Two Funds for Life
Pre & Post-Retirement
-- Chris Pedersen

The Merriman Financial Education Foundation

Target Date Funds >$1.7 Trillion

- >77% of investors hold TDFs in retirement accounts
- >50% of Vanguard participants have 100% in TDF
- ~37% of TDF market in Vanguard funds

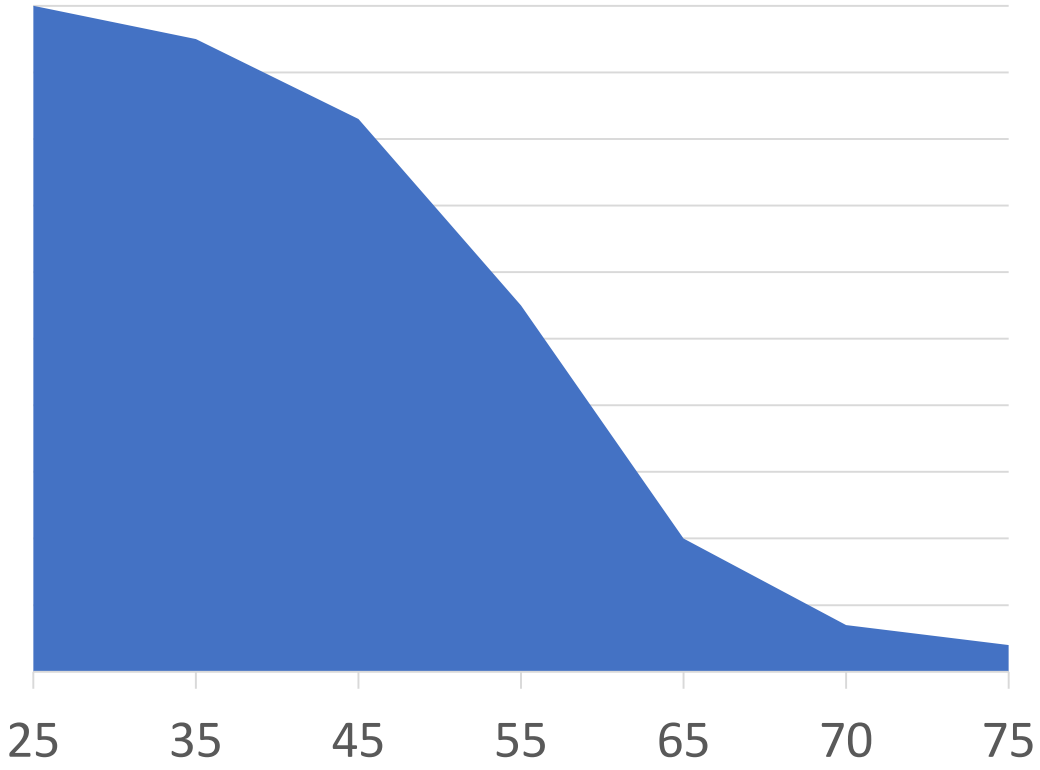
Sources:

“How America Saves 2019” from Vanguard

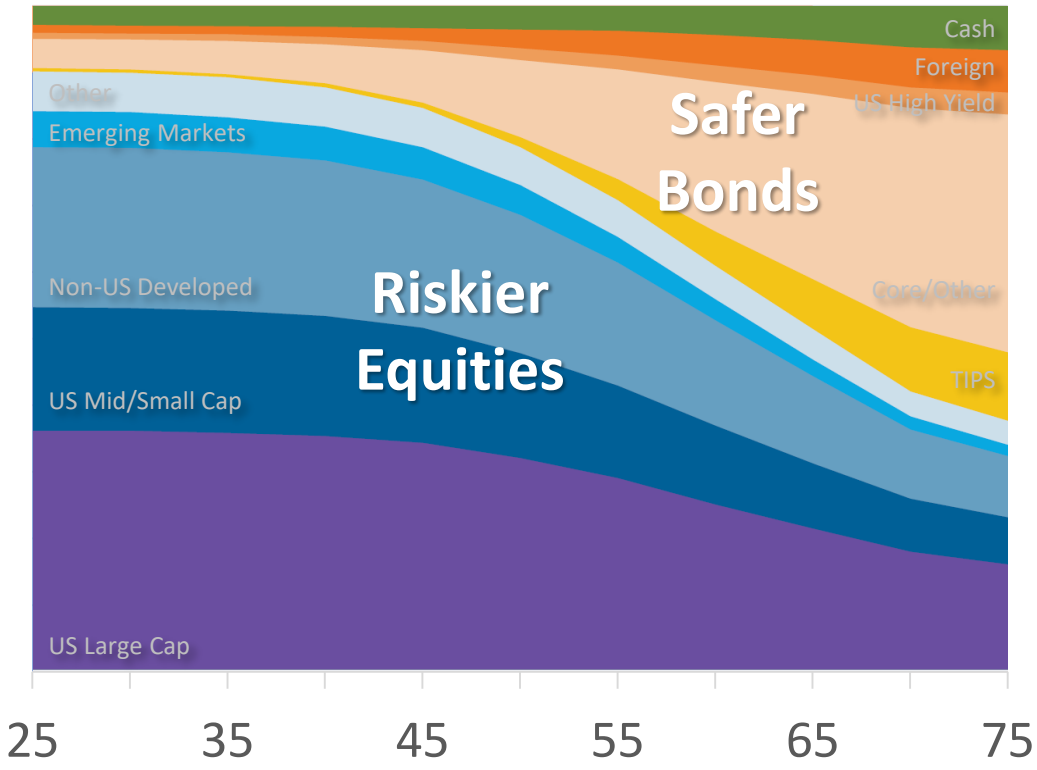
“2019 Target-Date Fund Landscape” from Morningstar

Human Capital & Target Date Funds (TDFs)

