

2 Funds for Life and Best-in-Class ETF Selection

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The Merriman Financial Education Foundation

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What I'll talk about today

2 Funds for Life

Best-in-Class ETF Selection

Summary & Q&A



2 Funds for Life *2023 Update v2*

*Backtests updated to end of 2022,
New lumpsum 2FFL fine-tuning table*

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DIY Investing

- Pick an equities allocation
 - S&P 500,
 - *Ultimate Buy & Hold, 4-Fund, 2-Fund,*
 - All-Value
 - All Small-Cap Value
- Pick a US/International ratio
- Pick a fixed-income/equity ratio (periodically)
- Invest regularly
- Rebalance annually
- Pick fixed or flexible withdrawals
- Pick a withdrawal rate
- Take withdrawals and rebalance annually

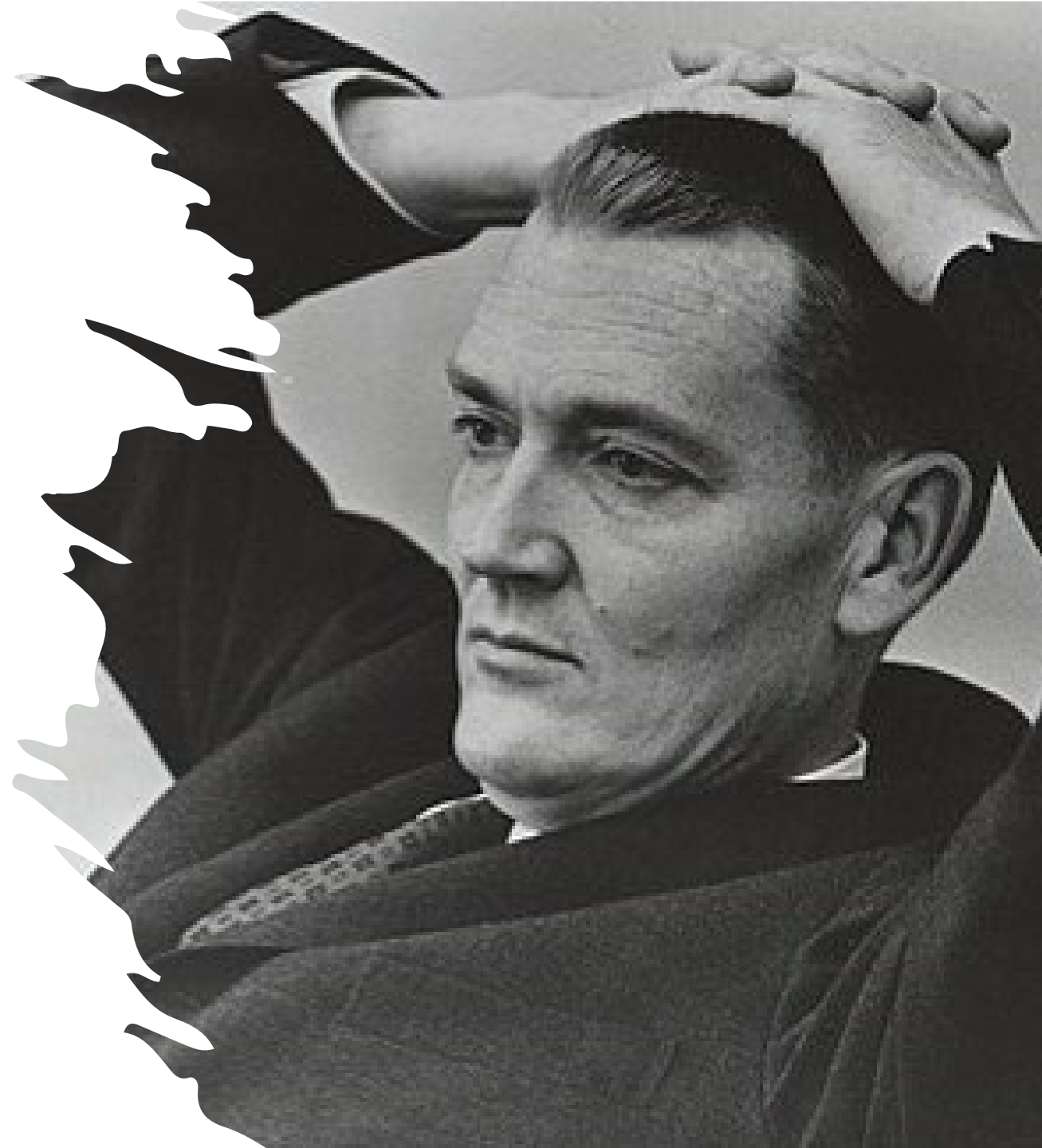


Jack Bogle's Pithy Advice

Buy Right

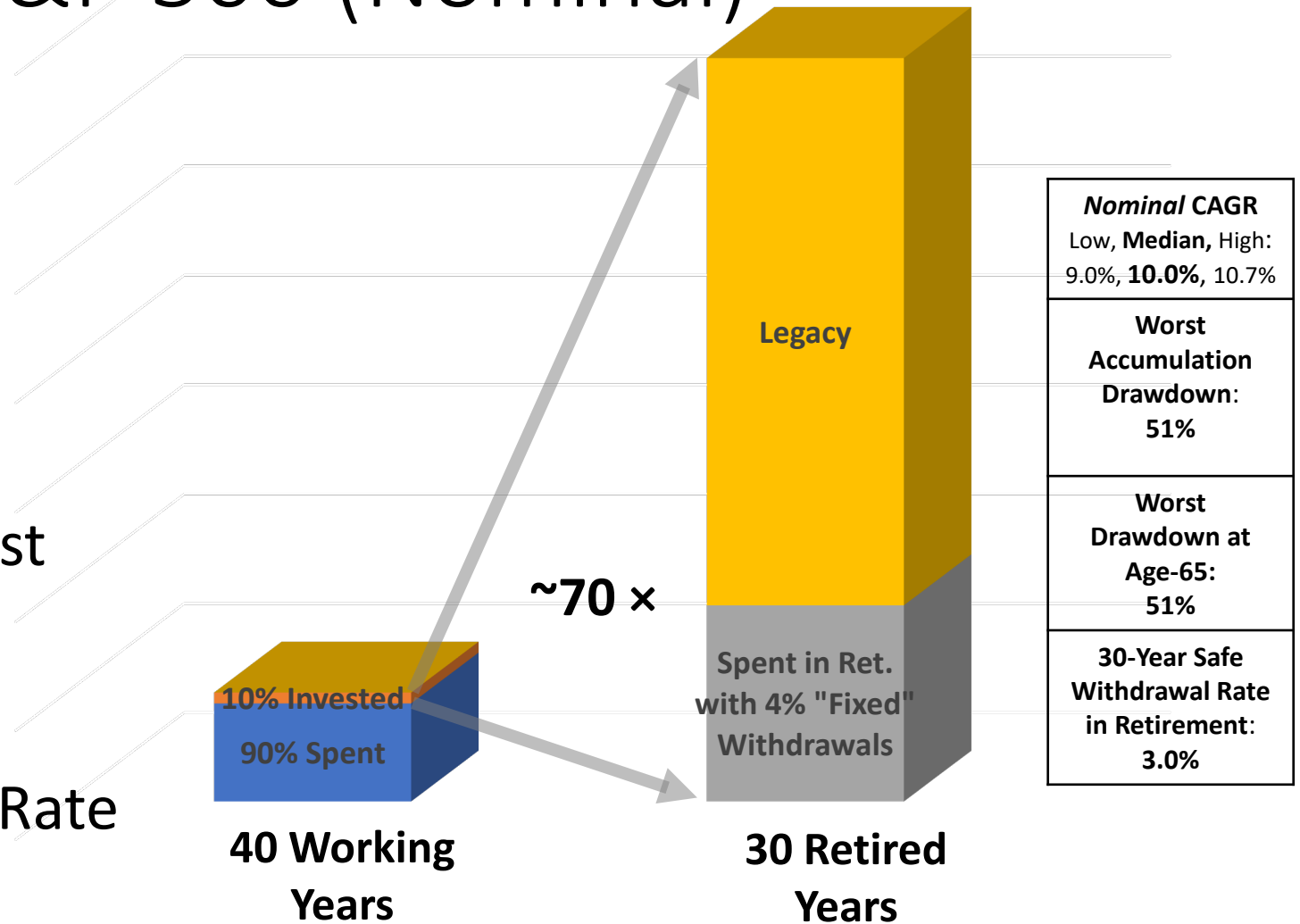
Hold Tight

Don't Peek



Bogle -- Just the S&P 500 (Nominal)

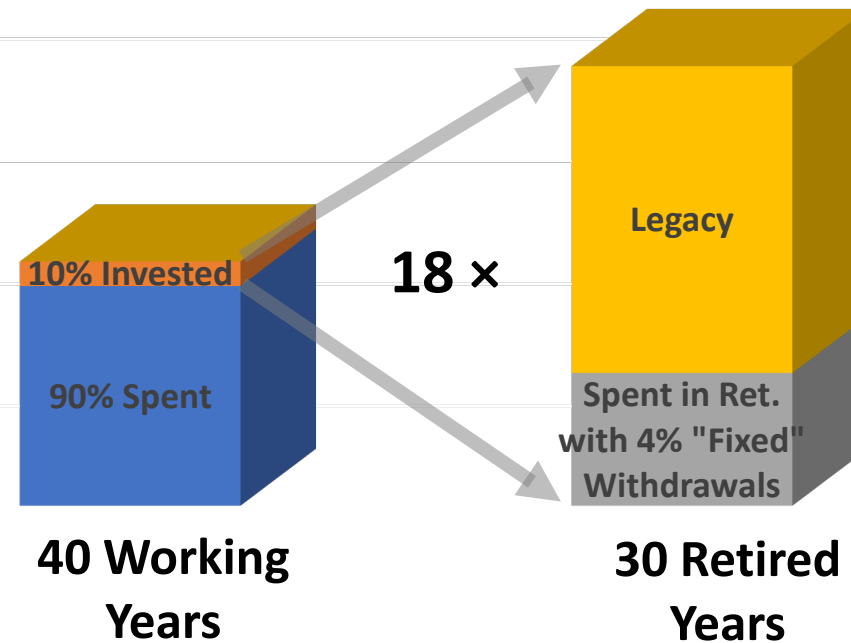
- + Tracks the market
- + Historically very effective
- High volatility throughout
- Worst drawdowns are most likely in retirement
- Legacy >> spending
- Only 3% Safe Withdrawal Rate



Compressed Scale Compared to Other Charts

Bogle -- Just the S&P 500 (*Real*)

