How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings Strategies

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Nerd's Eye View at KITCES.com

Advancing Knowledge in Financial Planning...

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Handouts/Materials: kitces.com/FPAHS18

Traditional Planning Assumptions

- Constant real earnings
- Fixed-dollar or fixed-percentage savings
- Straight-line investment growth

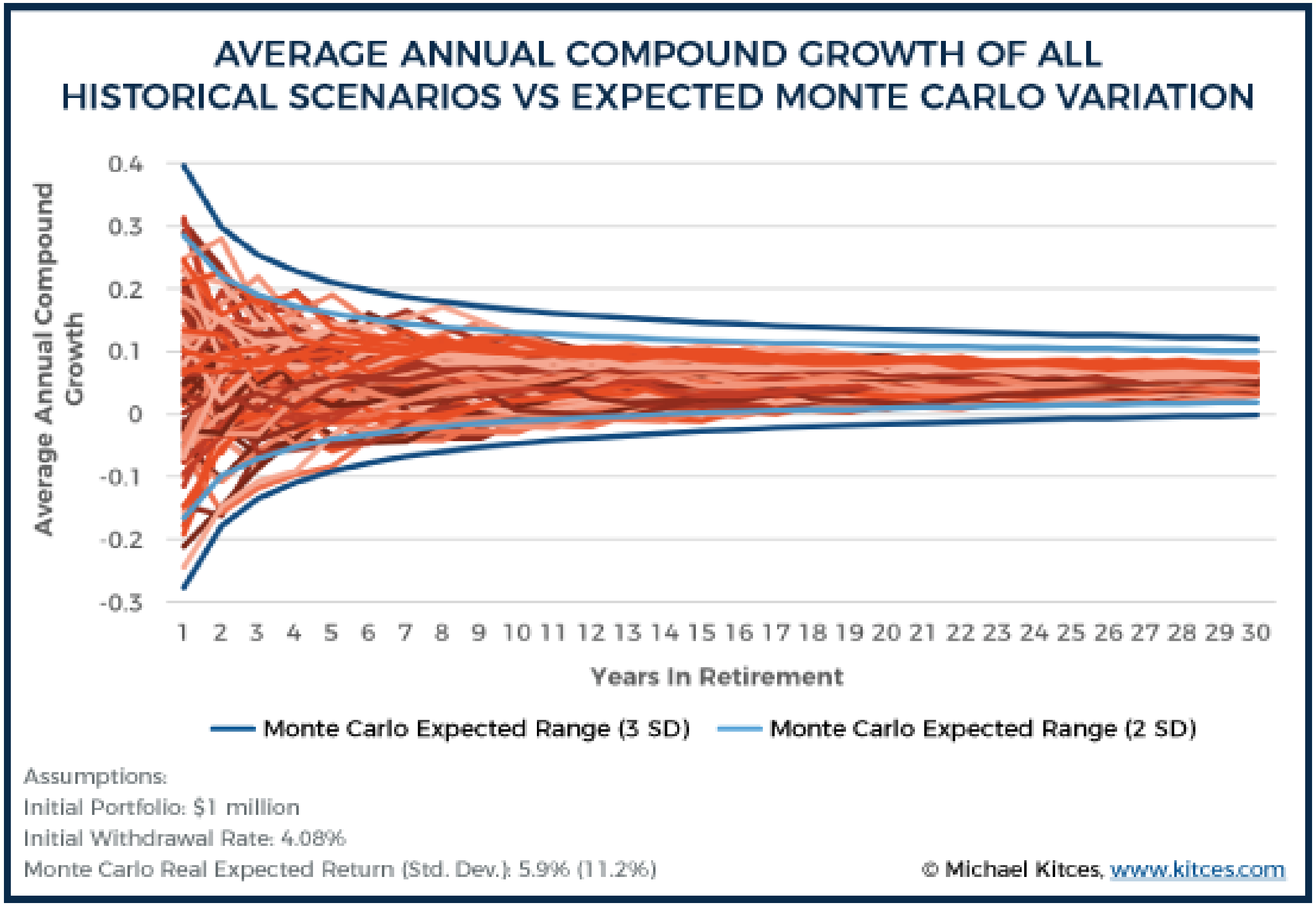
Historical Analysis

- Safe Withdrawal Rate (SWR) approach
- Captures historical volatility, but focuses primarily on distribution
- Project retirement saving/spending annually
- Ignores *earning* and *spending* volatility

Monte Carlo Simulation

- Incorporates random variables
- Most commonly investment returns
- Probability of success in accumulation and decumulation
- Returns typically assumed to be independent of one another

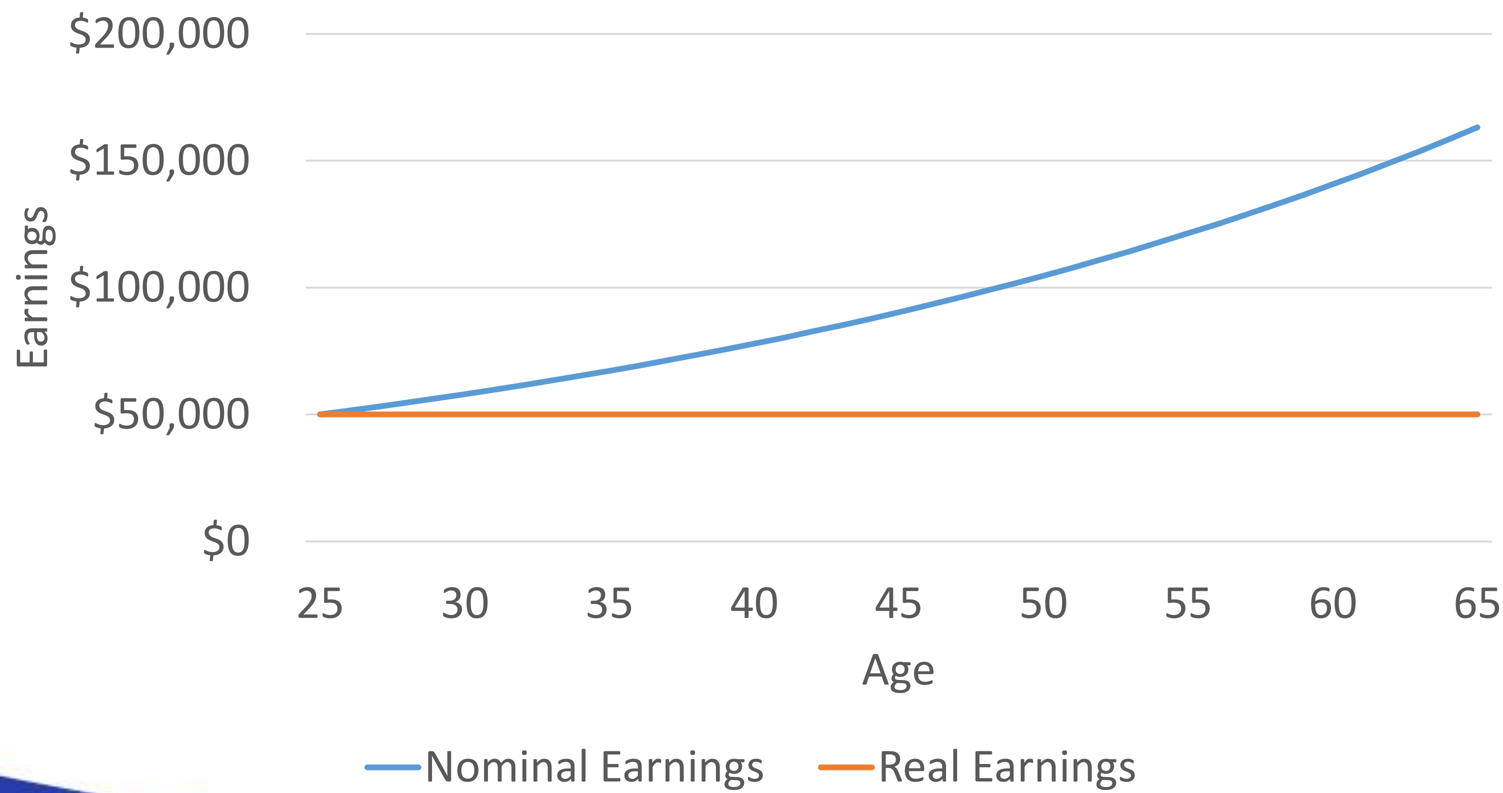
How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings



