

Behind the Curtain: Investment Process and Case Studies



 Exploring Our Process and the Impact of some Investment Scenarios

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Outline

- Investment principles
- Case study
- Technology preview



Investment Principles

Investment principles and theory

- Institutional framework
 - Be conservative in assumptions
 - Invest over time
 - Estimate risk and return and invest accordingly
 - Deliver the portfolio that's most optimal for your goal today
- Consequences
 - Avoid big jumps and bets
- We will examine several different hypothetical scenarios
 - Market shifts
 - Modifications to the investment universe

Philosophy

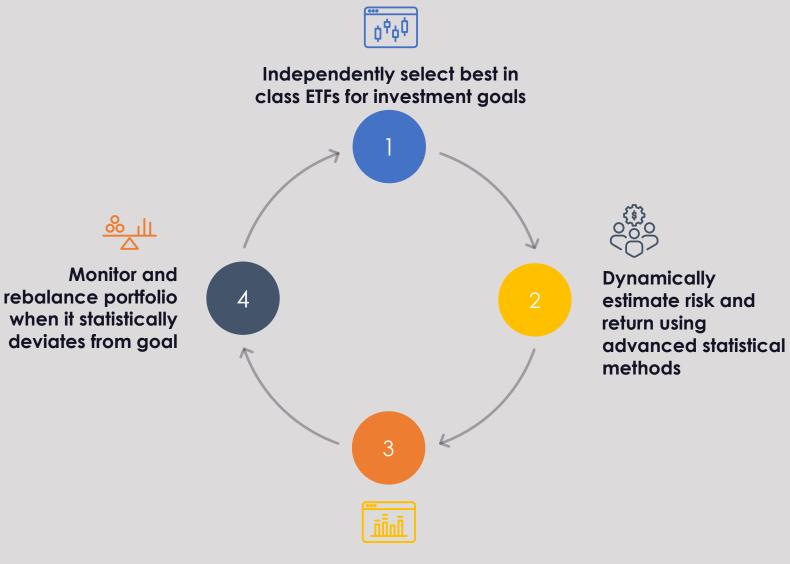
- Avoid discredited investing practices
- Apply provably beneficial practices

What We Avoid is Important

- Predict the future
 - Expert predictions of the S&P are worse than random chance.
- Pick favorite stocks
 - Stock pickers can underperform monkeys (Hsu and Kalesnik 2014).
- Pick favorite mutual funds
 - After fees, there's very little persistence in top performing funds.
- Pick favorite asset class
 - E.g. periodic table of the asset class returns
- Time markets
 - Tactical managers often fail to avoid market downturns.

Beneficial Practices

| Diversification | SecuritiesAsset classesRisk factors | Geographical regions Time (intertemporal risk management) | | | | | |
|------------------------------------|--|--|--|--|--|--|--|
| Managing Costs | Limit turnover Low cost ETFs Manage taxes | | | | | | |
| Strategic but not static forecasts | | | | | | | |
| Optimize portfolios | Optimize portfolios - Build portfolios for investor objectives - Seek to maximize return and especially minimize risk - Balance risk and return | | | | | | |



Optimize for an uncertain future using thousands of market scenarios

New Frontier Investment Process

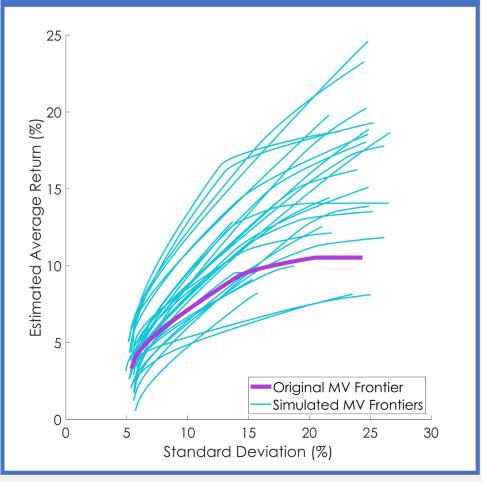
Unified Investment Process



Understanding Portfolio Uncertainty

- Start with your risk-return estimates and compute the Markowitz frontier (red curve)
- Simulate new inputs and compute a new efficient frontier (cyan)
- Do this many times
- Each simulated frontier as optimal as any other by construction
- Thousands of possible optimal asset allocations
- Thousands of ways things can happen consistent with what you believe

