

HOW EARNINGS GROWTH THROUGHOUT THE LIFECYCLE IMPACTS RETIREMENT SAVINGS STRATEGIES

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Eye View*
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Advancing Knowledge in Financial Planning...

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HOW EARNINGS GROWTH THROUGHOUT THE LIFECYCLE IMPACTS RETIREMENT SAVINGS STRATEGIES

TRADITIONAL PLANNING ASSUMPTIONS

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



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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

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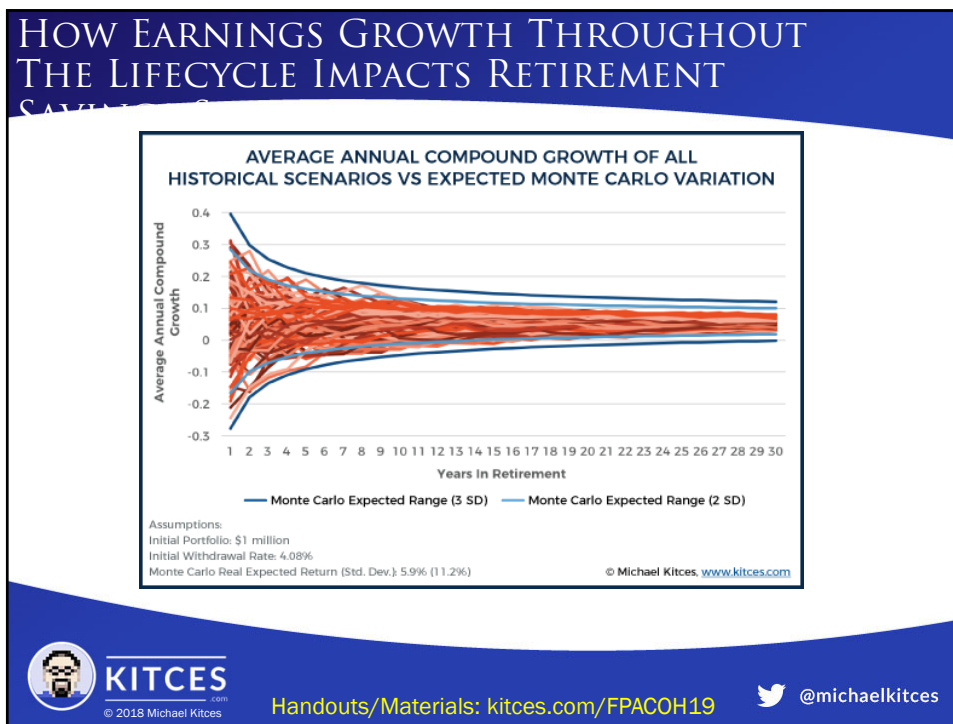
MONTE CARLO SIMULATION

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

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SAVING FOR RETIREMENT


TRADITIONAL EARNINGS GROWTH ASSUMPTIONS

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



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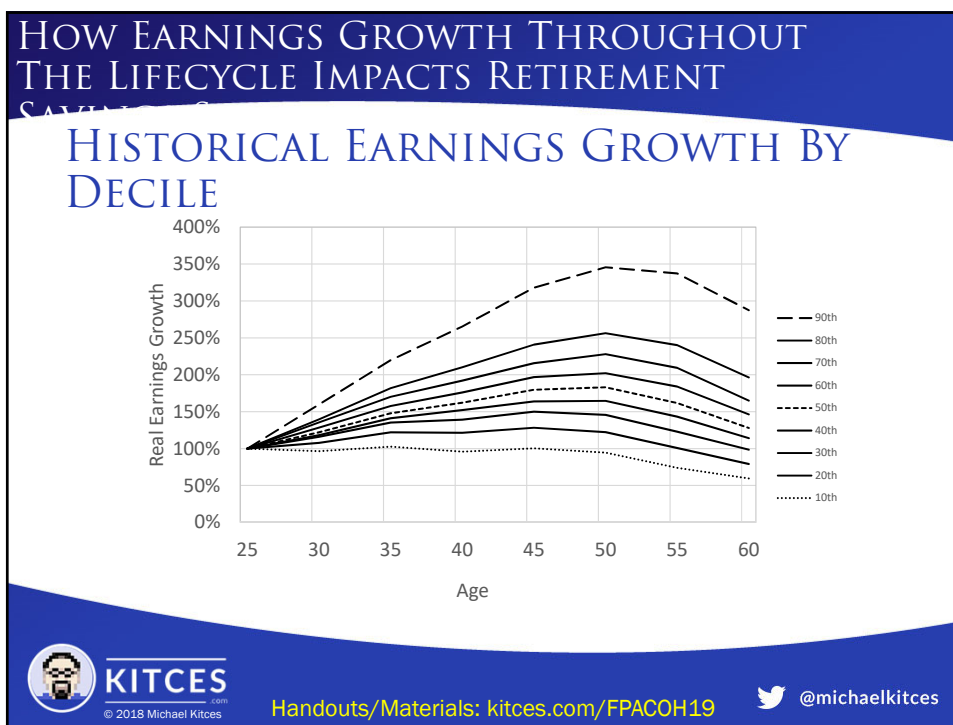
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EARNINGS AT A GIVEN AGE VS. LIFETIME EARNINGS