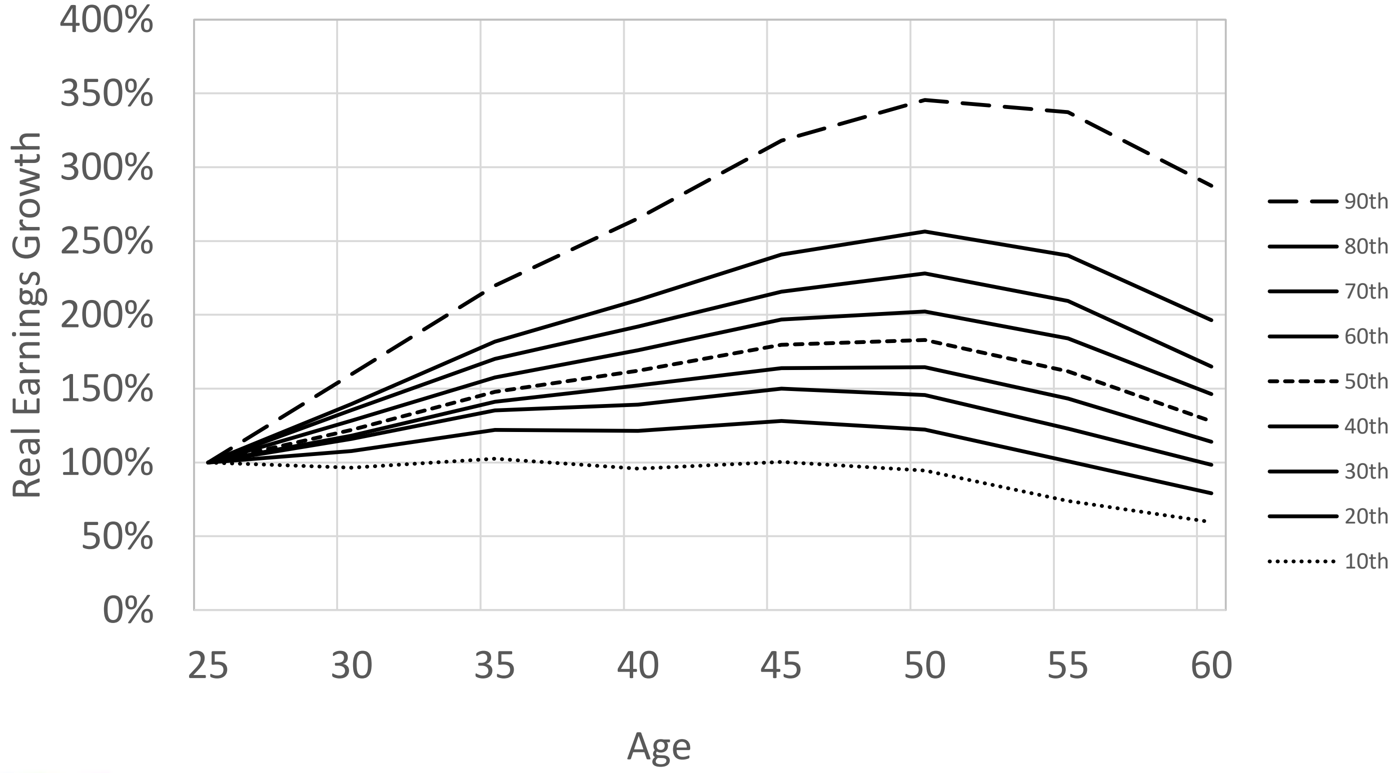
Traditional Earnings Growth Assumptions

- Fixed rate of annual growth (COLA)
- Ignores earnings volatility

Traditional Earnings Growth Assumptions



Historical Earnings Growth By Decile



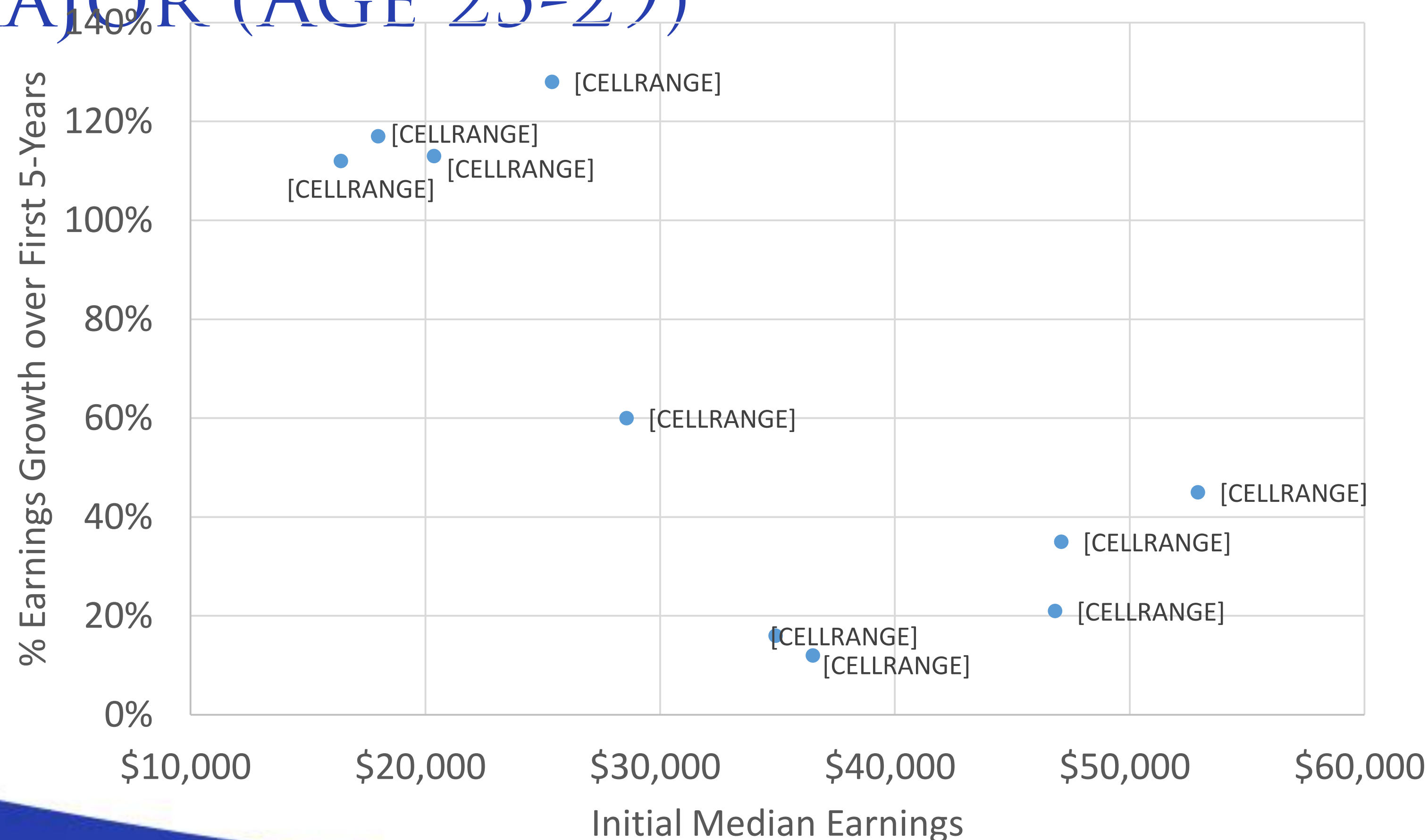
Earnings at a Given Age vs. Lifetime Earnings

	Age 25	Age 50	Lifetime Earnings (High School Grad)	Lifetime Earnings (College Grad)
