



ENVISION YOUR FINANCIAL FUTURE & PLAN HOW TO GET THERE

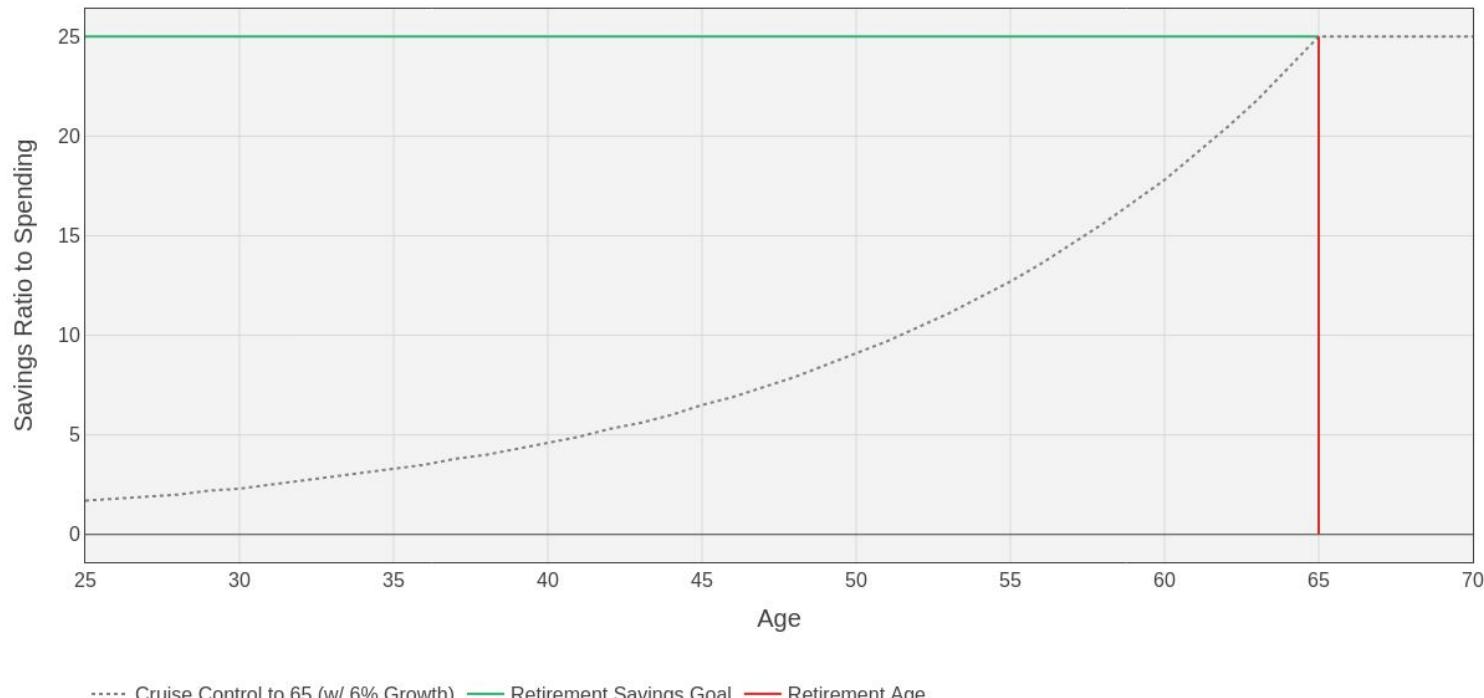
Steve Hanly
Engineered Portfolio
October, 2025

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- 05 PREPARE THE NEXT GENERATION

QUANTIFY YOUR GOAL & CHART YOUR COURSE

IDENTIFY THE GOAL AND CRUISE CONTROL LINE



PICK YOUR PERSONA & PATH



..... Cruise Control to 65
--- Cruise Control to 60

APPRECIATE THE VALUE OF INVESTMENT RETURNS

↓ Increasing Salary ↓

4% Salary Growth Rate

		Contribution %		
		10%	15%	20%
Market	4%	\$0.87 M	\$1.31 M	\$1.75 M
Rate of Return	6%	\$1.29 M	\$1.94 M	\$2.59 M
Rate of Return	8%	\$1.98 M	\$2.97 M	\$3.96 M

6% Salary Growth Rate

		Contribution %		
		10%	15%	20%
Market	4%	\$1.20 M	\$1.80 M	\$2.40 M
Rate of Return	6%	\$1.72 M	\$2.58 M	\$3.45 M
Rate of Return	8%	\$2.56 M	\$3.84 M	\$5.12 M

8% Salary Growth Rate

		Contribution %		
		10%	15%	20%
Market	4%	\$1.68 M	\$2.52 M	\$3.35 M
Rate of Return	6%	\$2.34 M	\$3.51 M	\$4.67 M
Rate of Return	8%	\$3.37 M	\$5.06 M	\$6.74 M

↓ Increasing Contribution % ↓

10% Contribution % of Salary

		Salary Growth Rate		
		4%	6%	8%
Market	4%	\$0.87 M	\$1.20 M	\$1.68 M
Rate of Return	6%	\$1.29 M	\$1.72 M	\$2.34 M
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15% Contribution % of Salary

		Salary Growth Rate		
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↓ Increasing Investment Performance ↓

4% Investment Performance

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Salary	4%	\$0.87 M	\$1.31 M	\$1.75 M
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DEVELOP YOUR INVESTMENT STRATEGY OF STRATEGIES

