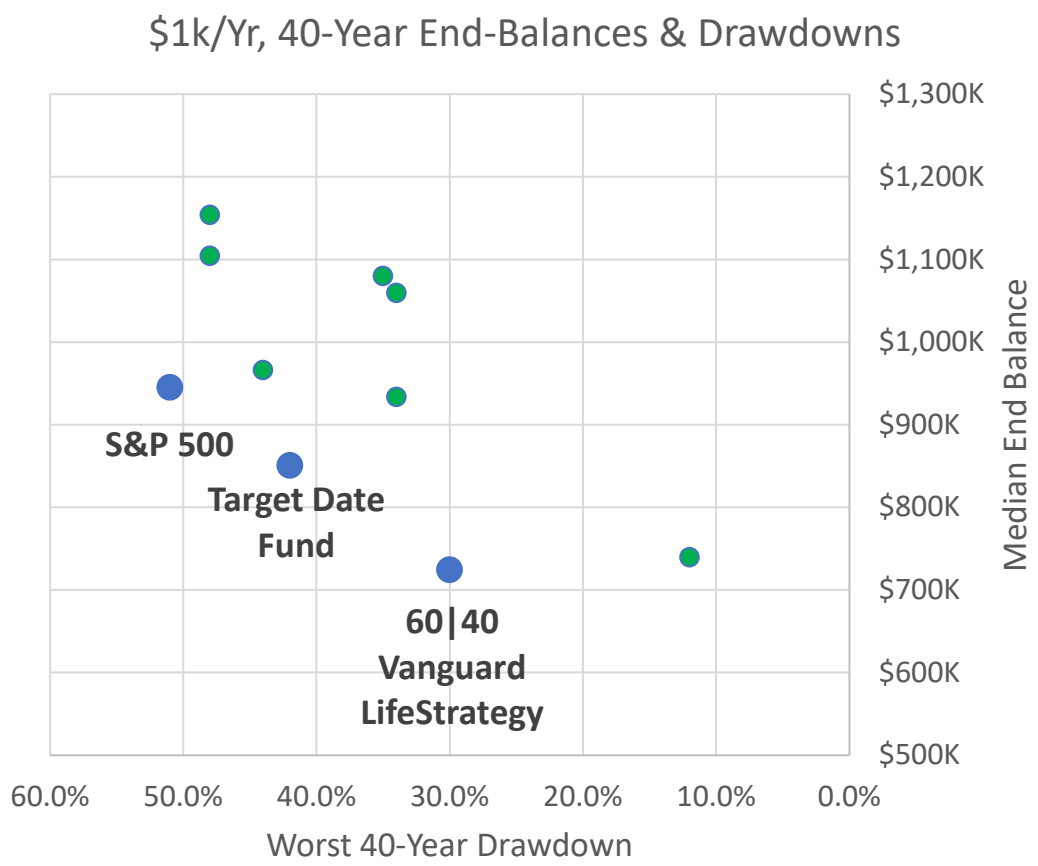
Simple & Effective Balanced Portfolios for Lifetime Investing Success

Chris Pedersen

Director of Research for The Merriman Financial Education Foundation

Why simple balanced portfolios are exciting!

- Higher return/risk
- Higher safe-withdrawal & survival rates
- Only 1 to 5 ETFs or funds



What we'll cover

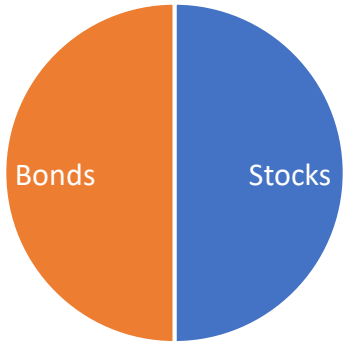
- What's a balanced portfolio?
- What can we do with a 1-4 fund ***fixed allocations***?
- What can we do with 1-3 funds and a ***target date fund***?
- How do they differ during accumulation and in retirement?
- What do we give up by being simple?
- Q&A

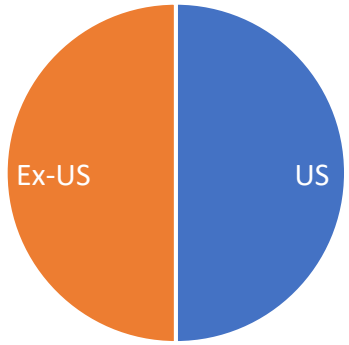
What's a Balanced Portfolio?

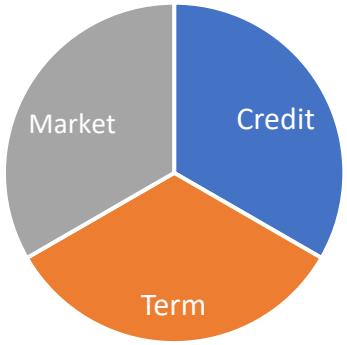
"A balanced investment strategy is a way of combining investments in a portfolio that aims to ***balance risk and return***.
Typically, balanced portfolios are divided equally between stocks and bonds."

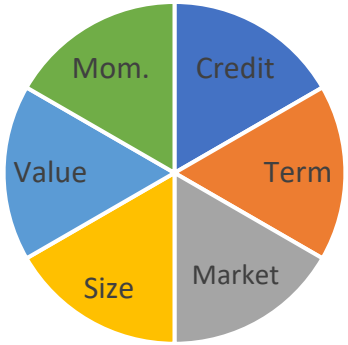
-- Investopedia, "Balanced Investment Strategy" by Jason Fernando

Different Ways to Balance Risk & Return

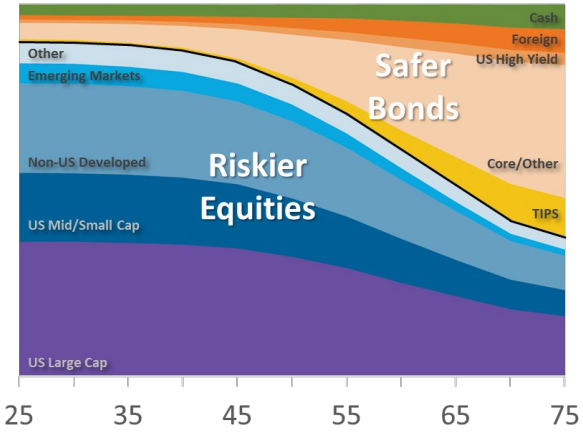






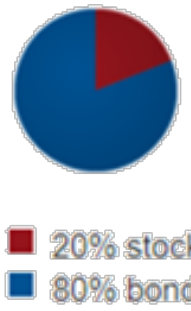
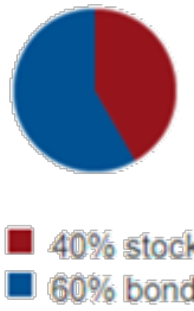
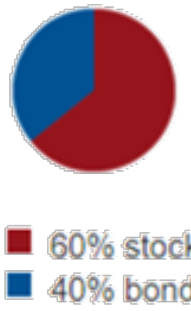
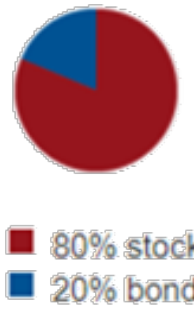


Target Date Funds



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

One-Fund Balanced Portfolios
Vanguard LifeStrategy Funds

	20% Stock, 80% Bonds **Vanguard LifeStrategy Income Fund (VASIX)**	**40% Stock, 60% Bonds** **Vanguard LifeStrategy Conservative Growth Fund (VSCGX)**	**60% Stock, 40% Bonds** **Vanguard LifeStrategy Moderate Growth Fund (VSMGX)**	**80% Stock, 20% Bonds** **Vanguard LifeStrategy Growth Fund (VASGX)**
Risk				
Target Allocation				

Source: Vanguard website -- https://investor.vanguard.com/mutual-funds/lifestrategy/#/

One-Fund Balanced Portfolios
Vanguard LifeStrategy Funds

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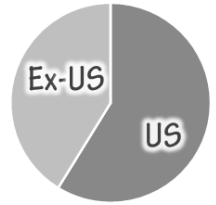
Compound *Annual* Growth Rate	5.50%	9.10%	9.90%	10.60%
Worst *Single* Drawdown	-12%	-22%	-32%	-42%

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years. Lumpsum initial investment with no cashflows.

One-Fund Balanced Portfolios
Vanguard LifeStrategy Funds



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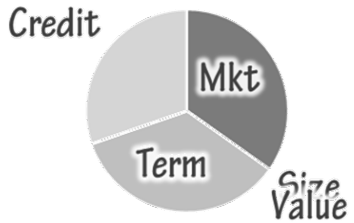
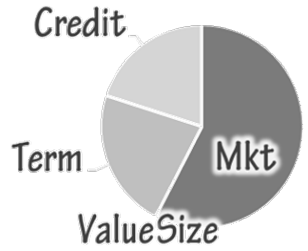
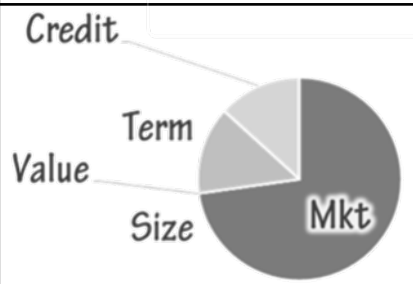
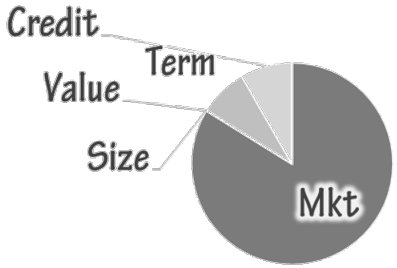
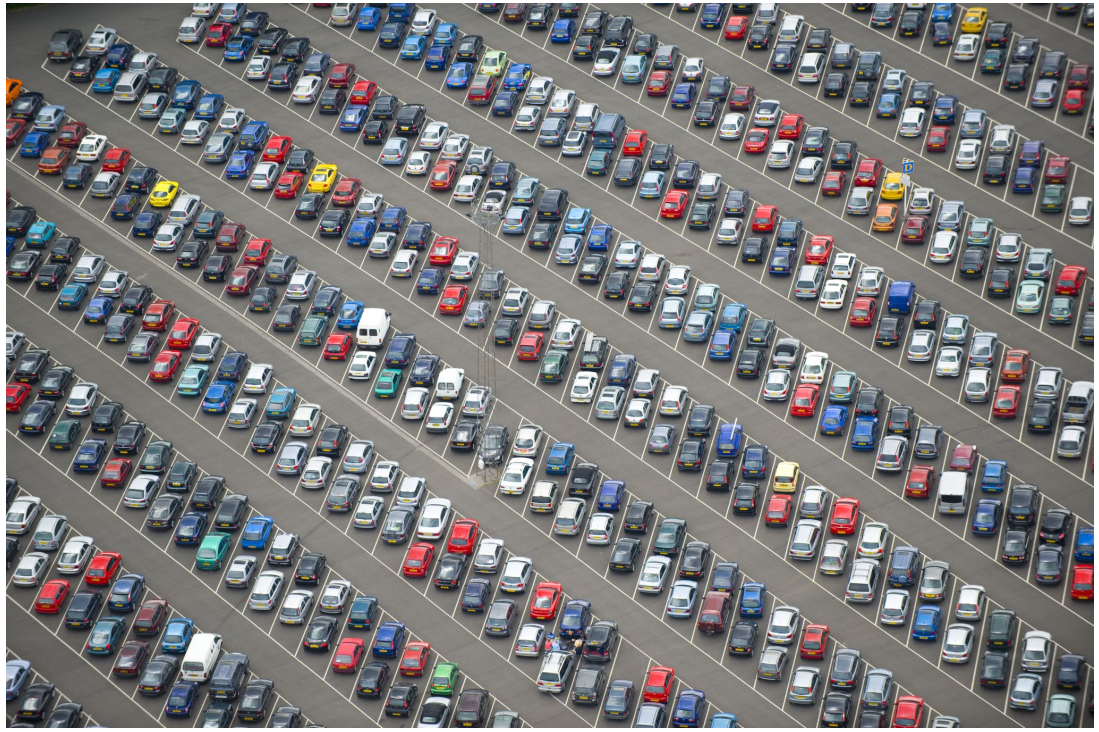
Factor Diversification				

