BRINGING TRANSPARENCY TO ROBO INVESTING

EDITION 8

The Robo Report™ Second Quarter 2018

We are proud to publish the 8th edition of *The Robo Report*™, covering the 2nd quarter of 2018. This report is a continuation of an ongoing study that monitors the most well-known robo advisors. We strive to provide a reliable resource for both investors and professionals interested in the digital advice industry. This is an exciting report for us, as we are launching some new features. This report, we are releasing a new method to compare globally diversified portfolios that have similar, but not identical allocations between fixed income and equities. This new method is called Normalized Benchmarking. A detailed methodology for this process can be found on our website, TheRoboReport.com. We are also excited to announce the upcoming release of a comprehensive ranking of the 10 robo advice providers for which we have two or more years' performance. The ranking scores the robos on both their qualitative attributes, like online experience, services, and features, as well as a quantitative factors, like performance and costs. The ranking is made up of nine high-level categories and over 45 specific metrics. The Robo Ranking will be released as a separate report in mid-August.

The Executive Summary

The highlights of the 2nd quarter report are:

- Broad-based and simple equity allocations at SigFig and Vanguard produce not only strong returns, but also strong risk-adjusted returns.
- Fidelity Go performs well over the past year. We will see if their strong performance continues after switching their fund line up to a series of no-expense-ratio funds.
- Hedgeable closes their managed accounts and returns assets back to their customers. What is next for our most actively traded robo?
- The outperformance of fixed income portfolios holding international bonds ends amidst a rising dollar and trade concerns.
- Acorns reverses their previous underperformance with high allocations to small-cap and domestic equities.
- Betterment's value tilt holds them back, as growth continues to outperform value.

Robo Report Housekeeping

There are a couple of housekeeping items we need to address in the new report. First, we introduce the Wealthsimple SRI portfolio, focused on empowering women, to our report. Second, Hedgeable has notified their account holders that they will no longer be providing a direct-to-consumer management service; due to this recent announcement, we have removed them from our report. We have also opened accounts at UBS and US Bank which will appear in our 3rd and 4th quarter reports respectively. This quarter, we are also introducing our Normalized Benchmarking method. A methodology for Normalized Benchmarking is at the end of the report, and a more detailed explanation can be found on our website, TheRoboReport.com. Our top total portfolio performers are now ranked on their returns above/below the Normalized Benchmark. This method reduces the inherent advantage to the robo portfolios we opened that have a higher than 60% equity allocation. Additionally, due to our introduction of Normalized Benchmarking, we have changed the reporting on two accounts, SoFi and Morgan Stanley. Specifics on these changes can be found in the disclosures section.

Methodology

To get a first-hand understanding of how the different providers operate and invest clients' money, we opened up, funded, and sought specific portfolios at various robo advisors. For the taxable accounts, we sought a moderate allocation of approximately 60% stocks and 40% bonds for an investor in a high tax bracket. For comparability between portfolios that have different target allocations, we track the equity-only and fixed-income only portions of the portfolios, and encourage investors to look at differences in target allocations and compare asset class to asset class when appropriate. This quarter we have introduced Normalized Benchmarking as an alternative way to compare robo portfolios with differing equity allocations. As for the IRAs, our goal was to have the most aggressive (highest stock) allocation. Starting with a similar baseline allocation across the portfolios allows us to measure performance and compare how our funds are invested as equally as possible.

Top Performers

Year-to-Date Top Performers

	Best	2nd	3rd
Total Portfolio	Fidelity Go	Zack's Advantage	Wealthsimple
Equity	Wells Fargo	Acorns	Zack's Advantage
Fixed Income	SoFi	Vanguard	Ellevest

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1-Year Trailing Top Performers

	Best	2nd	3rd
Total Portfolio	Wealthfront	Fidelity Go	Vanguard
Equity	Wealthfront	Fidelity Go	TIAA
Fixed Income	Fidelity Go	Wealthsimple	SoFi

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2-Year Trailing Top Performers

	Best	2nd	3rd
Total Portfolio	Vanguard	SigFig	E*Trade
Equity	E*Trade	SigFig	Vanguard
Fixed Income	Schwab	SigFig	Betterment

** Total Portfolio winners are based on the Portfolio's return above/below the normalized benchmark.*

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Robo News

Catch up on what you missed in the digital advice industry over the last quarter. Below are highlights of the biggest news from the 2nd Quarter of 2018.

The 2nd quarter of 2018 was an active three months for the robo advice industry. Existing players continue to attract capital and expand the features of their platforms. As banks continue to enter the robo advice arena, robos and other fintech companies are expanding into banking with an onslaught of checking account products, while companies that serve financial advice businesses are increasingly incorporating technology and features associated with digital advice into their product suite for traditional advisors.

Funding and Acquisition Update

Acorns, SigFig, and WiseBanyan, all early entrants into robo advice, raised money this quarter. Following an investment for an undisclosed amount led by The Rise Fund in January, Acorns raised $50 million in another fundraising round led by Blackrock this past May. SigFig also raised a $51 million dollar round in June. SigFig partnered with UBS and Wells Fargo, both newcomers to the robo advice space using SigFig's technology. The investment will go towards hiring developers and product improvements, according to the CEO Mike Sha. WiseBanyan also closed a smaller, $6.6 million dollar round this quarter. Grove Financial, a smaller and newer hybrid advisor with a focus on financial planning also raised $8 million this quarter. More consequentially, Financial Engines was purchased by private equity firm Hellman and Friedman LLC for $3.02 billion dollars with the intent of merging them with Edelman Financial Services, one of the nation's largest independent financial planning firms.