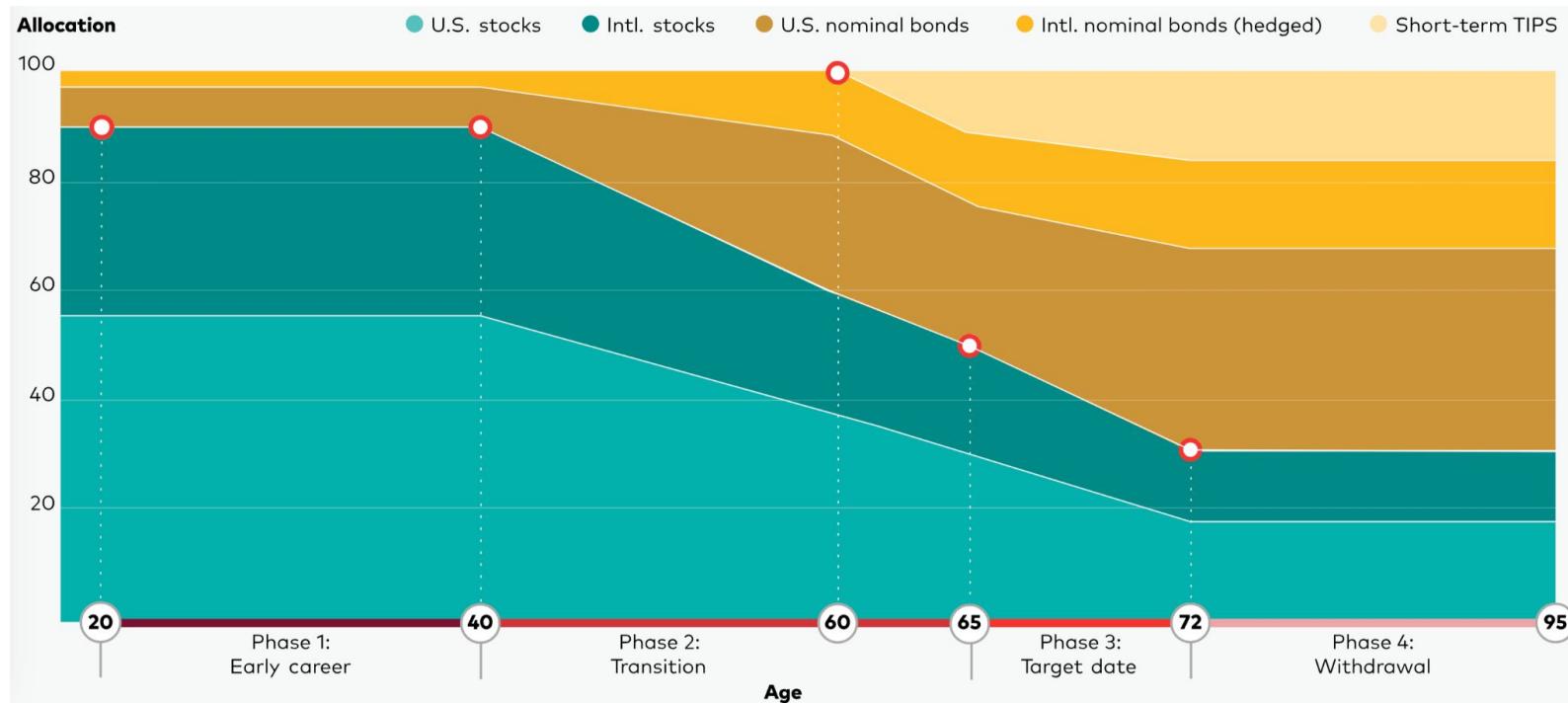
ESTABLISH RULES TO ABIDE BY

1. **Accurate reporting beats pride.** Telling yourself and your spouse the truth about your goals and performance may hurt sometimes; but it will pay dividends in the future for you both.
2. **Keep it simple yet fun.** Enable yourself to stick to the plan. But empower yourself to act.
3. **Learn enough to pay minimally.** Teach yourself what's needed to avoid fees and taxes at all costs.
4. **Apply good investment theory to your unique self.** Data helps, but only you know yourself well enough to use it in a way that benefits your needs.
5. **Maximize your impact, not your wealth.** Money is a means to an end. Use it or give it away.

DIVERSIFY ACROSS STRATEGIES

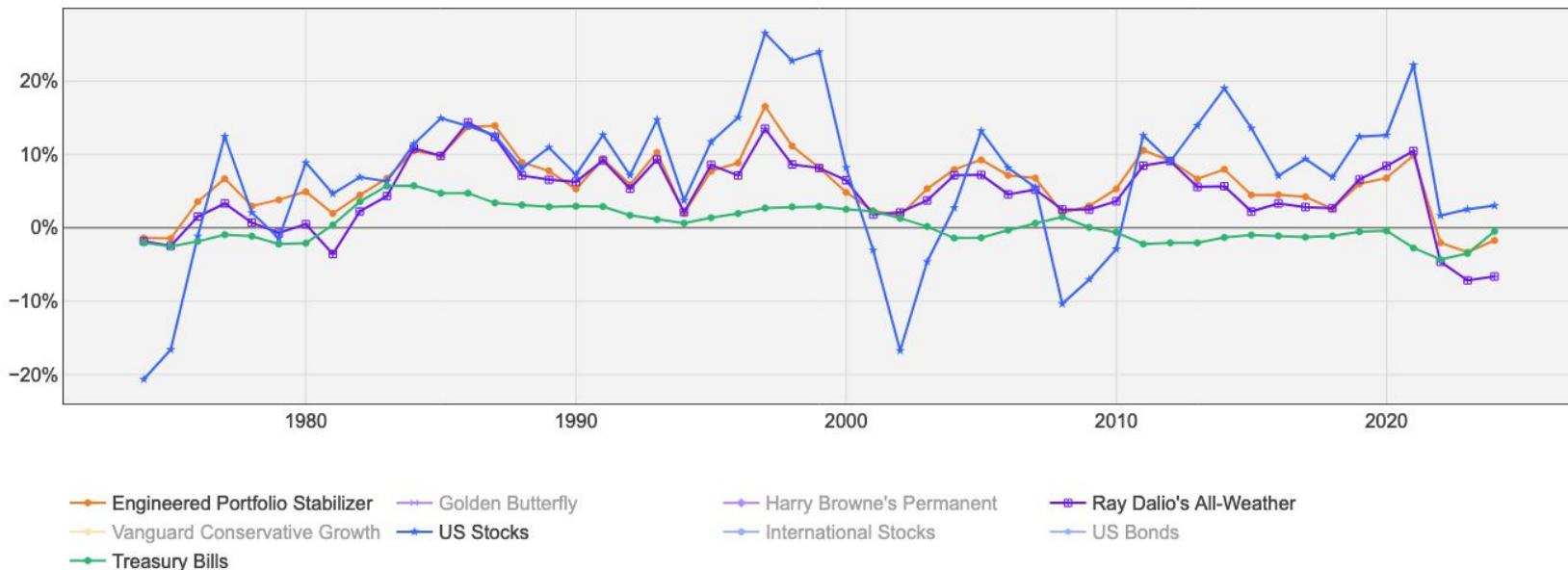
Strategy / Type	My Target Allocation	Recommended Allocation
Cash	5%	0% to 10%
All-Weather Portfolio	35%	15% to 50%
Index Target Date Funds	35%	35% to 70%
Momentum Strategy	22%	0% to 30%
Mad Money	3%	0% to 15%