Original and Simulated MV Frontiers





Rebalancing Process

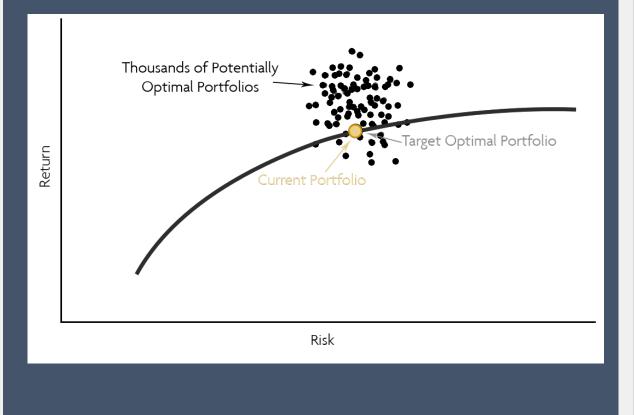


Select Asset Universe and ETFs



Construct Portfolio

Monitor and Rebalance Intelligent Rebalancing prevents ineffective and costly trades while enhancing investment value.



Portfolios are monitored continuously, and our need-totrade rebalancing test determines the optimal time to rebalance.

Common Rebalancing Practices

- Calendar rebalancing
- Range based rebalancing
- Just before the client comes in

Optimal Rebalancing Practices

- Full portfolio analysis
- Continuous process
- Every asset treated individually
- Every portfolio treated individually



Monitoring and Rebalancing

Intelligent Rebalancing™

- A. K. A. the Michaud-Esch Rebalance Test
- Compares "Distance" from Optimal Portfolio to yardstick
- Greater Statistical Distance implies greater need to trade
- For a specific portfolio relative to an optimal portfolio computed for all portfolios on optimal frontier
- Rule of thumb: rebalance scores greater than 50% warrant close monitoring

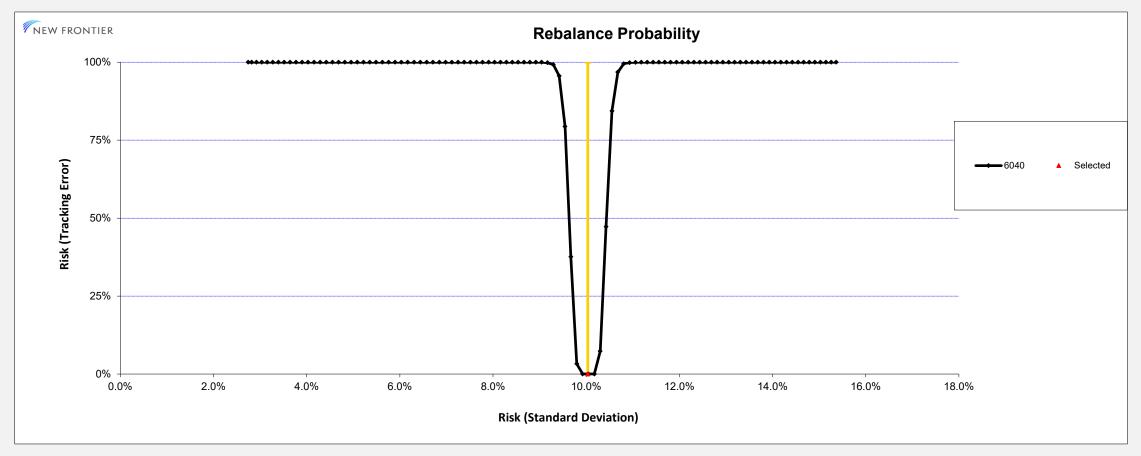
What Contributes to Statistical Distance?

- Stock/Bond misalignment
 - For example, Stocks have gone up more than bonds
 - Portfolio may still be efficient
- Asset Class mix is miscalibrated
 - Portfolio is likely inefficient
 - More serious need to trade
 - Can examine by looking at whole frontier