Human Capital vs. Age

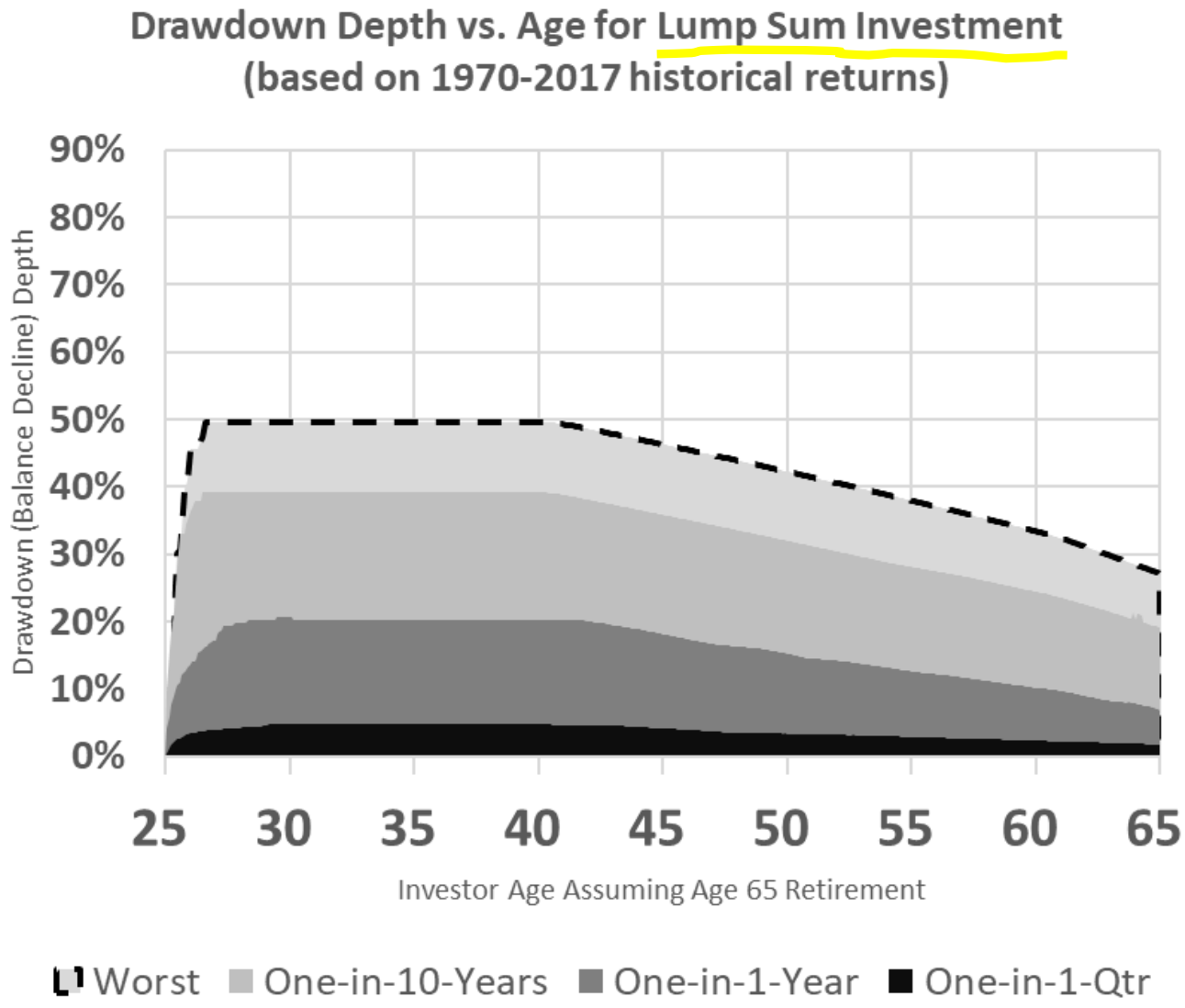


Industry Average TDF Glidepath

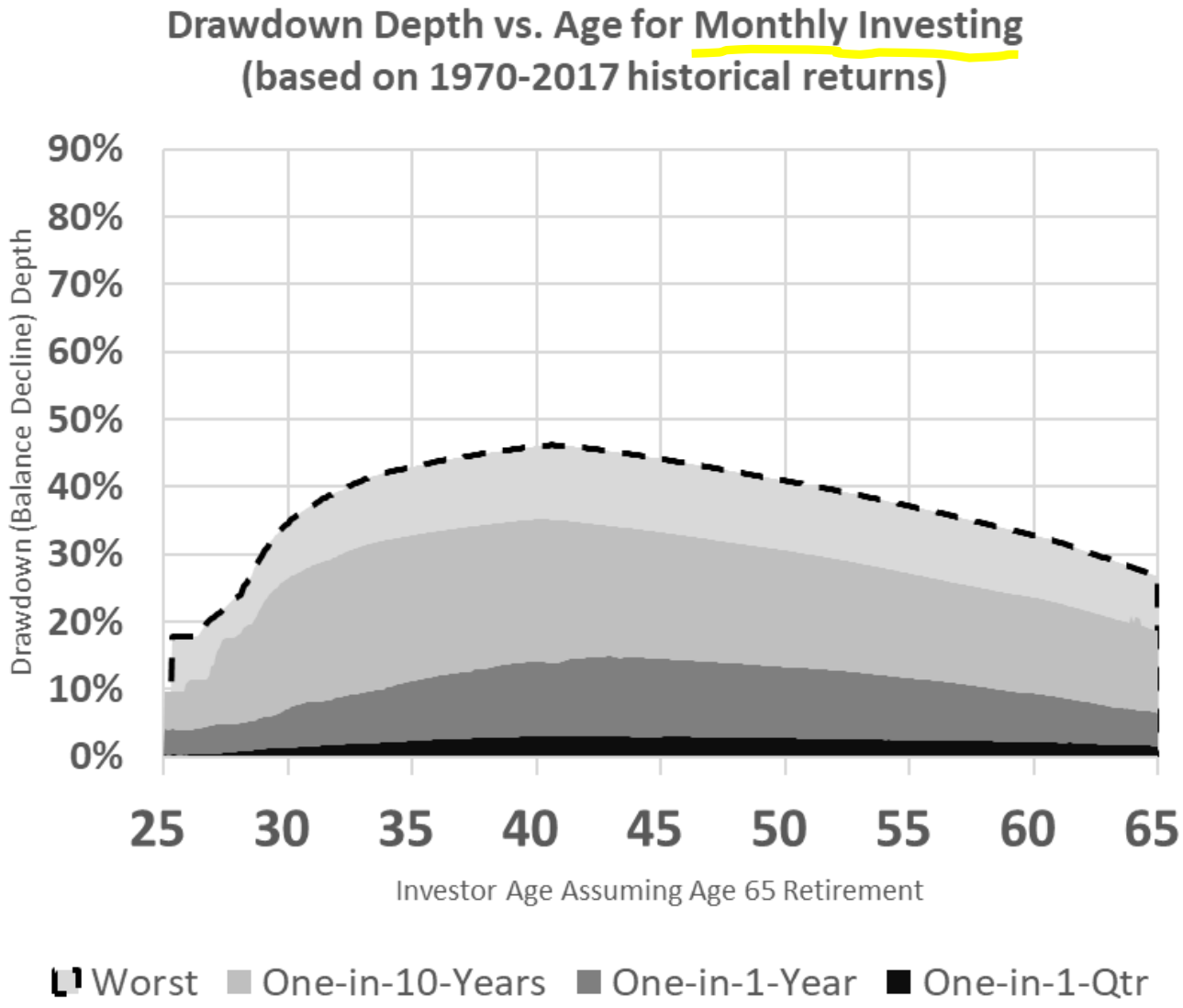


Sources: Morningstar 2015 Target-Date