LEVERAGE INDEX FUNDS TO TIE THE BENCHMARK

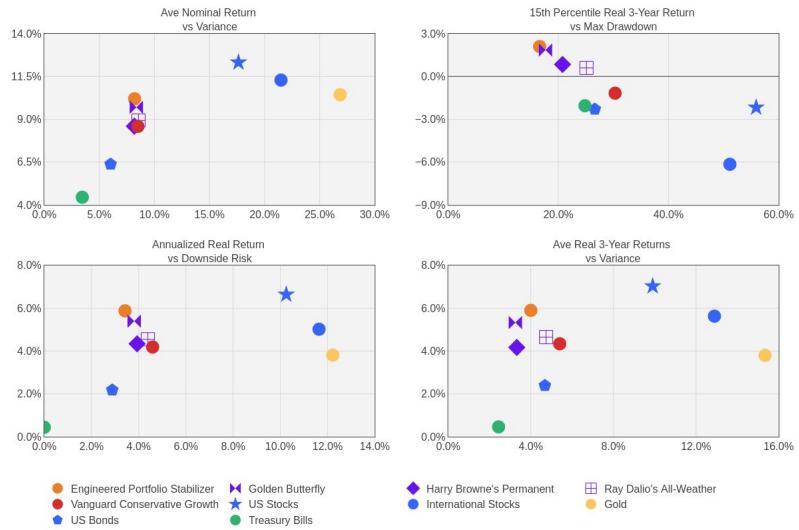
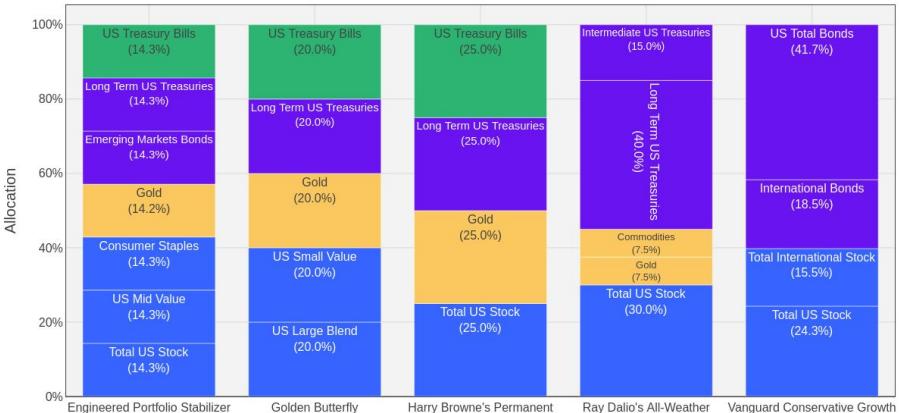


USE AN “ALL-WEATHER” TO STABILIZE RETURNS

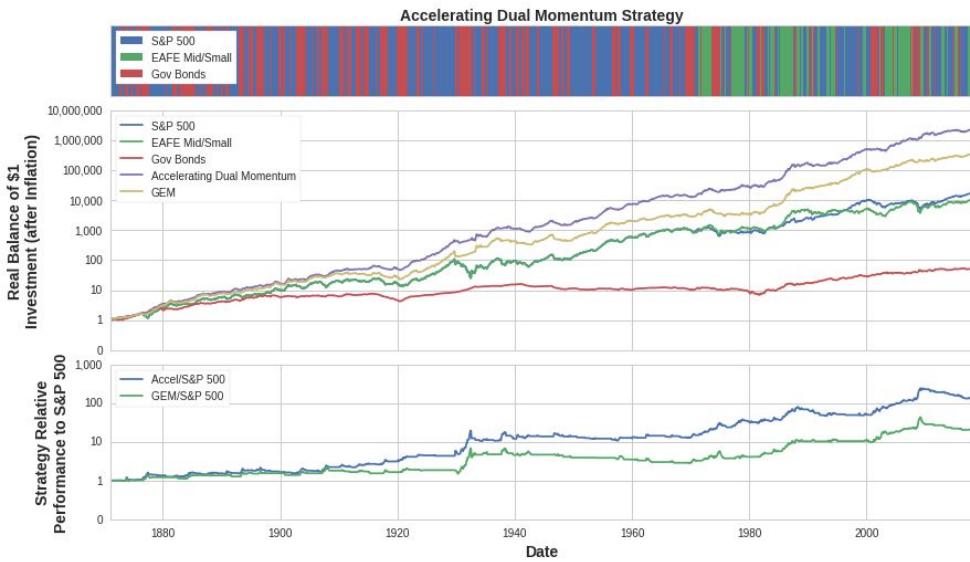
Annualized 3-Year Rolling Returns from 1972 through 2024



USE AN “ALL-WEATHER” TO STABILIZE RETURNS



CONSIDER A MOMENTUM STRATEGY



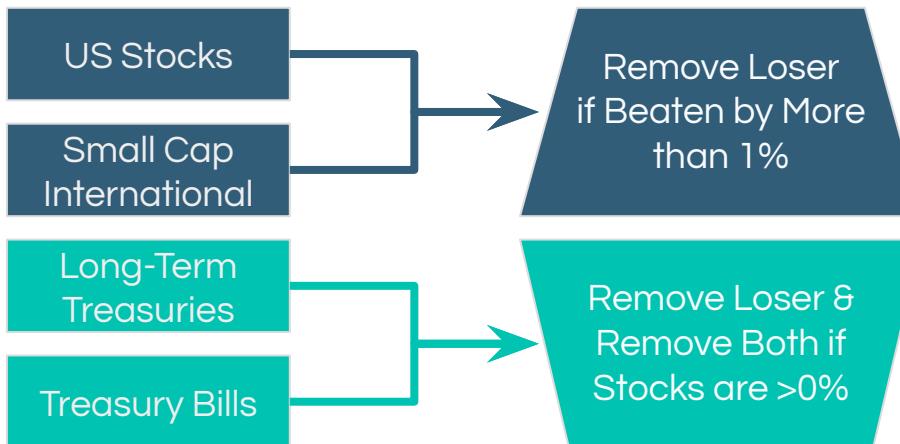
Making the trades is difficult to actually stick to and follow.

Whipsaws are Frustrating and Defeating.

Seeking “safety” in Long Term Treasuries doesn't always work.