Closing Robos

Despite the existing appetite for investing in robo advice companies, not all news has been good. LearnVest, a digital financial planning company that was acquired by Northwestern Mutual in 2015, recently notified customers that they are discontinuing their planning and online investment services. Hedgeable also sent out a notification to their customers that they are discontinuing their managed accounts. Additionally, a smaller, women-focused robo, WorthFM, announced it was closing their doors after launching in 2016.

Banks Launching Robos and Robos Launching Banking

While one independent robo closes, established banking institutions continue to launch digital advice products. US Bank recently launched their offering backed by FutureAdvisor, which is owned by BlackRock. Fifth Third Bank also announced the launch of their digital advisor this quarter. While banks are rapidly adopting digital advice products, robo advisors are firing back by expanding into banking products. This quarter, both Acorns and Stash, two of the most popular robos with younger and lower asset clients, launched a checking account and debit card option. SoFi, which started as a fintech lender then launched a robo advice product, is now offering checking accounts with debit cards. This is on top of Venmo, a popular person-to-person payment app, also going from digital to plastic with a debit card product. If that was not enough, Wealthfront is also exploring a possible checking and savings account feature. For those users who want a newly minted debit card from one of these players, get in line: All of these new products have waitlists.

Robos Evolve

Beyond checking accounts, Wealthfront CEO Andy Rachleff would like to see Wealthfront develop tools to handle a much wider range of personal finance tasks. Recent development efforts by Wealthfront have continued to enhance Path, their financial planning tool, expanding its capabilities to a wider set of financial goals, like buying a new home or saving for education. Betterment is also enhancing their advice by incorporating users' held-away assets in their retirement plan goals, as well as dispensing advice on held-away accounts. Fidelity also made changes to their platform, reducing their minimum to $0 and changing the underlying assets of their portfolios to a family of proprietary mutual funds that do not charge an expense ratio. The move was an effort to increase transparency and attractiveness to those just starting out in investing. Meanwhile, Envestnet is planning on launching a personal finance app with robo advice capabilities to add to their already wide suite of products designed for financial advice businesses.

The Future is Around the Corner

As for the future, Wealth Wizard, a UK-based advice company, is looking past chatbots and developing a talking robo advisor. JP Morgan also recently launched a pilot program for an AI-powered digital assistant in their treasury service division. This follows virtual assistants launched at Bank of America and Wells Fargo.

Funding and AUM Statistics

Robo	Raised to Date (Millions)	Last Funding Amount (Millions)	Last Funding Date	Post-Money Valuation at Last Funding Round (Millions)	AUM (Millions)	Clients	As of Date	Source of AUM and Clients Figures
Acorns	$152	$50	May, 2018	Unknown	$804	1,870,961	4/19/2018 ADV	Most Recent ADV
Ally Invest Advisors	N/A	N/A	N/A	Acquired TradeKing for $294 Million June, 2016	$114	7,153	6/15/2018 ADV	Most Recent ADV
Betterment	$275	$70	Jul, 2017	$800	$14,143	361,809	6/4/2018 ADV	Most Recent ADV
Ellevest	$45	$35	Jul, 2017	$83	$91	7,673	12/31/2017	Most Recent ADV
FutureAdvisor	N/A	N/A	N/A	Acquired for $152 Million August, 2015	$1,213	8,587	12/31/2017	Most Recent ADV
Personal Capital	$250	$40	Aug, 2017	Unknown	$6,489	15,070	12/31/2017	Most Recent ADV
Schwab Intelligent Portfolio Products	N/A	N/A	N/A	N/A	$33,300	223,000 Accounts (# of clients unavailable)	AUM as of 6/30/2018; # of Accounts as of 12/31/2017	AUM from Q2 18' Earnings Report; # of Accounts from Q4 17' Earnings Report
SigFig	$118	$51	Jun, 2018	$471	$211	3,934	12/31/2017	Most Recent ADV
SoFi Wealth	N/A	N/A	N/A		$43	9,163	12/31/2017	Most Recent ADV
TD Ameritrade Selective and Essential Portfolios	N/A	N/A	N/A	N/A	$19,700	Unknown	6/30/2018	Company Reports
T Rowe Price ActivePlus Portfolios	N/A	N/A	N/A	N/A	$355	Unknown	6/30/2017	Company Representitive
United Income	$5	$5	Jun, 2016	$25	$436	312	AUM as of 06/30/2018; Clients as of 7/11/18 ADV	Company Representitive and Most Recent ADV
Vanguard Personal Advisor Services	N/A	N/A	N/A	N/A	$101,000	Unknown	12/31/2017	News Media/ Vanguard Spokesperson
Wealthfront	$204	$75	Jan, 2018	$500*	$10,233	193,287	12/31/2017	Most Recent ADV
Wealthsimple	$115	$52	Feb, 2018	Unknown	$52 (U.S.)	7,980 (U.S.)	12/31/2017	Most Recent ADV
WiseBanyan	$11	$7	Apr, 2018	Unknown	$153	31,772	12/31/2017	Most Recent ADV

All funding and valuation amounts are estimates
Sources: Crunchbase, Pitchbook, News Media
**This valuation number has been disputed*