Rebalance Scores for Drifted Portfolios

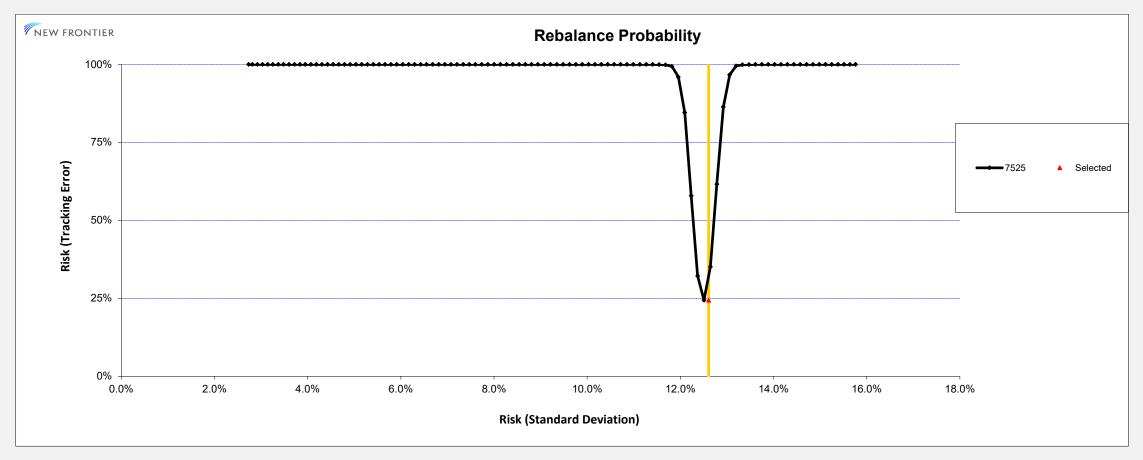
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Rebalance Scores for an Optimal Portfolio



Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process

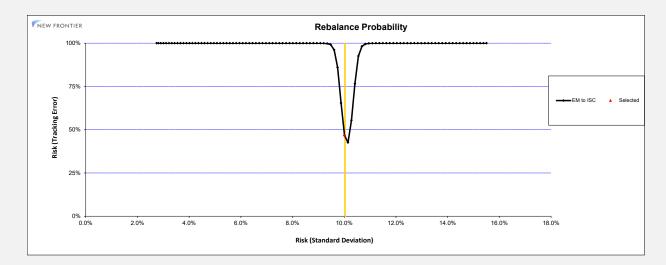
Rebalance Scores for a Drifted Portfolio



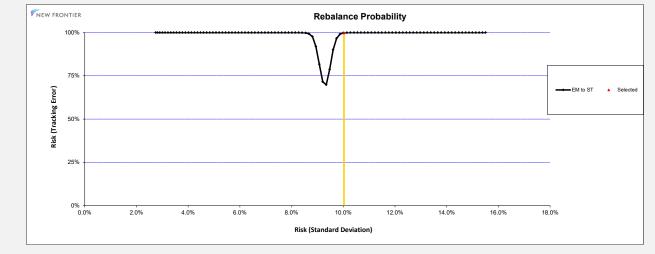
Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process

Equal Turnover may result in Different Rebalance Scores

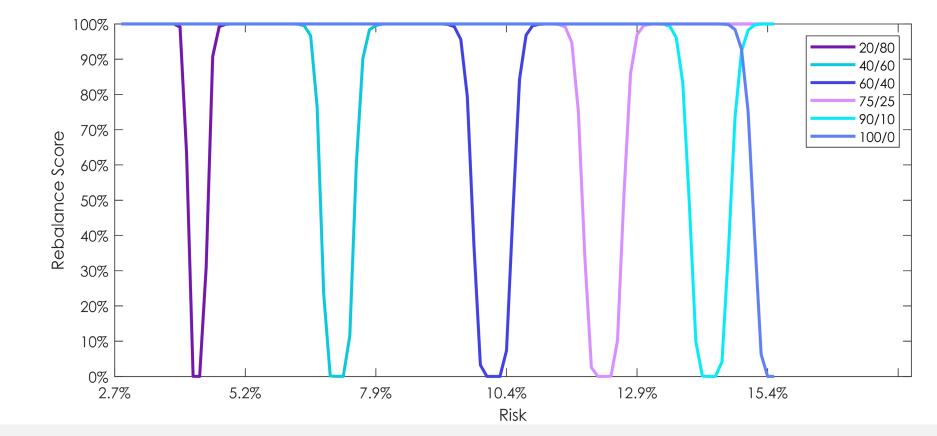
- Optimal 60/40 with 5% of EM weight moved to International Small Cap (correlation = 89.9%)
- Rebalance Score 46%



- Optimal 60/40 with 5% of EM weight moved to Short Treasurys (correlation = -11.7%)
- Rebalance score 99.8%