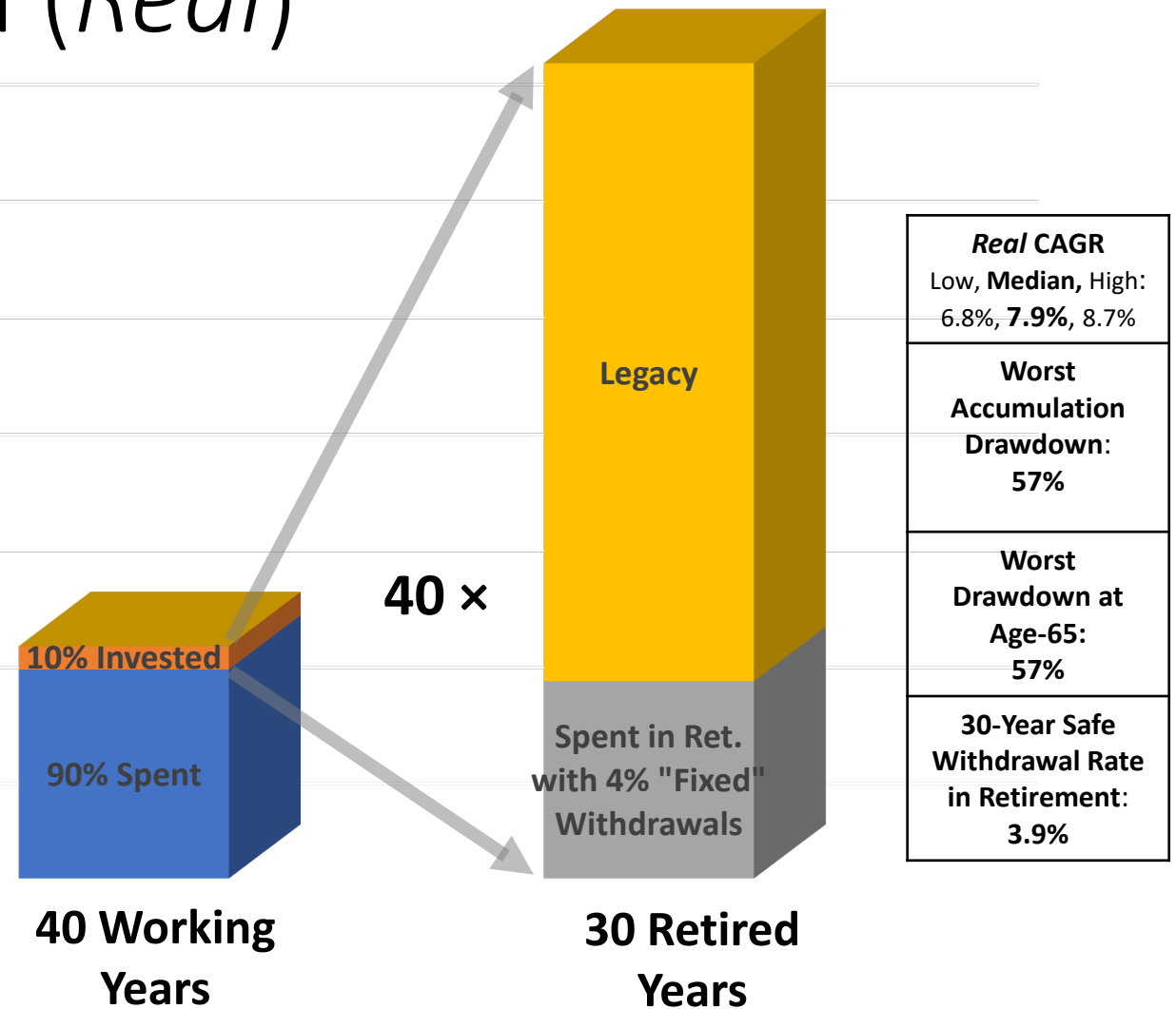
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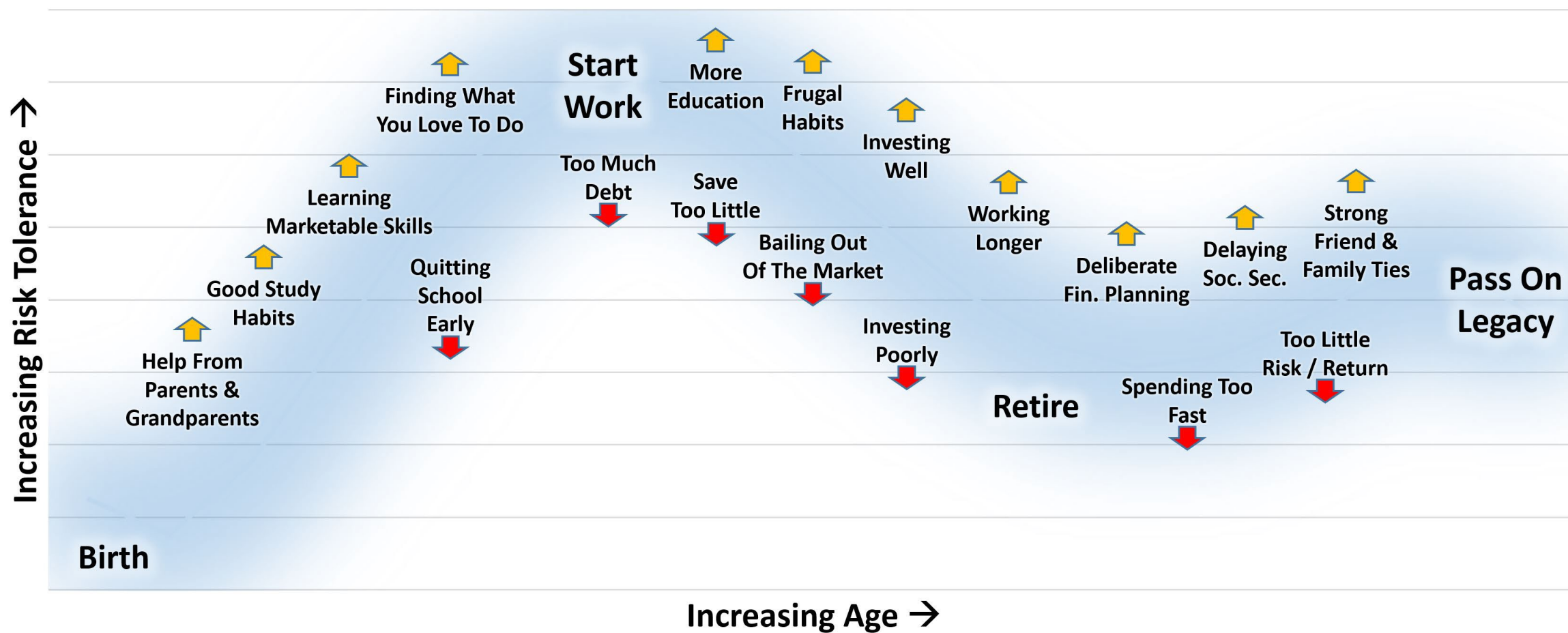
| |
|--|
| Real CAGR Low, Median , High: 4.8%, 5.9% , 6.6% |
| Worst Accumulation Drawdown: 51% |
| Worst Drawdown at Age-65: 51% |
| 30-Year Safe Withdrawal Rate in Retirement: 3.0% |

Merriman WW 4-Fund (*Real*)

- + Massively diversified
- + > 2× S&P 500 over lifetime
- + 3.9% Safe Withdrawal Rate
- Doesn't track the market
- High volatility throughout
- Worst drawdowns are most likely in retirement
- Legacy >> Spending

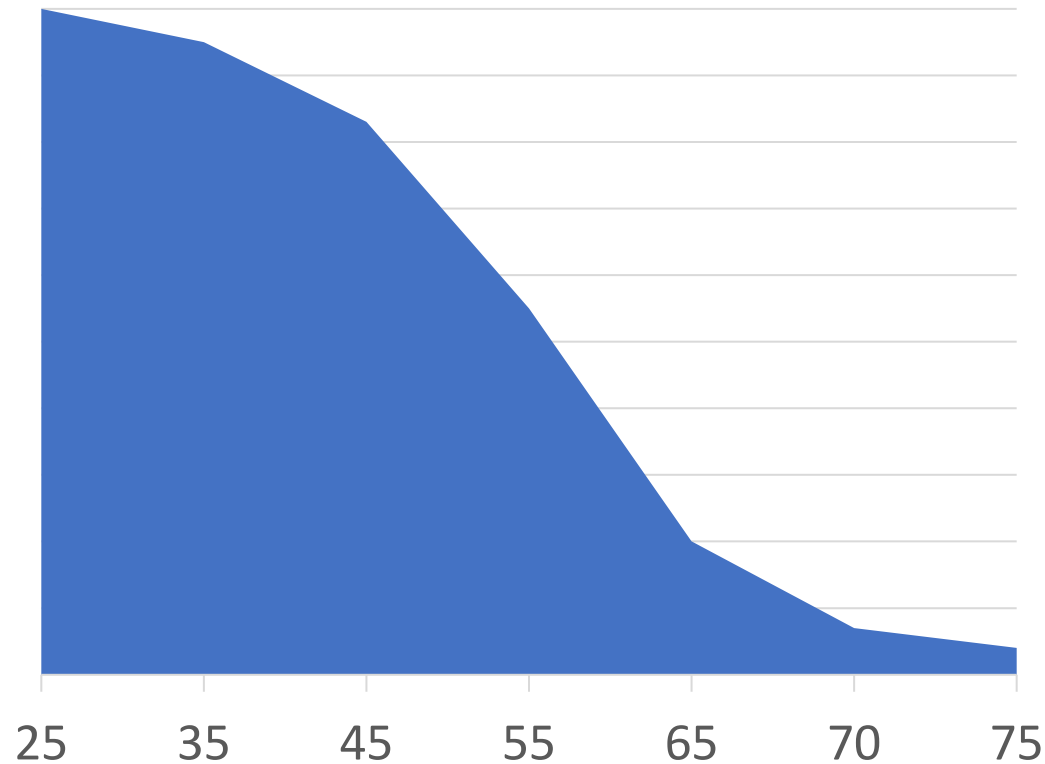


The Problem with Buy & Hold

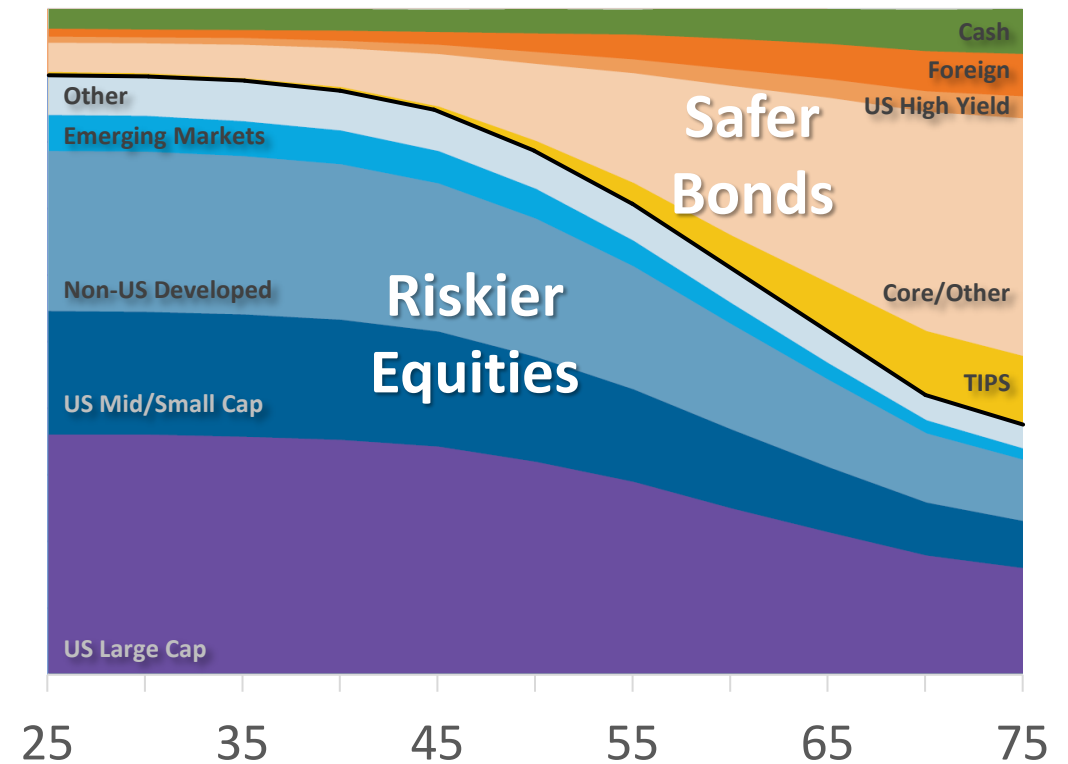


Human Capital & Target Date Funds (TDFs)