ENGINEERED DUAL MOMENTUM RULES

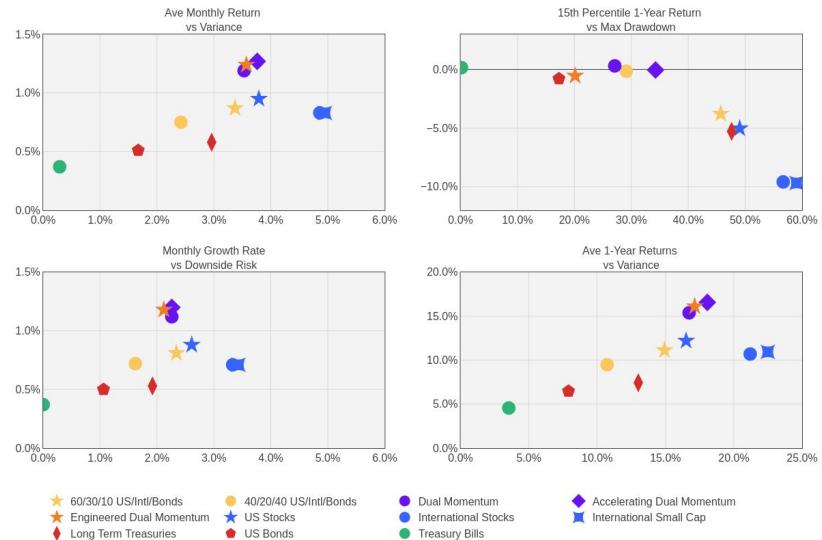
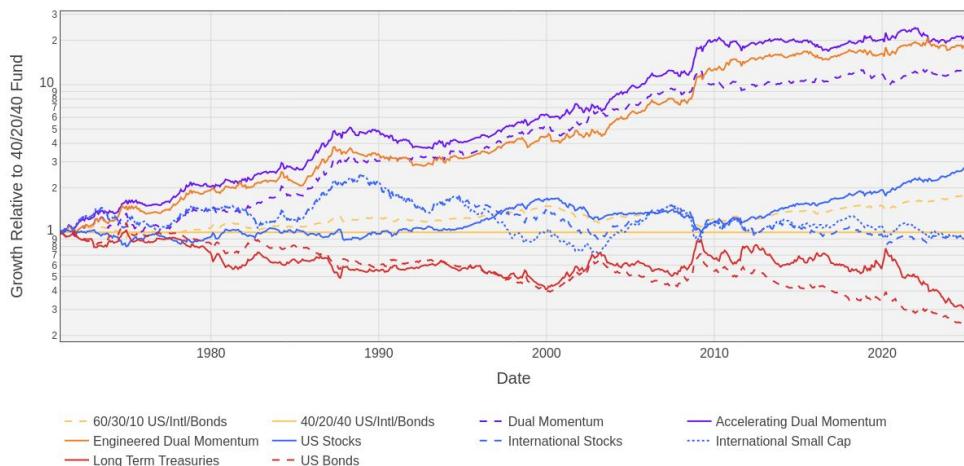
CALCULATE 3 + 6 MONTH RETURN



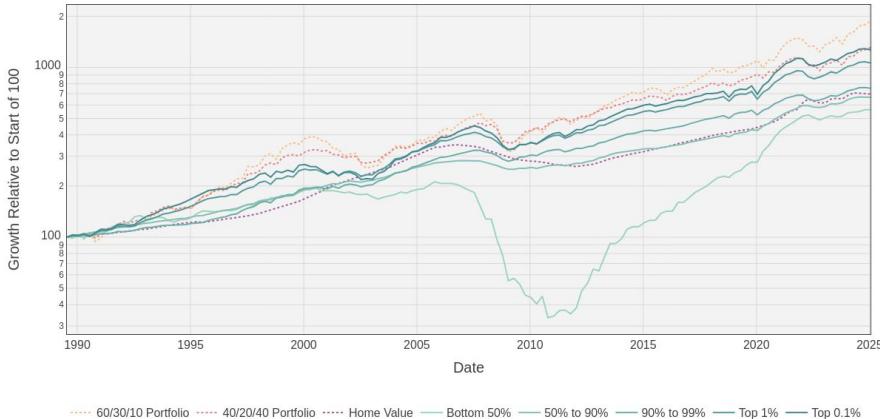
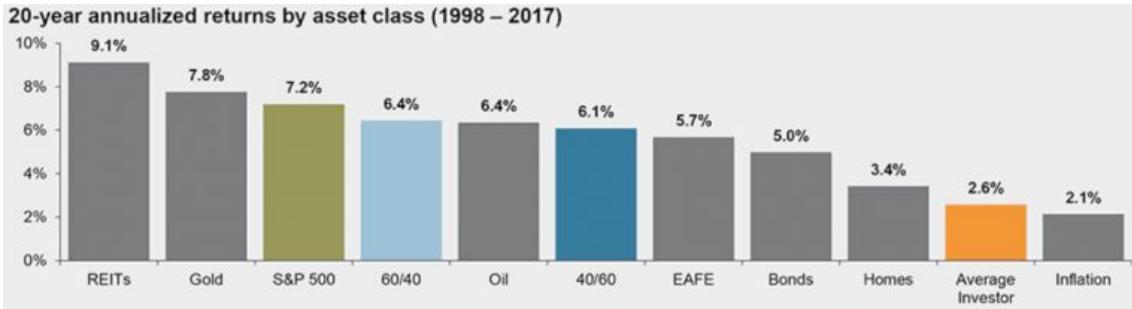
WEIGHT SELECTION

- 1) Remove Assets beaten by More than 1%
- 2) Weight Allocation Proportional to Score

RIDE THE TRENDS... IF YOU CAN STICK TO IT

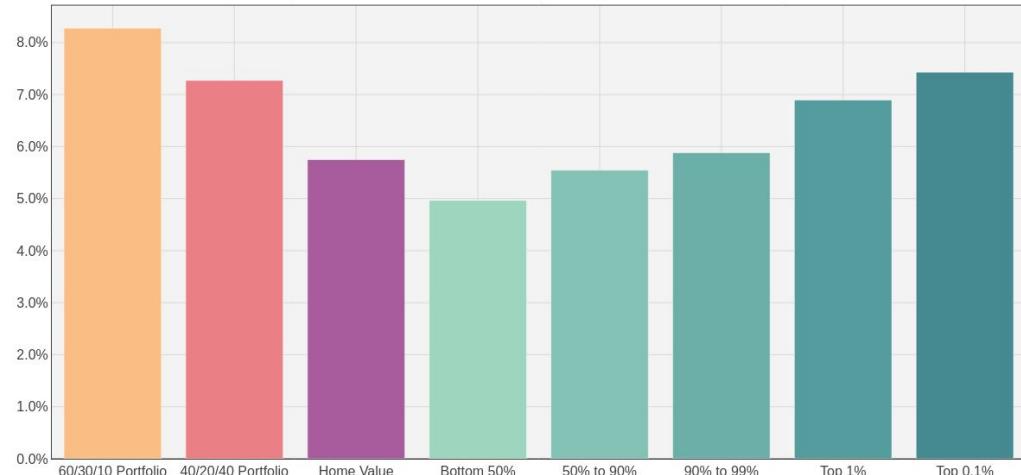


HAVE SOME FUN WITH LIMITED MAD MONEY



BUT REMEMBER THAT 7%+ RETURNS ARE GREAT!