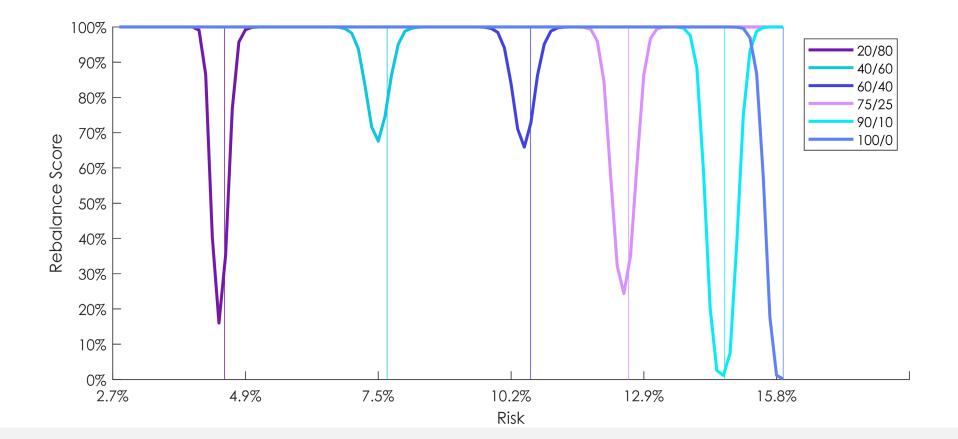


The Six Risk Profiles



Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process

Drifted Rebalance Test for Need to Trade

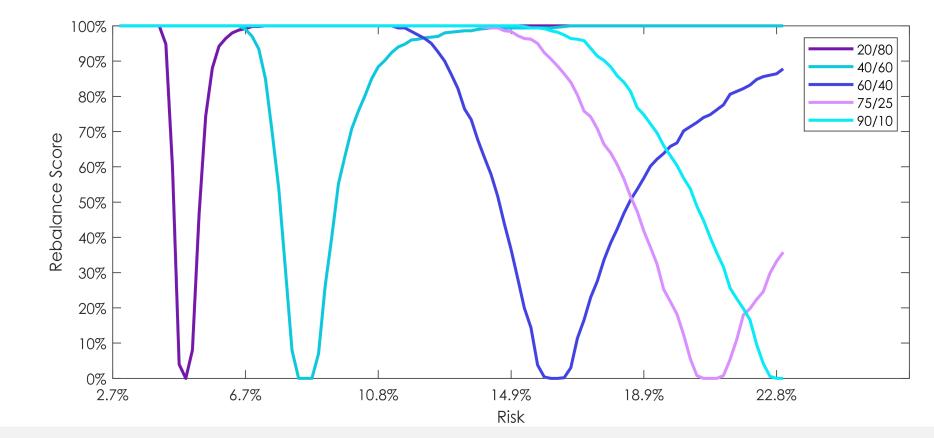


Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process

Rejection Sampling – Creating Uniform Rebalance Curves

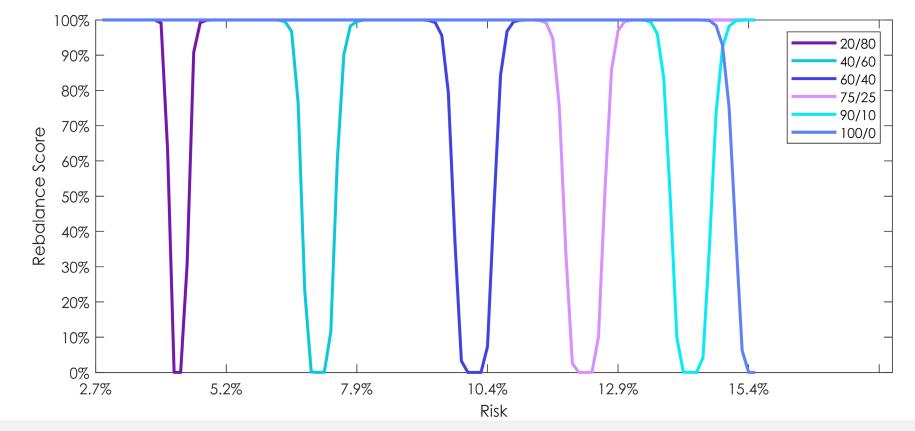
- Optimizer Simulations can be quite erratic in riskier profiles
- We believe that 90/10 and 100 percent Equity are efficient investments
- Many optimizer simulations have frontiers without these risk levels
- Without any modification, the Michaud Frontier will also fail to produce a 90/10 portfolio
- To remedy this issue, we deliberately reject simulations whose frontiers do not have 90/10 portfolios
- This changes the Optimal Allocations: Lower Risk
- This also has the effect of fixing the miscalibration of the Rebalance Test between low and high risk profiles