Human Capital vs. Age



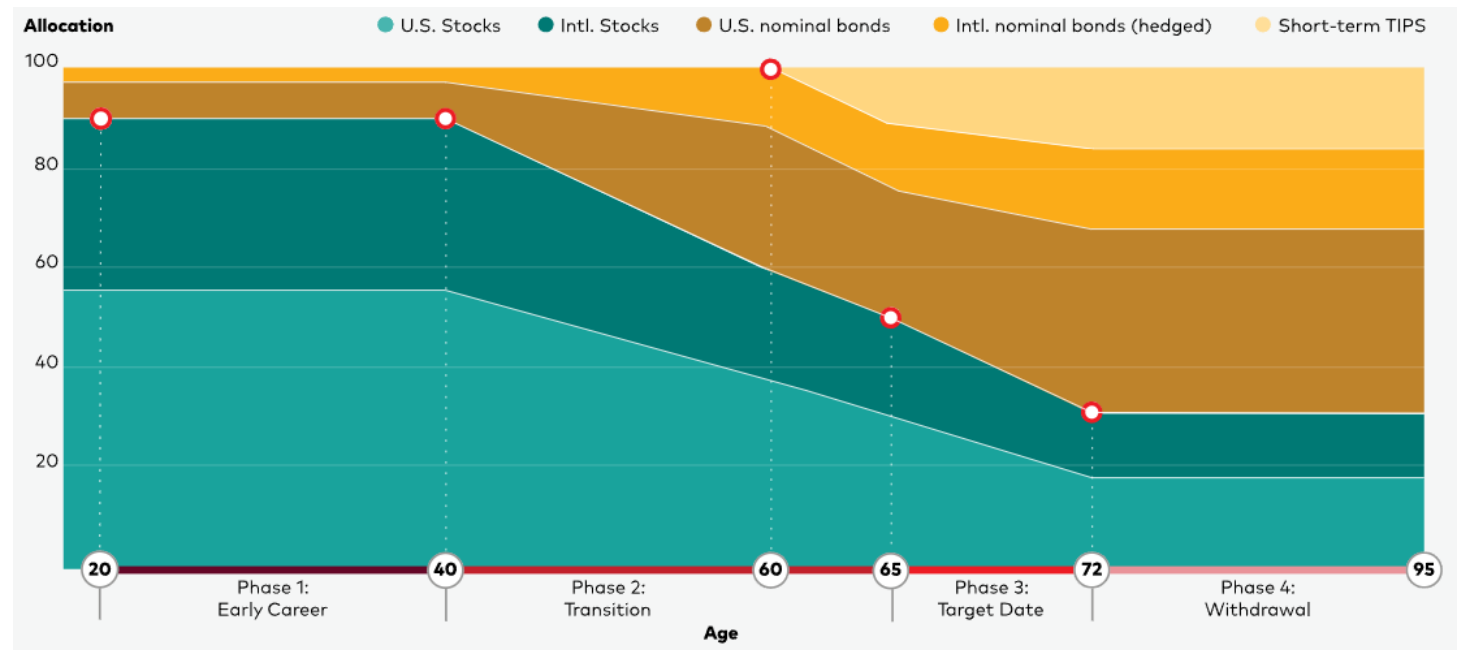
Industry Average TDF Glidepath



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

Vanguard Target Retirement Funds

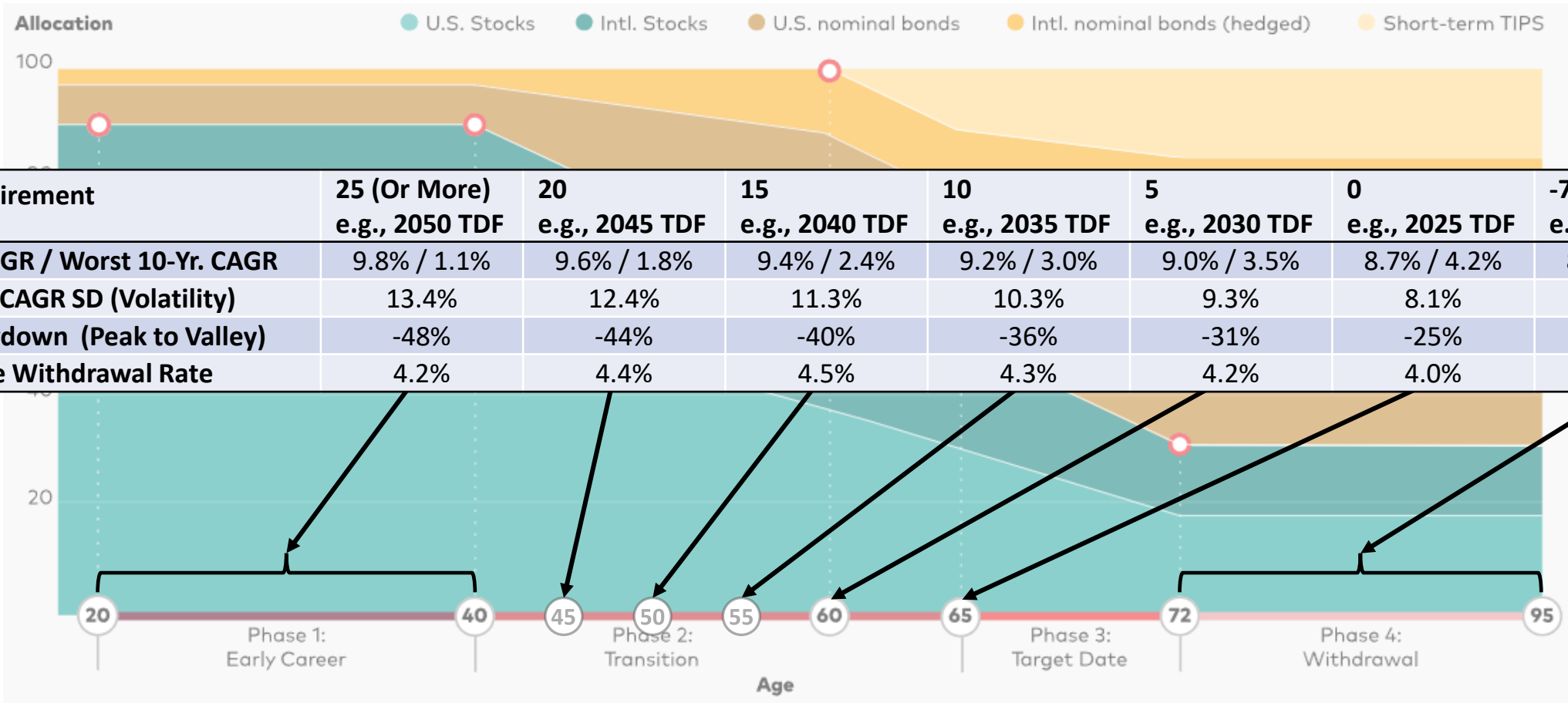
- Target Retirement 2015 (VTXVX)
- Target Retirement 2020 (VTWNVX)
- Target Retirement 2025 (VTTVX)
- Target Retirement 2030 (VTHRXX)
- Target Retirement 2035 (VTTHXX)
- Target Retirement 2040 (VFORXX)
- Target Retirement 2045 (VTIVXX)
- Target Retirement 2050 (VFIFXX)
- Target Retirement 2055 (VFFVXX)
- Target Retirement 2060 (VTTSXX)
- Target Retirement 2065 (VLXVXX)



Why Target-Date Funds Matter

- “**Ninety-five percent** of plans offered target-date funds at year-end 2021”
- “**Eighty-one percent** of all participants used target-date funds”
- “**Sixty-nine percent** of participants owning target-date funds had their entire account invested in a single target-date fund.”

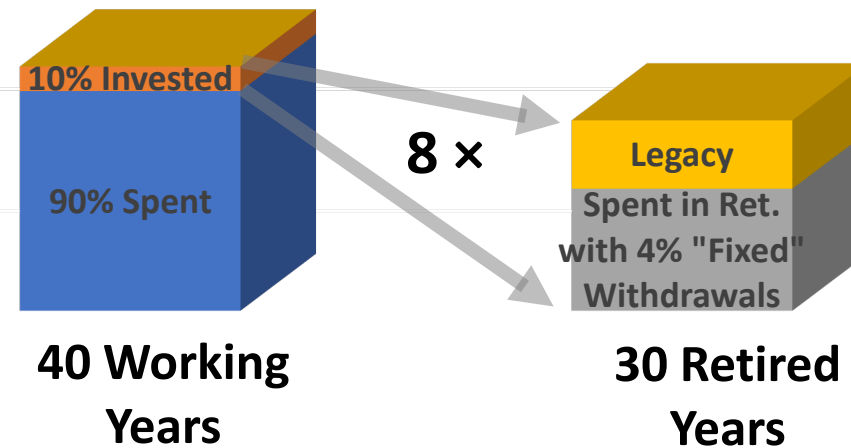
Historical TDF Lump Sum *Nominal* Results



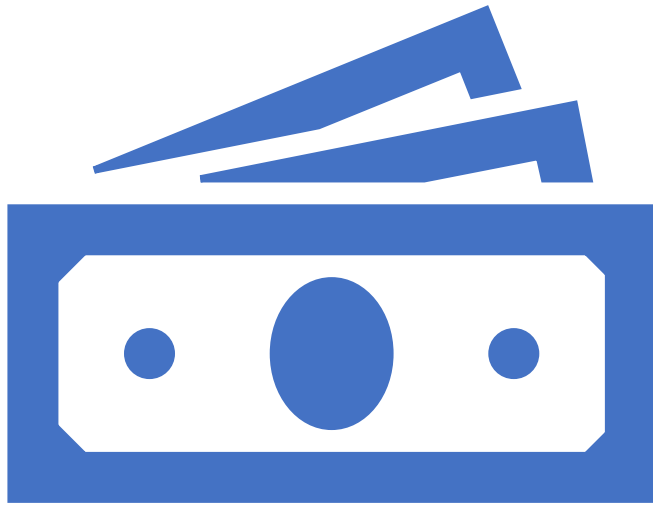
Backtested with lump sum investment, annual rebalancing, and monthly start dates from Jan. 1970 through Dec. 2022 for CAGRs, SD & drawdowns. Safe-withdrawal rates tested back to Jan. 1928.

Vanguard-Like Target-Date Fund (Real)

- + Automatic for life!
- + Volatility declines w/ age
- + 3.7% safe withdrawal rate
- + Spend > legacy
- Lower total return



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|--|
| Real CAGR Low, Median, High: 4.3%, 5.2% , 5.6% |
| Worst Accumulation Drawdown: 42% (48% w/o contributions) |
| Worst Drawdown at Age-65: 27% |
| 30-Year Safe Withdrawal Rate in Retirement: 3.7% |



Would an 8× *real* multiple be bad?

- Assume \$100k/yr income, \$10k/yr savings for 40 years
- Spend \$90k/yr while working
- *Real* 4% withdrawals = ~\$68k/yr
- If +10% employer match = ~\$75k/yr
- Social security likely adds more
- And a *real* legacy of \$1M+ at age-95

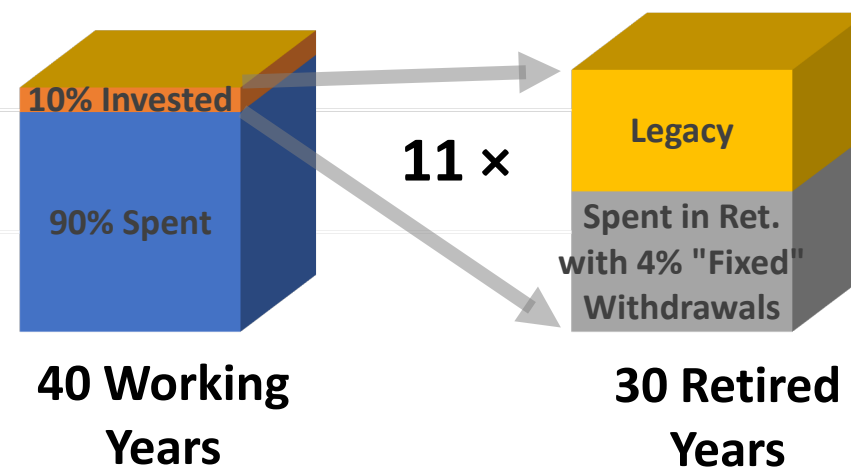
Easy 2 Funds for Life Strategy

- Put 90% of retirement savings in target-date fund
- Put 10% into US small-cap value fund
- No rebalancing
- Take 4% “fixed” annual retirement withdrawals from the fund that’s bigger than its target allocation to “nudge” rebalance over time.