Fund Landscape & 2013 Target-Date Series Research Paper

How well do they work?



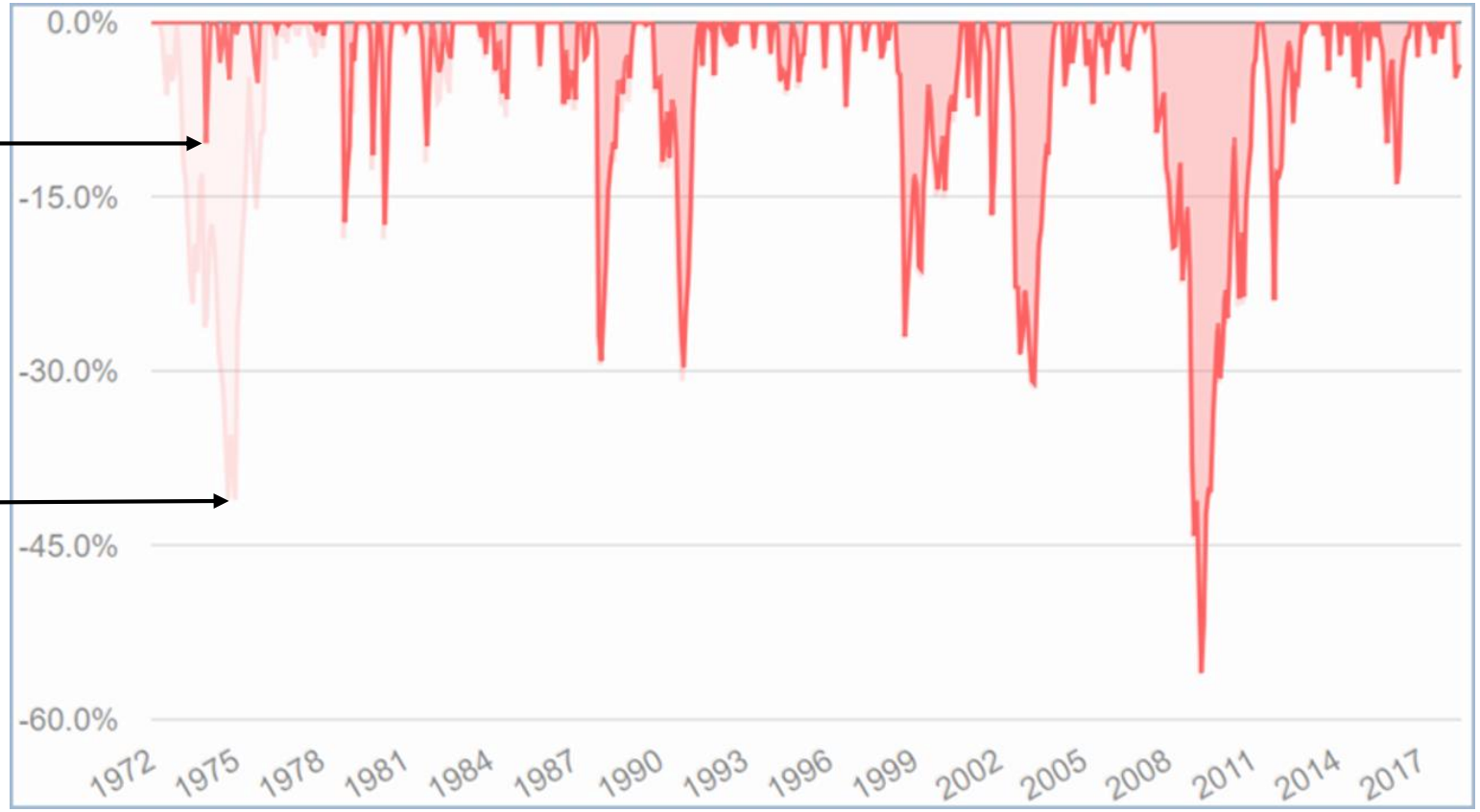
How well do they work for young portolios?