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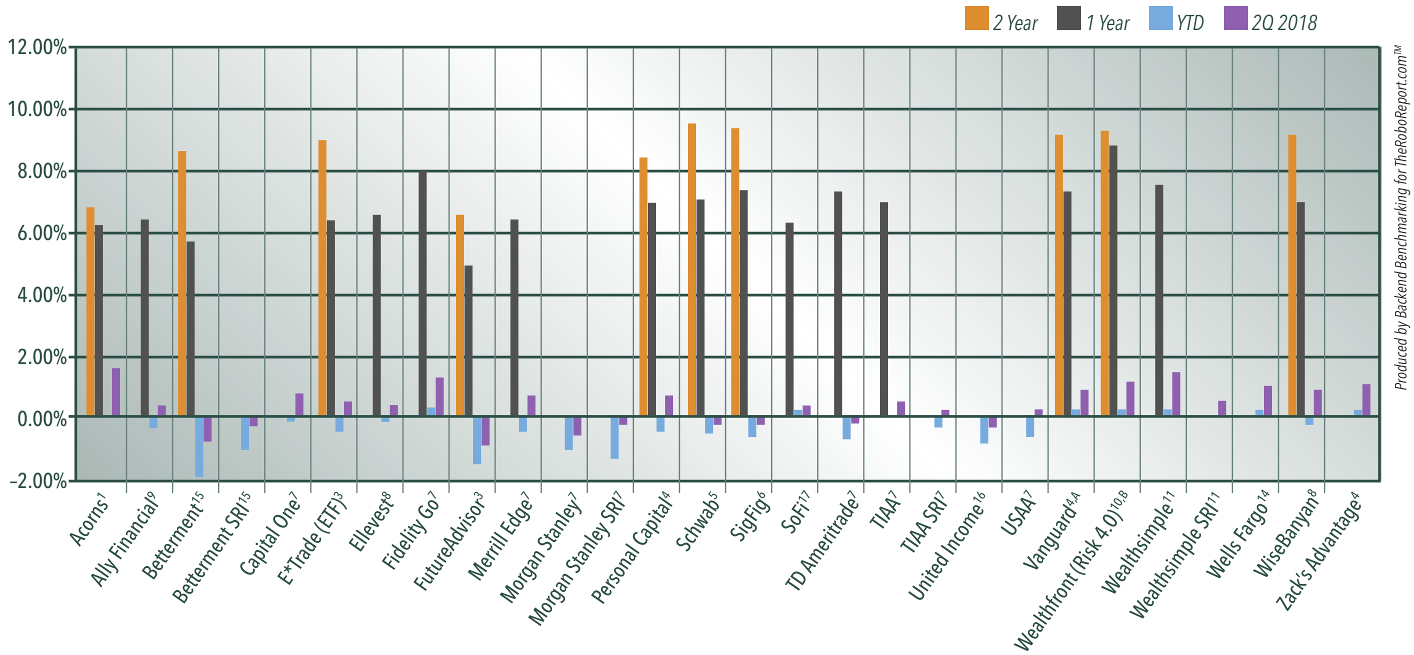
Performance