99th Percentile	$150,000	$400,000	-	-
90th Percentile	$65,000	$135,000	$1,330,000	$3,280,000
50th Percentile	$29,000	$47,000	$610,000	$1,420,000

Source: DQYDJ *Source: Hamilton Project*

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings?

Earnings Growth by College Major (Age 25-29)



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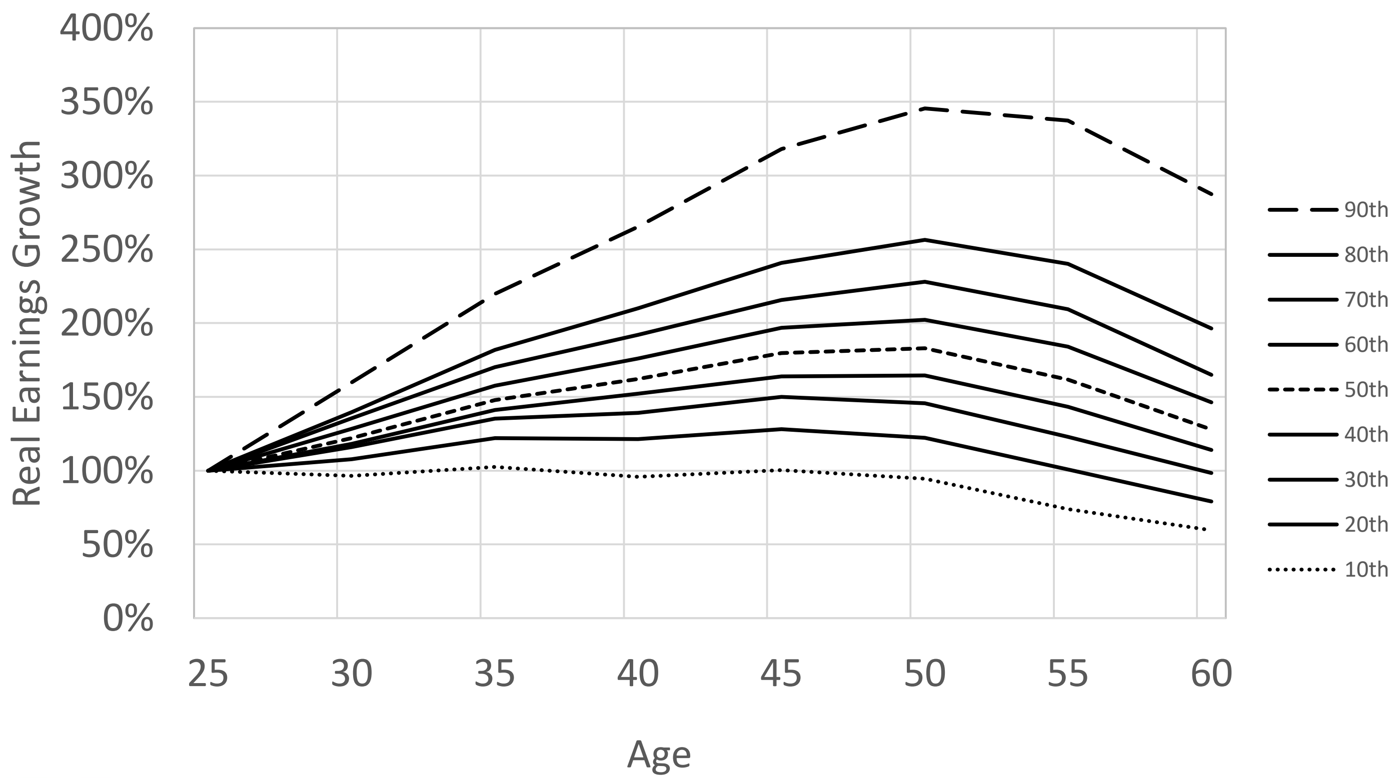