Easy 90/10 2 Funds for Life (*Real*)

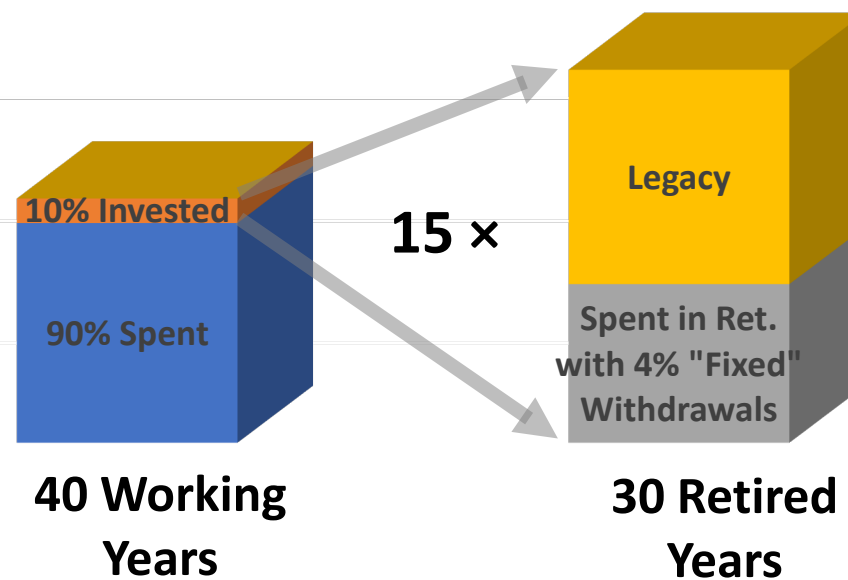
- + More 1.3× TDF over lifetime
- + Volatility declines w/age
- + >4% safe withdrawal rate
- More volatile than TDF alone
- Doesn't track the market



| |
|--|
| Real CAGR Low, Median, High: 4.7%, 5.8% , 6.2% |
| Worst Accumulation Drawdown: 44% (49% w/o contributions) |
| Worst Drawdown at Age-65: 35% |
| 30-Year Safe Withdrawal Rate in Retirement: 4.1% |

Easy 80/20 2 Funds for Life (*Real*)

- + Almost 2× TDF over lifetime
- + >4.5% safe withdrawal rate
- Higher volatility later
- Doesn't track the market

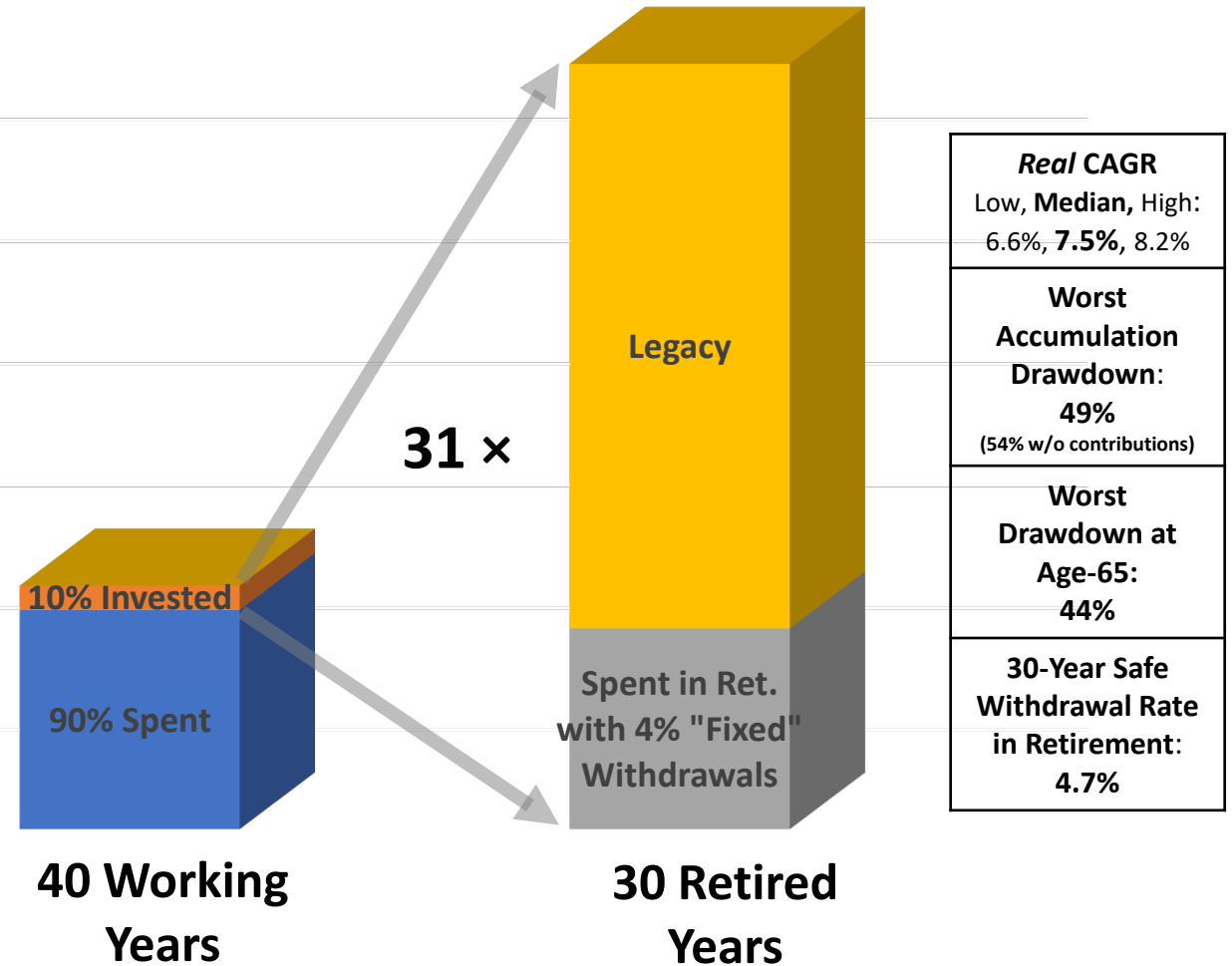


| |
|--|
| Real CAGR Low, Median , High: 5.3%, 6.3% , 6.9% |
| Worst Accumulation Drawdown: 47% (50% w/o contributions) |
| Worst Drawdown at Age-65: 42% |
| 30-Year Safe Withdrawal Rate in Retirement: 4.6% |

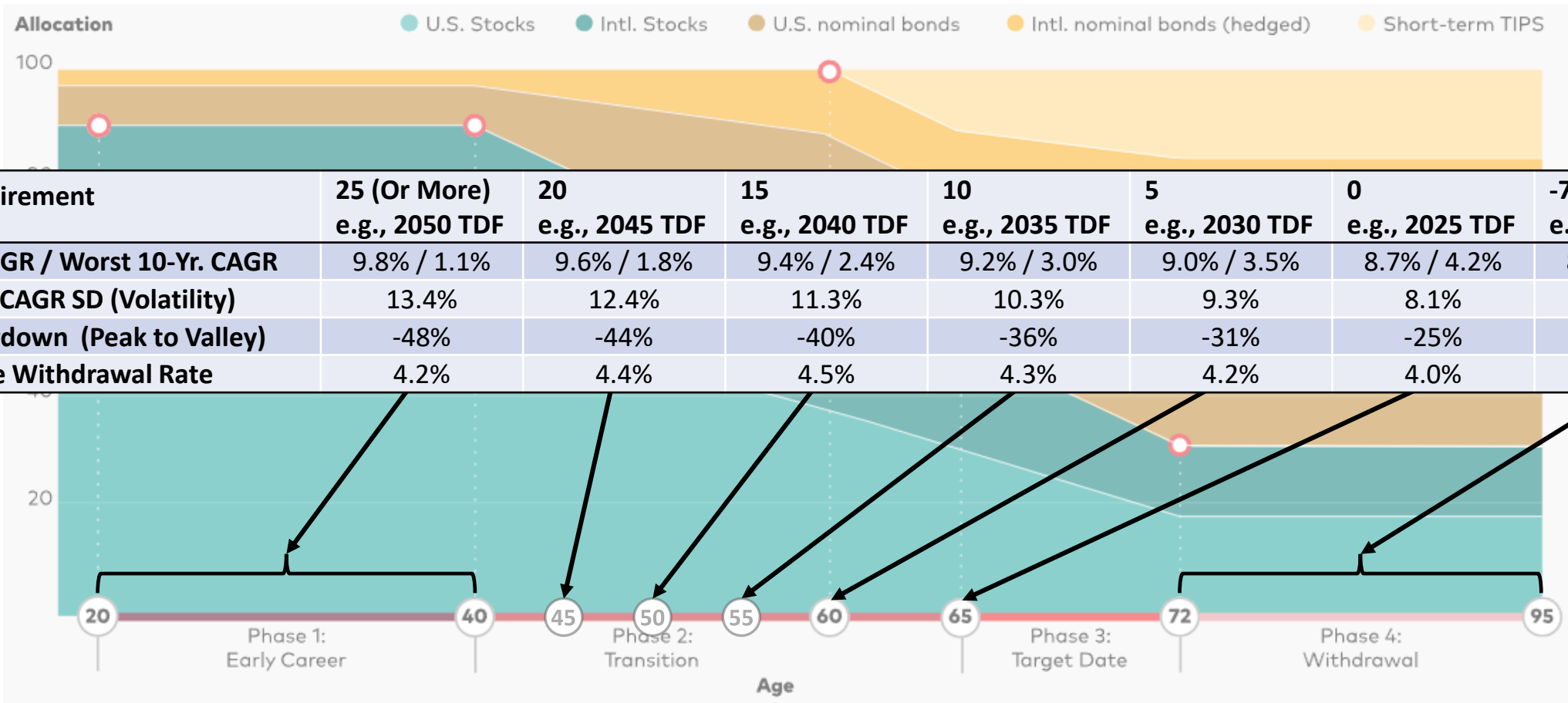
50/50 2 Funds for Life (*Real*)

Rebalanced Annually

- + Almost 4× TDF over lifetime
- + Massively diversified
- + >4.5% safe withdrawal rate
- Higher volatility later
- Doesn't track the market

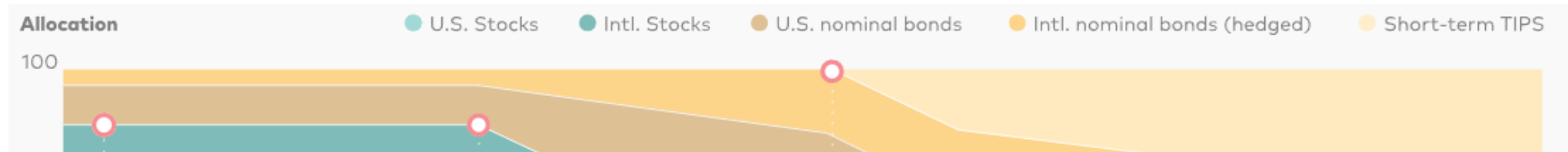


Historical TDF Lump Sum *Nominal* Results

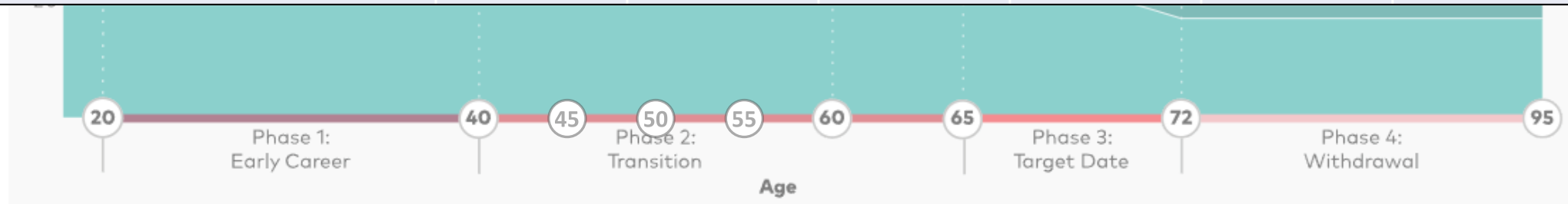


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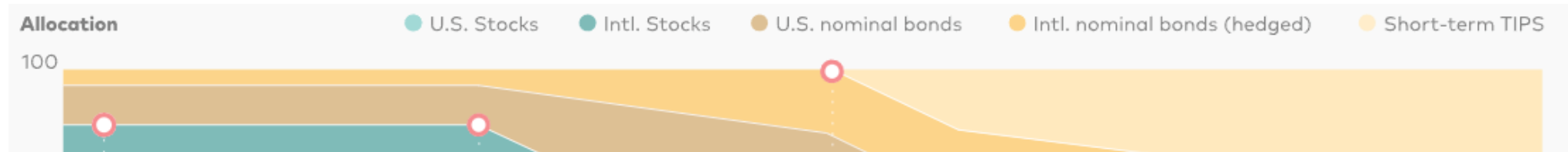


| Years to Retirement | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
|----------------------------------|----------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
| Worst Drawdown (Peak to Valley) | -48% | -44% | -40% | -36% | -31% | -25% | -17% |
| 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.5% | 4.3% | 4.2% | 4.0% | 3.5% |
| 10% US SCV, 90% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.3% / 1.9% | 10.2% / 2.5% | 10.0% / 3.0% | 9.8% / 3.6% | 9.6% / 4.0% | 8.7% / 4.2% |
| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 6.8% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.1% |



Backtested with lump sum investment, annual rebalancing, and monthly start dates from Jan. 1970 through Dec. 2022 for CAGRs, SD & drawdowns. Safe-withdrawal rates tested back to Jan. 1928.