Early Drawdowns Are Reduced by Contributions

Monthly Contribution Investment

Lump Sum Fixed Investment

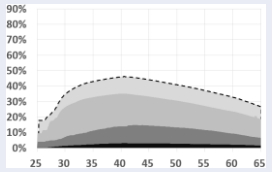
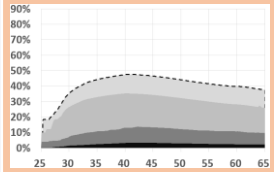
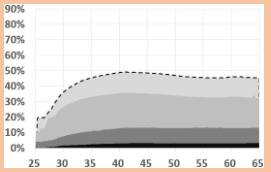
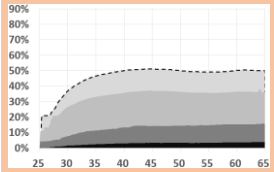


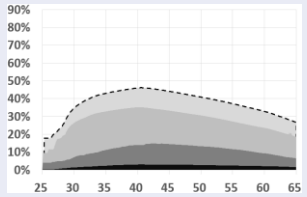
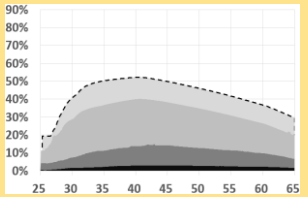
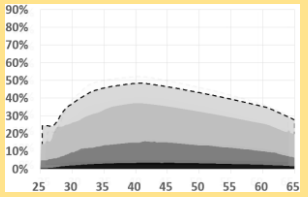
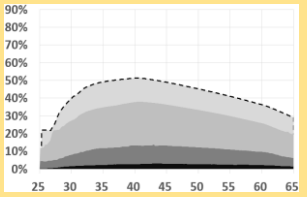
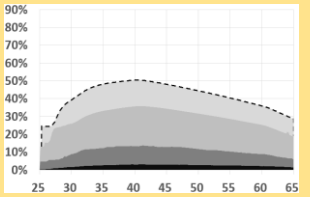
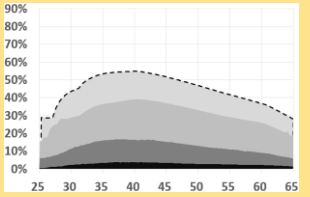
All small cap value portfolio balance backtested with and without annual contributions at www.portfoliovisualizer.com

Putting bonds in a young portfolio is like …

How could we improve?

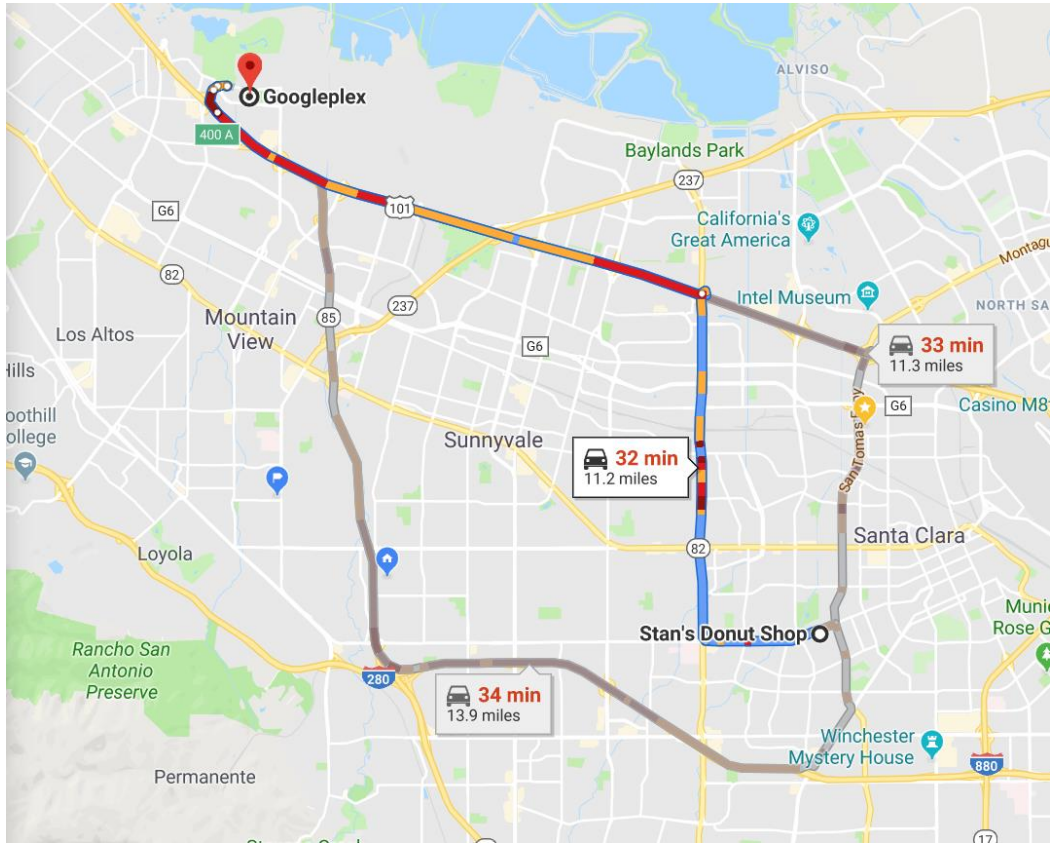
Invest a bit in a higher risk-reward asset class such as small-cap value (SCV)