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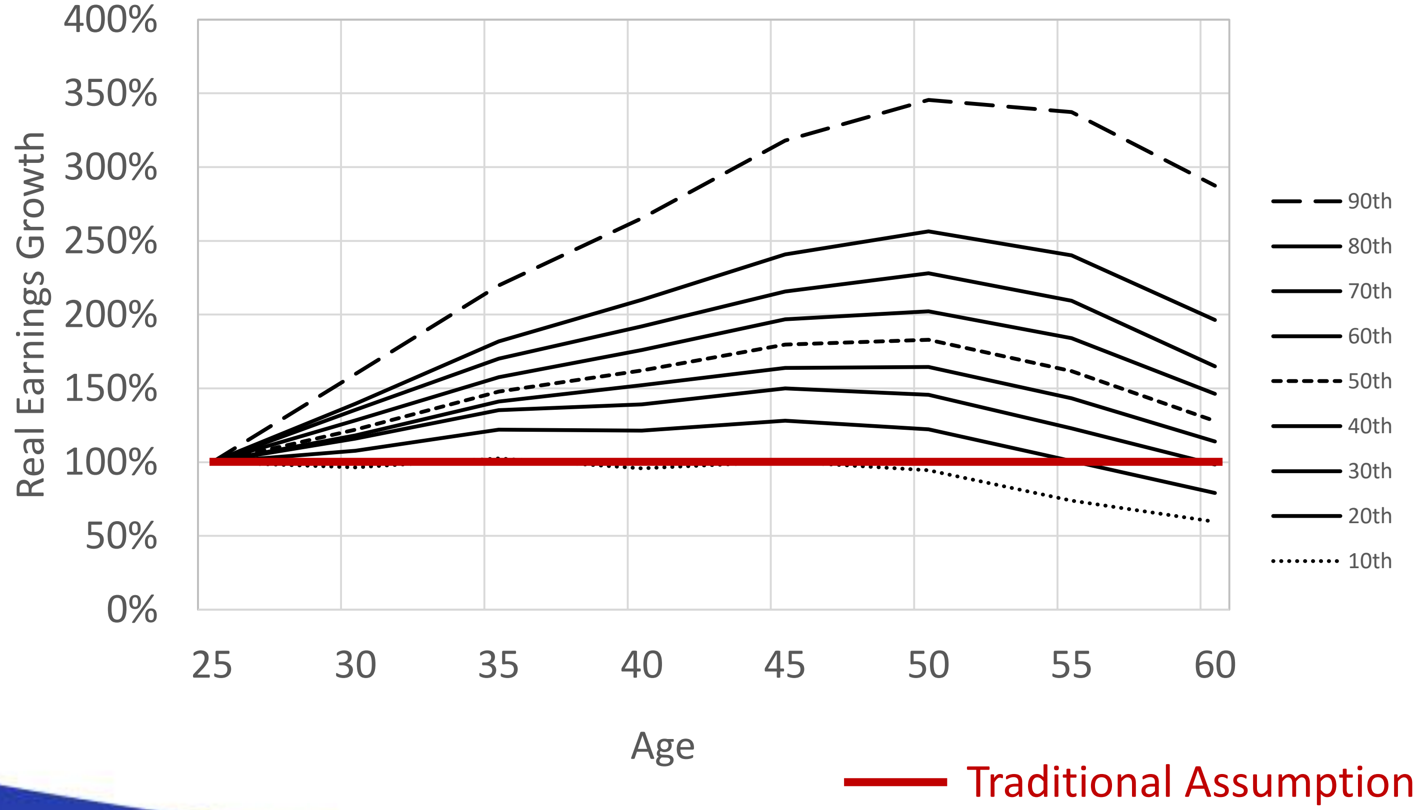

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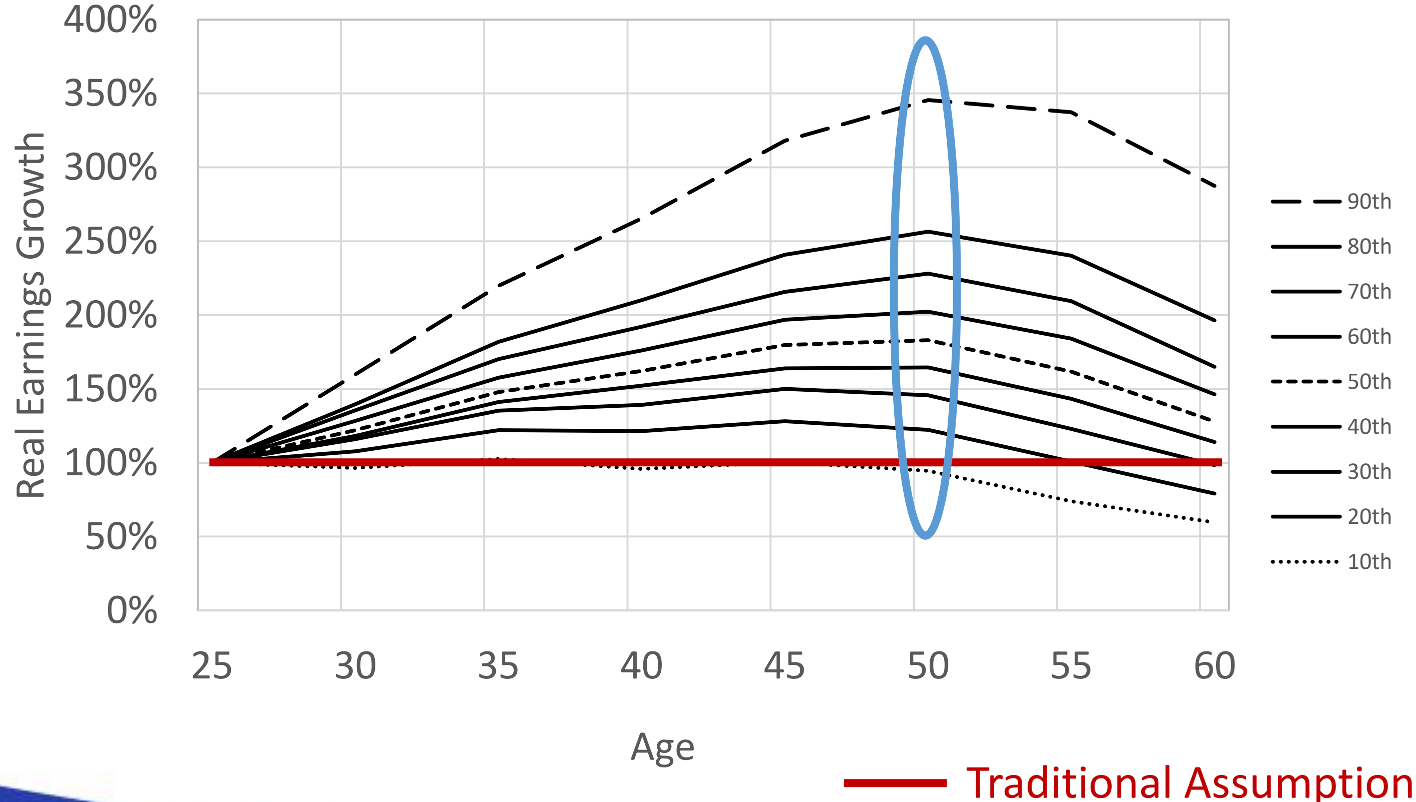