Historical TDF Lump Sum *Nominal* Results



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| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 8.9% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -29% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.5% |
| 20% US SCV, 80% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.8% / 2.6% | 10.7% / 3.1% | 10.5% / 3.6% | 10.4% / 4.1% | 10.2% / 4.5% | 10.0% / 5.1% |
| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% |
| | Worst Drawdown (Peak to Valley) | -50% | -47% | -44% | -41% | -37% | -32% |
| | 30-Year Safe Withdrawal Rate | 4.1% | 4.3% | 4.5% | 4.7% | 4.7% | 4.8% |

Phase 1:
Early Career

Phase 2:
Transition

Phase 3:
Target Date

Phase 4:
Withdrawal

Age

2 Funds for Life, Fixed Allocation, Lump Sum, Annually Rebalanced, Fine-Tuning Table

| Target Date Fund Years to Retirement: | | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
|---------------------------------------|--|--------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Simplified TDF Allocations | TDF Total US Stock Allocation | 54% | 49.5% | 45% | 40.5% | 36% | 30% | 18% |
| | TDF International LCB Stock Allocation | 36% | 33% | 30% | 27% | 24% | 20% | 12% |
| | TDF Int.-Term Gov't Bonds Allocation | 10% | 17.5% | 25% | 32.5% | 40% | 50% | 70% |
| 0% US SCV, 100% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| | Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
| | Worst Drawdown (Peak to Valley) | -48% | -44% | -40% | -36% | -31% | -25% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.5% | 4.3% | 4.2% | 4.0% | 3.5% |
| 10% US SCV, 90% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.3% / 1.9% | 10.2% / 2.5% | 10.0% / 3.0% | 9.8% / 3.6% | 9.6% / 4.0% | 9.4% / 4.6% | 8.7% / 4.2% |
| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 8.9% | 6.8% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -29% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.5% | 4.1% |
| 20% US SCV, 80% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.8% / 2.6% | 10.7% / 3.1% | 10.5% / 3.6% | 10.4% / 4.1% | 10.2% / 4.5% | 10.0% / 5.1% | 9.4% / 4.9% |
| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% | 7.9% |
| | Worst Drawdown (Peak to Valley) | -50% | -47% | -44% | -41% | -37% | -32% | -22% |
| | 30-Year Safe Withdrawal Rate | 4.1% | 4.3% | 4.5% | 4.7% | 4.7% | 4.8% | 4.6% |
| 30% US SCV, 70% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.2% / 3.2% | 11.1% / 3.7% | 11.0% / 4.2% | 10.9% / 4.6% | 10.8% / 5.0% | 10.6% / 5.5% | 10.1% / 5.6% |
| | Annualized CAGR SD (Volatility) | 14.8% | 14.1% | 13.4% | 12.6% | 11.9% | 11.0% | 9.3% |
| | Worst Drawdown (Peak to Valley) | -51% | -48% | -46% | -43% | -40% | -36% | -27% |
| | 30-Year Safe Withdrawal Rate | 4.0% | 4.2% | 4.3% | 4.5% | 4.7% | 4.8% | 4.8% |
| 40% US SCV, 60% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.7% / 3.9% | 11.6% / 4.3% | 11.5% / 4.7% | 11.4% / 5.1% | 11.3% / 5.4% | 11.1% / 5.8% | 10.8% / 6.2% |
| | Annualized CAGR SD (Volatility) | 15.5% | 14.9% | 14.2% | 13.6% | 13.0% | 12.2% | 10.7% |
| | Worst Drawdown (Peak to Valley) | -52% | -50% | -48% | -46% | -44% | -40% | -33% |
| | 30-Year Safe Withdrawal Rate | 3.8% | 4.0% | 4.1% | 4.3% | 4.4% | 4.6% | 4.9% |
| 50% US SCV, 50% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 12.1% / 4.5% | 12.0% / 4.9% | 12.0% / 5.2% | 11.9% / 5.5% | 11.8% / 5.8% | 11.7% / 6.2% | 11.4% / 6.4% |
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| 100% US SCV | Nominal CAGR / Worst-10Yr CAGR: 13.9% / 4.2% (-9.8% in 1928) Annualized CAGR SD: 20.6% Worst Drawdown: -61% 30-Year SWR: 2.5% | | | | | | | |

Sources & Assumptions: Assumes fixed asset class allocations, lumpsum investment, w/ annual rebalancing, for January 1970 through December 2022 returns. Safe withdrawal rates calculated with 1928-2022 annual returns. US Stock allocation modeled with US total market returns. International stock allocation modeled with International Large Cap blend. Bond allocation modeled with US Intermediate-term Government bonds.

- Young investors who contribute regularly will likely see lower drawdowns while contributions are large relative to account balance.
 - Investors who rebalance less frequently will likely see higher returns and higher drawdowns.
 - Real returns (adjusted for inflation) were about 3-4% less than the nominal returns shown.
- Past performance doesn't guarantee future returns. Drawdowns from 1928-1970 were worse by an additional 10% to more than 30%.

≥ 11%
CAGR

| 2 Funds for Life, Fixed Allocation, Lump Sum, Annually Rebalanced, Fine-Tuning Table | | | | | | | | |
|--|--|--------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Target Date Fund Years to Retirement: | | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
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| 0% US SCV, 100% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| | Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
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| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% | 7.9% |
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| | 30-Year Safe Withdrawal Rate | 3.8% | 4.0% | 4.1% | 4.3% | 4.4% | 4.6% | 4.9% |
| 50% US SCV, 50% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 12.1% / 4.5% | 12.0% / 4.9% | 12.0% / 5.2% | 11.9% / 5.5% | 11.8% / 5.8% | 11.7% / 6.2% | 11.4% / 6.4% |
| | Annualized CAGR SD (Volatility) | 16.2% | 15.7% | 15.2% | 14.7% | 14.2% | 13.5% | 12.3% |
| | Worst Drawdown (Peak to Valley) | -54% | -52% | -51% | -49% | -47% | -44% | -39% |
| | 30-Year Safe Withdrawal Rate | 3.6% | 3.7% | 3.9% | 4.0% | 4.1% | 4.3% | 4.7% |
| 100% US SCV | Nominal CAGR / Worst-10Yr CAGR: 13.9% / 4.2% (-9.8% in 1928) Annualized CAGR SD: 20.6% Worst Drawdown: -61% 30-Year SWR: 2.5% | | | | | | | |
| Sources & Assumptions: Assumes fixed asset class allocations, lumpsum investment, w/ annual rebalancing, for January 1970 through December 2022 returns. Safe withdrawal rates calculated with 1928-2022 annual returns. US Stock allocation modeled with US total market returns. International stock allocation modeled with International Large Cap blend. Bond allocation modeled with US Intermediate-term Government bonds. <ul style="list-style-type: none">• Young investors who contribute regularly will likely see lower drawdowns while contributions are large relative to account balance.<ul style="list-style-type: none">• Investors who rebalance less frequently will likely see higher returns and higher drawdowns.• Real returns (adjusted for inflation) were about 3-4% less than the nominal returns shown.• Past performance doesn't guarantee future returns. Drawdowns from 1928-1970 were worse by an additional 10% to more than 30%. | | | | | | | | |

Less
Than
40%
Peak
To
Trough
Loss

2 Funds for Life, Fixed Allocation, Lump Sum, Annually Rebalanced, Fine-Tuning Table

| Target Date Fund Years to Retirement: | | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
|---------------------------------------|--|--------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Simplified TDF Allocations | TDF Total US Stock Allocation | 54% | 49.5% | 45% | 40.5% | 36% | 30% | 18% |
| | TDF International LCB Stock Allocation | 36% | 33% | 30% | 27% | 24% | 20% | 12% |
| | TDF Int.-Term Gov't Bonds Allocation | 10% | 17.5% | 25% | 32.5% | 40% | 50% | 70% |
| 0% US SCV, 100% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| | Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
| | Worst Drawdown (Peak to Valley) | -48% | -44% | -40% | -36% | -31% | -25% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.5% | 4.3% | 4.2% | 4.0% | 3.5% |
| 10% US SCV, 90% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.3% / 1.9% | 10.2% / 2.5% | 10.0% / 3.0% | 9.8% / 3.6% | 9.6% / 4.0% | 9.4% / 4.6% | 8.7% / 4.2% |
| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 8.9% | 6.8% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -29% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.5% | 4.1% |
| 20% US SCV, 80% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.8% / 2.6% | 10.7% / 3.1% | 10.5% / 3.6% | 10.4% / 4.1% | 10.2% / 4.5% | 10.0% / 5.1% | 9.4% / 4.9% |
| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% | 7.9% |
| | Worst Drawdown (Peak to Valley) | -50% | -47% | -44% | -41% | -37% | -32% | -22% |
| | 30-Year Safe Withdrawal Rate | 4.1% | 4.3% | 4.5% | 4.7% | 4.7% | 4.8% | 4.6% |
| 30% US SCV, 70% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.2% / 3.2% | 11.1% / 3.7% | 11.0% / 4.2% | 10.9% / 4.6% | 10.8% / 5.0% | 10.6% / 5.5% | 10.1% / 5.6% |
| | Annualized CAGR SD (Volatility) | 14.8% | 14.1% | 13.4% | 12.6% | 11.9% | 11.0% | 9.3% |
| | Worst Drawdown (Peak to Valley) | -51% | -48% | -46% | -43% | -40% | -36% | -27% |
| | 30-Year Safe Withdrawal Rate | 4.0% | 4.2% | 4.3% | 4.5% | 4.7% | 4.8% | 4.8% |
| 40% US SCV, 60% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.7% / 3.9% | 11.6% / 4.3% | 11.5% / 4.7% | 11.4% / 5.1% | 11.3% / 5.4% | 11.1% / 5.8% | 10.8% / 6.2% |
| | Annualized CAGR SD (Volatility) | 15.5% | 14.9% | 14.2% | 13.6% | 13.0% | 12.2% | 10.7% |
| | Worst Drawdown (Peak to Valley) | -52% | -50% | -48% | -46% | -44% | -40% | -33% |
| | 30-Year Safe Withdrawal Rate | 3.8% | 4.0% | 4.1% | 4.3% | 4.4% | 4.6% | 4.9% |
| 50% US SCV, 50% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 12.1% / 4.5% | 12.0% / 4.9% | 12.0% / 5.2% | 11.9% / 5.5% | 11.8% / 5.8% | 11.7% / 6.2% | 11.4% / 6.4% |
| | Annualized CAGR SD (Volatility) | 16.2% | 15.7% | 15.2% | 14.7% | 14.2% | 13.5% | 12.3% |
| | Worst Drawdown (Peak to Valley) | -54% | -52% | -51% | -49% | -47% | -44% | -39% |
| | 30-Year Safe Withdrawal Rate | 3.6% | 3.7% | 3.9% | 4.0% | 4.1% | 4.3% | 4.7% |
| 100% US SCV | Nominal CAGR / Worst-10Yr CAGR: 13.9% / 4.2% (-9.8% in 1928) Annualized CAGR SD: 20.6% Worst Drawdown: -61% 30-Year SWR: 2.5% | | | | | | | |

Sources & Assumptions: Assumes fixed asset class allocations, lumpsum investment, w/ annual rebalancing, for January 1970 through December 2022 returns. Safe withdrawal rates calculated with 1928-2022 annual returns. US Stock allocation modeled with US total market returns. International stock allocation modeled with International Large Cap blend. Bond allocation modeled with US Intermediate-term Government bonds.

- Young investors who contribute regularly will likely see lower drawdowns while contributions are large relative to account balance.
 - Investors who rebalance less frequently will likely see higher returns and higher drawdowns.
 - Real returns (adjusted for inflation) were about 3-4% less than the nominal returns shown.
- Past performance doesn't guarantee future returns. Drawdowns from 1928-1970 were worse by an additional 10% to more than 30%.