	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



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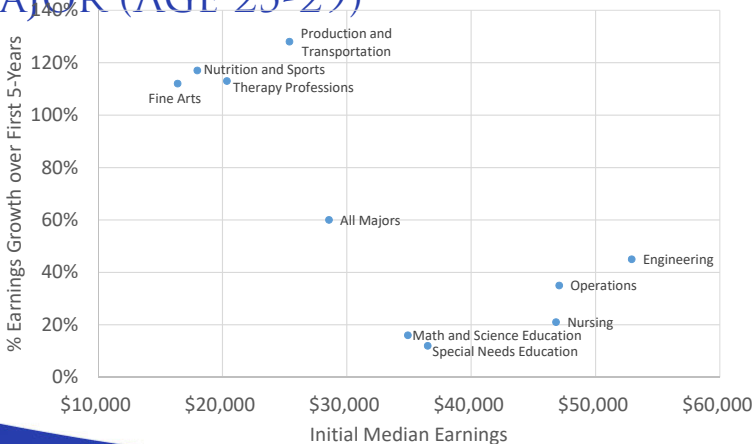
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EARNINGS GROWTH BY COLLEGE MAJOR (AGE 25-29)




College Major	Initial Median Earnings (Approx.)	% Earnings Growth over First 5-Years (Approx.)
Fine Arts	\$15,000	105%
Nutrition and Sports	\$18,000	115%
Therapy Professions	\$20,000	110%
Production and Transportation	\$25,000	130%
All Majors	\$30,000	60%
Math and Science Education	\$35,000	15%
Special Needs Education	\$35,000	10%
Nursing	\$48,000	20%
Operations	\$48,000	35%
Engineering	\$55,000	45%