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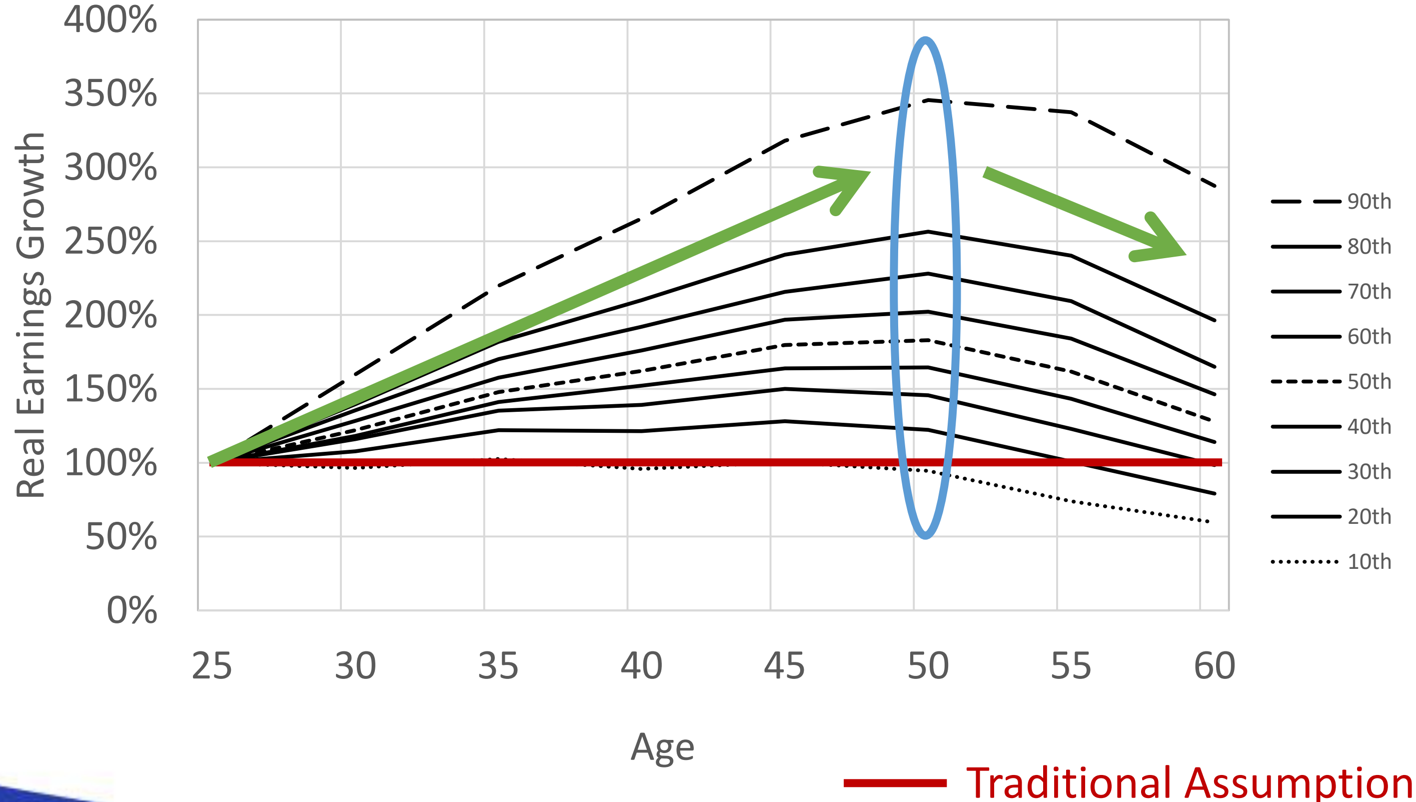

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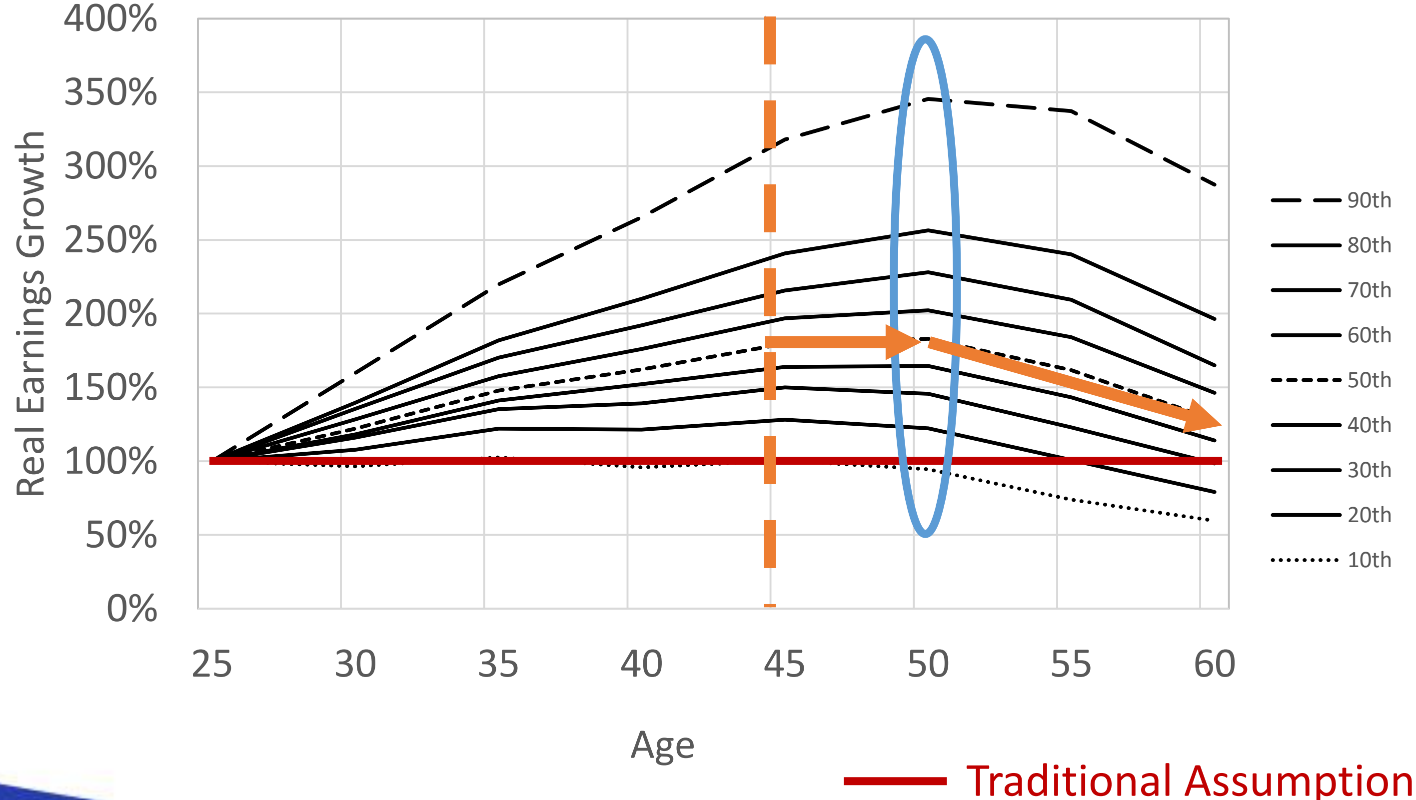