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years. Lumpsum initial investment with no cashflows. Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

Factors?

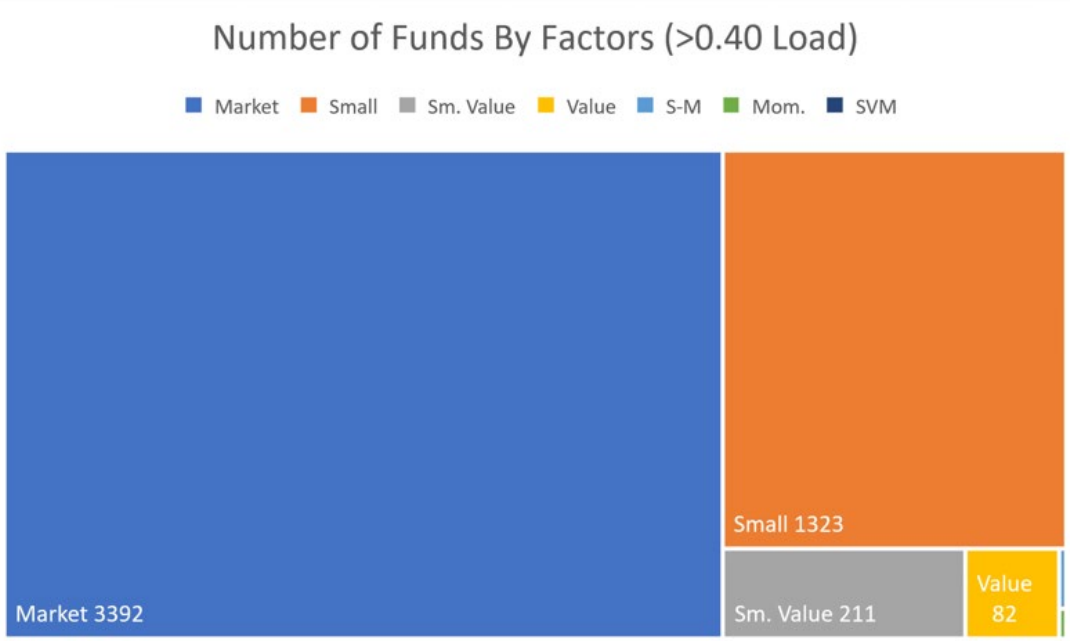
What characteristics do high MPG cars have?

- Light weight, smaller engines, fewer doors, lower air resistance
- Electric or hybrid drive trains, not as long, not 4-wheel-drive
- Smaller gas tanks, fewer seats & cup holders, not an SUV, truck or van



Factors = Qualities that drive higher returns

- For bonds: ***credit & term***
- For stocks, many choices
- The three most available & efficient though are
  - ***Market***
  - ***Size***
  - ***Value***



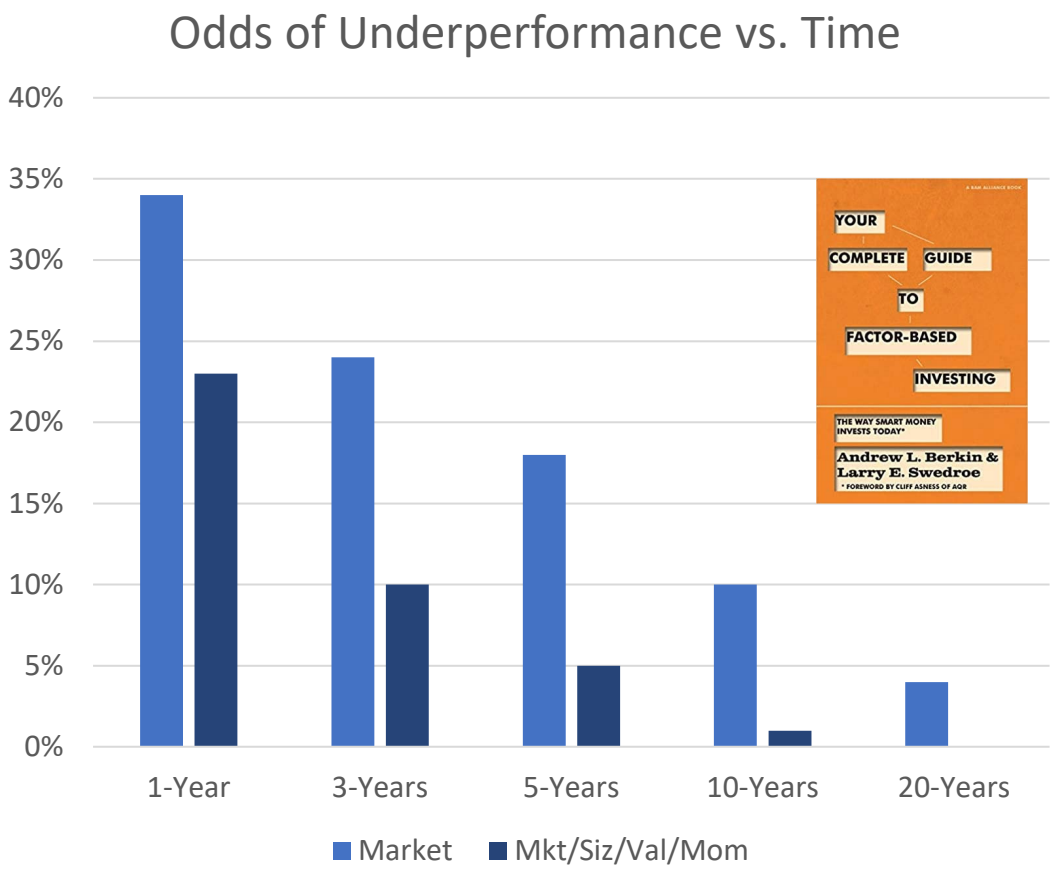
Source: Analysis of Portfolio Visualizer fund factor regressions in October, 2019.

How do factors help *balance* a portfolio?

Factors go up and down at different times

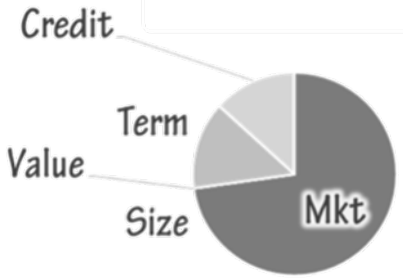
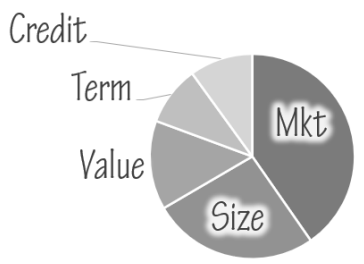
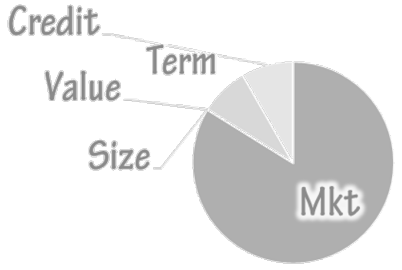
So …

A multi-factor portfolio should disappoint less often



Source: Data from "Your Complete Guide to Factor-Based Investing" by Andrew L. Berkin & Larry E. Swedroe

Increasing 60/40 Portfolio & factor exposures

	One Fund	Three Funds	One Fund
	60% Stock, 40% Bonds **Vanguard LifeStrategy Moderate Growth Fund (VSMGX)**	**60% Stock, 40% Bonds** **35% US SCV, 25% Int'l SCV, 40% WW Total Bonds (SLYV, DLS, BNDW)**	**80% Stock, 20% Bonds** **Vanguard LifeStrategy Growth Fund (VASGX)**
Compound *Annual* Growth Rate	9.90%	12.00%	10.60%
Worst *Single* Drawdown	-32%	-37%	-42%
Factor Diversification			