Annualized Returns from Q3 1989 to 2025



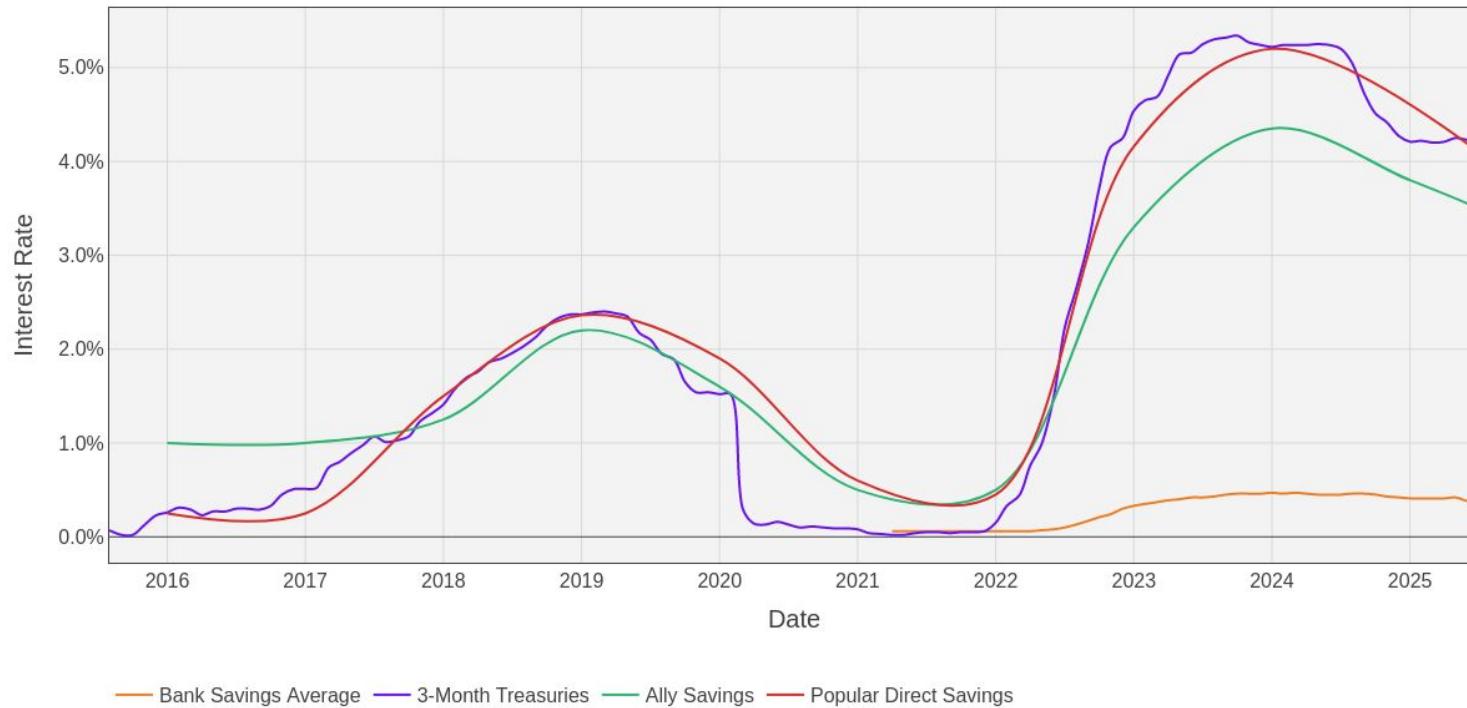
	60/30/10 Portfolio	40/20/40 Portfolio	Home Value	Bottom 50%	50% to 90%	90% to 99%	Top 1%	Top 0.1%
60/30/10 Portfolio	1.00	0.97	0.16	0.36	0.53	0.69	0.71	0.70
40/20/40 Portfolio		1.00	0.10	0.32	0.50	0.66	0.69	0.68
Home Value			1.00	0.52	0.73	0.43	0.31	0.28
Bottom 50%				1.00	0.67	0.46	0.47	0.48
50% to 90%					1.00	0.79	0.75	0.74
90% to 99%						1.00	0.92	0.87
Top 1%							1.00	0.98
Top 0.1%								1.00

DIVERSIFY ACROSS STRATEGIES

Strategy / Type	My Target Allocation	Recommended Allocation
Cash	5%	0% to 10%
All-Weather Portfolio	35%	15% to 50%
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PUT CASH TO WORK, BUT NOT
ENOUGH TO DRAG RETURNS

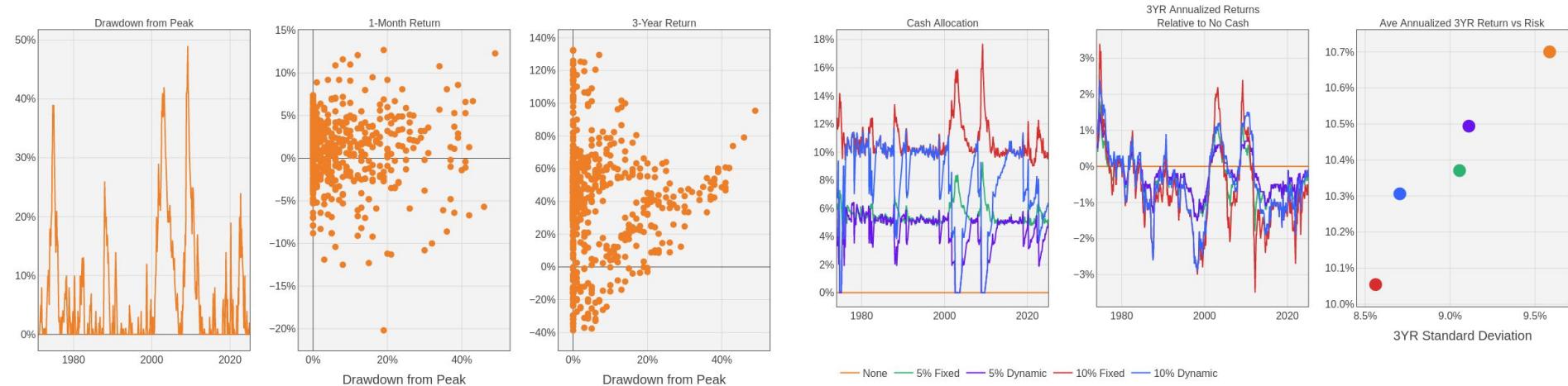
SAVE 3-MONTHS OF EXPENSES IN A HYSA



SAVE THE REST IN CASH EQUIVALENTS



DEPLOY CASH DURING DOWNTURNS



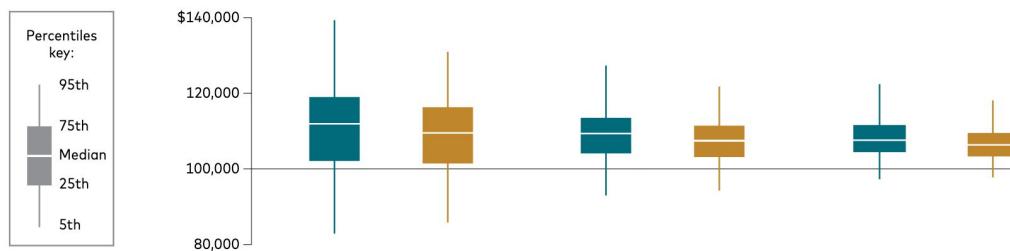
- Deploy 30% of cash when at a 10% drawdown
- Deploy 60% of cash when at a 20% drawdown
- Deploy All of your cash when at over a 30% drawdown

APPLY DOLLAR COST AVERAGING IF NECESSARY

FIGURE 3

An LS strategy typically yields higher wealth compared with CA

Historical wealth ranges for LS versus CA strategies after a one-year investment period