The Six Risk Profiles - No rejection sampling



Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process

The Six Risk Profiles with Rejection Sampling



Data Sources: Bloomberg, US Bureau of Labor Statistics, New Frontier Estimation Process



Technology Preview

Daily Rebalance Test

| | | ade Execution Date 04/30/2024 📰 | Trade Selected Portfo | lios Preview Selec | ted Trades | Undo Selected Traded Portfolios | | | | |
|-----------------------|------------------|------------------------------------|---|---|----------------|---------------------------------|-------------------|------------------|-----------------|----------------------------------|
| | | Search: | | | | | | | | |
| Select To Trade | Trade Optimal | Portfolio | Rebalance Probability 🔶 (Undrifted) | Rebalance Probability 🔶 (Drifted) | Last Traded | Drifted To | Target Optimal | Filter Target | Filter score | Return Since Last Trade |
| | | 20:80 Income | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 15.52 | 0.2 | 0.2 | -0.8% |
| | | 40:60 Balanced Income | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 38.75 | 0.4 | 0.4 | -0.8% |
| | | 60:40 Balanced | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 60.56 | 0.6 | 0.601 | -0.9% |
| | | 75:25 Balanced Growth | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 75.98 | 0.75 | 0.752 | -0.9% |
| | | 90:10 Growth | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 91.46 | 0.9 | 0.901 | -0.9% |
| | | 100:0 All Equity | 0.0% | 0.0% | 03/07/2024 | 04/29/2024 | 101 | 1 | 0.979 | -0.8% |
| | | 20:80 Income (Domestic) | 0.4% | 25.8% | 01/12/2024 | 04/29/2024 | 12.58 | 0.2 | 0.211 | 0.9% |
| | | 40:60 Balanced Income (Domestic) | 0.1% | 9.3% | 01/12/2024 | 04/29/2024 | 33.58 | 0.4 | 0.415 | 2.4% |
| | | 60:40 Balanced (Domestic) | 0.3% | 9.1% | 01/12/2024 | 04/29/2024 | 54.81 | 0.6 | 0.614 | 3.5% |
| | | 75:25 Balanced Growth (Domestic) | 0.8% | 9.2% | 01/12/2024 | 04/29/2024 | 70.7 | 0.75 | 0.761 | 4.3% |
| | | 90:10 Growth (Domestic) | 1.8% | 9.0% | 01/12/2024 | 04/29/2024 | 87.88 | 0.9 | 0.904 | 5.1% |
| | | 100:0 All Equity (Domestic) | 24.7% | 21.1% | 01/12/2024 | 04/29/2024 | 101 | 1 | 0.98 | 5.6% |