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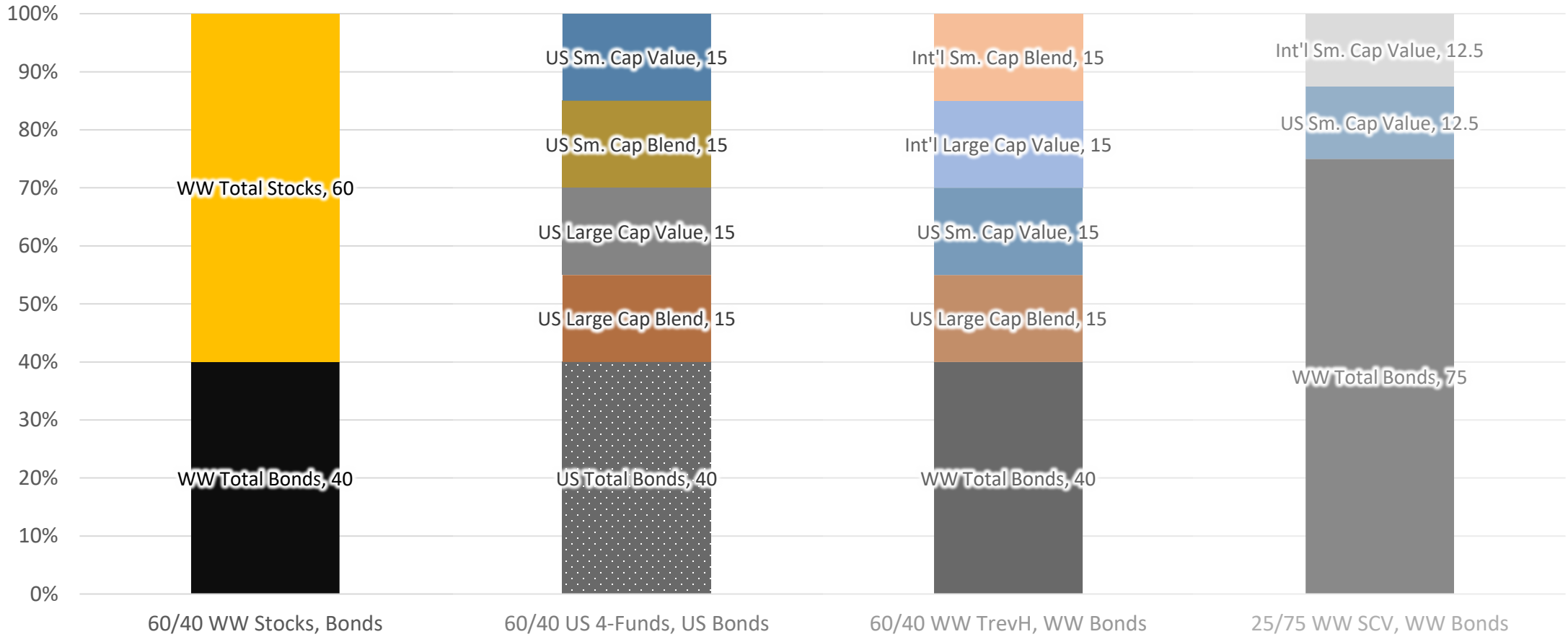
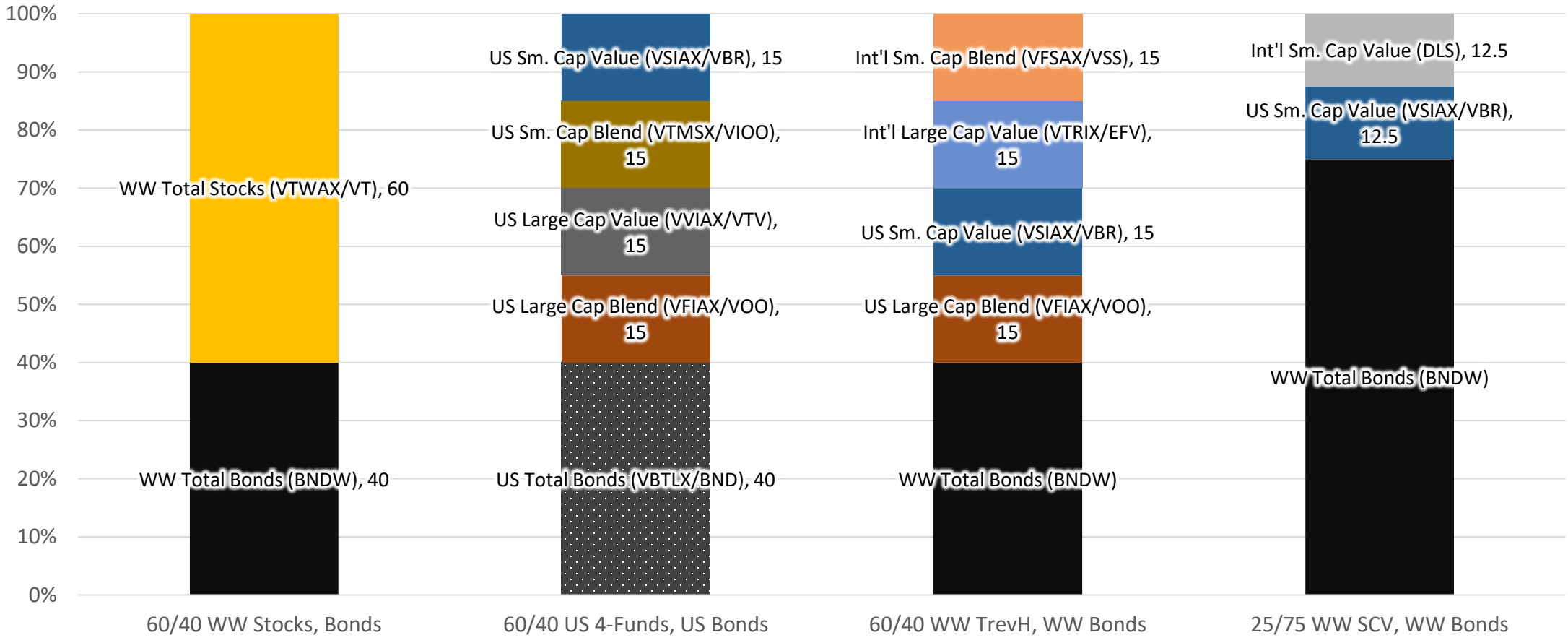
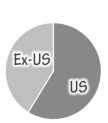
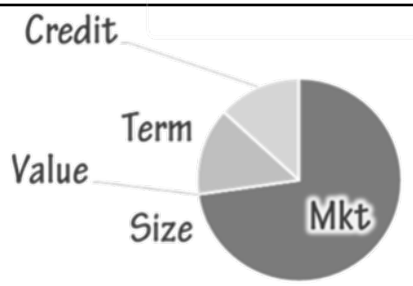
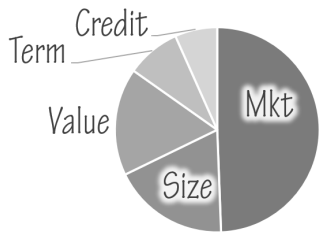
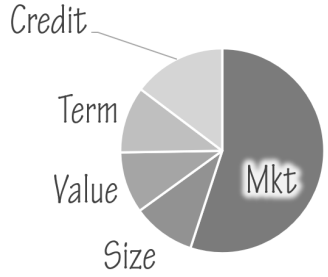
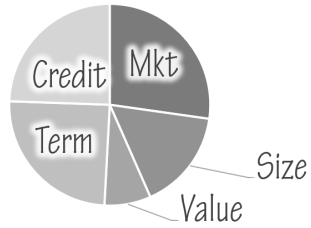
Some 2, 3 and 5-Fund 60|40 Balanced Portfolios



Some 3-5-Fund Balanced Portfolios
with Example Tickers (Mutual Fund/ETF)



3-5-Fund Balanced Portfolios

	WW 60/40 Stocks, Bonds	60/40 US 4-Fund, US Bonds	60/40 TrevH, WW Bonds	25/75 SCV (US & Int'l), WW Bonds
Compound *Annual* Growth Rate	9.90% 	10.70% 	10.70% 	9.10% 
Worst *Single* Drawdown	-32%	-35%	-36%	-13%
Factor Diversification				

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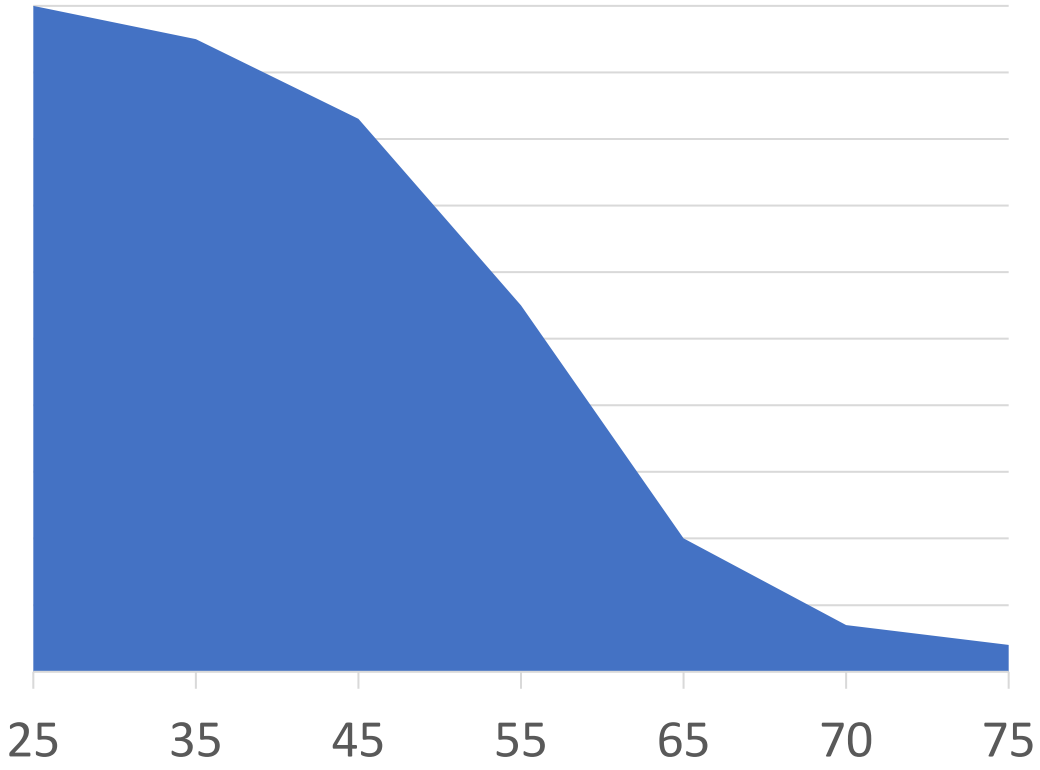
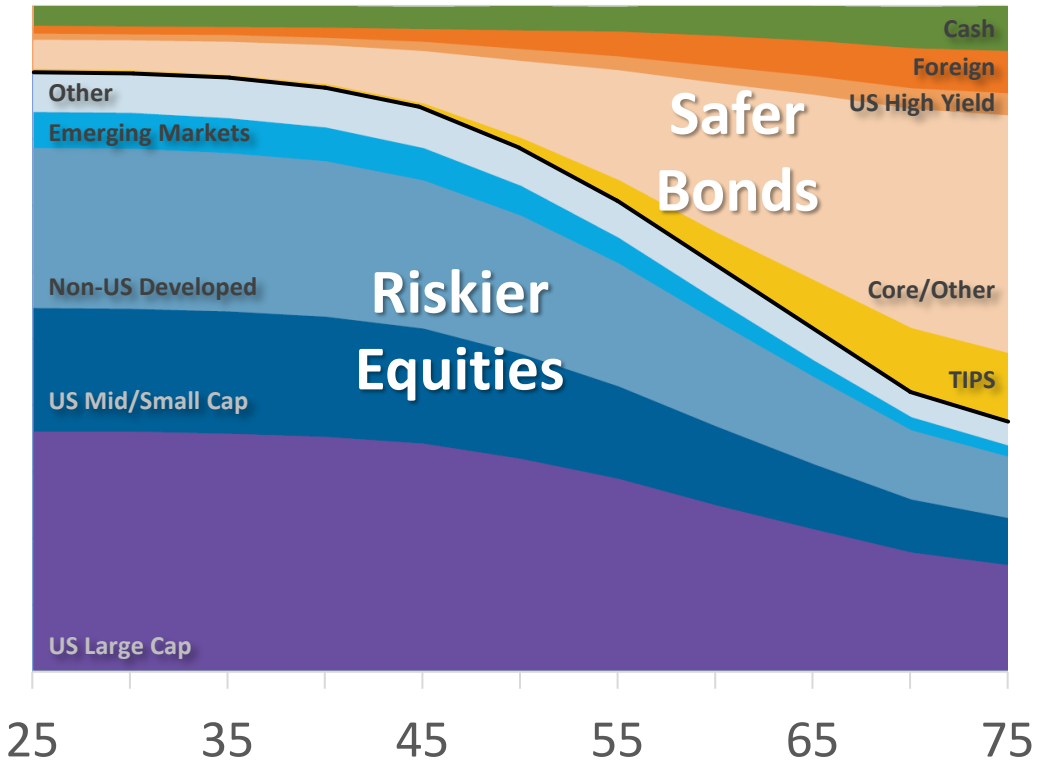
Human Capital & Target Date Funds (TDFs)