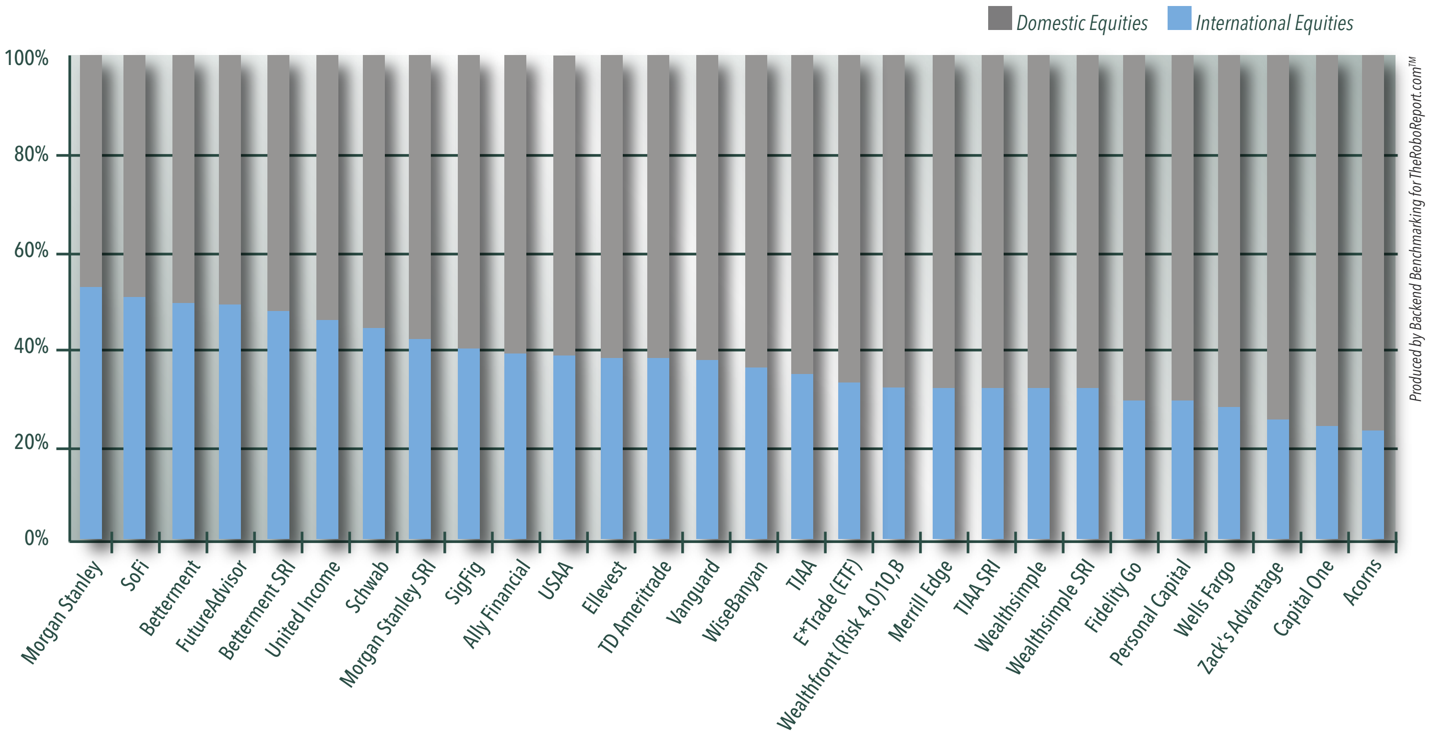


Performance Commentary

Domestic and Small Caps Drive Equity Performance

The volatility that returned to equity markets in early 2018 persisted in the 2nd quarter. In addition to concerns over rising yields and high stock price valuations, a significant escalation of international trade disputes added a new layer of uncertainty. The Trump administration escalated its protectionist rhetoric and began to make specific tariff threats against major U.S. trading partners in the 2nd quarter, leading foreign nations to respond in kind. Small-cap stocks, which tend to be more domestically focused due to their smaller size, were largely able to sidestep many of these concerns, helping to contribute to their significant outperformance in the period. Beyond trade disputes, international equity markets were also impacted in the 2nd quarter by a strengthening U.S. dollar and pockets of slowing economic growth following a period of robust expansion across the vast majority of global economies in the latter half of 2017. Amid these trends, emerging markets equities had their worst quarter in over a year, with Latin America experiencing particularly noteworthy losses.

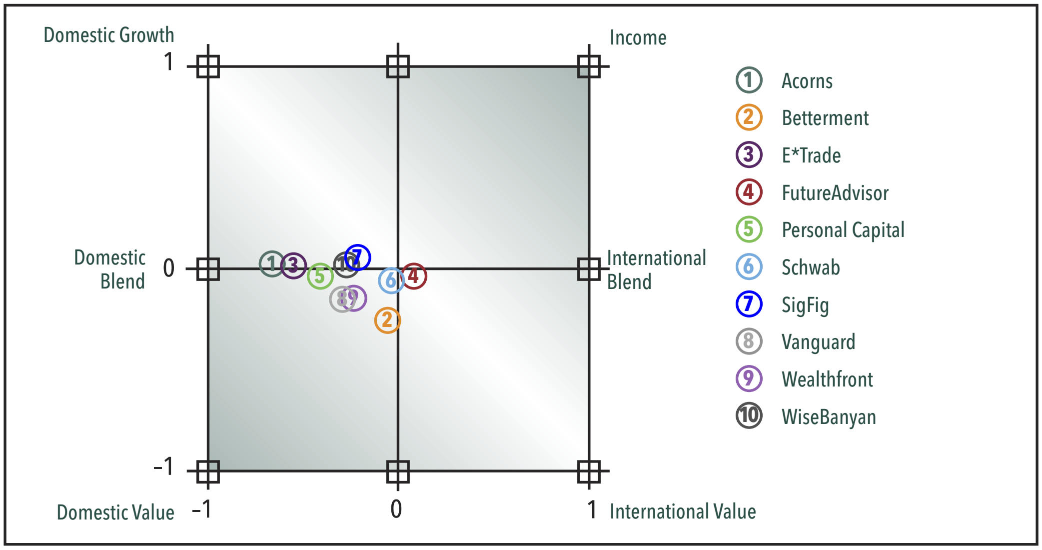
International Allocation of Total Equity



Those robo portfolios that are more weighted towards domestic stocks and those with higher small-cap equities exposure outperformed this quarter and YTD. Acorns' portfolio has the second lowest allocation to international, with just 23% of their equities invested abroad. This, combined with their large dedicated small-caps position, helped them achieve the best quarterly overall performance measured by both total performance and their return above the Normalized Benchmark. The returns above the Normalized Benchmark measures the portfolios against each other after controlling for the different proportions of equity and bonds in the portfolios. The YTD numbers also show Acorns in the top few spots for equity performance. Wells Fargo and Fidelity Go also achieved high scores in their YTD and 2nd quarter total performance, performance against the benchmark, and equity-only performance. Fidelity Go ended the quarter with nearly 8% of their equities in a dedicated small-cap fund, and this, combined with their lower than average allocation to international equities, helped their taxable portfolio outperform this year. Wells Fargo also is on the lower end of international equities allocation and holds a dedicated small-cap position, although smaller than that of Acorns. Allocations to REITs also helped Acorns outperform this quarter and YTD, but in a long-term view, REITs have detracted from portfolios in the trailing one- and two-year time frames. Wealthsimple's lower than average allocation to international equities and their dedicated high-yield fixed income exposure helped them outperform on a total portfolio basis. Wealthfront's exposure to an energy ETF has helped them over the past year, while energy has been volatile; their energy ETF holding outperformed the S&P 500. While this energy ETF helped them outperform over the past year, it has not contributed to outperformance in the two-year trailing timeframe.