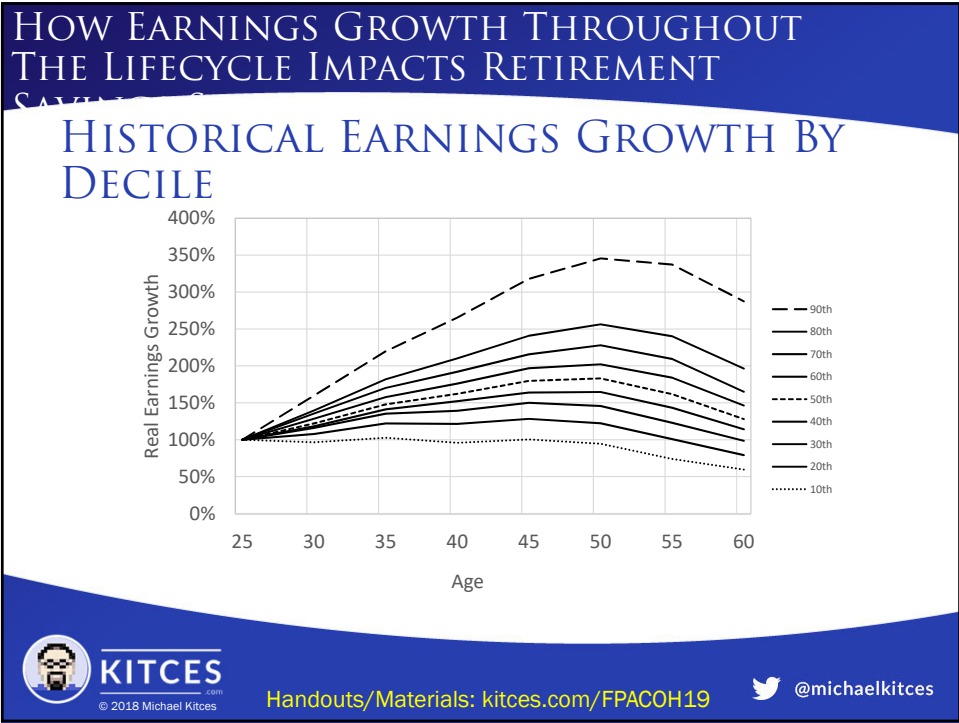
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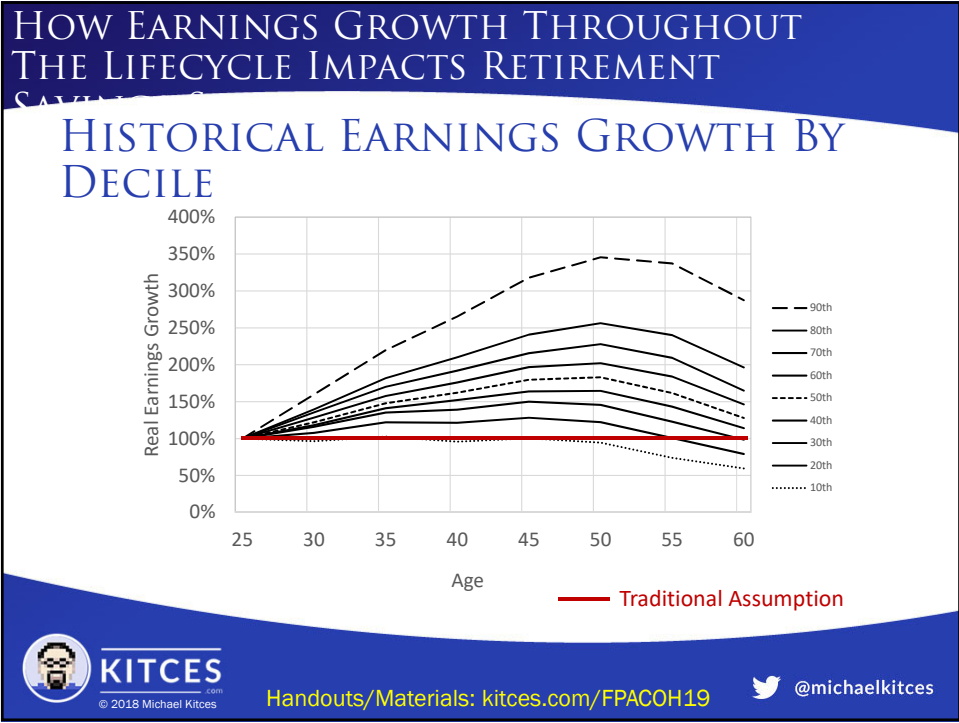
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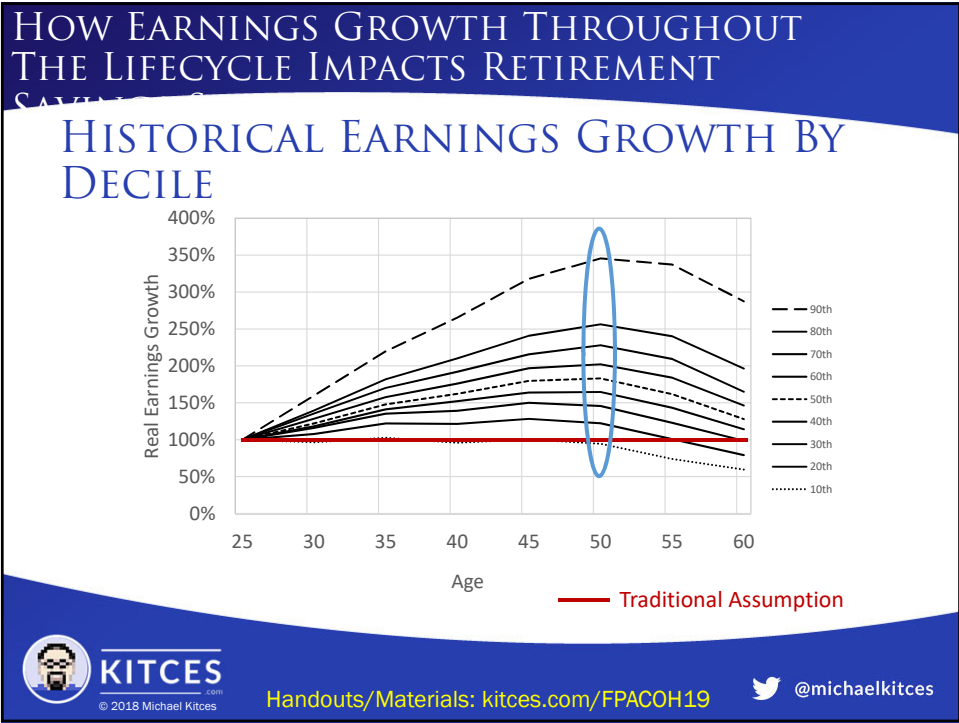
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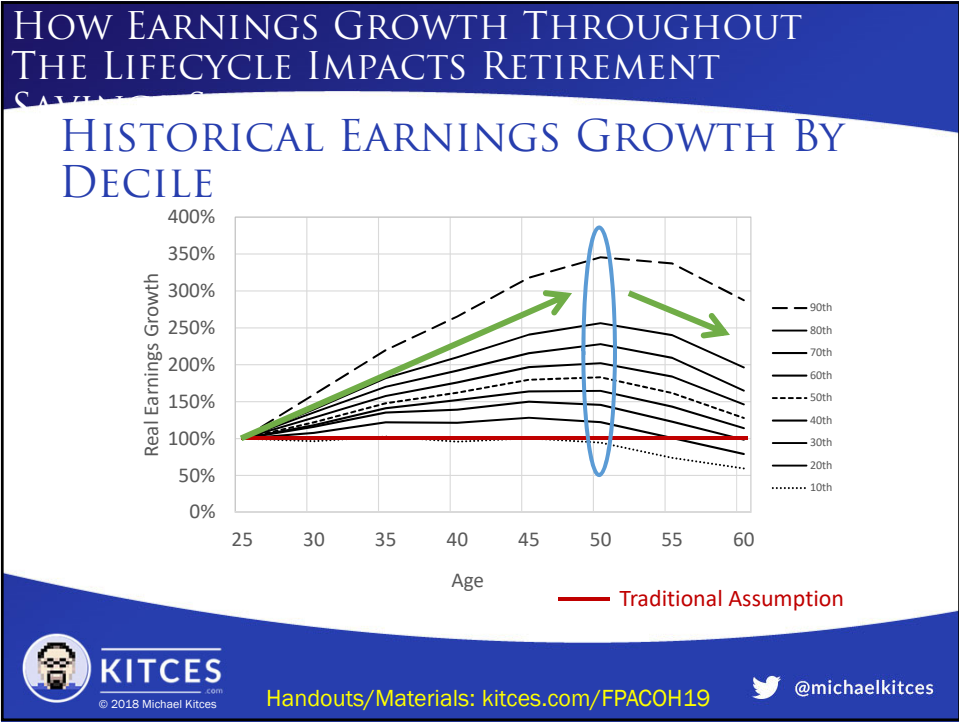
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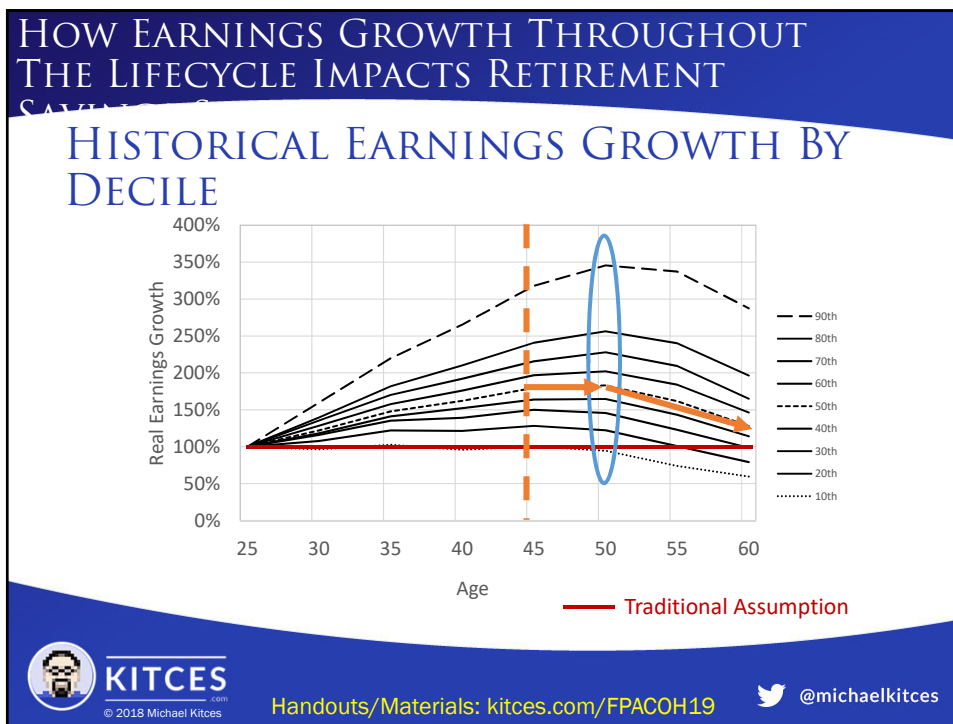
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- ## HOW EARNINGS GROWTH THROUGHOUT THE LIFECYCLE IMPACTS RETIREMENT SAVINGS
- ### TRADITIONAL EARNINGS ASSUMPTIONS COMPARED TO HISTORICAL EARNINGS
- Age 25 to 50
 - Understates savings potential
 - Understates lifestyle growth
 - Age 50 to Retirement
 - Overstates savings potential
 - Understates lifestyle decline
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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