≥ 4.4%
SWR

| 2 Funds for Life, Fixed Allocation, Lump Sum, Annually Rebalanced, Fine-Tuning Table | | | | | | | | |
|--|--|--------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Target Date Fund Years to Retirement: | | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
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| | TDF Int.-Term Gov't Bonds Allocation | 10% | 17.5% | 25% | 32.5% | 40% | 50% | 70% |
| 0% US SCV, 100% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| | Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
| | Worst Drawdown (Peak to Valley) | -48% | -44% | -40% | -36% | -31% | -25% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.5% | 4.3% | 4.2% | 4.0% | 3.5% |
| 10% US SCV, 90% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.3% / 1.9% | 10.2% / 2.5% | 10.0% / 3.0% | 9.8% / 3.6% | 9.6% / 4.0% | 9.4% / 4.6% | 8.7% / 4.2% |
| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 8.9% | 6.8% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -29% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.5% | 4.1% |
| 20% US SCV, 80% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.8% / 2.6% | 10.7% / 3.1% | 10.5% / 3.6% | 10.4% / 4.1% | 10.2% / 4.5% | 10.0% / 5.1% | 9.4% / 4.9% |
| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% | 7.9% |
| | Worst Drawdown (Peak to Valley) | -50% | -47% | -44% | -41% | -37% | -32% | -22% |
| | 30-Year Safe Withdrawal Rate | 4.1% | 4.3% | 4.5% | 4.7% | 4.7% | 4.8% | 4.6% |
| 30% US SCV, 70% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.2% / 3.2% | 11.1% / 3.7% | 11.0% / 4.2% | 10.9% / 4.6% | 10.8% / 5.0% | 10.6% / 5.5% | 10.1% / 5.6% |
| | Annualized CAGR SD (Volatility) | 14.8% | 14.1% | 13.4% | 12.6% | 11.9% | 11.0% | 9.3% |
| | Worst Drawdown (Peak to Valley) | -51% | -48% | -46% | -43% | -40% | -36% | -27% |
| | 30-Year Safe Withdrawal Rate | 4.0% | 4.2% | 4.3% | 4.5% | 4.7% | 4.8% | 4.8% |
| 40% US SCV, 60% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.7% / 3.9% | 11.6% / 4.3% | 11.5% / 4.7% | 11.4% / 5.1% | 11.3% / 5.4% | 11.1% / 5.8% | 10.8% / 6.2% |
| | Annualized CAGR SD (Volatility) | 15.5% | 14.9% | 14.2% | 13.6% | 13.0% | 12.2% | 10.7% |
| | Worst Drawdown (Peak to Valley) | -52% | -50% | -48% | -46% | -44% | -40% | -33% |
| | 30-Year Safe Withdrawal Rate | 3.8% | 4.0% | 4.1% | 4.3% | 4.4% | 4.6% | 4.9% |
| 50% US SCV, 50% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 12.1% / 4.5% | 12.0% / 4.9% | 12.0% / 5.2% | 11.9% / 5.5% | 11.8% / 5.8% | 11.7% / 6.2% | 11.4% / 6.4% |
| | Annualized CAGR SD (Volatility) | 16.2% | 15.7% | 15.2% | 14.7% | 14.2% | 13.5% | 12.3% |
| | Worst Drawdown (Peak to Valley) | -54% | -52% | -51% | -49% | -47% | -44% | -39% |
| | 30-Year Safe Withdrawal Rate | 3.6% | 3.7% | 3.9% | 4.0% | 4.1% | 4.3% | 4.7% |
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| Sources & Assumptions: Assumes fixed asset class allocations, lumpsum investment, w/ annual rebalancing, for January 1970 through December 2022 returns. Safe withdrawal rates calculated with 1928-2022 annual returns. US Stock allocation modeled with US total market returns. International stock allocation modeled with International Large Cap blend. Bond allocation modeled with US Intermediate-term Government bonds. <ul style="list-style-type: none">• Young investors who contribute regularly will likely see lower drawdowns while contributions are large relative to account balance.<ul style="list-style-type: none">• Investors who rebalance less frequently will likely see higher returns and higher drawdowns.• Real returns (adjusted for inflation) were about 3-4% less than the nominal returns shown.• Past performance doesn't guarantee future returns. Drawdowns from 1928-1970 were worse by an additional 10% to more than 30%. | | | | | | | | |


≥ 11%
CAGR

&

< 40%
Worst
DD

&

≥ 4.4%
SWR

A blue-tinted close-up photograph of a microscope. The image shows the objective lens and eyepiece in sharp focus, with the rest of the instrument and the background blurred. A dark, semi-transparent overlay is positioned in the upper-left corner, containing the text 'Best-in-Class Fund Selection' in white.

Best-in- Class Fund Selection

How to pick the best funds?



Cheapest?



Least
turnover?



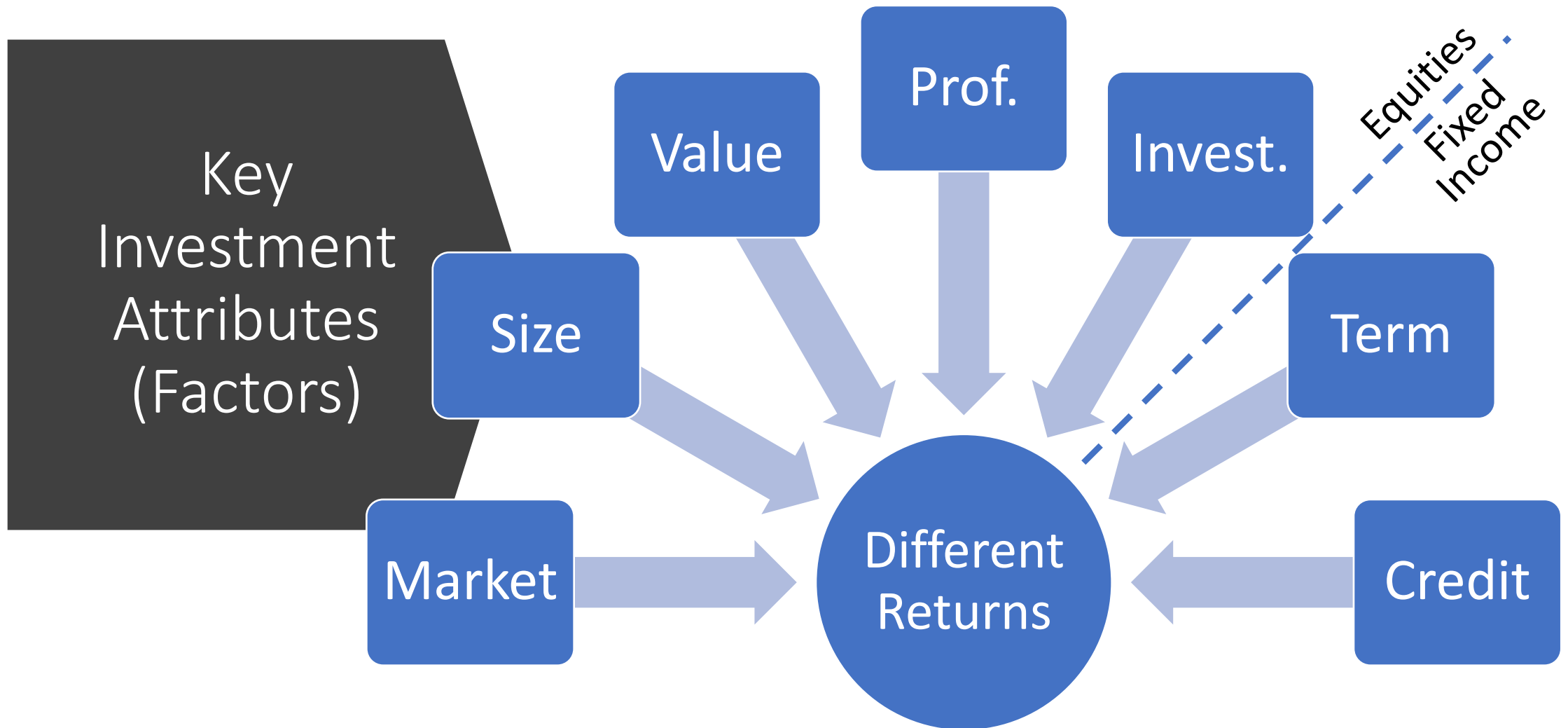
Least style
drift?



Smallest
companies?



Cheapest
companies?



Many Models, Many Premiums

| | Fama-French (Jan 1964 – Jun 2023) | | | AQR (Jan 1964 – May 2023) | | Alpha Architects (Jan 1992 – Jun 2023) | | | q-Factors (Jan 1967 – Dec 2022) | | |
|------------------|--------------------------------------|------|-------------|------------------------------|------|---|------|------|------------------------------------|------|------|
| Market | 5.6% | 5.6% | <u>5.5%</u> | 5.2% | 5.2% | 7.8% | 7.8% | 7.8% | 5.6% | 5.6% | 5.6% |
| Size | 2.2% | 2.2% | <u>2.2%</u> | 1.1% | 1.1% | 3.3% | 3.3% | 3.3% | 2.8% | 2.8% | 2.8% |
| Value | 2.8% | 2.8% | <u>2.8%</u> | 2.5% | 2.5% | 2.3% | 2.3% | 2.3% | | | |
| Momentum | | 6.3% | | | 6.9% | | 1.9% | 1.9% | | | |
| Profitability | | | <u>3.1%</u> | | | | | | | | |
| Investment | | | <u>3.2%</u> | | | | | | 4.5% | 4.5% | 4.5% |
| Quality | | | | | 4.4% | | | 0.8% | | | |
| Bet-Against-Beta | | | | | 9.1% | | | | | | |
| Return on Equity | | | | | | | | | | 6.2% | 6.2% |
| Expected Growth | | | | | | | | | | | 9.4% |

Source: Portfolio Visualizer Factor Statistics Page – US Risk premia shown rounded to nearest 0.1%.

Portfolio Visualizer Tools



Factor Analysis

Run regression analysis using Fama-French and Carhart factor models for individual assets or a portfolio to analyze returns against market, size, value and momentum factors.

- [Factor Regression »](#)
- [Risk Factor Allocation »](#)
- [Match Factor Exposures »](#)
- [Principal Component Analysis »](#)
- [Factor Statistics »](#)
- [Fund Factor Regressions »](#)
- [Fund Performance Attribution »](#)

PV Factor Regression

| Factor Analysis Results Link PDF Excel | | | | | |
|--|--|----------------|--------|---------|-------------------------|
| Note: The time period was constrained by the available data for DFA US Small Cap Value I (DFSVX) [Mar 1993 - Jun 2023]. | | | | | |
| Factor Regression Performance Attribution Residuals Rolling Regression Rolling Returns | | | | | |
| DFA US Small Cap Value I | | | | | |
| Ticker | DFSVX | | | | |
| Time Period | Mar 1993 - Apr 2023 | | | | |
| Regression Basis | 362 monthly samples | | | | |
| Coefficient of Determination (R ²) | 97.3% | | | | |
| Adjusted R ² | 97.2% | | | | |
| Regression F statistic | 2,536.62 (p-value = 0.000) | | | | |
| Autocorrelation | No autocorrelation confirmed (Durbin-Watson test value is 1.984 with p-value 0.431) | | | | |
| Heteroscedasticity | No heteroscedasticity confirmed (Breusch-Pagan test value is 8.545 with p-value 0.129) | | | | |
| Factor | Loading | Standard Error | t-stat | p-value | 95% Confidence Interval |
| Market (Rm-Rf) | 1.04 | 0.013 | 79.520 | 0.000 | 1.013...1.065 |
| Size (SMB) | 0.86 | 0.019 | 44.863 | 0.000 | 0.824...0.900 |
| Value (HML) | 0.45 | 0.022 | 20.602 | 0.000 | 0.406...0.491 |
| Profitability (RMW) | 0.13 | 0.024 | 5.196 | 0.000 | 0.078...0.173 |
| Investment (CMA) | 0.06 | 0.033 | 1.789 | 0.075 | -0.006...0.122 |
| Alpha (α) | -9.63bps | 0.001 | -1.779 | 0.076 | -0.20%...0.01% |
| Annualized Alpha (α) | -1.16% | | | | |