On the other side of the spectrum, Betterment, Morgan Stanley, and FutureAdvisor did not fare as well in the first half of 2018. All three portfolios sit on the high end of our spectrum for allocations to international equities. In fact, all three of these taxable portfolios hold nearly half of their equities abroad. With trade concerns as an underlying theme in 2018, these portfolios have not done as well this year. Additionally, Betterment has a tilt towards value in their portfolio. This is likely due, in part, to value historically outperforming growth; however, recent years—including the first half of this year—have bucked that trend. The value tilt in Betterment's portfolio has detracted from their performance through the first half of the year. FutureAdvisor not only has a large international allocation, but a larger than average proportion of international invested in emerging markets funds. Emerging markets have done particularly poorly this year, but have experienced periods of strong outperformance over the past two years. So, what has held FutureAdvisor back this year has helped them in the past.

Two-Year Trailing Equity Style Map



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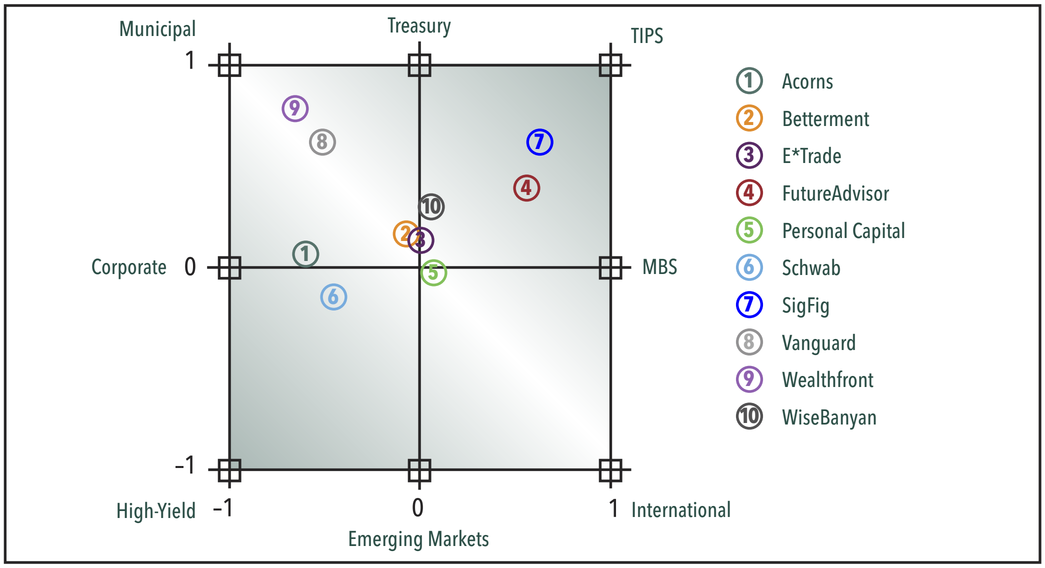
This analysis produced with the help of Markov Process International, Inc.

Municipals and Domestic Debt Lead

Fixed income markets continued to be guided by many of the same forces from previous quarters, including gradual quantitative tightening, another interest rate increase by the Federal Reserve, and the resulting shifts in the yield curve. In keeping with its long-term plan to pull back from post-crisis easy money policies, the Fed maintained course with its balance sheet reduction program and raised interest rates once again at its June meeting. The increase sent the Fed's discount rate up to a range of 1.75% to 2% and pushed yields on the short end of the curve higher. Despite the 10-year Treasury Yield briefly touching 3% in April and May, yields on the longer end of the curve failed to keep pace with the short-term increases over the course of the quarter, resulting in another flattening of the yield curve. Within this backdrop, shorter term bonds once again outperformed longer term issues, and high-yield bonds outpaced their investment-grade counterparts amid persistently low default rates. Municipal debt outpaced taxable bond issues in the 2nd quarter, with higher yielding municipal bonds performing especially well, thanks to an increased willingness by investors to buy back into distressed issuers. International fixed income markets were generally lower in the period, with emerging markets having a particularly rough quarter.

Fidelity Go saw strong performance in their fixed income over the last year, earning one of the top one-year trailing fixed income spots this quarter. Their bond portfolio is made up of domestic bond funds and they have been rewarded by not going abroad during a period of a rising dollar. SoFi's fixed income led the group this quarter and last, due in large part to a large allocation to a high-yield municipal bond fund. Wealthsimple charted a successful course over the past year through a difficult bond market. Staying invested in only domestic bond funds, a partial allocation to municipals, and a small allocation to a high-yield fund have all helped them. Zack's fixed income has done well with dedicated high-yield allocations and allocations to municipal bonds. Vanguard also performed well over the past year. Vanguard holds only municipals and has been well positioned across the yield curve. Schwab is a good comparison to Vanguard because of their different approaches. While Vanguard holds three municipal bond funds, keeping their portfolio simple, Schwab holds international debt, high-yield, TIPS, municipals, and corporates. Over the long run, exposure to riskier asset classes has helped Schwab outperform; they still lead the two-year fixed income performance by a wide margin. Their fixed income portfolio has not performed as well this year, though, as their international fixed income holdings have held back the portfolio.