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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


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HISTORICAL: PFAU (2011)

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


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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%


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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%



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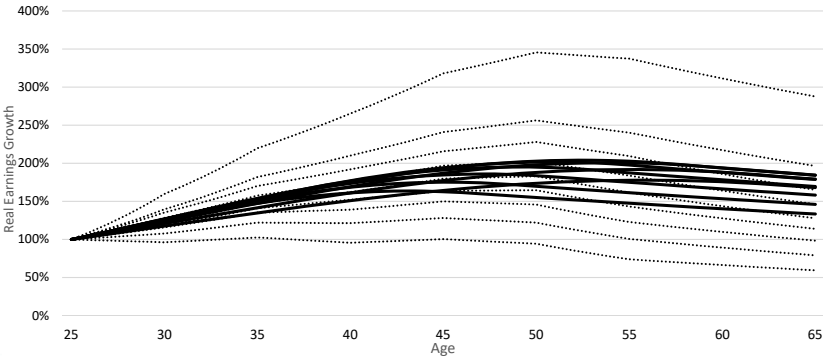
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EARNINGS CURVES: BLANCHETT, FINKE, & PFAU (2018)





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SAVING & DISSAVING

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)



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HOW EARNINGS GROWTH THROUGHOUT THE LIFECYCLE IMPACTS RETIREMENT

SAVING & DISSAVING

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%



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SAVING & SPENDING


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%



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SAVING & SPENDING

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%



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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%



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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%	



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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


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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


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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