Percentile	100% equity		60% equity/40% bonds		40% equity/60% bonds	
	Lump-sum	Cost averaging	Lump-sum	Cost averaging	Lump-sum	Cost averaging
95th	\$139,453	\$131,012	\$127,631	\$121,967	\$122,673	\$118,303
75th	119,063	116,286	113,661	111,545	111,686	109,640
50th	111,940	109,580	109,360	107,453	107,648	106,400
25th	102,070	101,531	104,082	103,134	104,420	103,290
5th	82,947	85,906	92,720	94,043	97,144	97,701

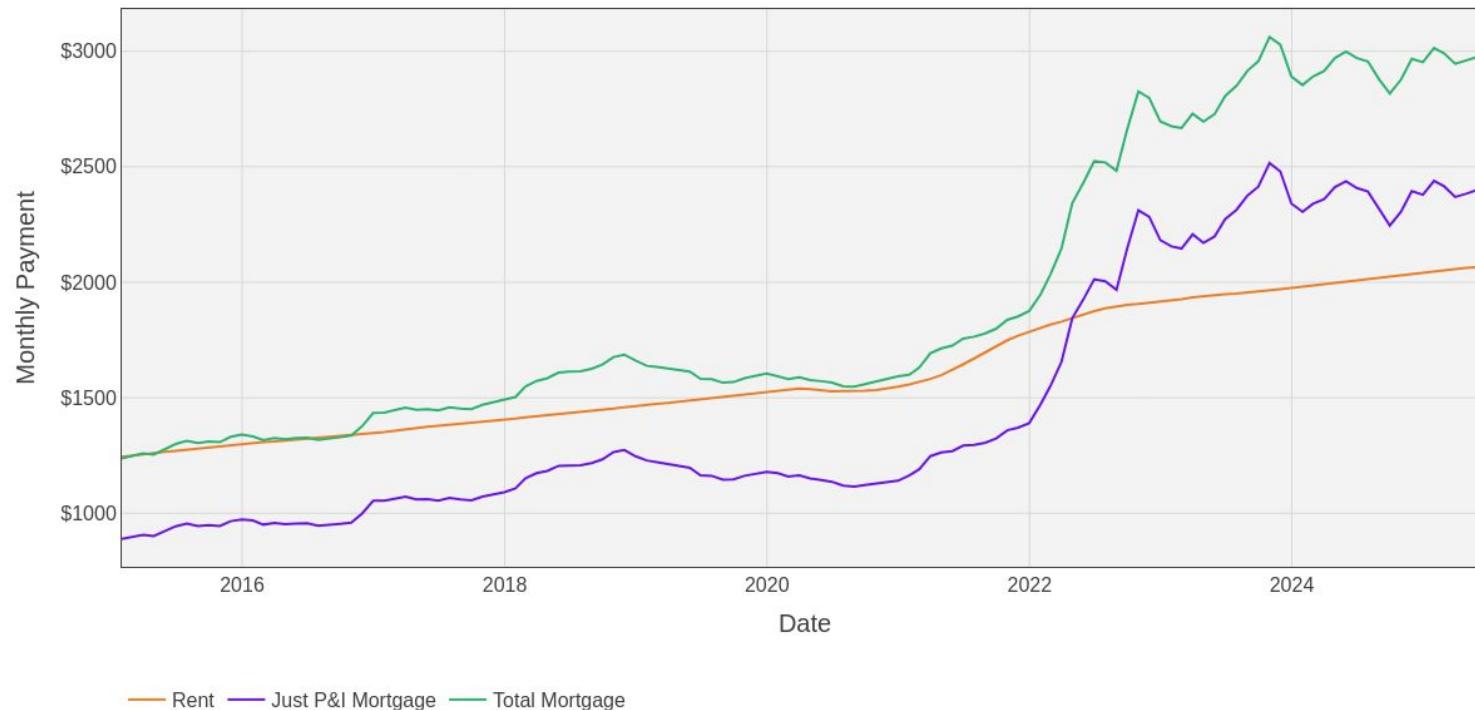
Notes: This figure is for illustrative purposes only and does not represent any particular investment. Percentiles are for a one-year rolling investment period with a starting wealth of \$100,000 for each of three portfolios (100% equity, 60% equity/40% bonds, and 40% equity/60% bonds) using a lump-sum strategy versus a three-month cost averaging split (splitting a lump sum into three equal parts and investing each one a month apart). Calculations are made using MSCI World Index and Bloomberg U.S. Aggregate Bond Index returns for 1976–2022.

Source: Vanguard.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

LIVE A LIFE WORTH LIVING IN APPRECIABLE ASSETS

COMPARE AVERAGE RENT & MORTGAGE COSTS



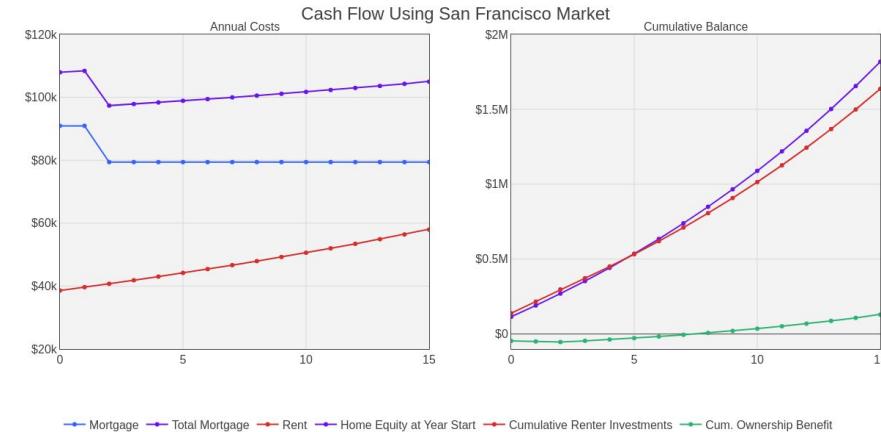
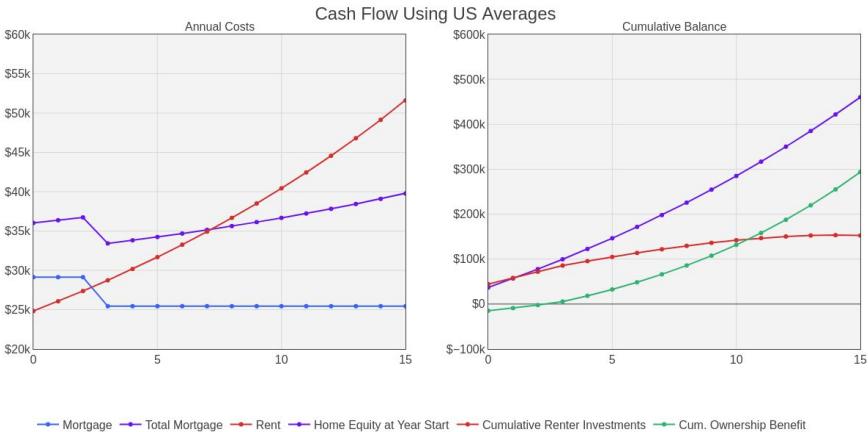
CONSIDER YOUR TARGET REAL ESTATE MARKET



BUILD A CALCULATOR!