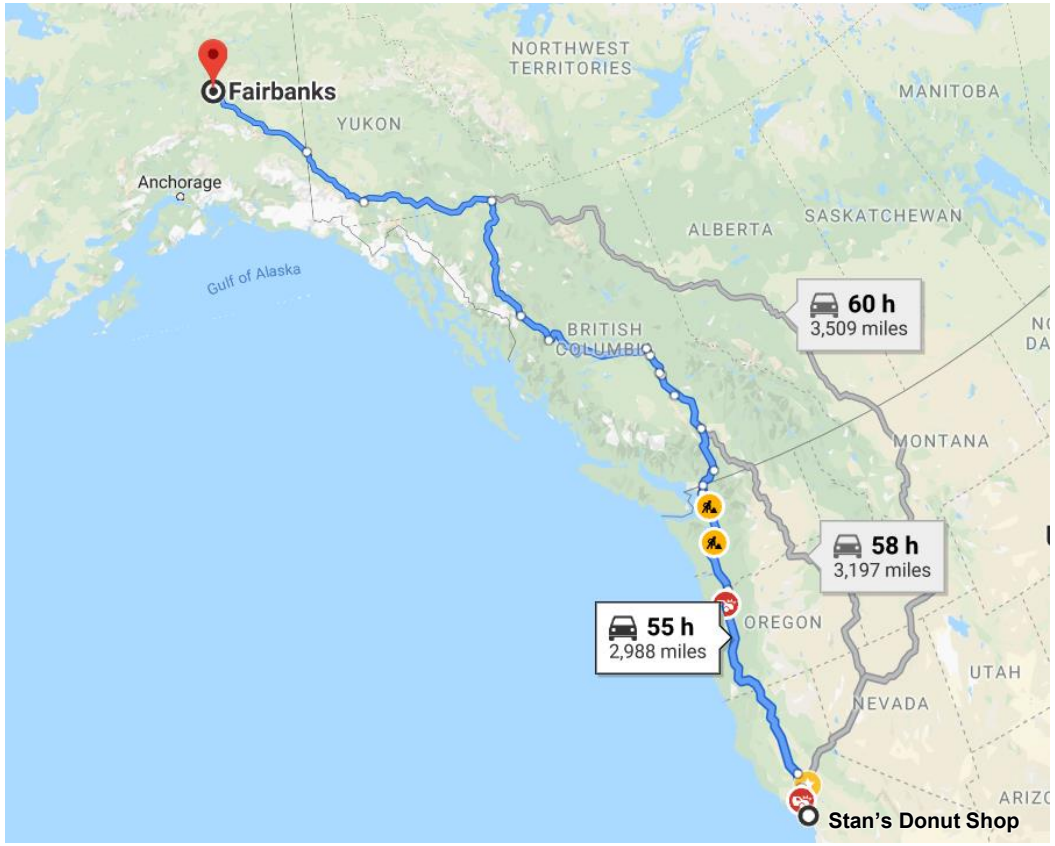
	Vanguard-like Target Date Fund (Baseline TDF)	90% TDF plus 10% US SCV	80% TDF plus 20% US SCV	70% TDF plus 30% US SCV
Rebalancing	**Monthly**	**None – for second fund could be in different account**		
End Balance Range ($10k/yr + inflation for 40 years)	$12.8 M **$7.93 M** $3.49 M	$18.21 M **$10.31 M** $3.90 M	$23.98 M **$12.68 M** $4.24 M	$29.74 M **$15.06 M** $4.53 M
Inflation-Adjusted End Balances	$2.36 M **$1.61 M** $0.72 M	$3.19 M **$2.09 M** $1.02 M	$4.20 M **$2.56 M** $1.22 M	$5.21 M **$3.03 M** $1.30 M
Worst Drawdown	46%	48%	49%	51%
Age 65 Worst DD	26%	37%	45%	50%
Drawdown Risk versus Age				

	Vanguard-like Target Date Fund (Baseline TDF)	1.5 X Age = % in TDF Rest in US LCV	1.5% X Age = % in TDF Rest in US SC	1.5% X Age = % in TDF Rest US LCV|SCV	1.5% X Age = % in TDF Rest in US SCV	2.5 X (Age-25) = % TDF Rest in US SCV
Rebalancing	**Monthly**	**Monthly**				
End Balance Range ($10k/yr + inflation for 40 years)	$12.8 M **$7.93 M** $3.49 M	$16.24 M **$9.80 M** $4.26 M	$15.38 M **$9.55 M** $4.01 M	$17.50 M **$10.63 M** $4.56M	$18.79 M **$11.50 M** $4.79 M	$22.83 M **$13.83M** $5.64 M
Inflation-Adjusted End Balances	$2.36 M **$1.61 M** $0.72 M	$2.97 M **$1.99 M** $0.88 M	$2.72M **$1.94 M** $0.94 M	$3.11 M **$2.16 M** $0.99 M	$3.26 M **$2.33 M** $1.11 M	$4.02 M **$2.80 M** $1.39 M
Worst Drawdown	46%	52%	48%	51%	50%	55%
Age 65 Worst DD	26%	29%	27%	28%	28%	27%
Drawdown Risk versus Age						

Could we do even better?

Scale higher risk-reward asset class with age so TDF is ~100% at age 65





What's the catch?

What about FIRE?
Financial **I**ndependence **R**etire **E**arly

Years to Retirement X 1.5 = % for the 2nd fund

Example:

You're 30 retiring @ age 50

You have 20 yrs left

20 X 1.5 = 30

Put 30% in 2cd fund

Put 70% in TDF

What if I’m already retired?!

It depends

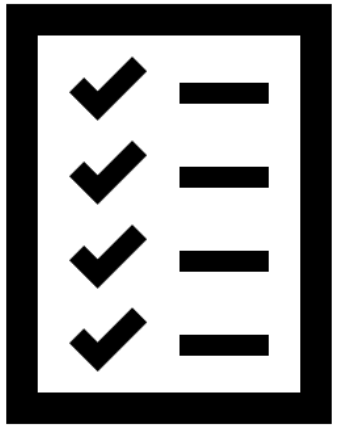
> 4% / Year – Under Saved
~4% / Year – Just Right
< 4% / Year – Over Saved

+ Pension

Raise or Lower Expenses
& You Change
Withdrawal Rate

Withdrawals

Expenses



Savings, Income, Expenses, Withdrawals

They interact

Two Fund for Life Options in Retirement

If withdrawal rate is > 4%/year, see a financial planner

If withdrawal rate is ~ 4%/year, 100% TDF is likely fine -- consider adding a 2nd equity fund over time

If withdrawal rate is <4%/year, you could spend more, or put “extra” in 2nd equity fund for legacy

Why ramp 2nd fund down, then up?

What can we expect?