Two-Year Trailing Fixed Income Style Map



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This analysis produced with the help of Markov Process International, Inc.

Taxable Returns

	Total 2Q 2018	2Q 2018 Return Above/Below Benchmark	YTD	YTD Return Above/Below Benchmark	1 Year Trailing	1 Year Trailing Return Above/Below Benchmark	2 Year Trailing (Annualized)	2 Year Trailing Return Above/Below Benchmark (Annualized)
Acorns[1]	1.59%	0.89%	0.01%	-0.04%	6.16%	-1.44%	6.73%	-2.87%
Ally Financial[9]	0.41%	-0.27%	-0.28%	-0.31%	6.38%	-1.10%	-	-
Betterment[15]	-0.80%	-1.55%	-1.97%	-2.09%	5.64%	-2.31%	8.61%	-1.45%
Betterment SRI[15]	-0.27%	-0.94%	-1.06%	-1.07%	-	-	-	-
Capital One[7]	0.75%	0.16%	-0.09%	0.00%	-	-	-	-
E*Trade (ETF)[3]	0.51%	-0.16%	-0.46%	-0.47%	6.36%	-1.00%	8.95%	-0.34%
Ellevest[8]	0.42%	-0.28%	-0.17%	-0.22%	6.53%	-1.07%	-	-
Fidelity Go[7]	1.32%	0.64%	0.34%	0.31%	7.94%	0.46%	-	-
FutureAdvisor[3]	-0.91%	-1.56%	-1.46%	-1.45%	4.85%	-2.40%	6.58%	-2.55%
Merrill Edge[7]	0.70%	0.03%	-0.42%	-0.43%	6.34%	-1.02%	-	-
Morgan Stanley[12]	-0.61%	-1.36%	-1.04%	-1.16%	-	-	-	-
Morgan Stanley SRI[7]	-0.22%	-0.95%	-1.34%	-1.44%	-	-	-	-
Personal Capital[4]	0.70%	-0.17%	-0.45%	-0.72%	6.90%	-1.98%	8.39%	-2.92%
Schwab[5]	-0.20%	-0.98%	-0.53%	-0.69%	7.07%	-1.11%	9.48%	-0.89%
SigFig[6]	-0.19%	-0.87%	-0.64%	-0.67%	7.30%	-0.18%	9.33%	-0.11%
SoFi[17]	0.28%	-0.39%	0.11%	0.10%	6.27%	-1.09%	-	-
TD Ameritrade[7]	-0.15%	-0.90%	-0.72%	-0.84%	7.28%	-0.67%	-	-
TIAA[7]	0.50%	-0.18%	-0.01%	-0.04%	6.95%	-0.53%	-	-
TIAA SRI[7]	0.13%	-0.54%	-0.32%	-0.33%	-	-	-	-
United Income[16]	-0.30%	-0.97%	-0.85%	-0.86%	-	-	-	-
USAA[7]	0.24%	-0.52%	-0.63%	-0.77%	-	-	-	-
Vanguard[4,A]	0.90%	0.25%	0.14%	0.15%	7.32%	0.07%	9.11%	-0.02%
Wealthfront (Risk 4.0)[10,B]	1.23%	0.48%	0.15%	0.03%	8.76%	0.81%	9.25%	-0.81%
Wealthsimple[11]	1.46%	0.78%	0.23%	0.20%	7.51%	0.03%	-	-
Wealthsimple SRI[11]	0.54%	-0.13%	-	-	-	-	-	-
Wells Fargo[14]	1.01%	0.31%	0.18%	0.13%	-	-	-	-
WiseBanyan[8]	0.89%	0.16%	-0.23%	-0.33%	6.99%	-0.84%	9.17%	-0.74%
Zack's Advantage[4]	1.06%	0.44%	0.25%	0.30%	-	-	-	-

**Some accounts have not been open long enough for 1 year or 2 year trailing returns*

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**SRI indicates the account is invested in a Sociall Responsible Investing portfolio, also known as "Impact Investing"*