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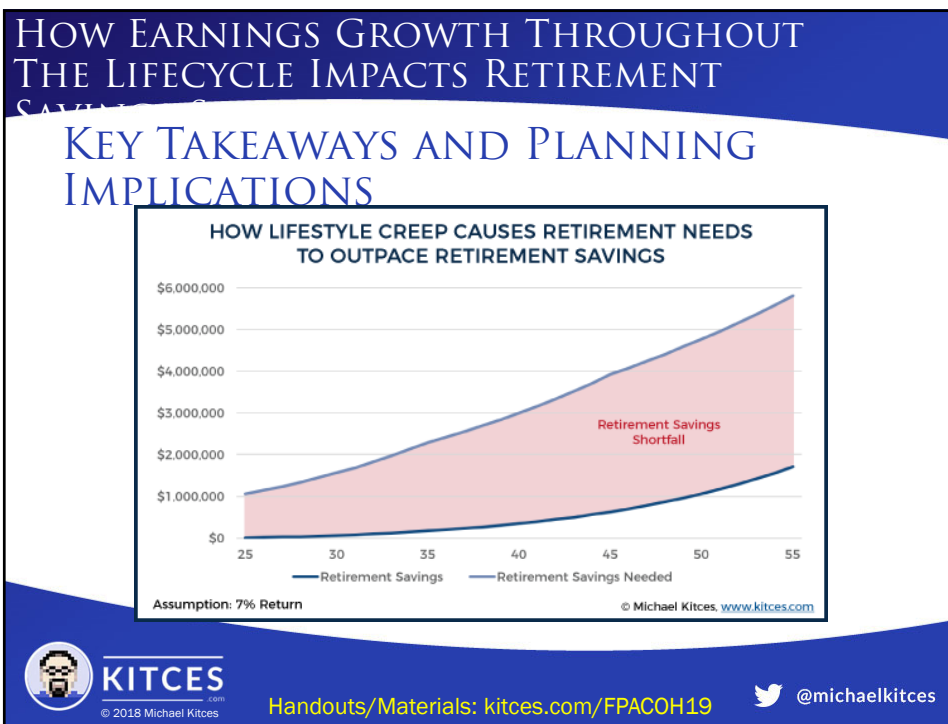
KEY TAKEAWAYS AND PLANNING IMPLICATIONS

- 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!