PV Factor Statistics

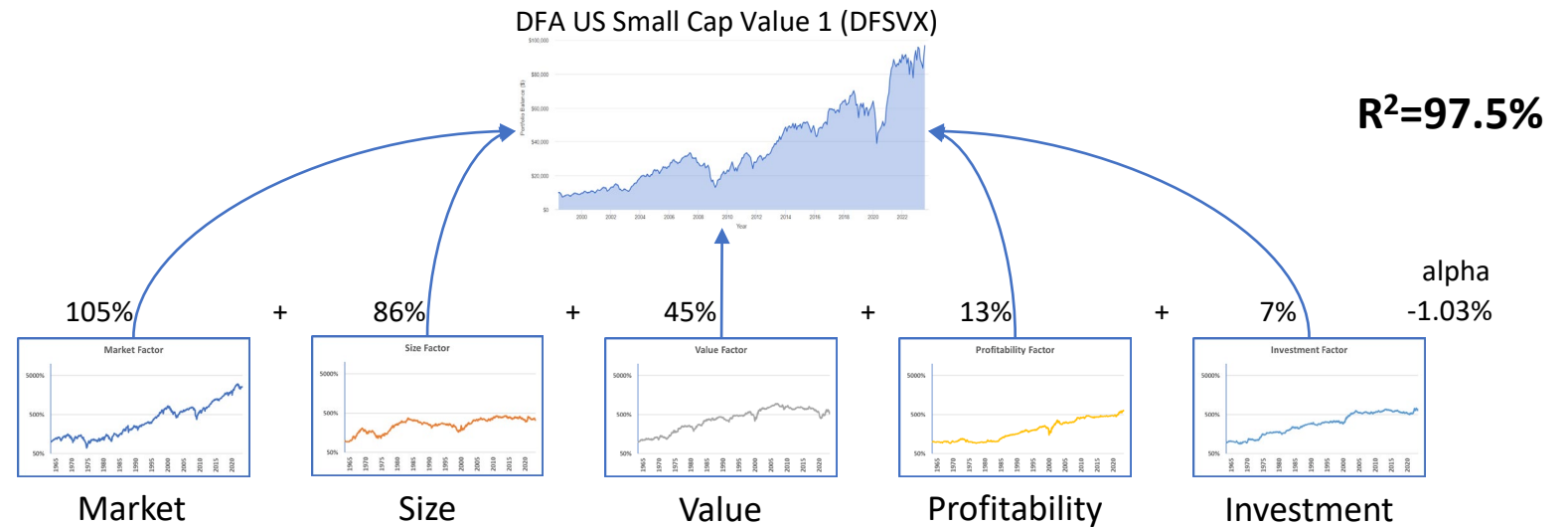
Factor Return Statistics (Jan 1964 - Apr 2023) [Link](#) [Excel](#)

Factor Correlations

| Factor | Key | Rm-Rf | SMB | SMB5 | HML | MOM | RMW | CMA | STREV | LTREV | Annualized Return | Annualized Standard Deviation |
|---------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|-------------------------------|
| Market | FF-MKT-RF | 1.00 | 0.29 | 0.28 | -0.21 | -0.17 | -0.18 | -0.37 | 0.32 | -0.00 | 5.52% | 15.61% |
| Size (FF3) | FF-SMB | 0.29 | 1.00 | 0.98 | -0.17 | -0.04 | -0.41 | -0.18 | 0.18 | 0.26 | 1.74% | 10.60% |
| Size (FF5) | FF-SMB5 | 0.28 | 0.98 | 1.00 | -0.02 | -0.07 | -0.35 | -0.10 | 0.18 | 0.32 | 2.18% | 10.53% |
| Value | FF-HML | -0.21 | -0.17 | -0.02 | 1.00 | -0.19 | 0.09 | 0.68 | 0.02 | 0.51 | 2.97% | 10.39% |
| Momentum | FF-MOM | -0.17 | -0.04 | -0.07 | -0.19 | 1.00 | 0.08 | -0.00 | -0.32 | -0.09 | 6.37% | 14.68% |
| Profitability | FF-RMW | -0.18 | -0.41 | -0.35 | 0.09 | 0.08 | 1.00 | -0.01 | -0.09 | -0.27 | 3.13% | 7.72% |
| Investment | FF-CMA | -0.37 | -0.18 | -0.10 | 0.68 | -0.00 | -0.01 | 1.00 | -0.14 | 0.52 | 3.34% | 7.16% |
| Short Term Reversal | FF-STREV | 0.32 | 0.18 | 0.18 | 0.02 | -0.32 | -0.09 | -0.14 | 1.00 | 0.09 | 5.10% | 10.92% |
| Long Term Reversal | FF-LTREV | -0.00 | 0.26 | 0.32 | 0.51 | -0.09 | -0.27 | 0.52 | 0.09 | 1.00 | 2.47% | 9.24% |

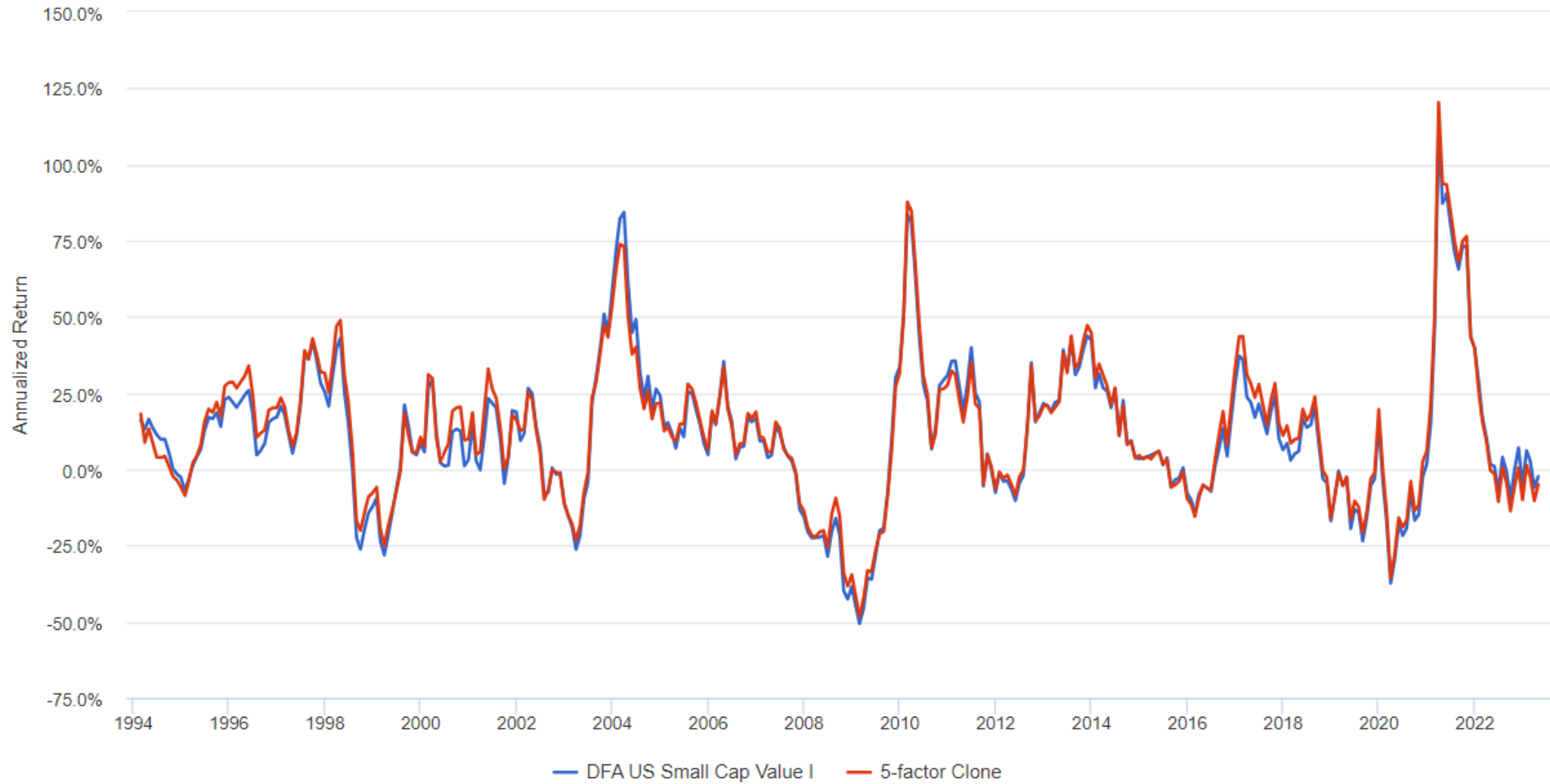
Factor correlations and returns statistics from January 1964 to April 2023

Factor models
can explain
>95% of return
variations



DFA US Small Cap Value I

DFA US Small Cap Value I - 12-month Rolling Excess Return

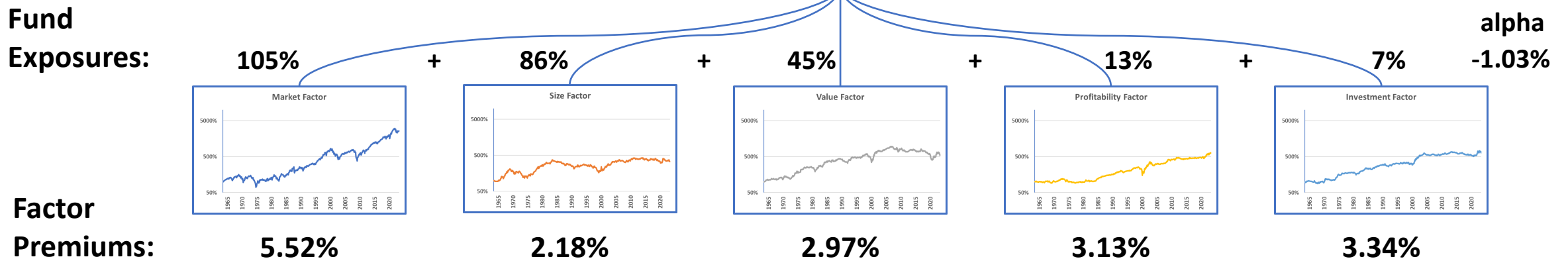


We can estimate expected returns using past exposures & premiums – e.g., DFSVX

DFA US Small Cap Value 1 (DFSVX 0.30% Expense Ratio)



$R^2=97.5\%$



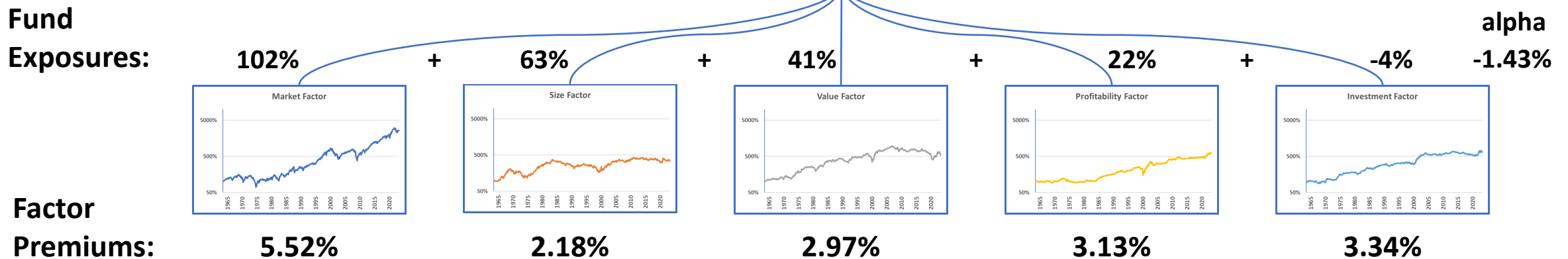
$$(105\% \times 5.52\%) + (86\% \times 2.18\%) + (45\% \times 2.97\%) + (13\% \times 3.13\%) + (7\% \times 3.34\%) - 1.03\% = \sim \underline{\underline{8.6\% \text{ (above risk-free)}}}$$

We can estimate expected returns using past exposures & premiums – e.g., VISVX

Vanguard Small-Cap Value Index Inv (VISVX 0.19% Expense Ratio)



$R^2=95.3\%$



$$(102\% \times 5.52\%) + (63\% \times 2.18\%) + (41\% \times 2.97\%) + (22\% \times 3.13\%) + (-4\% \times 3.34\%) - 1.43\% = \sim \underline{\underline{7.3\% \text{ (above risk-free)}}}$$