“Test as you fly,
fly as you test”

-- NASA

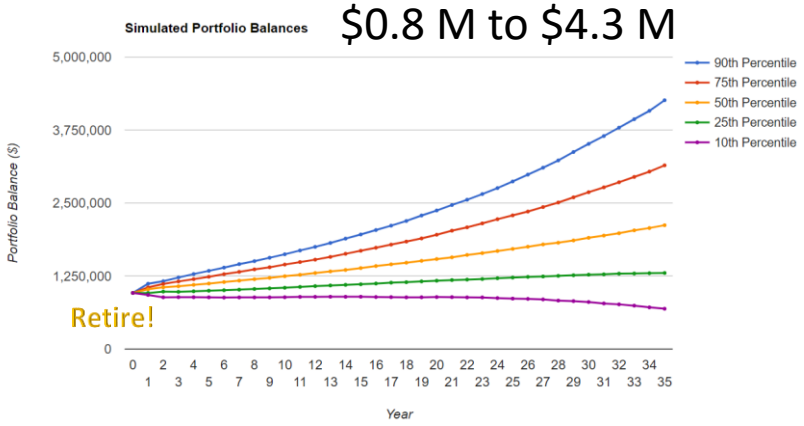
Testing Retirement Scenarios with Portfolio Visualizer

- It's free
- "Financial Goals" tool can model TDF allocations in retirement
  - Select Multistage Planning Type
  - Enter 7 Years to Retirement even though scenario is in retirement
  - Enter starting portfolio allocation to match TDF allocation at start
  - Enter ending portfolio allocation to match final TDF allocation
  - Enter withdrawal model in Financial Goals section
  - Click "Run Simulation"

100% TDF w/ *fixed* withdrawals in retirement

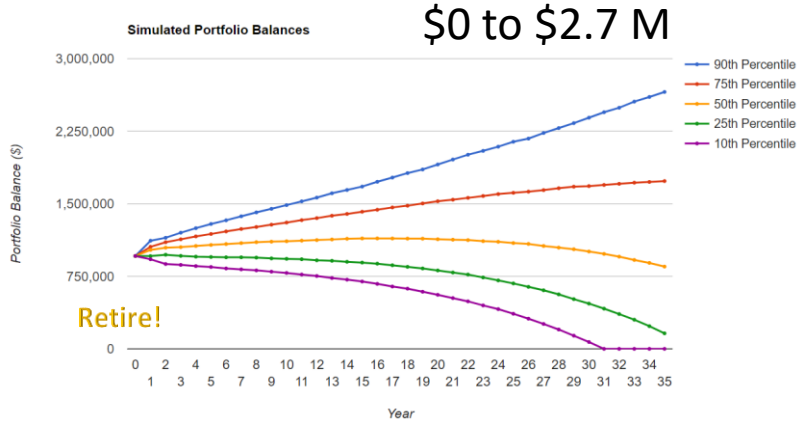
Portfolio Visualizer (4% fixed example at https://bit.ly/2mr1Wqg)

$0.8 M to $4.3 M



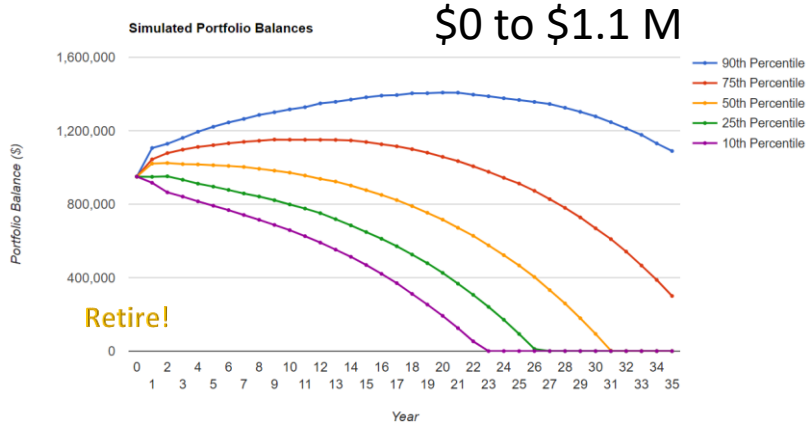
3% Fixed Withdrawal Rate

$0 to $2.7 M



4% Fixed Withdrawal Rate

$0 to $1.1 M



5% Fixed Withdrawal Rate

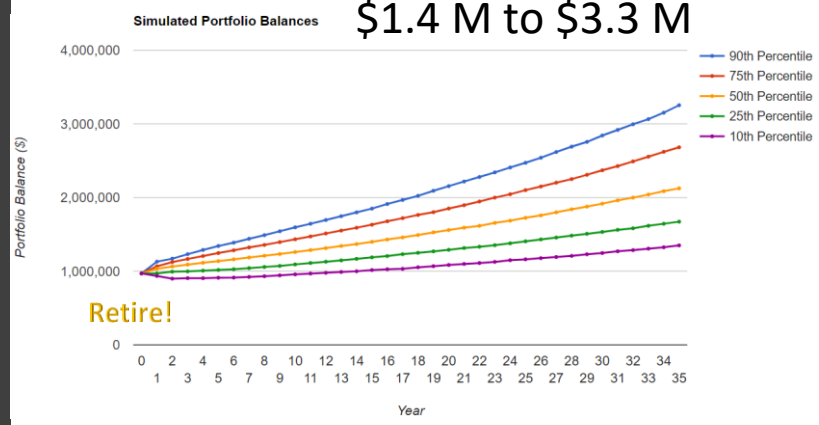
Only 34% make it all the way to 35 years

Assumes $1M minus first withdrawal as starting balance at retirement, 35 years in retirement, and Vanguard-like TDF asset allocation glidepath. Fixed withdrawal dollar amount calculated as percent of balance at start of retirement and is then kept fixed except for increases to match inflation.

