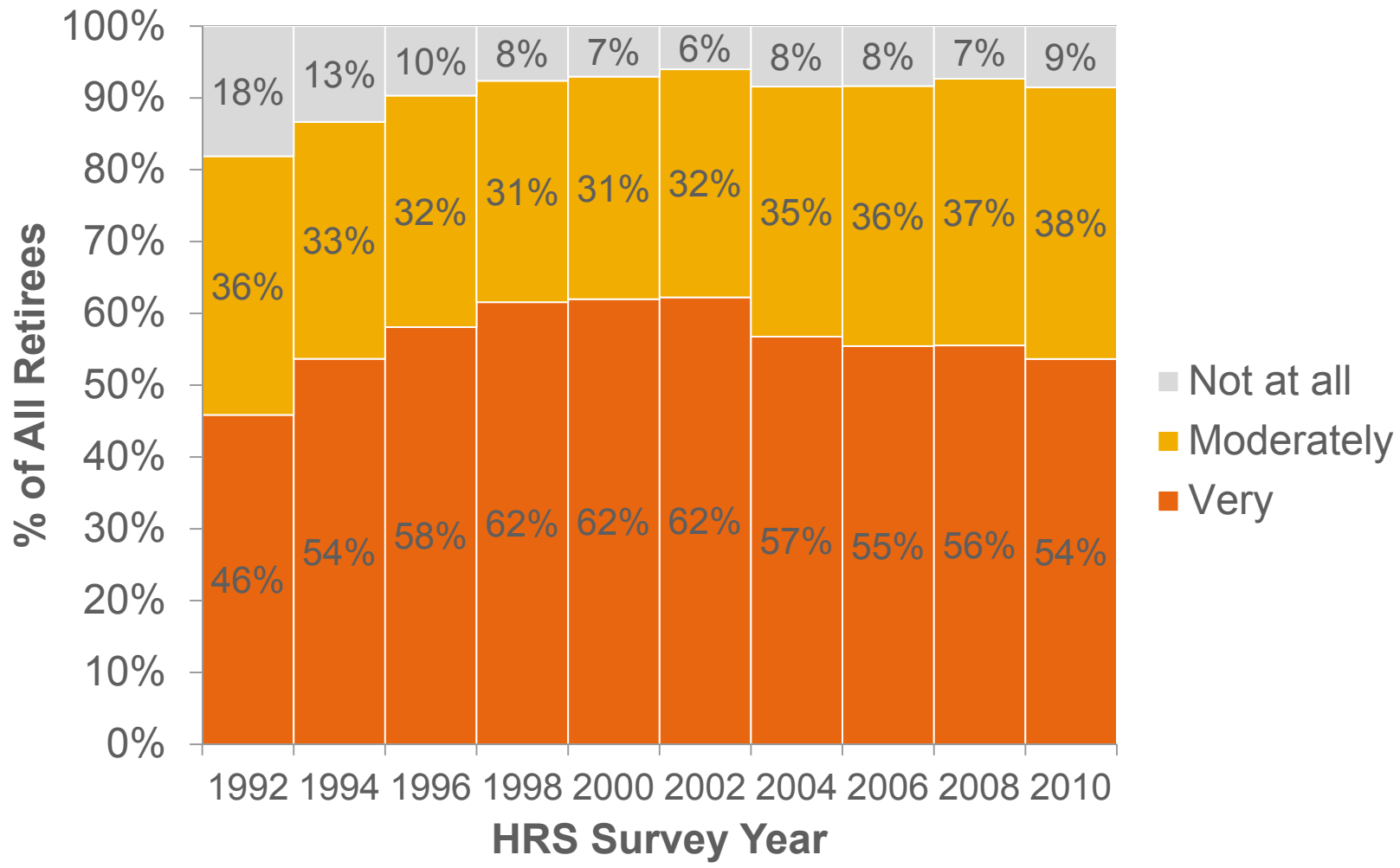
Withdrawal Increases Annually by Inflation							
		Fixed Period (Years)			During Lifetime (Age 65)		
		25	30	35	Male	Female	Joint
Initial Withdrawal Rate	3.0%	98.9%	95.4%	89.6%	98.3%	97.5%	96.3%
	4.0%	88.4%	73.3%	58.5%	90.7%	87.0%	81.5%
	5.0%	61.0%	39.7%	26.3%	76.4%	68.6%	57.4%
	6.0%	29.9%	14.8%	8.1%	60.0%	49.3%	34.5%

$50k Initial Goal Curve							
		Fixed Period (Years)			During Lifetime (Age 65)		
		25	30	35	Male	Female	Joint
Initial Withdrawal Rate	3.0%	99.7%	98.5%	95.6%	99.3%	99.0%	98.5%
	4.0%	94.8%	86.0%	75.4%	95.1%	93.0%	89.9%
	5.0%	75.9%	57.8%	42.8%	84.2%	78.5%	70.3%
	6.0%	45.3%	28.1%	17.2%	68.4%	59.2%	46.3%

Source: “Estimating the True Cost of Retirement” by David Blanchett, Morningstar White Paper

Retirement Satistfaction

Are Retirees Happy? (Yes)



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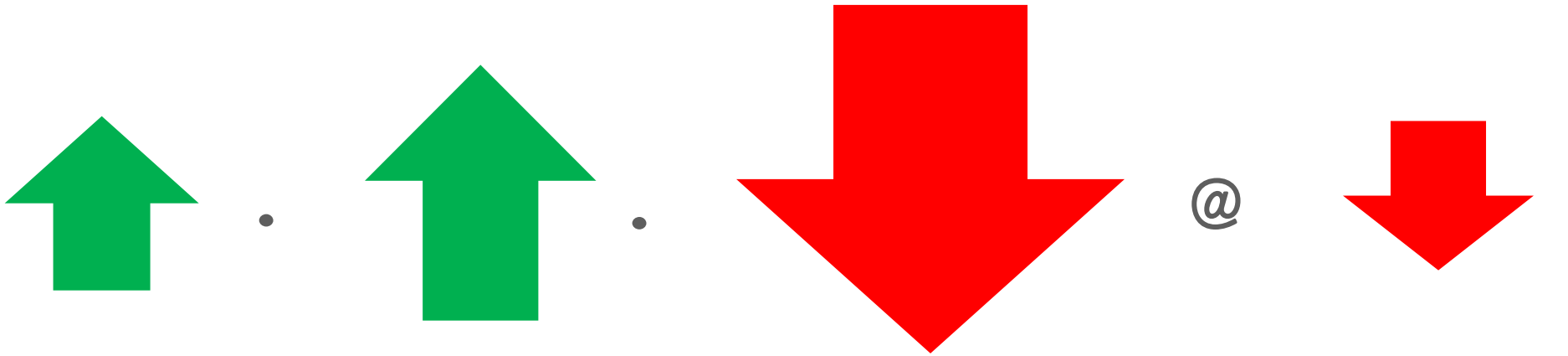
Conclusions

Tips/Takeaways

- Use expected returns in simulations… not historical… you can't buy the past
- The "4% Rule" isn't nearly as safe data as historical data suggests using forward-looking projections
- Increase the expected length of retirement in your models… your clients aren't "average" from a life expectancy perspective
  - 30+ years for a married couple both age 65
- Consider modeling different levels of spending in retirement, where inflation-adjusted consumption decreases as the retiree/s age
- Retirees are a relatively happy bunch… and it's not the financial stuff that makes them the happiest

Combined Impact of the Cost of Retirement



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Questions