Performance Monitoring and Attribution

| Stock Benchmark ACWI ~ Bond Ben | chmark | T-Bill | ~ | | | | | | | | | |
|---|--------|--------|-------|-------|--------|--------|-------|-------|------------|-----------------|------------------|-----------------------|
| | | | | | | | | | | | | (i) Contribution Type |
| | | | | | | | | | | Since Selected | | Relative ~ |
| | | | | | | | | | Since | Model Inception | Weights (%) i | Contribution (%) |
| Assset | 1 Day: | MTD: | QTD: | YTD: | 1yr: | 3yr: | 5yr: | 10yr: | 10/31/2004 | (10/29/2004) | 60:40 Balanced ~ | QTD ~ |
| SPDR Bloomberg 1-3 Month T-Bi (BIL) | 0.01 | 0.43 | 0.43 | 1.72 | 5.28 | 2.64 | 1.92 | 1.26 | 1.37 | 1.37 | 2.06 | 0.00 |
| iShares Treasury Floating Ra (TFLO) | 0.00 | 0.52 | 0.52 | 1.88 | 5.49 | 2.97 | 2.13 | 1.48 | - | - | 11.20 | 0.01 |
| SPDR Portfolio Short Term Tr (SPTS) | -0.14 | -0.37 | -0.37 | -0.12 | 2.24 | -0.16 | 0.98 | 1.02 | - | - | 0.00 | 0.00 |
| SPDR Portfolio Intermediate (SPTI) | -0.33 | -2.07 | -2.07 | -2.81 | -2.23 | -3.35 | -0.18 | 0.76 | - | - | 2.16 | -0.05 |
| SPDR Portfolio Long Term Tre (SPTL) | -0.68 | -5.92 | -5.92 | -8.88 | -12.32 | -10.70 | -3.72 | 0.35 | - | - | 4.49 | -0.29 |
| Schwab U.S. TIPS ETF (SCHP) | -0.45 | -1.64 | -1.64 | -1.71 | -1.37 | -1.61 | 2.02 | 1.84 | - | - | 1.39 | -0.03 |
| iShares MBS ETF (MBB) | -0.53 | -2.82 | -2.82 | -3.93 | -2.15 | -4.05 | -1.02 | 0.62 | - | - | 1.16 | -0.04 |
| iShares iBoxx \$ Investment Gr (LQD) | -0.55 | -3.24 | -3.24 | -4.08 | -0.32 | -3.99 | 0.64 | 2.12 | 3.71 | 3.71 | 1.38 | -0.05 |
| iShares Long-Term Corporate (IGLB) | -0.83 | -4.87 | -4.87 | -6.25 | -2.56 | -6.46 | -0.30 | 2.14 | - | - | 1.28 | -0.07 |
| PIMCO 0-5 Year High Yield Cor (HYS) | -0.71 | -0.90 | -0.90 | 0.70 | 8.31 | 2.77 | 3.37 | 3.64 | - | - | 7.26 | -0.09 |
| iShares Broad USD High Yield (USHY) | -0.55 | -1.16 | -1.16 | 0.69 | 8.61 | 1.36 | 3.39 | - | - | - | 2.06 | -0.03 |
| SPDR Bloomberg Barclays Inter (BWX) | -1.11 | -3.62 | -3.62 | -7.23 | -5.42 | -9.06 | -3.86 | -2.40 | - | - | 0.48 | -0.02 |
| iShares J.P. Morgan USD Emerg (EMB) | -1.01 | -2.41 | -2.41 | -0.90 | 6.32 | -3.43 | -0.16 | 2.13 | - | - | 1.33 | -0.04 |
| Vanguard Value ETF (VTV) | -1.28 | -3.91 | -3.91 | 5.33 | 14.28 | 7.47 | 9.90 | 9.90 | 8.78 | 8.78 | 14.89 | 0.00 |
| Vanguard Growth ETF (VUG) | -1.85 | -4.18 | -4.18 | 6.24 | 31.67 | 6.92 | 15.85 | 14.57 | 11.62 | 11.61 | 9.80 | 0.04 |
| Vanguard Small-Cap Value ETF (VBR) | -1.78 | -6.00 | -6.00 | 0.72 | 17.31 | 3.71 | 8.39 | 8.33 | 8.78 | 8.77 | 3.79 | -0.03 |
| Vanguard Small-Cap Growth ETF (VBK) | -2.15 | -7.29 | -7.29 | 0.14 | 13.95 | -4.76 | 6.02 | 8.12 | 9.33 | 9.33 | 5.06 | -0.10 |
| iShares Edge MSCI Min Vol US (USMV) | -1.02 | -3.74 | -3.74 | 3.55 | 11.09 | 5.53 | 7.94 | 10.30 | - | - | 3.53 | -0.01 |
| iShares MSCI EAFE Min Vol Fa (EFAV) | -0.74 | -2.20 | -2.20 | -0.03 | 1.68 | 0.45 | 2.01 | 3.74 | - | - | 1.46 | 0.02 |
| JPMorgan BetaBuilders Canada ETF (BBCA) | -1.99 | -3.67 | -3.67 | 0.74 | 7.63 | 3.97 | 8.08 | - | - | - | 1.91 | -0.00 |
| iShares Core MSCI Europe ETF (IEUR) | -1.47 | -2.45 | -2.45 | 2.56 | 6.91 | 3.02 | 6.57 | - | - | - | 4.96 | -0.06 |
| iShares MSCI Switzerland ETF (EWL) | -1.56 | -4.71 | -4.71 | -6.03 | -3.56 | 1.36 | 6.68 | 4.87 | 7.69 | 7.69 | 0.00 | 0.00 |
| iShares Core MSCI Pacific ETF (IPAC) | -1.23 | -4.68 | -4.68 | 1.41 | 9.70 | 0.02 | 4.53 | - | - | - | 5.45 | -0.01 |