100% TDF w/ *variable* withdrawals in retirement

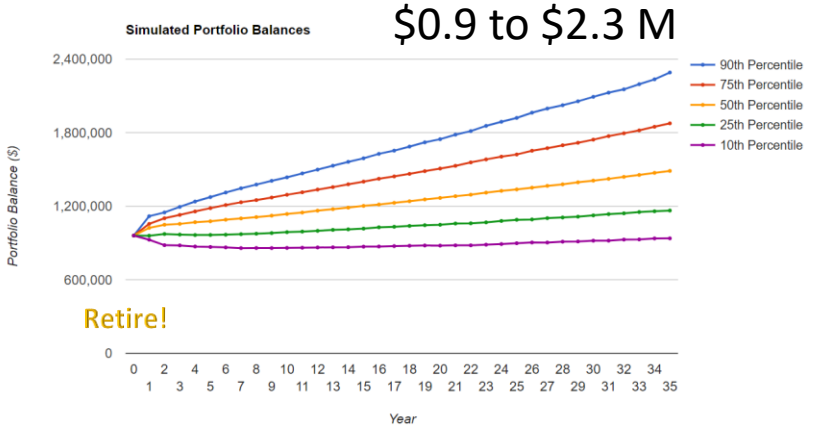
Portfolio Visualizer (4% variable example at https://bit.ly/2mpTkQK)

$1.4 M to $3.3 M



3% Variable Withdrawal Rate

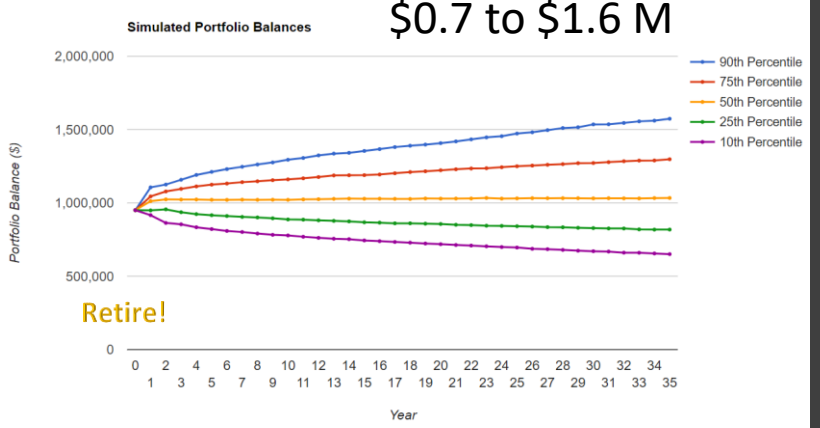
$0.9 to $2.3 M



4% Variable Withdrawal Rate

Inflation-adjusted value of withdrawals declines by 27% over 35-year retirement

$0.7 to $1.6 M



5% Variable Withdrawal Rate

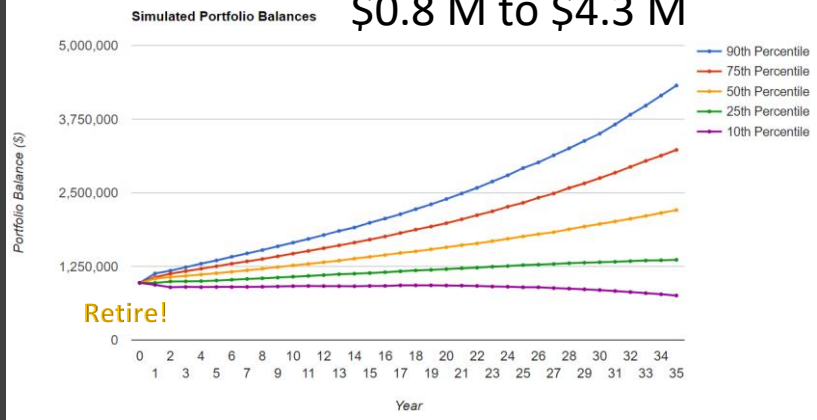
Inflation-adjusted value of withdrawals declines by 49% over 35-year retirement

Assumes $1M minus first withdrawal as starting balance at retirement, 35 years in retirement, and Vanguard-like TDF asset allocation glidepath. *Variable withdrawal dollar amount calculated as percent of balance at start of each year in retirement, so dollar amount withdrawn varies year-to-year based on investment returns and independent of inflation.*

TDF + Value Fund Options for Over-Savers

Portfolio Visualizer (75% TDF | 25% SCV example at https://bit.ly/2mlcRBD)