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Taxable Returns

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	Equity				Fixed Income			
	2Q 2018	YTD	1 Year Trailing	2 Year Trailing (Annualized)	2Q 2018	YTD	1 Year Trailing	2 Year Trailing (Annualized)
Acorns[1]	3.09%	1.51%	11.04%	11.84%	-0.82%	-2.36%	-1.76%	-1.43%
Ally Financial[9]	0.68%	0.08%	10.86%	-	0.00%	-0.87%	-0.05%	-
Betterment[15]	-1.21%	-2.63%	7.99%	13.09%	-0.05%	-0.73%	0.88%	0.24%
Betterment SRI[15]	-0.31%	-1.18%	-	-	-0.21%	-0.87%	-	-
Capital One[7]	1.53%	0.74%	-	-	-0.21%	-1.11%	-	-
E*Trade (ETF)[3]	1.19%	0.68%	11.42%	15.20%	-0.48%	-2.46%	-1.21%	-0.46%
Ellevest[8]	0.68%	-0.12%	10.51%	-	0.17%	-0.41%	0.85%	-
Fidelity Go[7]	1.66%	0.92%	12.21%	-	0.82%	-0.53%	1.75%	-
FutureAdvisor[3]	-0.96%	-2.07%	7.83%	11.63%	-0.85%	-0.77%	0.53%	-0.28%
Merrill Edge[7]	0.87%	-0.16%	10.54%	-	0.54%	-0.95%	0.49%	-
Morgan Stanley[12]	-0.64%	-0.71%	-	-	-0.62%	-1.93%	-	-
Morgan Stanley SRI[7]	-0.24%	-1.36%	-	-	-0.23%	-1.38%	-	-
Personal Capital[4]	1.44%	0.09%	9.81%	11.43%	-1.46%	-2.07%	-1.14%	0.01%
Schwab[5]	0.19%	-0.48%	10.23%	13.47%	-1.65%	-1.10%	0.90%	2.39%
SigFig[6]	-0.09%	-0.15%	11.49%	15.14%	-0.28%	-1.68%	0.62%	0.48%
SoFi[17]	-0.14%	-0.42%	11.06%	-	0.93%	0.91%	1.16%	-
TD Ameritrade[7]	0.16%	-0.27%	10.95%	-	-1.00%	-1.95%	-0.81%	-
TIAA[7]	0.93%	0.49%	11.65%	-	-0.22%	-1.32%	-0.62%	-
TIAA SRI[7]	0.34%	0.21%	-	-	-0.25%	-1.17%	-	-
United Income[16]	-0.09%	-0.22%	-	-	-0.64%	-1.83%	-	-
USAA[7]	0.57%	0.00%	-	-	-0.30%	-1.91%	-	-
Vanguard[4,A]	0.99%	0.36%	11.47%	15.07%	0.76%	-0.23%	1.05%	0.23%
Wealthfront (Risk 4.0)[10,B]	1.44%	0.38%	12.44%	14.20%	0.84%	-0.75%	1.08%	-0.14%
Wealthsimple[11]	1.85%	0.69%	11.64%	-	0.82%	-0.54%	1.25%	-
Wealthsimple SRI[11]	1.08%	-	-	-	-0.32%	-	-	-
Wells Fargo[14]	2.33%	1.80%	-	-	-1.33%	-2.73%	-	-
WiseBanyan[8]	1.47%	0.45%	11.11%	14.42%	-0.13%	-1.56%	-0.20%	0.21%
Zack's Advantage[4]	1.74%	1.02%	-	-	0.17%	-1.03%	-	-

**Some accounts have not been open long enough for 1 year or 2 year trailing returns*

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IRA Returns

	Total Portfolio				Equity				Fixed Income			
	Q2 2018	YTD	1 Year	2 Year	Q2 2018	YTD	1 Year	2 Year	Q2 2018	YTD	1 Year	2 Year
Ally Financial IRA[9]	0.81%	0.22%	10.23%	13.36%	0.87%	0.27%	11.04%	14.23%	0.03%	-0.60%	0.37%	0.53%
Betterment IRA[15]	-0.57%	-1.55%	7.97%	11.90%	-0.55%	-1.57%	9.15%	13.73%	-0.76%	-1.43%	0.39%	0.28%
E*Trade (ETF) IRA[3]	1.09%	0.53%	10.98%	-	1.10%	0.56%	11.27%	-	-	-	-	-
Fidelity Go IRA[7]	1.38%	0.52%	9.97%	-	1.68%	0.92%	11.95%	-	-0.29%	-1.88%	-0.82%	-
Merrill Edge IRA[7]	0.08%	-1.00%	8.55%	-	0.21%	-0.75%	9.92%	-	-1.09%	-3.53%	-2.09%	-
Morgan Stanley IRA[7]	-0.65%	-1.01%	-	-	-0.66%	-0.75%	-	-	-0.68%	-2.13%	-	-
Personal Capital IRA[4]	1.28%	0.04%	9.49%	11.53%	1.40%	0.09%	9.84%	12.07%	-3.25%	-2.56%	-1.50%	-0.61%
Schwab IRA[7]	0.73%	-0.11%	10.24%	13.62%	0.78%	-0.12%	10.93%	14.56%	-	-	-	-
SigFig IRA[6]	-1.29%	-1.63%	8.64%	12.43%	-1.05%	-1.12%	10.09%	13.94%	-3.38%	-6.11%	-3.52%	-0.43%
SoFi IRA[18]	-0.14%	0.35%	-	-	-0.14%	-0.07%	-	-	-	-	-	-
T Rowe Price IRA[13]	1.33%	2.11%	-	-	1.33%	2.11%	-	-	-	-	-	-
TD Ameritrade IRA[7]	-0.11%	-0.54%	9.06%	-	0.16%	-0.25%	11.00%	-	-2.04%	-2.67%	-1.41%	-
TIAA IRA[7]	0.97%	0.46%	10.34%	-	1.01%	0.60%	11.81%	-	-0.30%	-1.76%	-0.73%	-
United Income IRA[16]	-0.36%	0.02%	-	-	-0.36%	0.03%	-	-	-	-	-	-
USAA IRA[7]	0.60%	0.03%	-	-	0.60%	0.03%	-	-	-	-	-	-
Wealthsimple IRA[2]	1.17%	0.01%	9.02%	-	1.38%	0.23%	11.14%	-	0.34%	-0.85%	0.75%	-
Wells Fargo IRA[14]	1.11%	0.76%	-	-	1.30%	1.08%	-	-	-1.27%	-3.27%	-	-
WiseBanyan IRA[8]	0.98%	0.32%	10.64%	13.97%	1.08%	0.46%	11.61%	15.26%	-0.15%	-1.55%	0.26%	0.66%
Zack's Advantage IRA[4]	0.96%	0.12%	-	-	1.03%	0.29%	-	-	-	-	-	-