Account Monitoring Technology

| Select | | | | | | | | | | | | |
|--------|---------|----------------------------------|--------------------|------------|-------------|------------|------------|--------|------|-----------|-----------|---------|
| То | Trade | | | | | | Model 💧 | ۵ | ۵ | 4 | Return | Rebal 🛓 |
| Trade | Optimal | | Ť. | | Rebalance | Inception | Last | Filter | Ť | Total | Since | Flag |
| | | Portfolio | Custodian | Restricted | Probability | Date | Traded | score | Cash | Value | Inception | TE |
| | | ts 90:10 Growth | schwab(tda) | false SWAP | 0.5% | 01/15/2020 | 01/12/2024 | 0.904 | 2.1% | \$61,983 | 7.3% | False |
| | | 75:25 Balanced Growth (Domestic) | schwab(tda) | false SWAP | 15.9% | 11/23/2020 | 01/12/2024 | 0.752 | 3.1% | \$28,726 | 7.1% | False |
| | | 40:60 Balanced Income (Domestic) | interactivebrokers | true SWAP | 16.1% | 08/15/2018 | 01/12/2024 | 1 | 0.0% | \$33,280 | 6.7% | False |
| | | 75:25 Balanced Growth (MAI) | fidelity | true SWAP | 16.2% | 04/12/2023 | 03/02/2023 | 0.771 | 0.0% | \$610,383 | 8.0% | False |
| | | 40:60 Balanced Income (Domestic) | schwab(tda) | false SWAP | 16.3% | 11/23/2020 | 01/12/2024 | 0.402 | 3.4% | \$25,811 | 3.0% | False |
| | | 75:25 Balanced Growth (MAI) | fidelity | true SWAP | 16.8% | 10/25/2021 | 03/02/2023 | 0.767 | 0.0% | \$236,320 | -1.3% | False |
| | | 40:60 Balanced Income (MAI) | schwab(tda) | false SWAP | 19.0% | 02/03/2020 | 03/02/2023 | 0.396 | 4.0% | \$26,566 | 2.7% | False |
| | | 75:25 Balanced Growth (MAI) | fidelity | true SWAP | 20.6% | 10/25/2021 | 03/02/2023 | 0.767 | 0.0% | \$461,879 | -1.7% | False |
| | | 60:40 Balanced (MAI) | schwab(tda) | false SWAP | 28.0% | 02/03/2020 | 03/02/2023 | 0.584 | 4.2% | \$27,484 | 3.8% | False |



Disclosures:

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New Frontier Advisors, LLC ("New Frontier") is retained as a portfolio strategist ("Strategist") to provide model portfolios. Model portfolios are provided either (1) to registered investment advisors or broker-dealers ("Financial Advisors") through third-party asset management platforms ("Sponsors") or (2) to individual clients where New Frontier acts as subadvisor to the client's Financial Advisor and accesses the client's account through a qualified custodian ("Custodian") to execute the model portfolio's transactions. New Frontier does not provide investment advisory services tailored to the individual needs and objectives of any investor. New Frontier acts solely as subadvisor, strategist, model provider, and/or model manager, and its relationship with any investor is limited to a subadvisory role working with the investor's Financial Advisor. Investors should consult with their Financial Advisor if they have any questions concerning the information provided here.

Returns shown here for the Standard, Taxed, and MAI portfolios are hypothetical because the returns are from accounts following our models and represent our performance on multiple Sponsors. Returns shown for the US Portfolios are actual portfolios traded to those models on Custodians. We include no back tested performance.

Disclosures:

Past performance is no guarantee of future results. The portfolio's investment objective, risks, fees, and underlying expenses should be considered carefully before investing. As market conditions fluctuate, the investment return and principal value of any investment will change. Diversification may not protect against market risk. There are risks involved with investing, including possible loss of principal. Volatility represents the expected risk of the portfolio relative to major asset classes. The underlying holdings may invest in foreign and emerging market securities which will involve greater volatility as well as political, economic, and currency risks and differences in accounting methods. Portfolio holdings, exposures, and characteristics are as of the date show and are subject to change at any time. Before investing in any investment portfolio, the investor and Financial Advisor should carefully consider the investor's investment objectives, time horizon, risk tolerance, and fees. The Financial Advisor assumes full responsibility for determining the suitability and fitness of each portfolio for their clients.