Assumptions	United States (Use for Calc)	New York, NY	Los Angeles, CA	Chicago, IL	Dallas, TX	Houston, TX	Washington, DC	Philadelphia, PA	Miami, FL	Atlanta, GA	Boston, MA	Phoenix, AZ	San Francisco, CA
Home Value	\$369,147	\$712,842	\$972,837	\$344,763	\$375,293	\$313,936	\$587,158	\$385,435	\$480,874	\$388,897	\$737,436	\$456,017	\$1,152,144
Value Appreciation	4.4%	4.7%	5.9%	3.1%	4.2%	3.6%	4.6%	4.5%	5.8%	3.8%	4.8%	4.6%	5.5%
Price to Rent	14.9	16.6	26.9	12.8	17.4	15.1	19.5	16.4	14.4	16.7	19.2	20.5	29.9
Rent Appreciation	5.0%	3.7%	4.8%	4.1%	4.5%	3.0%	3.4%	4.2%	6.0%	6.0%	4.1%	6.4%	2.8%
Total Mortgage Ratio	27.8%	38.1%	36.7%	23.7%	43.1%	35.9%	33.0%	36.3%	36.4%	32.8%	33.7%	24.2%	44.1%
Interest Rate	6.5%	↑↑↑ Assumptions from Zillow Data ↑↑↑											
Down Payment	10.0%												
Mortgage Insurance	1.0%	Assumptions Independent to the Specific Real Estate Market											
Closing Costs	2.0%												
Rental Investment Growth	6.0%	↓↓↓ Calculated Values Using the Assumptions Above and to the Left ↓↓↓											
Calculated Mortgage	\$2,428	\$4,688	\$6,398	\$2,267	\$2,468	\$2,065	\$3,862	\$2,535	\$3,163	\$2,558	\$4,850	\$2,999	\$7,577
Calculated Rent	\$2,069	\$3,583	\$3,012	\$2,253	\$1,793	\$1,734	\$2,505	\$1,955	\$2,784	\$1,940	\$3,209	\$1,854	\$3,215
Calculated Total Mortgage	\$3,002	\$6,053	\$7,504	\$2,802	\$3,242	\$2,687	\$4,689	\$3,245	\$4,174	\$3,194	\$5,932	\$3,448	\$8,995
Ownership Benefit 5YR	\$32,505	\$21,918	\$33,107	\$27,455	-\$7,363	\$49	\$5,969	\$12,563	\$79,107	\$3,318	\$15,720	\$16,847	-\$27,316
Ownership Benefit 7YR	\$66,130	\$60,723	\$86,272	\$56,935	\$3,805	\$11,536	\$30,789	\$34,605	\$142,454	\$23,419	\$52,938	\$47,318	-\$5,310
Ownership Benefit 10YR	\$131,688	\$133,800	\$190,058	\$114,078	\$26,338	\$32,876	\$77,021	\$76,922	\$266,552	\$66,016	\$124,149	\$109,985	\$35,586
Year	Home Value at Year Start	Loan Value at Year Start	Mortgage	Principal Paid Last Year	Home Equity at Year Start	Total Mortgage	Rent	Price to Rent	Mortgage Minus Rent for That Year	Closing Costs	Cumulative Cash Flow	Cumulative Renter Investments	Cum. Ownership Benefit
0	\$369,147	\$332,232	\$29,133		\$36,915	\$36,026	\$24,823	14.9	\$11,203	\$7,383	-\$7,383	\$44,298	-\$14,766
1	\$385,218	\$328,386	\$29,133	\$3,846	\$56,832	\$36,370	\$26,064	14.8	\$10,306		-\$18,586	\$58,158	-\$9,030
2	\$401,988	\$324,289	\$29,133	\$4,096	\$77,699	\$36,732	\$27,367	14.7	\$9,365		-\$28,892	\$71,954	-\$2,295
3	\$419,489	\$319,927	\$25,441	\$4,363	\$99,563	\$33,420	\$28,735	14.6	\$4,686		-\$38,257	\$85,637	\$5,536
4	\$437,752	\$315,280	\$25,441	\$4,646	\$122,472	\$33,819	\$30,171	14.5	\$3,648		-\$42,943	\$95,460	\$18,256
5	\$456,810	\$310,332	\$25,441	\$4,948	\$146,478	\$34,238	\$31,679	14.4	\$2,559		-\$46,591	\$104,836	\$32,505
6	\$476,697	\$305,062	\$25,441	\$5,270	\$171,635	\$34,678	\$33,263	14.3	\$1,415		-\$49,150	\$113,685	\$48,416
7	\$497,450	\$299,450	\$25,441	\$5,612	\$198,001	\$35,139	\$34,925	14.2	\$214		-\$50,565	\$121,921	\$66,130
8	\$519,107	\$293,472	\$25,441	\$5,977	\$225,635	\$35,624	\$36,671	14.2	-\$1,047		-\$50,779	\$129,450	\$85,802
9	\$541,707	\$287,107	\$25,441	\$6,366	\$254,600	\$36,133	\$38,504	14.1	-\$2,371		-\$49,732	\$136,170	\$107,595
10	\$565,290	\$280,327	\$25,441	\$6,780	\$284,963	\$36,667	\$40,429	14.0	-\$3,762		-\$47,360	\$141,969	\$131,688

MODEL OUT YOUR ASSUMPTIONS



Ownership Benefit after 5 Years	US Average					Miami, FL					Boston, MA					San Francisco, CA								
			Down Payment					Down Payment					Down Payment					Down Payment						
	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%
		4%	\$34 K	\$40 K	\$53 K	\$67 K		4%	\$81 K	\$89 K	\$101 K	\$119 K		4%	\$28 K	\$33 K	\$59 K	\$87 K		4%	-\$16 K	\$4 K	\$32 K	\$76 K
		6%	\$28 K	\$33 K	\$42 K	\$49 K		6%	\$73 K	\$79 K	\$86 K	\$95 K		6%	\$15 K	\$16 K	\$35 K	\$48 K		6%	-\$42 K	-\$27 K	-\$10 K	\$10 K
		8%	\$22 K	\$24 K	\$30 K	\$29 K		8%	\$65 K	\$68 K	\$70 K	\$68 K		8%	\$0 K	-\$3 K	\$9 K	\$6 K		8%	-\$69 K	-\$61 K	-\$56 K	-\$60 K
		10%	\$16 K	\$16 K	\$17 K	\$7 K		10%	\$56 K	\$57 K	\$53 K	\$40 K		10%	-\$15 K	-\$23 K	-\$20 K	-\$40 K		10%	-\$98 K	-\$96 K	-\$104 K	-\$136 K