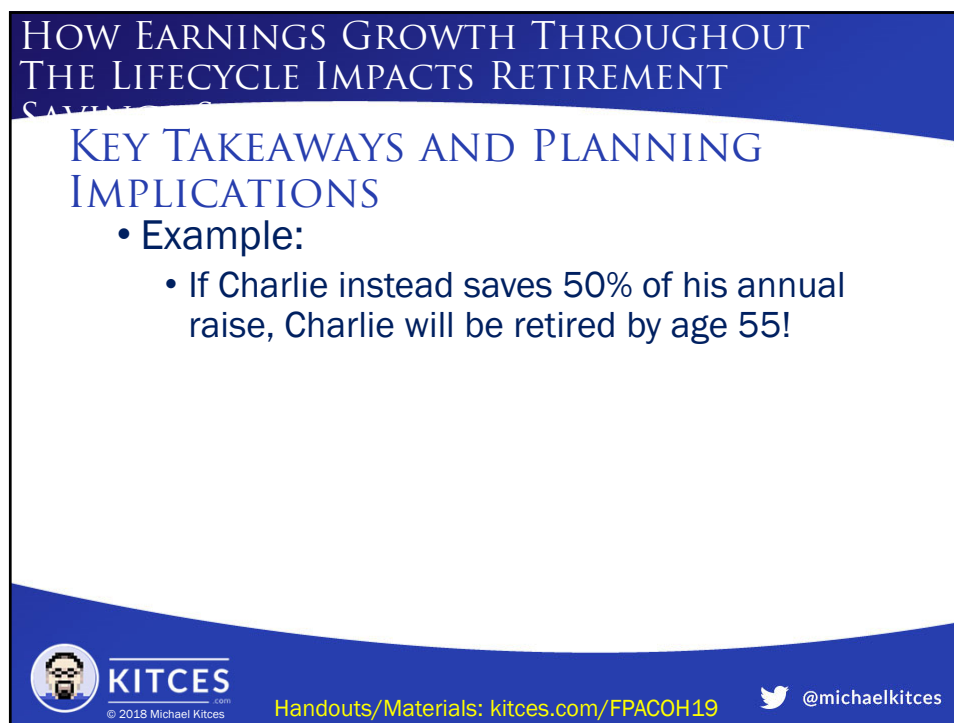

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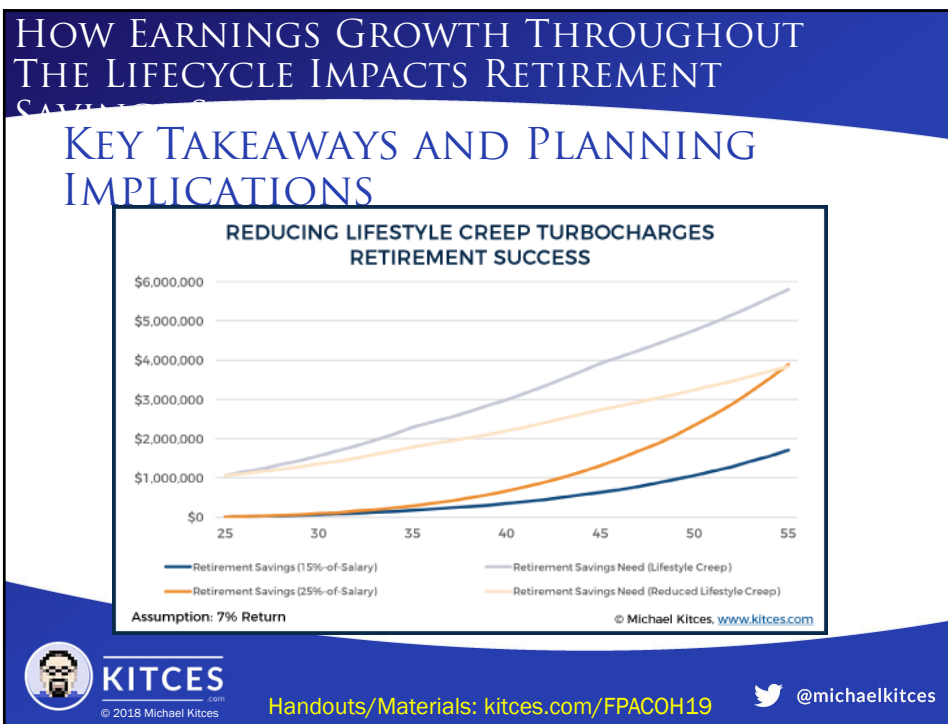
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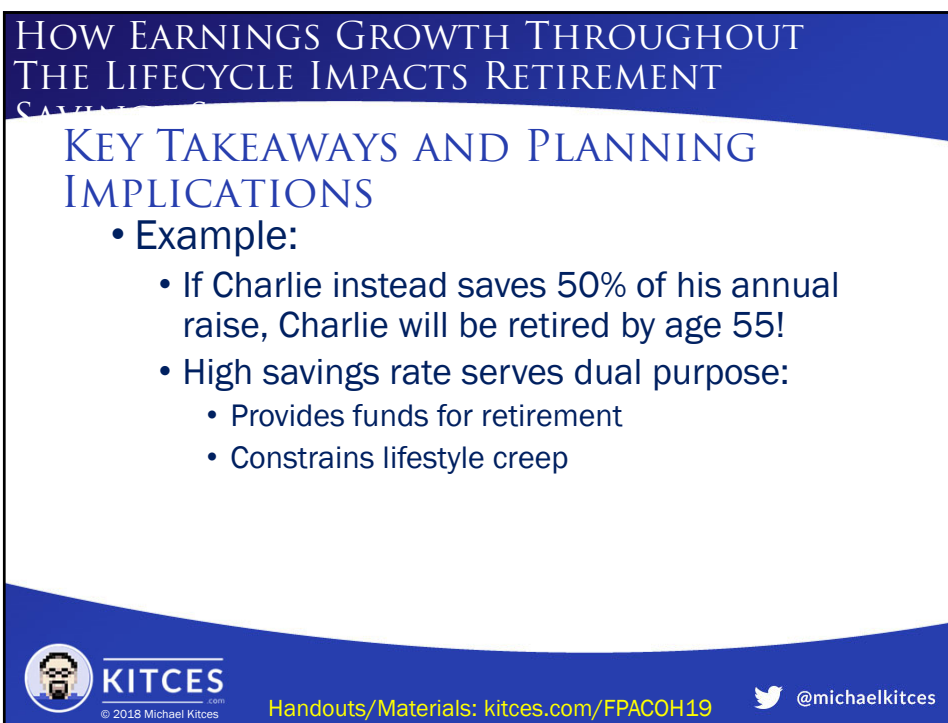
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HOW EARNINGS GROWTH THROUGHOUT THE LIFECYCLE IMPACTS RETIREMENT

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


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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!


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