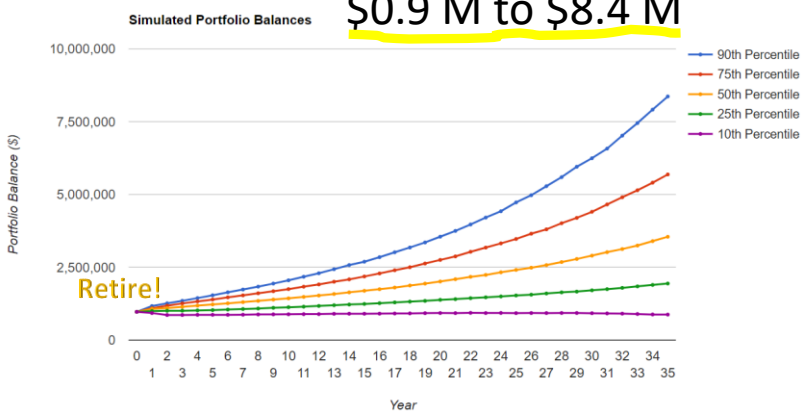
$0.8 M to $4.3 M



$30k (3%) Fixed Withdrawal Rate

100% TDF

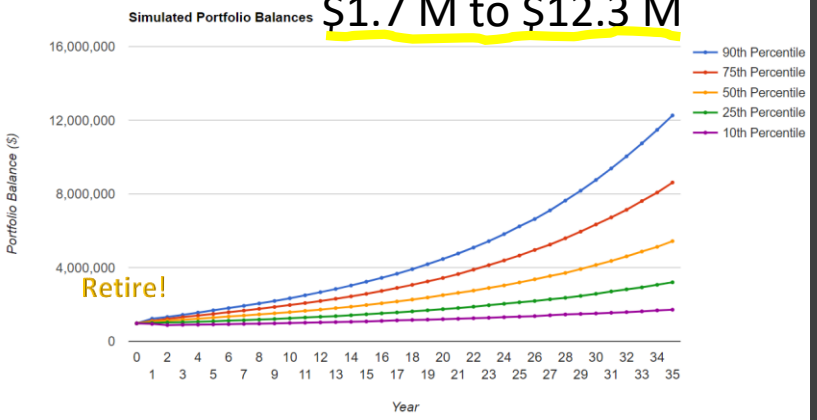
$0.9 M to $8.4 M



$30k (3%) Fixed Withdrawal Rate

75% TDF | 25% LCV

$1.7 M to $12.3 M



$30k (3%) Fixed Withdrawal Rate

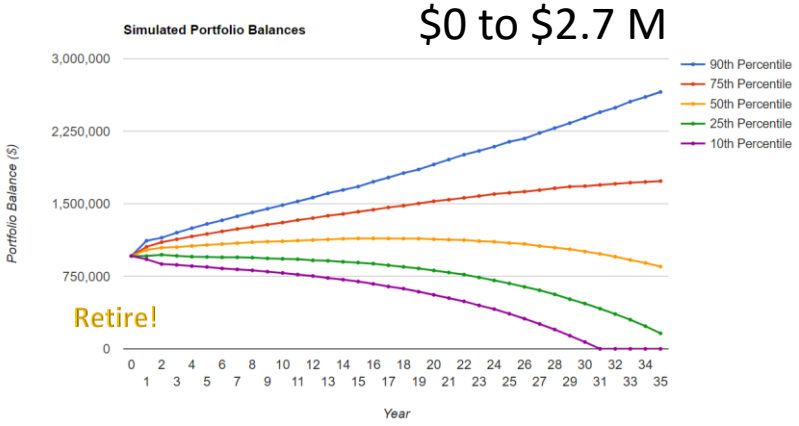
75% TDF | 25% SCV

Assumes $1M minus first withdrawal as starting balance at retirement, 35 years in retirement, and Vanguard-like TDF asset allocation glidepath. Fixed withdrawal dollar amount calculated as percent of balance at start of retirement and is then kept fixed except for increases to match inflation.

TDF + Small-Cap-Value for “Just Enough” Savers

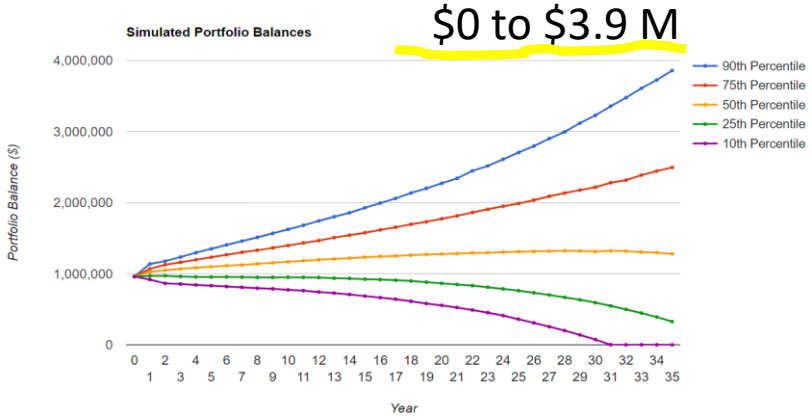
Portfolio Visualizer (4% fixed 80|20 example at https://bit.ly/2m8eKBR)

$0 to $2.7 M



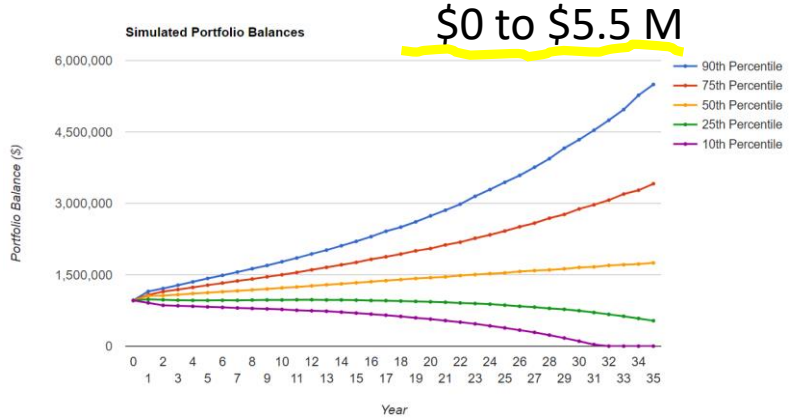
4% Fixed Withdrawal Rate 100% TDF

$0 to $3.9 M



4% Fixed Withdrawal Rate 90% TDF | 10% SCV

$0 to $5.5 M



4% Fixed Withdrawal Rate 80% TDF | 20% SCV

Assumes $1M minus first withdrawal as starting balance at retirement, 35 years in retirement, and Vanguard-like TDF asset allocation glidepath. Fixed withdrawal dollar amount calculated as percent of balance at start of retirement and is then kept fixed except for increases to match inflation.

Loose Ends

Question	Answer
Which specific second fund should I use?	Recommendations for mutual funds and Best in Class ETFs at www.paulmerriman.com
Could I use just a few more funds to get more diversification?	Sure! E.g. US SCV + Intl. SCV + EM
Can I use Portfolio Visualizer to model target date funds in contribution years?	Not yet.
What's the biggest risk with this strategy?	Portfolio suicide – losing hope and selling when the market is down.
What if I don't care about complexity and want the "Ultimate" TDF?	Read about the Merriman Aggressive TDF Glide Path & Calculator

Call to Action

Recognize	The resilience of young portfolios!
Consider	Two Funds for Life Strategy in your working years
Calculate	Withdrawal rate & consider two funds in retirement
Test	Your plan, set expectations, then stick with it!

Helpful links

www.portfoliovisualizer.com

www.paulmerriman.com

www.2fundsforlife.com

https://paulmerriman.com/the-ultimate-target-date-fund-portfolio/

https://paulmerriman.com/best-in-class-etfs-for-the-ultimate-buy-and-hold-2019/

https://www.aqr.com/Insights/Podcasts/The-Curious-Investor/Season-Two/Calculated-Risks (fly as you test, test as you fly …)