Ownership Benefit after 10 Years	US Average					Miami, FL					Boston, MA					San Francisco, CA								
			Down Payment					Down Payment					Down Payment					Down Payment						
	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%	Investment	Return	5%	10%	20%	40%
		4%	\$144 K	\$154 K	\$174 K	\$200 K		4%	\$284 K	\$297 K	\$317 K	\$351 K		4%	\$173 K	\$183 K	\$224 K	\$276 K		4%	\$119 K	\$150 K	\$199 K	\$280 K
		6%	\$125 K	\$132 K	\$145 K	\$156 K		6%	\$258 K	\$267 K	\$277 K	\$291 K		6%	\$122 K	\$124 K	\$152 K	\$173 K		6%	\$15 K	\$36 K	\$61 K	\$95 K
		8%	\$104 K	\$106 K	\$111 K	\$103 K		8%	\$228 K	\$231 K	\$230 K	\$220 K		8%	\$64 K	\$56 K	\$67 K	\$52 K		8%	-\$103 K	-\$95 K	-\$98 K	-\$122 K
		10%	\$79 K	\$75 K	\$71 K	\$41 K		10%	\$194 K	\$190 K	\$175 K	\$136 K		10%	-\$2 K	-\$22 K	-\$31 K	-\$91 K		10%	-\$237 K	-\$245 K	-\$281 K	-\$376 K

DECIDE WHAT WILL BRING YOU MORE JOY

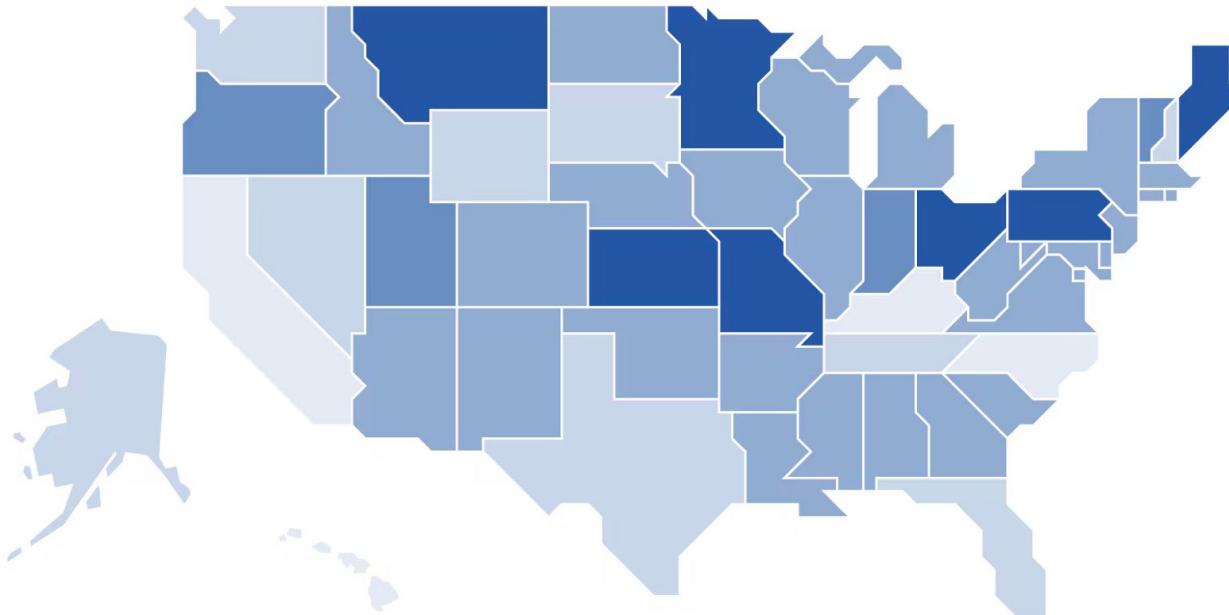


5

PREPARE THE NEXT GENERATION

PAY FOR COLLEGE WITH A 529 PLAN

529 Tax Benefits by State



No Benefits

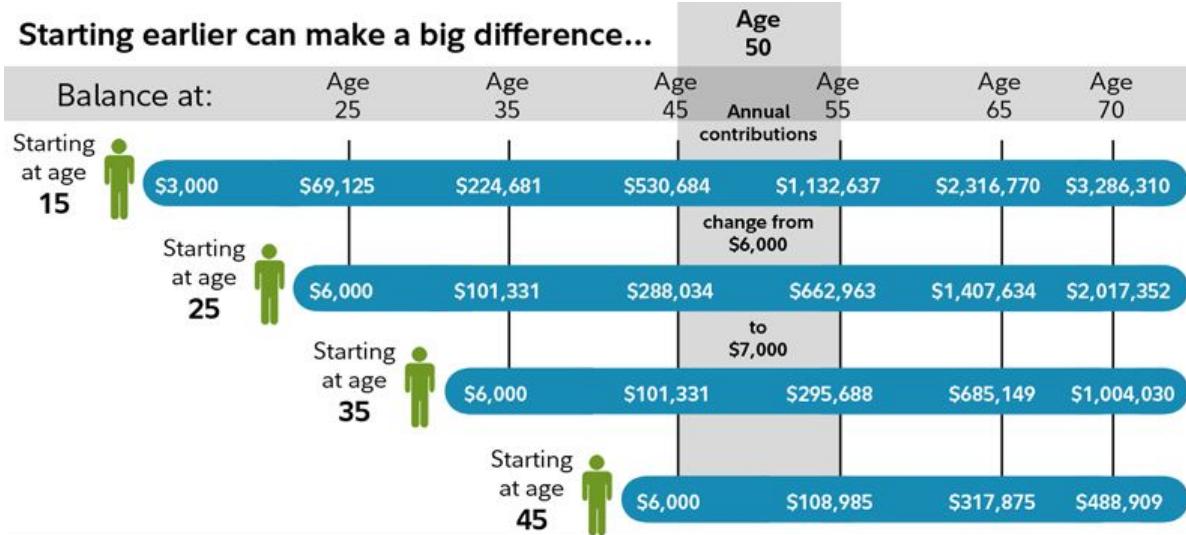
No State Tax

Tax Deduction

Tax Credit

Tax Parity

TEACH INVESTING WITH A CUSTODIAL ROTH IRA



The hypothetical example assumes the following:

- Annual Roth IRA contributions on January 1st of each year starting at age shown.
- Annual Roth contributions of \$3,000 for ages 15 - 20; annual contributions of \$6,000 for ages 21 and over; at age 50, additional \$1,000 annually as catch-up contributions each year.
- An annual rate of return of 7%.
- No taxes on any earnings within the Roth IRA. The ending values do not reflect taxes, fees, or inflation. If they did, amounts would be lower.

THANKS



<https://www.linkedin.com/in/stephen-hanly/>

ADDITIONAL RESOURCES

- [Blog Post at Engineered Portfolio](#)
- [Google Sheets of Data](#)
- [Google Colab of Python Code and Interactive Plots](#)