Human Capital vs. Age



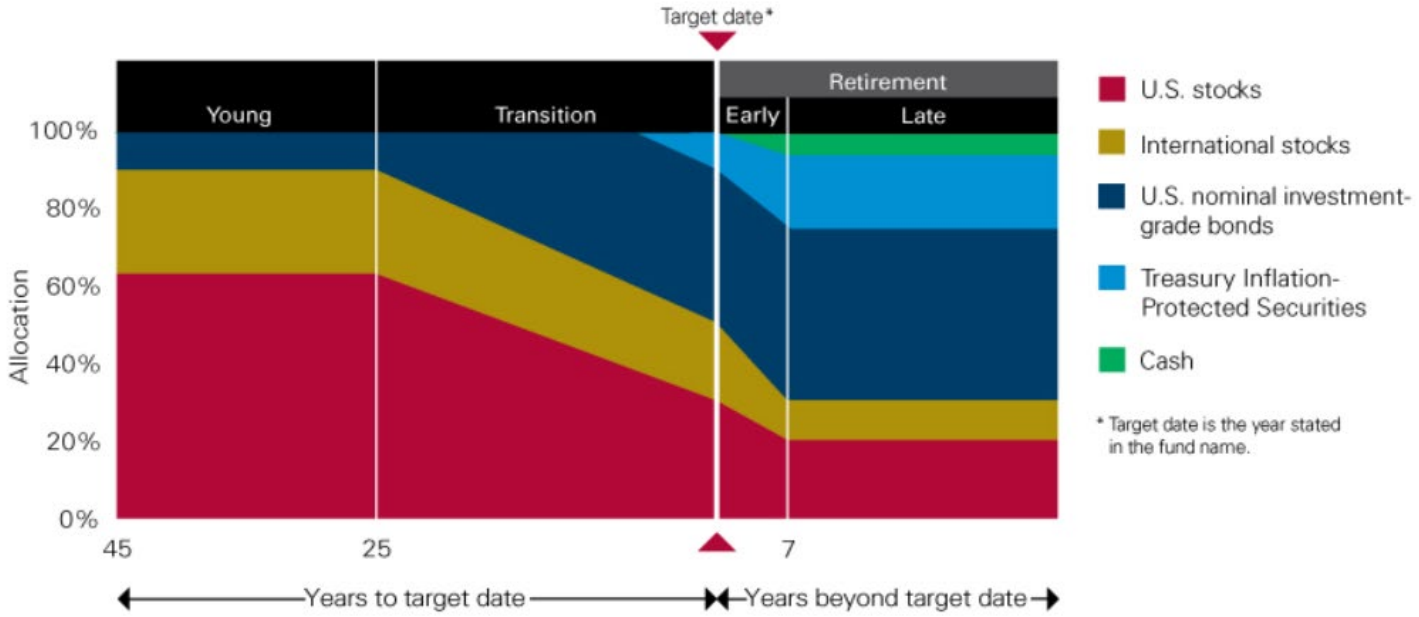
Industry Average TDF Glidepath



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

Vanguard Target Retirement Funds

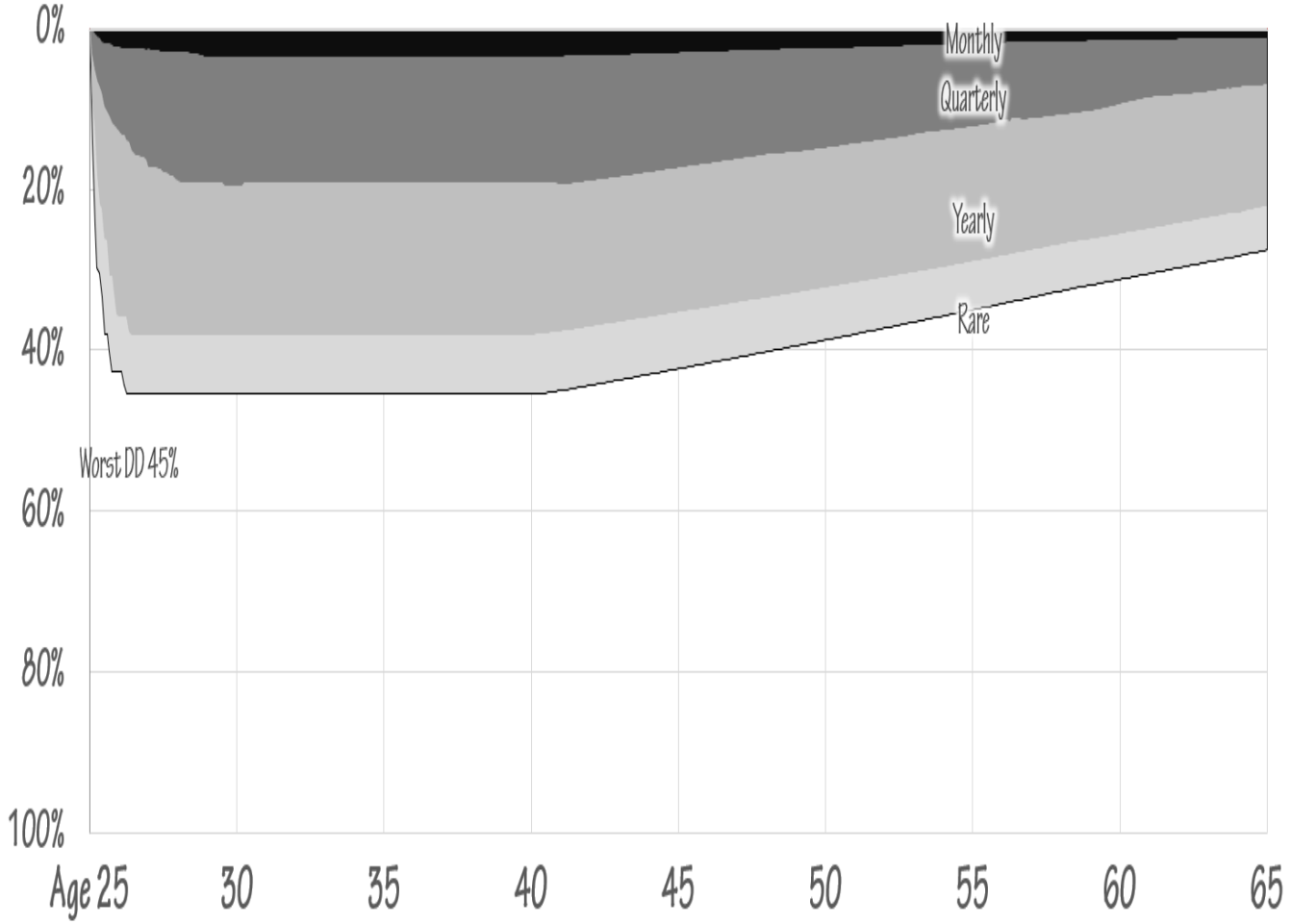
- Target Retirement 2015 (VTXVX)
- Target Retirement 2020 (VTWNX)
- Target Retirement 2025 (VTTVX)
- Target Retirement 2030 (VTHRX)
- Target Retirement 2035 (VTTHX)
- Target Retirement 2040 (VFORX)
- Target Retirement 2045 (VTIVX)
- Target Retirement 2050 (VFIFX)
- Target Retirement 2055 (VFFVX)
- Target Retirement 2060 (VTTSX)
- Target Retirement 2065 (VLXVX)



Source: Vanguard website -- https://investor.vanguard.com/mutual-funds/target-retirement/#/