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Traditional Earnings Assumptions Compared to Historical Earnings

- Age 25 to 50
  - Understates savings potential
  - Understates lifestyle growth
- Age 50 to Retirement
  - Overstates savings potential
  - Understates lifestyle decline

Safe Savings Rate (SSR) Research

- Similar to SWR research with an accumulation phase
- Both historical analyses and Monte Carlo simulations
- Results tend to indicate that Americans need to save much more

Historical Analysis

- Kitces (2008): Market declines prior to retirement historically result in higher spending in retirement
  - Higher percentage of lower base
- Pfau (2011): Historical accumulation and decumulation periods should be analyzed in conjunction

Historical: Pfau (2011)

- Baseline case:
  - 30-year retirement
  - 60/40 allocation
- SSR by accumulation phase:
  - 40 Years: 9%
  - 30 Years: 17%
  - 20 Years: 36%

How Earnings Growth Throughout The Lifecycle Impacts Retirement

Historical: Blanchett, Finke, Pfau (2017)

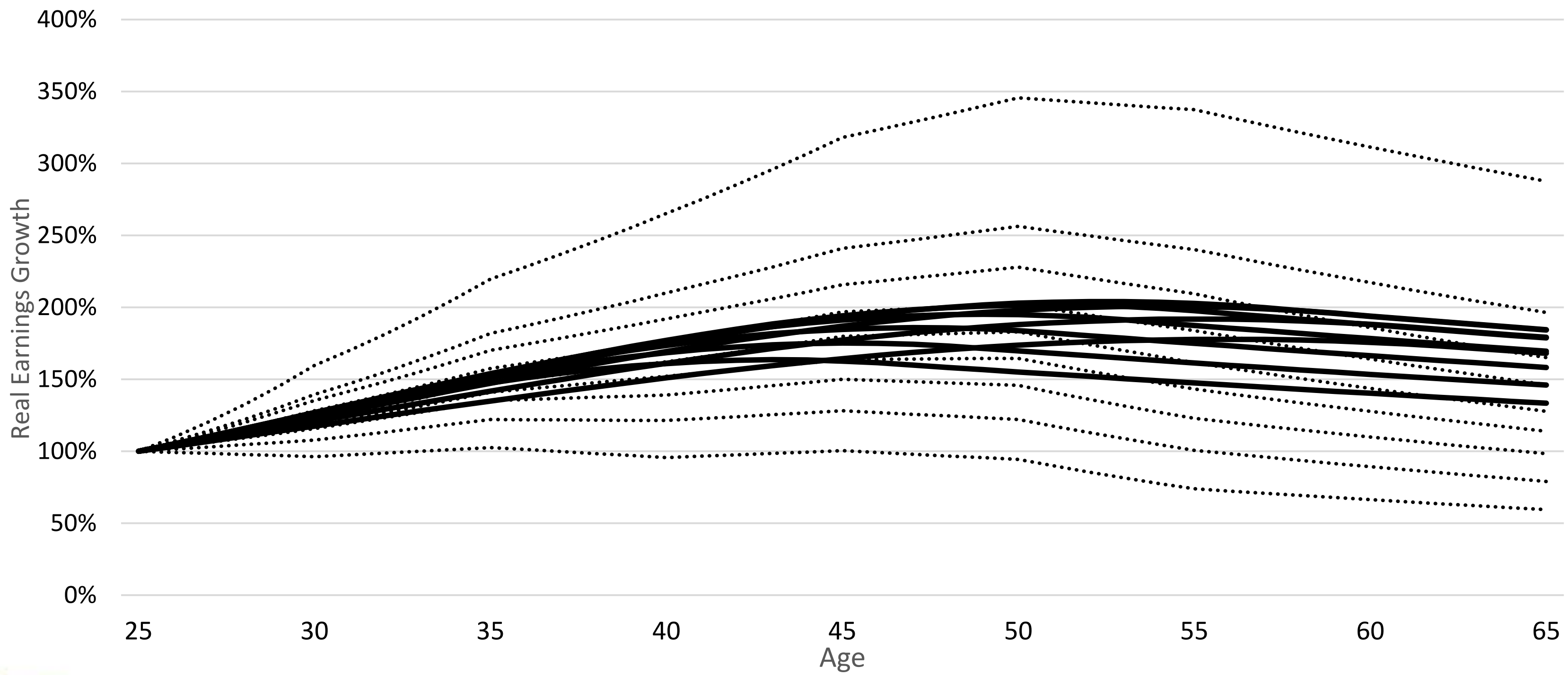
- Baseline case:
  - Age 65 retirement
  - Morningstar Moderate Lifetime Glide Path
  - $100k household income
- SSR by accumulation phase:
  - 40 Years: 7%
  - 30 Years: 10%
  - 25 Years: 13%

Simulation: Blanchett, Finke, Pfau (2017)

- Baseline case:
  - Age 65 retirement
  - Morningstar Moderate Lifetime Glide Path
  - $100k household income
  - Low-return environment
- SSR by accumulation phase:
  - 40 Years: 12%
  - 30 Years: 17%
  - 25 Years: 19%

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings?

Earnings Curves: Blanchett, Finke, & Pfau (2018)



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Historical: Tharp & Kitces (2018)

- Lifetime earnings curves vs. constant real earnings:
  - 30-year retirement
  - 60/40 allocation
  - 100% replacement ratio (net of taxes and savings)

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings?