For the Global Core, Tax Sensitive and Multi-Asset Income portfolios ("Global Strategies") returns since inception are based upon the performance data provided by the Sponsors. Returns from inception of the Global Core and Tax-Sensitive profiles on October 29, 2004, until July 1, 2009 (except for taxed 20/80 which switched on October 1, 2010, and taxed 40/60 which switched on January 1, 2010) and the inception of the Multi-Asset Income profiles on July 1, 2012, until October 1, 2012 for the 40/60 and 60/40 profiles, or April 1, 2013 for the 75/25 profile, are the returns of a single account for each profile held by one of our Sponsors and being traded according to New Frontier's trading instructions. After the switching dates, additional accounts following the model at Sponsors are included in the composite. This performance is considered hypothetical because it is model performance that is not directly traded by New Frontier. Performance shown for the U.S. Core Portfolios is based upon the performance data provided from accounts managed by New Frontier in the Direct-through-Custodian program. All initial investments were in a limited number of accounts, which is not as representative as the performance of a larger number of accounts would be. Performance results use a time-weighted rate of return for each account, weighted by each account's beginning assets relative to the total assets invested in the model. All securities are listed at fair value as determined by the Custodian.

For the Global Strategies, New Frontier acquires gross of fees monthly composite performance data of the accounts invested in each model portfolio at each Sponsor and weights the returns according to each Sponsor's assets under management for that model. Some Sponsors provide insufficient performance information for New Frontier to include them in the weighted average. Each Sponsor sets the criteria for account exclusion and rules for return calculation on the account level. We consider our partner Sponsors to be reliable sources of information, but we are unable to warrant that the data will be complete or error-free as we do not have direct access to individual account data at any of our Sponsors. We also track our model portfolios using publicly available ETF prices as an outside check on Sponsor data.

Disclosures:

In order to show net performance, we deduct estimated Strategist and Sponsor fees from gross performance using the highest possible fee rate of 65 basis points for the Global Strategies and 75 basis points for the Multi-Asset Income portfolios. Fees are subtracted on a quarterly basis, so performance for less than one quarter may not show the full impact of fees. The net performance does not include the advisory fees charged by a Financial Advisor nor any applicable trading or custodial fees. The deduction of advisory, custodial, and trading fees would lower historical performance as net performance does not reflect the compounding effect of those fees. The performance shown includes reinvestment of income, deductions for transaction costs, and rebalancing according to the Strategist's buy/sell signals. At the time of publication, a majority of custodians are not charging a trading fee for domestic stock trades or ETF trades. The reported gross performance excludes all fees except the underlying ETF fees, and as such, does not reflect the compounding effect of those fees.

For the Global Core and Tax-Sensitive profiles, benchmark returns are blended returns of the MSCI's ACWI IMI NR returns and FTSE 3-month US Tbill returns according to the stock/bond ratio of the profile. This blended benchmark is used to reflect the global exposure of our portfolios while being denominated in U.S. dollars. The MSCI ACWI Investable Market Index (IMI) captures large, mid, and small cap representation across both developed and emerging market countries. The index is comprehensive, covering approximately 99% of the global equity investment opportunity set. The FTSE 3-month US T-Bill Index tracks the daily performance of 3 Month US Treasury Bills and is designed to operate as a reference rate for a series of funds. For the Multi-Asset Income profiles, benchmark returns are blended returns of the Dow Jones Global Select Dividend Index and the ICE BoAML US Broad Market Index according to the stock/bond ratio of the profile. This blended benchmark is used to reflect the global exposure of our portfolios while being denominated in U.S dollars. The Dow Jones Global Select Dividend Index aims to represent the performance of leading dividend-paying companies from developed markets. The ICE BoAML US Broad Market Index measures the performance of the total U.S. investment-grade bond market. For the U.S. Core profiles, benchmark returns are blended returns of the S&P 500 NR USD returns and FTSE 3-month US T-bill returns according to the stock/bond ratio of the profile. This blend consists of well-established and transparent indices that reflect our objective of capturing economic growth for a dollar-denominated investor. The S&P 500 NR USD index captures large-cap U.S. equities representation. It includes 500 top companies in leading industries of the U.S. economy and covers approximately 80% of available market capitalization. These benchmarks are not intended to represent the security selection process or holdings, but serve as a frame of comparison using established well-known indices. These indices are not available for direct investment. A person who purchases an investment product that attempts to mimic the performance of an index will incur expenses such as management fees, transaction costs, etc. which would reduce returns.

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To receive additional information such as the New Frontier brochure (the ADV Part 2), please contact Nick Lam at (nlam@newfrontieradvisors.com)