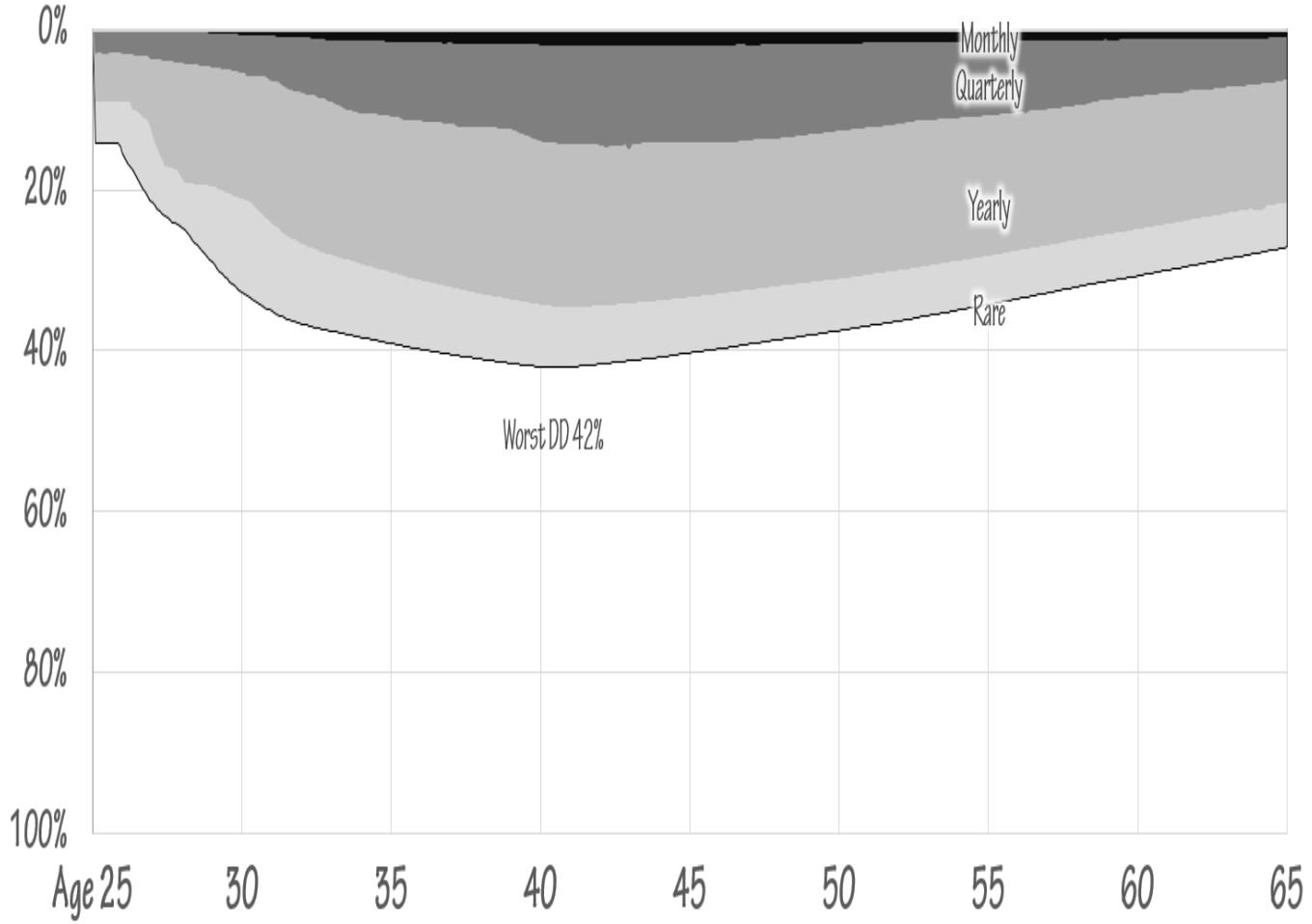
Target Date Funds work for lumpsum investing …

Drawdown Depth vs. Age for Lump Sum Investment
(based on 1970-2019 historical returns)



But take too little risk in early years for start-from-scratch investors

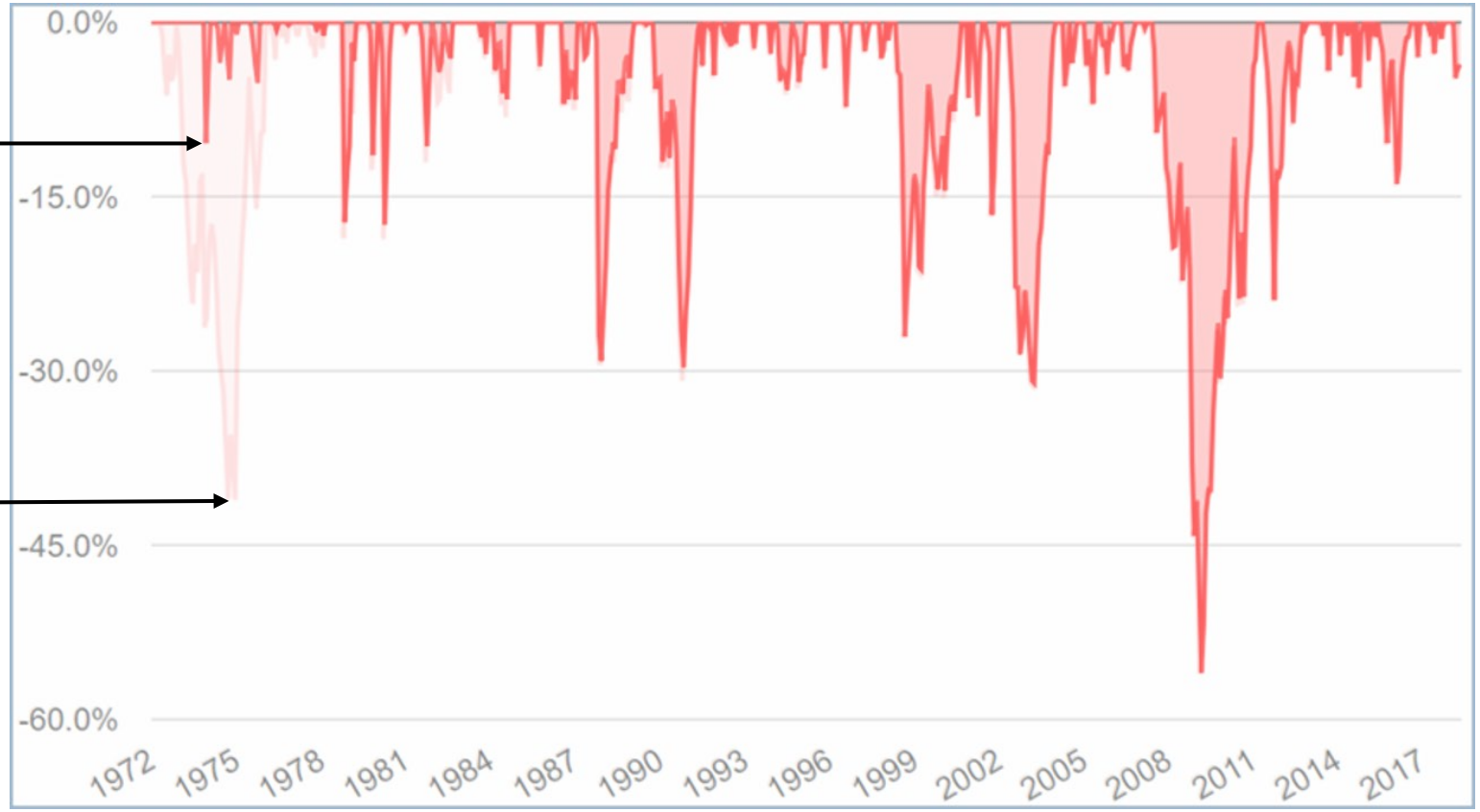
Drawdown Depth vs. Age for Monthly Investing
(based on 1970-2019 historical returns)