40-Year Saving & 30-Year Dissaving

	Baseline	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	15.4%	10.4%	11.4%	12.4%	13.3%	13.9%	14.6%	15.1%	16.3%	18.4%
50th	13.1%	8.8%	9.7%	10.6%	11.3%	11.8%	12.4%	12.8%	13.8%	15.6%
Min	10.6%	6.9%	7.9%	8.8%	9.6%	10.1%	10.7%	11.1%	12.1%	13.8%

30-Year Saving & 30-Year Dissaving

	Baseline	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	25.0%	18.1%	18.8%	19.8%	20.5%	21.0%	21.7%	22.0%	23.1%	25.0%
50th	21.0%	15.2%	15.7%	16.4%	17.1%	17.4%	17.9%	18.2%	19.1%	20.6%
Min	15.5%	10.4%	10.9%	11.7%	12.3%	12.6%	13.2%	13.4%	14.3%	15.8%

20-Year Saving & 30-Year Dissaving

	Baseline	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	41.7%	34.4%	34.7%	35.5%	35.9%	36.1%	36.6%	36.7%	37.6%	39.0%
50th	34.1%	27.2%	27.4%	28.1%	28.5%	28.7%	29.2%	29.3%	30.2%	31.5%
Min	24.0%	17.7%	18.0%	18.6%	19.0%	19.1%	19.5%	19.6%	20.4%	21.6%

Historical with SS: Tharp & Kitces (2018)

Lifetime Earnings Percentile	Replacement Ratio with Social Security
10th	-28%
20th	2%
30th	23%
40th	34%
50th	40%
60th	46%
70th	50%
80th	55%
90th	67%

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings

Historical with SS: Tharp & Kitces (2018)

40-Year Saving & 30-Year Dissaving (with Social Security)

	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	0.0%	0.3%	3.1%	4.9%	6.1%	7.3%	8.1%	9.7%	13.1%
50th	0.0%	0.3%	2.6%	4.1%	5.1%	6.1%	6.8%	8.2%	11.0%
Min	0.0%	0.2%	2.1%	3.4%	4.3%	5.2%	5.9%	7.1%	9.7%

30-Year Saving & 30-Year Dissaving (with Social Security)

	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	0.0%	0.6%	5.3%	8.0%	9.7%	11.3%	12.3%	14.3%	18.1%
50th	0.0%	0.5%	4.3%	6.5%	7.8%	9.1%	9.9%	11.5%	14.8%
Min	0.0%	0.3%	2.9%	4.5%	5.5%	6.5%	7.2%	8.5%	11.1%

20-Year Saving & 30-Year Dissaving (with Social Security)

	10th	20th	30th	40th	50th	60th	70th	80th	90th
Max (SSR)	0.0%	1.3%	11.1%	15.9%	18.5%	20.9%	22.3%	25.0%	29.8%
50th	0.0%	0.9%	8.1%	11.8%	13.9%	15.9%	17.1%	19.3%	23.4%
Min	0.0%	0.5%	4.9%	7.3%	8.7%	10.0%	10.8%	12.4%	15.5%

Low-Return Simulation (w/o SS): Tharp & Kitces (2018)

	Savings Rates Needed by Lifetime Earnings Percentile									
	Baseline	10th	20th	30th	40th	50th	60th	70th	80th	90th
40-Year Saving & 30-Year Dissaving	25.5%	18.5%	19.6%	20.8%	21.8%	22.4%	23.2%	23.6%	24.9%	27.1%
30-Year Saving & 30-Year Dissaving	38.2%	32.3%	34.7%	36.2%	37.9%	39.1%	40.2%	41.2%	42.3%	44.7%
20-Year Saving & 30-Year Dissaving	58.6%	59.0%	60.7%	62.0%	62.7%	63.6%	64.2%	64.6%	65.5%	67.2%

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings

Low-Return Simulation (With SS): Tharp & Kitces (2018)

	Savings Rates Needed Based on Forecasted Returns by Lifetime Earnings Percentile (with Social Security)								
	10th	20th	30th	40th	50th	60th	70th	80th	90th
40-Year Saving & 30-Year Dissaving	0.0%	0.6%	5.7%	8.6%	10.5%	12.2%	13.5%	15.6%	19.8%
30-Year Saving & 30-Year Dissaving	0.0%	1.3%	11.5%	17.2%	20.7%	23.8%	25.8%	28.8%	35.1%
20-Year Saving & 30-Year Dissaving	0.0%	3.7%	27.1%	35.7%	41.2%	45.2%	47.5%	50.9%	57.6%

Key Takeaways and Planning Implications

- Important to consider earnings trajectory in any type of analysis
  - Constant real earnings is often *not* accurate
  - For affluent clients, tends to:
    - Understate savings needed for those under 50
    - Overstate savings needed for those over 50

Key Takeaways and Planning Implications

- Huge opportunity to avoid lifestyle creep
  - Highest income growth rates in 20s and 30s
  - Transition out of college and marriage are crucial events
  - Peak earnings in late 40s early 50s

Key Takeaways and Planning Implications

- Can move backward with "percentage-of-income" savings strategies and big raises
  - When real earnings growth > 0% and replacement ratio remains constant, increased savings do not offset increased retirement expenditures

How Earnings Growth Throughout The Lifecycle Impacts Retirement Savings?

Key Takeaways and Planning Implications

- Example:
  - Charlie is 25 and makes $50k
  - Saves 15% of his income
  - 100% replacement (net of taxes and savings) at 4% SWR
  - Over next three decades, income grows by:
    - 1st Decade: 5% per year above inflation
    - 2nd Decade: 2.5% per year above inflation
    - 3rd Decade: 1% per year above inflation
  - Charlie is *further* from his retirement savings need at 55 than he was at 25!

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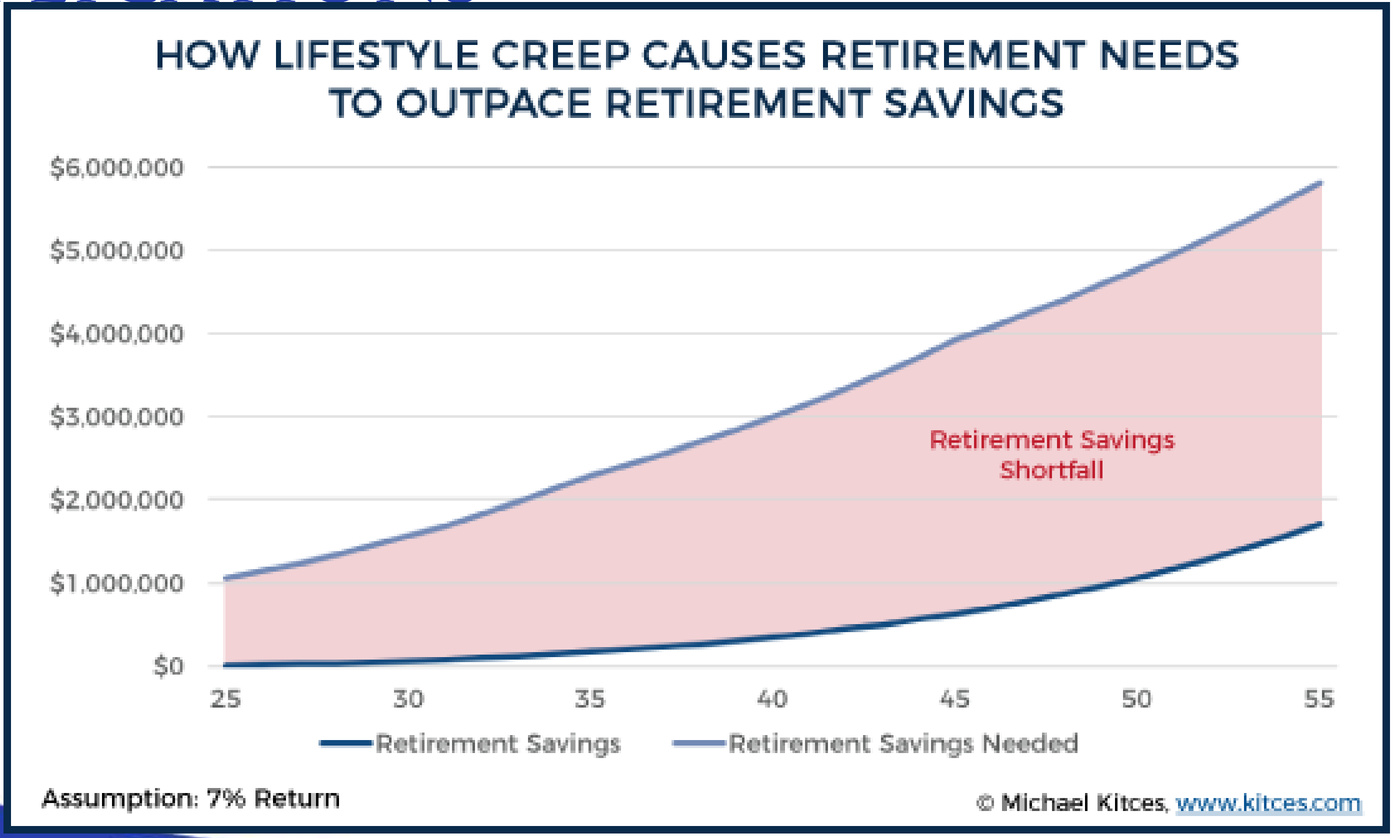
Key Takeaways and Planning Implications