Factor- Predicted Return Gotchas

Timeframes should match

Don't trust regressions with low R^2 values

Look at 95% confidence Intervals

Be skeptical of estimated alpha

It's just a model

Other Fund Attributes to Consider

Expense
Ratios

Number of
holdings

Turnover

Parent
company

Fund
managers &
methodology

The Merriman Financial Education Foundation Best- In-Class ETF Recommendations

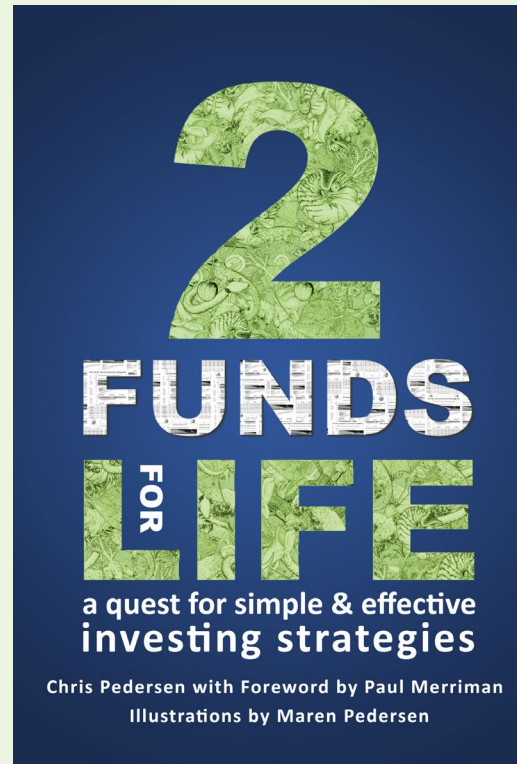
| | Best-in-Class (<i>New in 2023</i>) | Alternative Recommendations |
|-----------------------|---|---|
| US Large Cap Blend | Avantis U.S. Equity (AVUS) | DFA US Equity ETF (DFUS), Vanguard S&P 500 (VOO), Vanguard Total US Market (VTI), iShares Core S&P 500 (IVV), SPDR Large Cap (SPLG), Schwab Large-Cap (SCHX) |
| US Large Cap Value | Invesco S&P 500 Pure Value (RPV) | Avantis US Large Cap Value (AVLV), Vanguard Russell 1000 Value Index (VONV), iShares Core US Value (IUSV), Schwab S&P 500 Value (SPYV), U.S. Large-Cap Value (SCHV) |
| US Small Cap Blend | iShares Core S&P Small-Cap (IJR) | Avantis US Small Cap Equity (AVSC), DFA US Small Cap ETF (DFAS), Vanguard S&P Small-Cap 600 Index (VIOO), Russell Micro-Cap (IWC), Schwab U.S. Small-Cap (SCHA), SPDR Small Cap (SPSM) |
| US Small Cap Value | Avantis U.S. Small Cap Value (AVUV) | DFA US Small Cap Value ETF (DFSV), Vanguard S&P Small-Cap 600 Value (VIOV), SPDR Small Cap Value (SLYV), iShares S&P; SmCp 600 Value (IJS), Invesco S&P SmallCap 600 Pure Value ETF (RZV) |
| US REIT | Vanguard Real Estate Index (VNQ) | Fidelity MSCI Real Estate (FREL), iShares U.S. REIT (USRT), Schwab U.S. REIT (SCHH) |
| Int'l Large Cap Blend | Avantis International Equity (AVDE) | Vanguard FTSE Developed Markets (VEA), iShares Core MSCI EAFE (IEFA), SPDR World Ex-US (SPDW), Schwab Intl Equity (SCHF) |
| Int'l Large Cap Value | <u>DFA International Value (DFIV)</u> | Vanguard International High Dividend (VYMI), Avantis International Large Cap Val ETF (AVIV), iShares MSCI EAFE Value (EFV), iShares MSCI EAFE Value, Fidelity International Value Factor ETF (FIVA), SPDR S&P Intl Dividend (DWX) |
| Int'l Small Cap Blend | Schwab Fundamental International Small Company Index (FNDC) | DFA International Small Cap ETF (DFIS), Vanguard FTSE All-World ex-US Small-Cap Index (VSS), iShares MSCI EAFE SmCap (SCZ), SPDR S&P Intl. Small Cap (GWX), Schwab Intl Sm-Cp Equity (SCHC) |
| Int'l Small Cap Value | Avantis International Small Cap Value (AVDV) | DFA International Small Cap Value I (DISV), WisdomTree Intl. S. Cap Div (DLS) |
| Emerging Markets | Avantis Emerging Markets Equity (AVEM) | DFA Emerging Core Equity Market ETF (DFAE), Vanguard FTSE Emerging Markets (VWO), iShares Core MSCI EmMkts. (IEMG), SPDR Emerging Markets (SPEM), Schwab Emerging Mkt Eq (SCHE) |
| EM Large Cap Value | <u>Avantis Emerging Markets Value (AVES)</u> | Dimensional Emerging Markets Value ETF (DFEV) |
| EM Small Cap Blend | <u>iShares MSCI Em. Mkts. Sm.-Cap (EEMS)</u> | SPDR Emerging Mkts. S. Cap (EWX), WisdomTree Em. Markets SmCp Div ETF (DGS) |
| Int'l REITs | --- | Vanguard Global ex-US Real Estate (VNQI), iShares FTSE Real Estate ex-US (IFGL), |
| Short-Term Bonds | Vanguard Short-Term Gov't Bond (VGSH) | iShares Barclays ST Treas. (SHY), SPDR ST Treas. (SPTS), Schwab ST U.S. Treas. (SCHO) |
| Int.-Term Bonds | SPDR Inter. Term Treasury (SPTI) | iShares Barclays 7-10 Yr Treasury (IEF), Vanguard Intermediate-Term Government Bond (VGIT), Schwab I-T U.S. Treasury (SCHR) |
| Infl.-Prot. Bonds | Vanguard Short-Term Infl. Prot. Sec. (VTIP) | iShares Barclays 0-5 TIPS (STIP), Schwab U.S. TIPS (SCHP) |

Summary

- Buy right (for you)!
 - Right complexity
 - Right diversification
 - Right reward/risk
 - Right resilience
 - Right funds
- Hold tight!
- Zoom out & keep learning!



To learn more



- www.paulmerriman.com for books, articles, fund recommendations, videos, podcasts and more.
- ***Sign up*** for the free newsletter to get a download link for ***We're Talking Millions*** and ***2 Funds for Life***

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Any Questions?

(for more Iceland eye candy: bit.ly/44xp0Uw)

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The Merriman Financial Education
Foundation

October 11, 2023



Backup

2 Funds for Life, Fixed Allocation, Lump Sum, Annually Rebalanced, Fine-Tuning Table

| Target Date Fund Years to Retirement: | | 25 (Or More) e.g., 2050 TDF | 20 e.g., 2045 TDF | 15 e.g., 2040 TDF | 10 e.g., 2035 TDF | 5 e.g., 2030 TDF | 0 e.g., 2025 TDF | -7 (Or Less) e.g., 2015 TDF |
|---------------------------------------|---|--------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|--------------------------------|
| Simplified TDF Allocations | TDF Total US Stock Allocation | 54% | 49.5% | 45% | 40.5% | 36% | 30% | 18% |
| | TDF International LCB Stock Allocation | 36% | 33% | 30% | 27% | 24% | 20% | 12% |
| | TDF Int.-Term Gov't Bonds Allocation | 10% | 17.5% | 25% | 32.5% | 40% | 50% | 70% |
| 0% US SCV, 100% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 9.8% / 1.1% | 9.6% / 1.8% | 9.4% / 2.4% | 9.2% / 3.0% | 9.0% / 3.5% | 8.7% / 4.2% | 8.0% / 3.4% |
| | Annualized CAGR SD (Volatility) | 13.4% | 12.4% | 11.3% | 10.3% | 9.3% | 8.1% | 6.0% |
| | Worst Drawdown (Peak to Valley) | -48% | -44% | -40% | -36% | -31% | -25% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.5% | 4.3% | 4.2% | 4.0% | 3.5% |
| 10% US SCV, 90% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.3% / 1.9% | 10.2% / 2.5% | 10.0% / 3.0% | 9.8% / 3.6% | 9.6% / 4.0% | 9.4% / 4.6% | 8.7% / 4.2% |
| | Annualized CAGR SD (Volatility) | 13.8% | 12.8% | 11.9% | 11.0% | 10.1% | 8.9% | 6.8% |
| | Worst Drawdown (Peak to Valley) | -49% | -45% | -42% | -38% | -34% | -29% | -17% |
| | 30-Year Safe Withdrawal Rate | 4.2% | 4.4% | 4.6% | 4.6% | 4.6% | 4.5% | 4.1% |
| 20% US SCV, 80% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 10.8% / 2.6% | 10.7% / 3.1% | 10.5% / 3.6% | 10.4% / 4.1% | 10.2% / 4.5% | 10.0% / 5.1% | 9.4% / 4.9% |
| | Annualized CAGR SD (Volatility) | 14.3% | 13.4% | 12.6% | 11.8% | 10.9% | 9.9% | 7.9% |
| | Worst Drawdown (Peak to Valley) | -50% | -47% | -44% | -41% | -37% | -32% | -22% |
| | 30-Year Safe Withdrawal Rate | 4.1% | 4.3% | 4.5% | 4.7% | 4.7% | 4.8% | 4.6% |
| 30% US SCV, 70% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.2% / 3.2% | 11.1% / 3.7% | 11.0% / 4.2% | 10.9% / 4.6% | 10.8% / 5.0% | 10.6% / 5.5% | 10.1% / 5.6% |
| | Annualized CAGR SD (Volatility) | 14.8% | 14.1% | 13.4% | 12.6% | 11.9% | 11.0% | 9.3% |
| | Worst Drawdown (Peak to Valley) | -51% | -48% | -46% | -43% | -40% | -36% | -27% |
| | 30-Year Safe Withdrawal Rate | 4.0% | 4.2% | 4.3% | 4.5% | 4.7% | 4.8% | 4.8% |
| 40% US SCV, 60% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 11.7% / 3.9% | 11.6% / 4.3% | 11.5% / 4.7% | 11.4% / 5.1% | 11.3% / 5.4% | 11.1% / 5.8% | 10.8% / 6.2% |
| | Annualized CAGR SD (Volatility) | 15.5% | 14.9% | 14.2% | 13.6% | 13.0% | 12.2% | 10.7% |
| | Worst Drawdown (Peak to Valley) | -52% | -50% | -48% | -46% | -44% | -40% | -33% |
| | 30-Year Safe Withdrawal Rate | 3.8% | 4.0% | 4.1% | 4.3% | 4.4% | 4.6% | 4.9% |
| 50% US SCV, 50% TDF | Nominal CAGR / Worst 10-Yr. CAGR | 12.1% / 4.5% | 12.0% / 4.9% | 12.0% / 5.2% | 11.9% / 5.5% | 11.8% / 5.8% | 11.7% / 6.2% | 11.4% / 6.4% |
| | Annualized CAGR SD (Volatility) | 16.2% | 15.7% | 15.2% | 14.7% | 14.2% | 13.5% | 12.3% |
| | Worst Drawdown (Peak to Valley) | -54% | -52% | -51% | -49% | -47% | -44% | -39% |
| | 30-Year Safe Withdrawal Rate | 3.6% | 3.7% | 3.9% | 4.0% | 4.1% | 4.3% | 4.7% |
| 100% US SCV | Nominal CAGR / Worst-10Yr CAGR: 13.9% / 4.2% (-9.8% in 1928) Annualized CAGR SD: 20.6% Worst Drawdown: -61% 30-Year SWR: 2.5% | | | | | | | |

Sources & Assumptions: Assumes fixed asset class allocations, lumpsum investment, w/ annual rebalancing, for January 1970 through December 2022 returns. Safe withdrawal rates calculated with 1928-2022 annual returns. US Stock allocation modeled with US total market returns. International stock allocation modeled with International Large Cap blend. Bond allocation modeled with US Intermediate-term Government bonds.

- Young investors who contribute regularly will likely see lower drawdowns while contributions are large relative to account balance.
 - Investors who rebalance less frequently will likely see higher returns and higher drawdowns.
 - Real returns (adjusted for inflation) were about 3-4% less than the nominal returns shown.
- Past performance doesn't guarantee future returns. Drawdowns from 1928-1970 were worse by an additional 10% to more than 30%.

**~60/40
Eq./FI**

Not all factors equally available