Early Drawdowns Are Reduced by Contributions

Monthly Contribution Investment

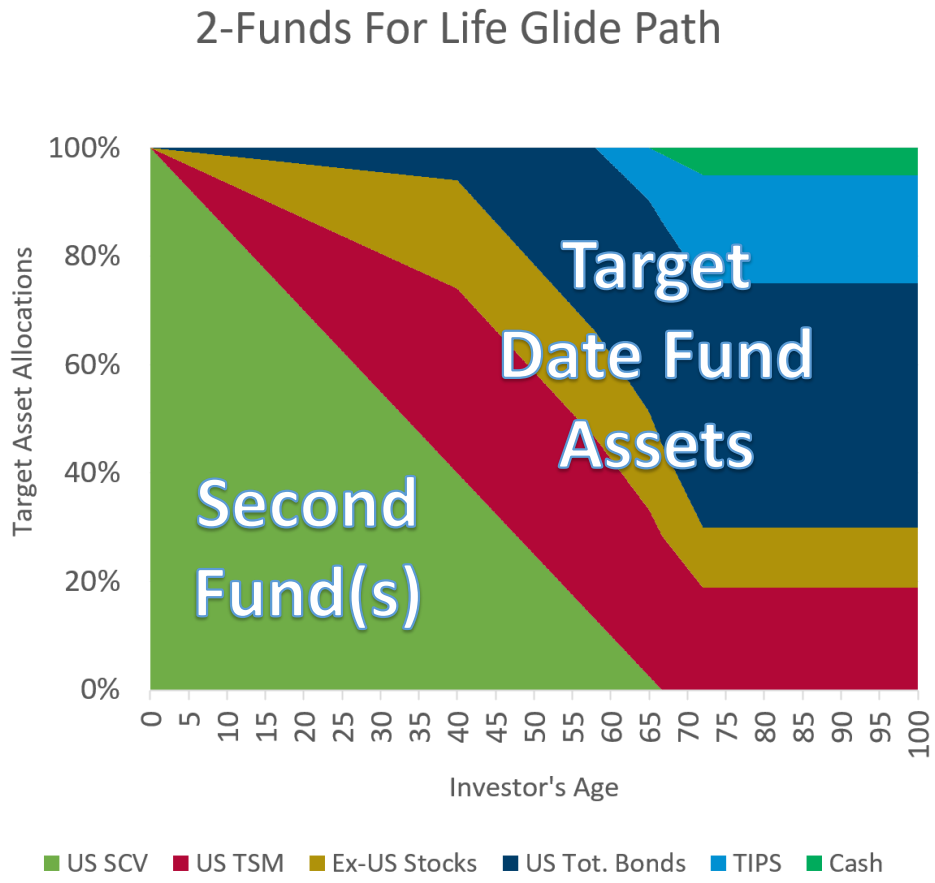
Lump Sum Fixed Investment



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

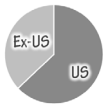
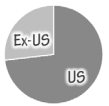
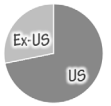
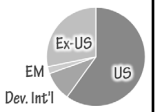
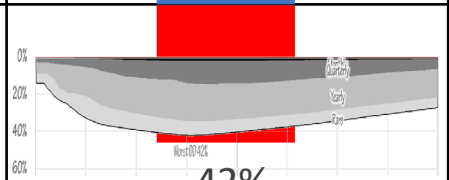
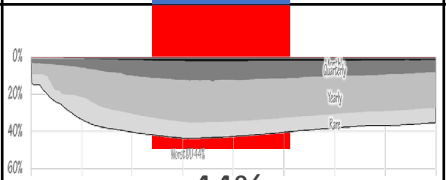
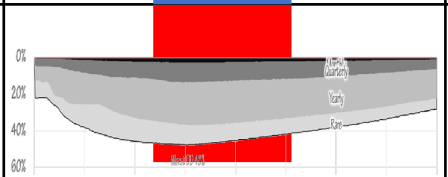
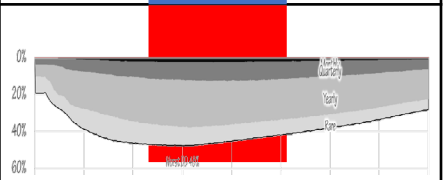
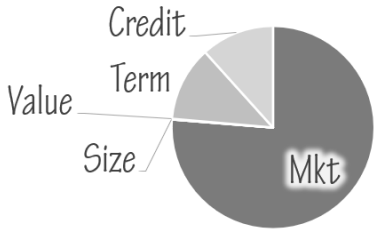
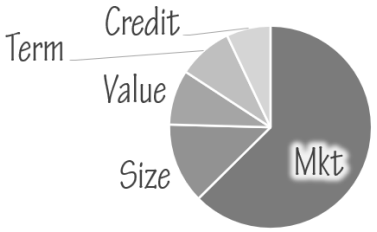
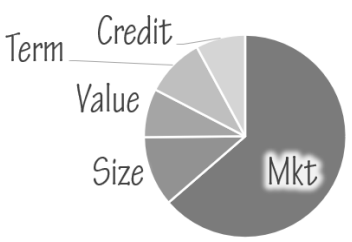
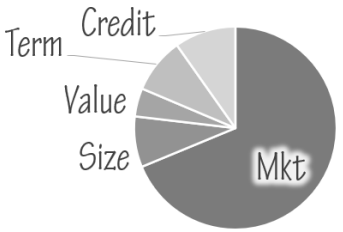
How to add factor diversification to a TDF?

- 2-Funds for Life
  - Put 1.5 x age as a % in a TDF, put the rest in US or WW Small Cap Value (SCV) & rebalance yearly OR
- 2-Funds for Life in 2 Accounts
  - 90% in a TDF, 10% in US or WW SCV, no rebalancing
- 2-Funds for Life for FIRE crowd
  - Put 1.5 x years-to-retirement as % in US or WW SCV and the rest in TDF



1-4-Fund Dynamic, Balanced Portfolios

Accumulation – Starting with $0 at age 25, then contributing monthly increasing with inflation to age 65

	One Fund	Two Funds	Two Funds	Four Funds
	Target Date Fund Vanguard Target Retirement Fund	**90% TDF, 10% US SCV, No Rebalancing** (TDF + SLYV/VSIAX)	**1.5 X Age in TDF, Rest in US SCV** (TDF + SLYV/VSIAX)	**1.5 X Age in TDF,** Rest in 50% US SCV, 40% Int'l SCV, 10% EM (TDF + SLYV/VSIAX + DGS/VEMAX)
Median Nominal Compound *Annual* Growth Rate	10.60% 	11.20% 	11.80% 	12.00% 
Worst *Single* Drawdown	 -42%	 -44%	 -48%	 -48%
Factor Diversification				

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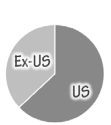
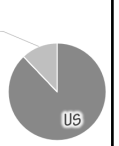
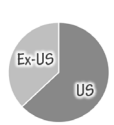
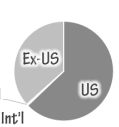
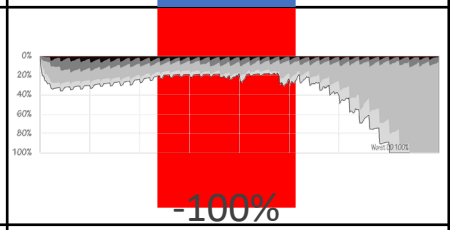
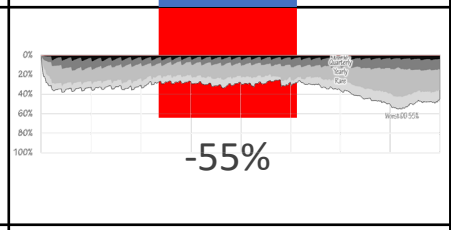
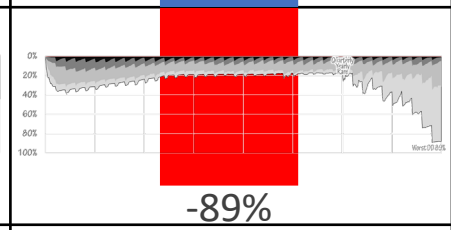
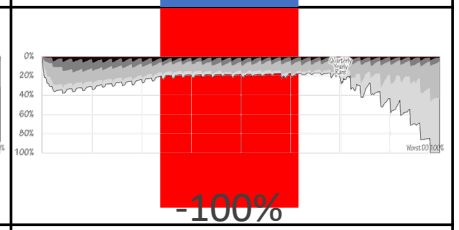
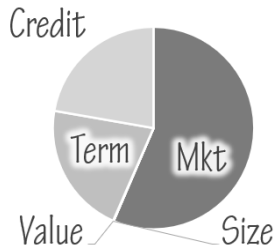
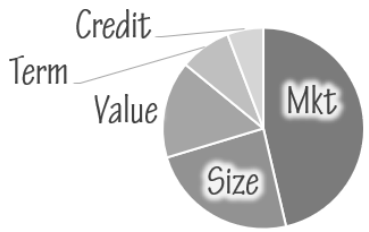
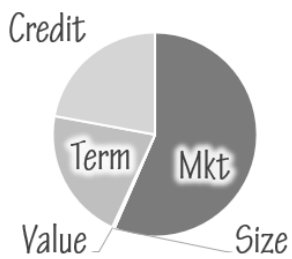
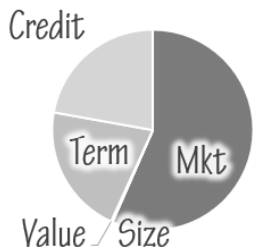
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

1-4-Fund Dynamic, Balanced Portfolios

Retirement – Starting with $1M at age 60, then withdrawing $40k/yr increasing with inflation to age 100

	One Fund	Two Funds	Two Funds	Four Funds
	Target Date Fund Vanguard Target Retirement Fund	**90% TDF, 10% US SCV, No Rebalancing** (TDF + SLYV/VSIAX)	**1.5 X Age in TDF, Rest in US SCV** (TDF + SLYV/VSIAX)	**1.5 X Age in TDF, Rest in 50% US SCV, 40% Int'l SCV, 10% EM** (TDF + SLYV/VSIAX + DGS/VEMAX)
Median Nominal Compound *Annual* Growth Rate	9.20% 	10.10% 	9.30% 	9.30% 
Worst *Single* Drawdown				
Factor Diversification				
30, 40 Yr Survival Rates	**100%, 98%**	**100%, 100%**	**100%, 100%**	**100%, 100%**
20, 30, 40 Yr Safe Withdrawal Rates	**5.4%, 4.4%, 3.7%**	**5.9%, 4.7%, 4.4%**	**5.4%, 4.5%, 4.0%**	**5.4%, 4.5%, 4.0%**

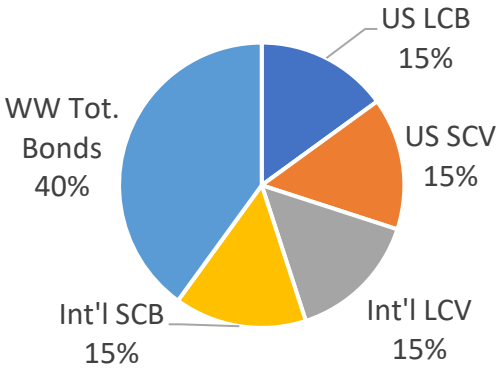
Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

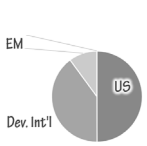
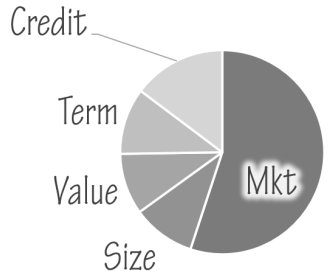
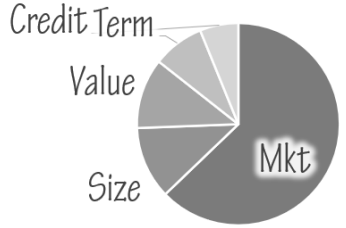
What do we give up by being simple?

Simple vs. Complex *Fixed* Allocation Portfolios

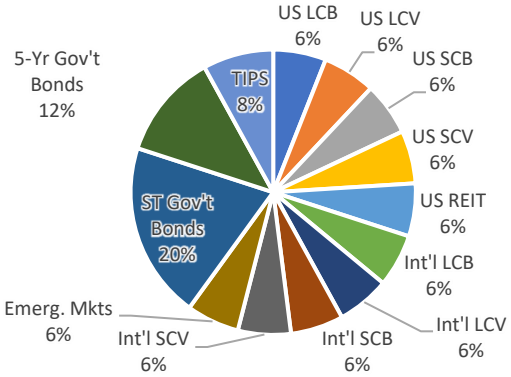
Lumpsum – Rebalanced annually over 40 years

60|40 TrevH



	Five Funds **60|40 TrevH & WW Total Bonds**	13 Funds **60|40 WW Ultimate Buy & Hold & Bonds**
Compound *Annual* Growth Rate	10.70% 	11.00% 
Worst *Single* Drawdown	 -36%	 -35%
Factor Diversification		