Key Takeaways and Planning Implications

- Example:
  - If Charlie instead saves 50% of his annual raise, Charlie will be retired by age 55!

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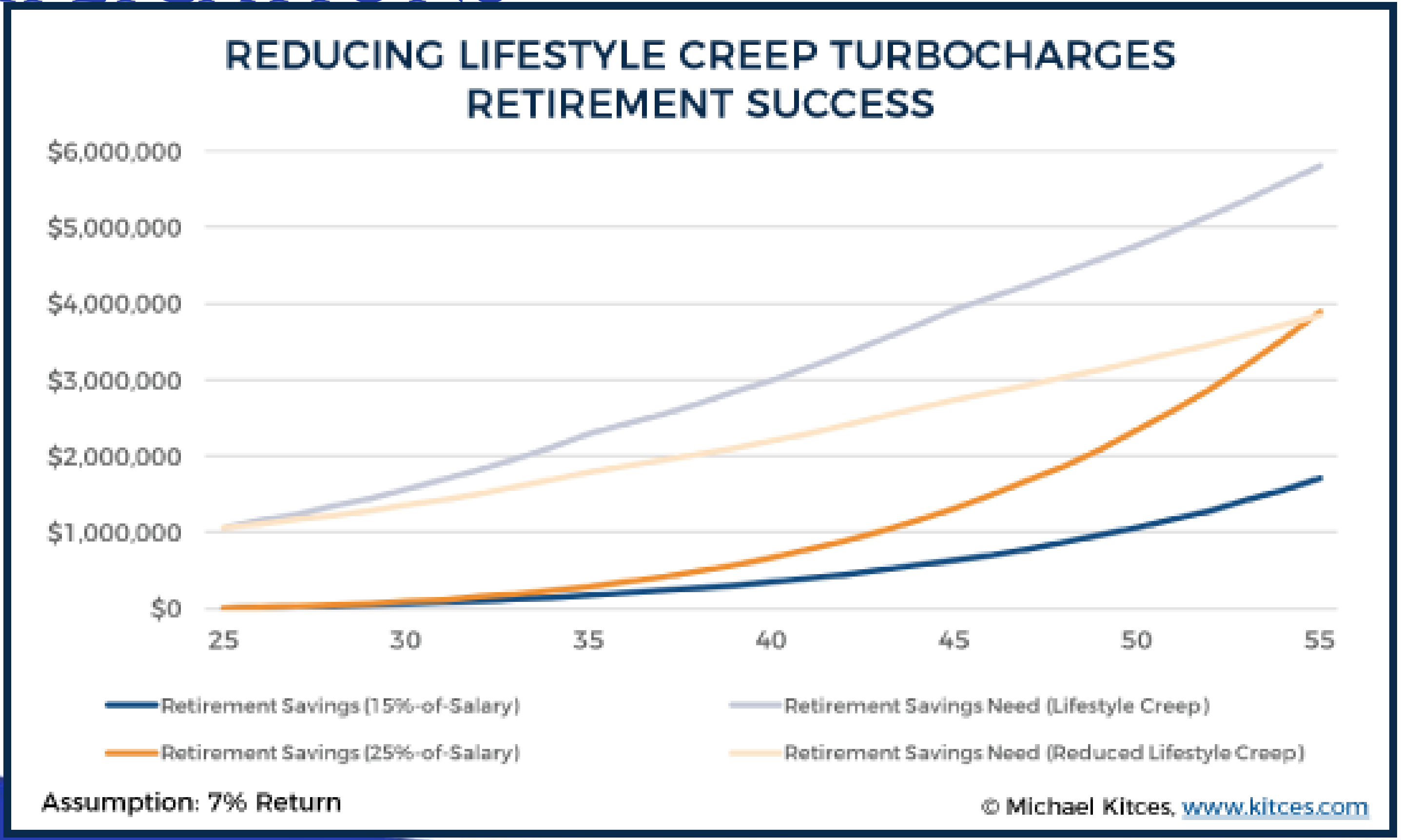
Key Takeaways and Planning Implications



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Key Takeaways and Planning Implications

- Example:
  - If Charlie instead saves 50% of his annual raise, Charlie will be retired by age 55!
  - High savings rate serves dual purpose:
    - Provides funds for retirement
    - Constrains lifestyle creep

Key Takeaways and Planning Implications

- "Save More Tomorrow" strategies to plan for future saving
  - Benartzi & Thaler's SMarT program for *future* commitments
  - Works for young clients moving towards peak earnings
  - Works for older clients as a way to constrain real spending

Summary

- Real earnings curves aren't flat
- Vary at age/stage of life (and by career/major)
- Earnings curves impact not just ability to save, but lifestyle spending by default (if not planned for)
- Can drastically change optimal savings rates, requiring more from young people and less from older people
- Integrates with Social Security as well, suggesting lower income folks may actually be relatively on track, but high-income young people are especially far off!

QUESTIONS

Handouts & additional materials:

www.kitces.com/FPAHS18

Contact: questions@kitces.com