60|40 WW UB&H



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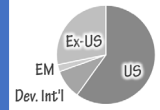
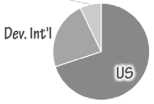
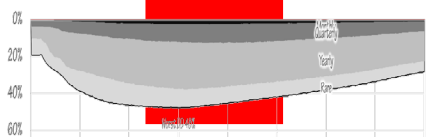
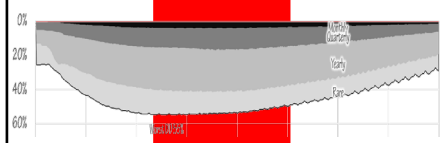
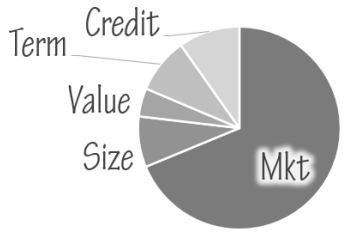
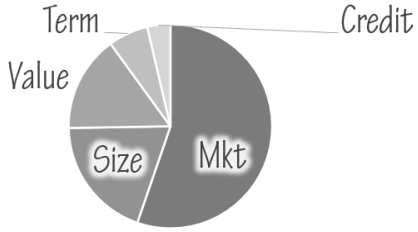
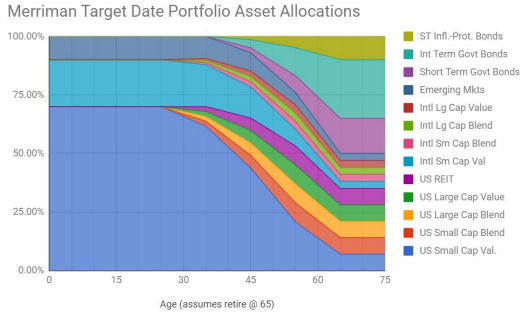
Simple vs. Complex *Dynamic* Allocation Portfolios

Accumulation – $0 initial, regular monthly contributions increasing w/ inflation rebalanced annually from age 25 to 65

	Four Funds	13 Funds
	1.5 X Age in TDF, Rest in 50% US SCV, 40% Int'l SCV, 10% EM	**Merriman Aggressive Glidepath**
Compound *Annual* Growth Rate	12.00% 	13.10% 
Worst *Single* Drawdown	 -48%	 -55%
Factor Diversification		



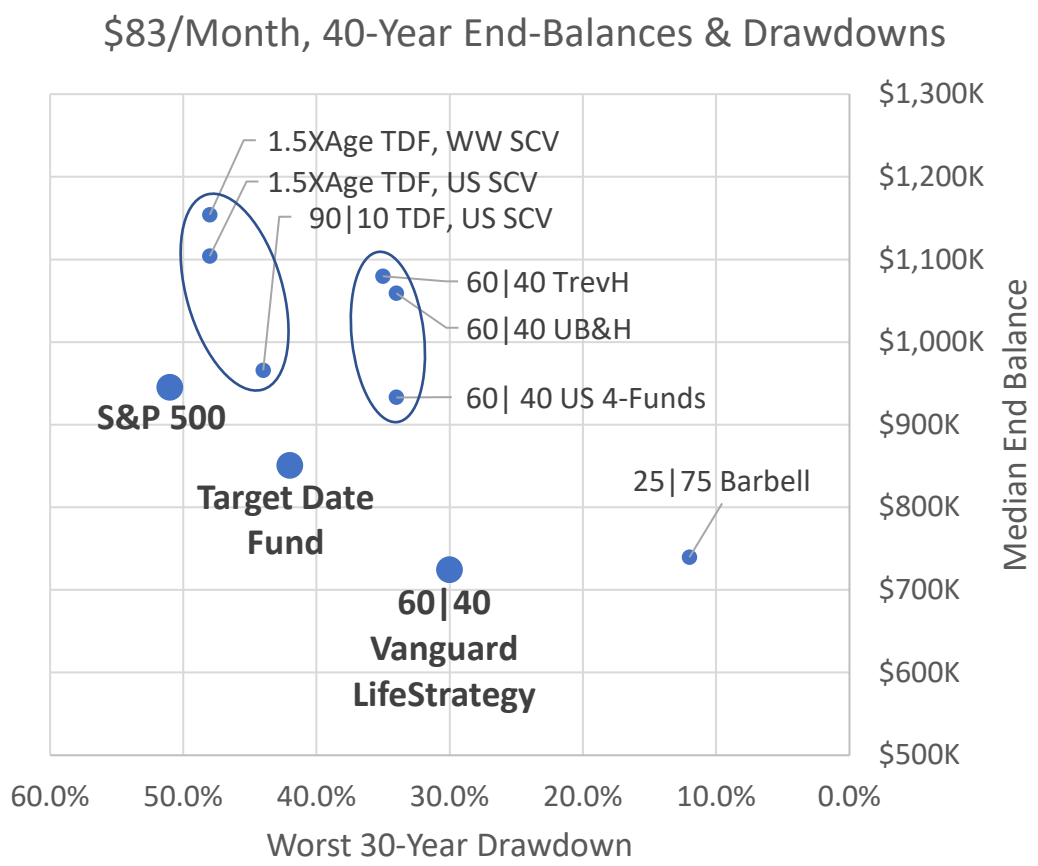
https://paulmerriman.com/custom-tdf-allocation-calculator/

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

How did they compare for accumulators?

Assumes $0 initial balance, then regular contributions of $83/mo. Increasing w/ inflation for 40 years

- Higher median end-balances with smaller worst drawdowns

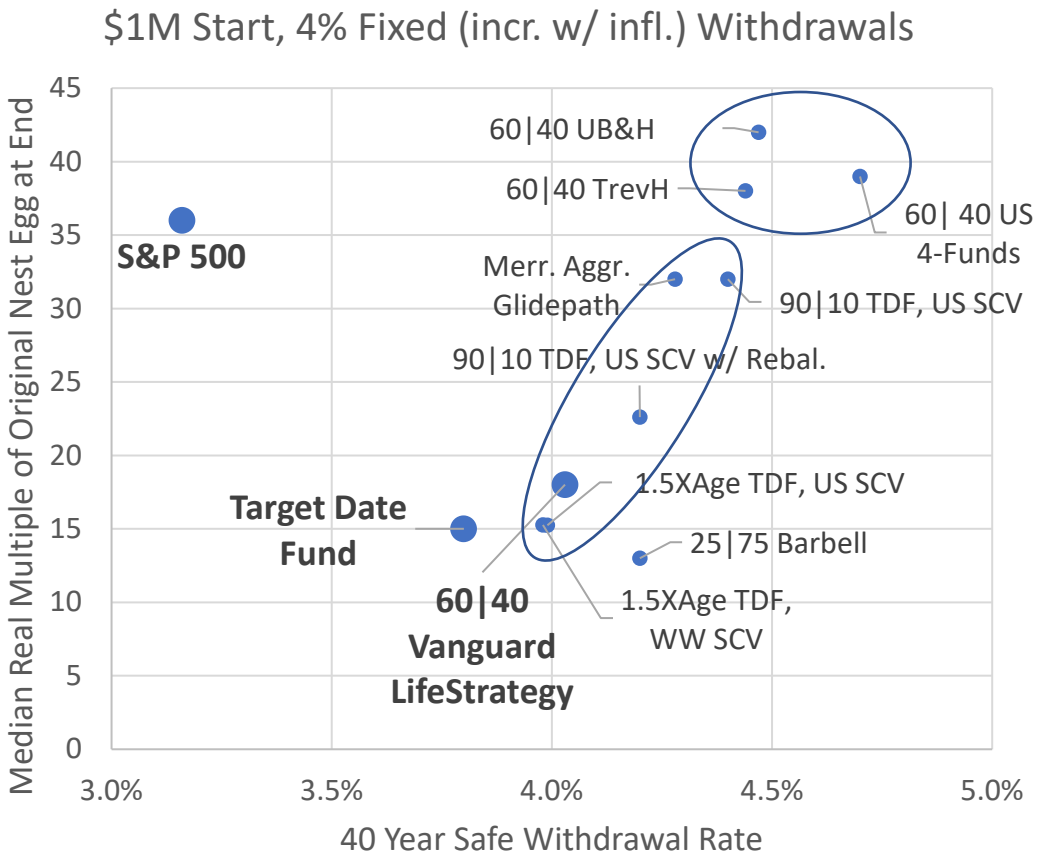


Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

How did they compare for retirees?

Assumes $1M initial balance, then yearly withdrawals of $40k Increasing w/ inflation for 40 years

- Higher safe withdrawal rates and higher median end balances



Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

Summary

- 1-5-Fund simple balanced portfolios have …
  - Broadly diversified across companies/countries/factors/age
  - Improved likely return/drawdown in accumulation
  - Improved safe withdrawal rates and account balances in retirement

- They gave up …
  - Some customization knobs
  - The chance to always own what's hot (e.g. US Large Cap Value)
  - The chance to be with the herd

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years. Lumpsum initial investment with no cashflows. Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

Want to learn more?

- Go to www.paulmerriman.com for books, articles, fund recommendations, videos, podcasts and more.
- ***Sign up*** there for the free newsletter and you'll be sent a link to download ***a free copy of Paul & Rich's new book*** when it's available later this year.

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Any Questions?

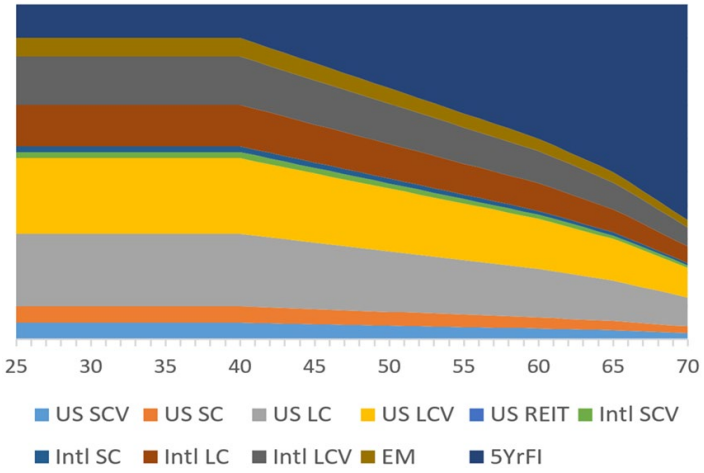
For more information, tables, articles, calculators and more, go to
www.paulmerriman.com

Backup Slides

How can we compare past performance?

50-year rolling historical analysis with circular sampling (e.g. 2019 followed by 1970)

Portfolio Glide Path



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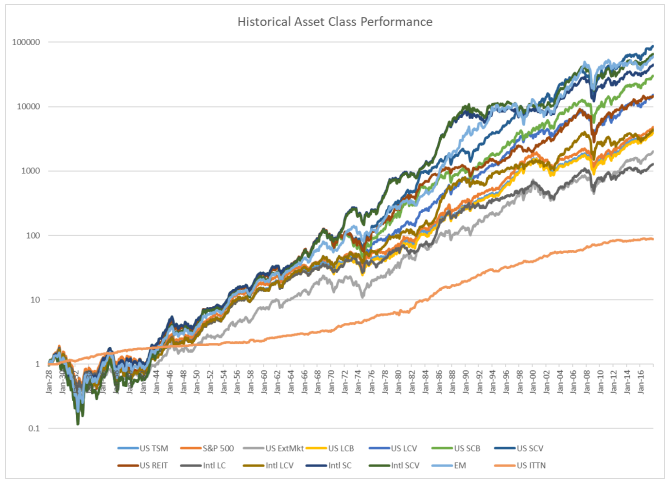
Asset Class Performance Histories



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Analysis of 600 40-Year Scenarios

For accumulation OR Retiree withdrawals

- 1/1/1970 to 12/31/2009
- 2/1/1970 to 1/31/2010
- 3/1/1970 to 2/31/2010
- .
- .
- .
- 12/1/2019 to 11/31/2009

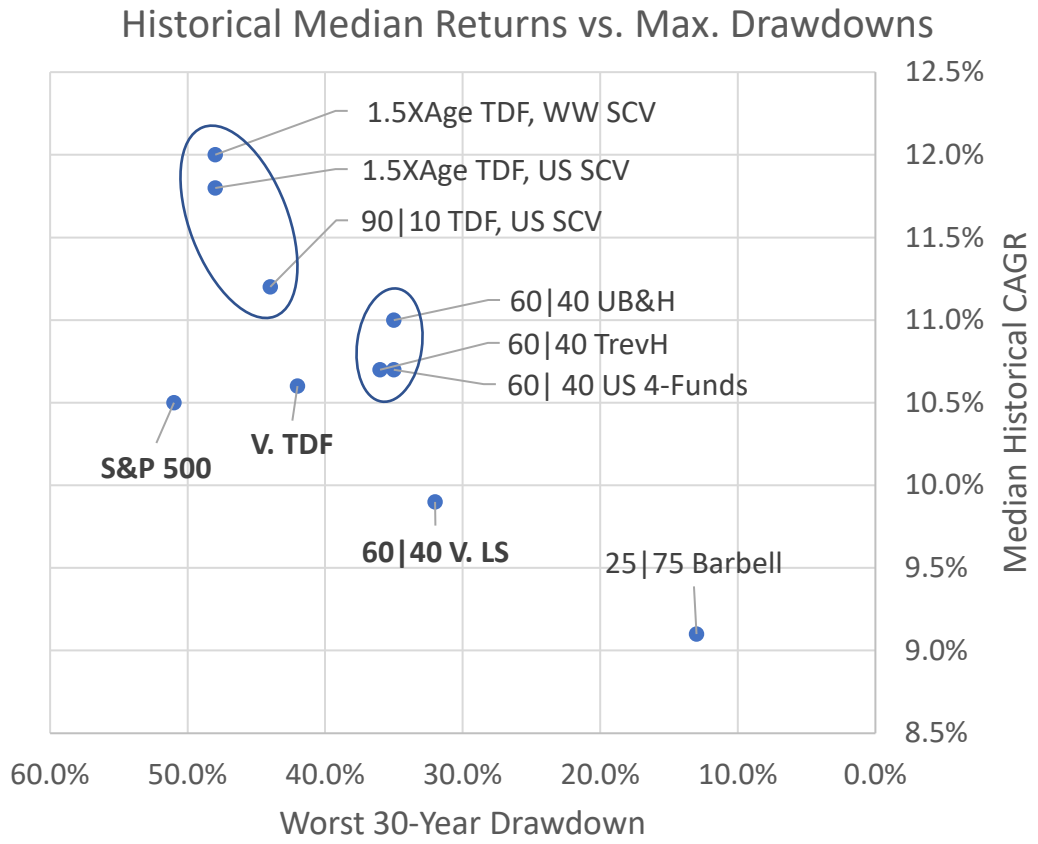
Asset Class History Sources & Modelling

1. Actual fund returns including expenses & dividend reinvesting are used where available
2. Index returns plus representative expense ratios are used where fund returns are not available, and indexes are.
3. A combination of regression modeling, rhyming return substitution and scaling by publicly available emerging markets & international markets return data to fill gaps back to 1970.
4. Rhyming returns are based on the idea that history doesn't repeat, but if often rhymes. For years with missing asset class history, we take the known asset class returns for that year and look for the best match to them among the years where the missing asset class return is known. If the match, determined by the lowest square root of the sum of the squares differences in returns, is good enough, we substitute the known return from that year into the gap. If the match is not above the threshold, we use a regression-model from known years to determine the return.
5. Finally, publicly available data on International Ex-US and Emerging Markets returns are used to scale the overall returns for asset classes in those regions.
6. For more detail on the funds and indexes used, please consult the https://paulmerriman.com/wp-content/uploads/2020/02/Data-DisclosureUBH-WW.pdf

How did they compare for accumulators?

Assumes $0 initial balance, then regular contributions of $83/mo. Increasing w/ inflation for 40 years

- Higher CAGRs and lower worst drawdowns



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Ex-US vs. US Telltale Chart

Does bond choice matter?

	60% UB&H, 40% WW Total Bonds	60% UB&H, 40% US Total Bonds	60% UB&H, 40% Int. Term US Gov't Bonds	60% UB&H, 20% in Short-Term, 12% in Int. Term and 8% in TIPS Gov't Bonds
Nominal CAGR for Lumpsum Inv.	10.6%	11.0%	10.9%	11%
20, 30, 40 Yr Safe Withdrawal Rates	6.1%, 4.9%, 4.6%	6.1%, 5.0%, 4.7%	6.2%, 5.0%, 4.7%	6.1%, 4.9%, 4.6%
40-Year Worst Drawdown	36%	36%	33%	35%

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

How often to rebalance?

WW 2FFL Strategy with contributions of $83/mo+inflation from age 25 to 65

	2FFL – 1.5XAge in TDF, Rest Split in US SCV and Int'l SCV Monthly Rebalance	2FFL – 1.5XAge in TDF, Rest Split in US SCV and Int'l SCV Yearly Rebalance	2FFL – 1.5XAge in TDF, Rest Split in US SCV and Int'l SCV Rebalance Every Other Year	2FFL – 1.5XAge in TDF, Rest Split in US SCV and Int'l SCV Rebalance Every 5 Years	2FFL – 1.5XAge in TDF, Rest Split in US SCV and Int'l SCV No Rebalancing
Nominal CAGR	11.9%	12%	12.1%	12.4%	13.5%
Best, **Median** & Worst End Balances at 40 Years	$2,0M **$1.14M** $0.41M	$2.08M **$1.17M** $0.41M	$2.13M **$1.21M** $0.42M	$2.23M **$1.27M** $0.42M	$3.89M **$2.04M** $0.36M
40-Year Worst Drawdown	48%	48%	48%	49%	54%
Worst Drawdown at Age 65	28%	28%	29%	30%	53%

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

How often to rebalance?

60|40 US 4-Fund Combo|5-Yr. US Gov't Bonds w/ contributions of $83/mo+inflation from age 25 to 65

	60|40 US 4-Fund Combo, 5-Yr. US Gov't Bonds Monthly Rebalance	60|40 US 4-Fund Combo, 5-Yr. US Gov't Bonds Yearly Rebalance	60|40 US 4-Fund Combo, 5-Yr. US Gov't Bonds Rebalance Every Other Year	60|40 US 4-Fund Combo, 5-Yr. US Gov't Bonds Rebalance Every 5 Years	60|40 US 4-Fund Combo, 5-Yr. US Gov't Bonds No Rebalancing
Nominal CAGR	10.8%	10.9%	10.8%	10.8%	11.3%
Best, **Median** & Worst End Balances at 40 Years	$1.50M **$0.90M** $0.32M	$1.52M **$0.91M** $0.31M	$1.54M **$0.90M** $0.33M	$1.57M **$0.91M** $0.32M	$2.02M **$1.01M** $0.30M
40-Year Worst Drawdown	33%	31%	31%	35%	50%
Worst Drawdown at Age 65	33%	31%	31%	34%	50%

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

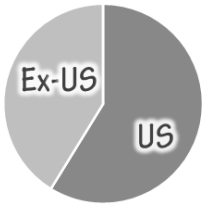
Bond Percentage Impact on SWRs

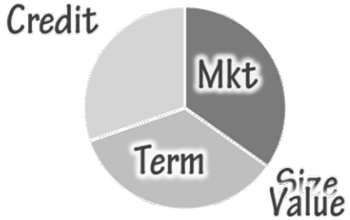
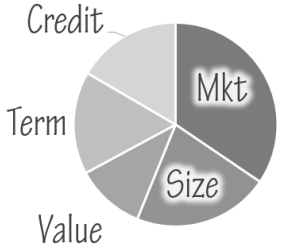
Bonds are US 5-Yr. Gov't, Equities are 25% Each US LCB, US SCV, Int'l LCV, Int'l SCB (TrevH)
Backtested using 1970-2019 returns, assuming a lumpsum investment & annual rebalancing

	20% Equities, 80% Bonds	40% Equities, 60% Bonds	60% Equities, 40% Bonds	80% Equities, 20% Bonds	90% Equities, 10% Bonds	100% Equities
20 Yr. SWR	5.65%	6.07%	6.18%	5.91%	5.75%	5.50%
30 Yr. SWR	4.66%	4.92%	5.02%	4.96%	4.87%	4.70%
40 Yr. SWR	4.18%	4.53%	4.72%	4.73%	4.67%	4.53%
Median ***real*** multiple of nest egg left after 40 years of 4% fixed withdrawals	5.5 X	8.7 X	13 X	18 X	21 X	25 X

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years.
Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

40/60 Portfolios w/ 3 & 5 factor exposures



	One Fund	Three Funds
	40% Stock, 60% Bonds **Vanguard LifeStrategy Conservative Growth Fund (VSCGX)**	**40% Stock, 60% Bonds** **25% US SCV, 15% Int'l SCV, 60% WW Total Bonds (SLYV, DLS, BNDW)**
Compound *Annual* Growth Rate	9.10%	10.30%
Worst *Single* Drawdown	-22%	-23%
Factor Diversification		

Backtested using proprietary 1970-2019 return sequences over 40-year periods. All 600 starting months used with circular bootstrapping to avoid oversampling middle years. Lumpsum initial investment with no cashflows. Factor weights determined by multiplying median dollar-time-weighted allocations by practical factor loads from Portfolio Visualizer factor-weight regressions of Merriman-recommended best-in-class ETF funds.

Upcoming Webinars

Register at www.aaii.com/webinars

Charles Rotblut on Putting Investing Preferences to Work in Your Portfolio
Wednesday, October 28, 2020, 7:30 p.m. CDT

More Webinars Coming in November and December! Stay Tuned!

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