**Some accounts have not been open long enough for 1 year or 2 year returns, others have no fixed income holdings thus no fixed income returns*

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Taxable Account Facts

Portfolio	Fee	Account Minimum	Initial Asset Allocation (Equities/Fixed Income/ Miscellaneous/Cash)	Current Asset Allocation (Equities/Fixed Income/ Miscellaneous/Cash)	Initial Domestic/ International Equity Split	Current Domestic/ International Equity Split	Tax Efficiency Ratio (Percent Muni Bonds of Overall Fixed Income)
Acorns	$1/month for Acorns; $2/month when adding Acorns later for Retirement accounts. Custom pricing for balances above $1 million	No minimum	62%/38%/0%/0%	62%/38%/0%/0%	84%/16%	77%/23%	0%
Ally Financial	0.30% annually	$2,500	59%/38%/2%/1%	61%/37%/0%/2%	66%/34%	61%/39%	0%
Betterment	Digital Only: 0.25%; "Premium" (unlmited chat and calls with advisor): 0.40%	"Digital Only": No minimum; "Premium": $100k Minimum	65%/35%/0%/0%	65%/35%/0%/0%	48%/52%	50%/50%	59%
Betterment SRI	Digital Only: 0.25%; "Premium" (unlmited chat and calls with advisor): 0.40%	"Digital Only": No minimum; "Premium": $100k Minimum	60%/40%/0%/0%	60%/40%/0%/0%	50%/50%	52%/48%	60%

Taxable Account Facts continued on following page

Taxable Account Facts *continued from previous page*

Portfolio	Fee	Account Minimum	Initial Asset Allocation (Equities/Fixed Income/ Miscellaneous/Cash)	Current Asset Allocation (Equities/Fixed Income/ Miscellaneous/Cash)	Initial Domestic/ International Equity Split	Current Domestic/ International Equity Split	Tax Efficiency Ratio (Percent Muni Bonds of Overall Fixed Income)
Capital One	0.90% annually	$25,000	55%/44%/0%/1%	56%/43%/0%/1%	76%/24%	76%/24%	0%
E*Trade (ETF)	0.30% (promo – fee waived for 2016)	$5,000	60%/39%/0%/1%	59%/39%/0%/2%	75%/25%	67%/33%	0%
Ellevest	0.25% annually for digital only; 0.50% for premium adding access to live advisors at this level	No minimum digital only; $50k minimum for premium	62%/36%/0%/2%	55%/43%/0%/1%	71%/29%	62%/38%	94%
Fidelity Go	0.35% annually; no expense ratios on underlying funds	$0	61%/39%/0%/0%	60%/39%/0%/1%	71%/29%	71%/29%	100%
FutureAdvisor	0.50% annually	$10,000	59%/41%/0%/0%	54%/44%/0%/2%	49%/51%	51%/49%	0%
Merrill Edge	0.45% annually	$5,000	60%/ 39%/ 0%/ 1%	54%/43%/0%/3%	66%/ 34%	68%/32%	89%
Morgan Stanley	0.35% annually	$5,000	65%/30%/0%/5%	65%/34%/0%/1%	45%/55%	47%/53%	0%
Morgan Stanley SRI	0.35% annually	$5,000	64%/35%/0%/1%	62%/37%/0%/1%	54%/46%	58%/42%	0%
Personal Capital	0.89% annually for the first $1 million; lower at different tiers over $1 million	$100,000	68%/25%/5%/2%	70%/24%/4%/1%	70%/30%	71%/29%	0%
Schwab	No fee for digital only "Intelligent Portfolio"; Access to live advisor with "Intelligent Advisory" has 0.28% fee.	"Intelligent Portfolio": $5,000; "Intelligent Advisory": $25,000	62%/23%/5%/10%	61%/26%/2%/11%	51%/49%	54%/46%	55%
SigFig	No fee for the first $10k; 0.25% annually over $10k	$2,000	61%/37%/0%/1%	60%/39%/0%/1%	59%/41%	60%/40%	0%
SoFi	No Fee on first $10k invested: 0.25% anually on funds above $10k: no fee if client also has a SoFi loan	$100	53%/47%/0%/0%	60%/40%/0%/0%	67%/33%	49%/51%	75%
TD Ameritrade	0.30% annually for Essential Portfolios. Selective Portfolios tiered at a higher fee level depending on account balance and portfolio selected.	$5,000 for Essential Portfolios, $25,000 for Selective Portfolios	65%/ 33%/ 0%/ 2%	71%/27%/0%/3%	65%/35%	62%/38%	0%
TIAA	0.30% annually	$5,000	61%/37%/0%/3%	61%/37%/0%/2%	71%/29%	65%/35%	0%
TIAA SRI	0.30% annually	$5,000	60%/39%/0%/1%	60%/39%/0%/1%	68%/32%	68%/32%	0%
United Income	Self Service: 0.50% Anually; Full Service: 0.80% to 0.45% depending on account balances	Self Service:$10,000; Full Service: $300,000	60%/39%/0%/1%	60%/38%/0%/3%	52%/48%	53%/47%	0%
USAA	0.50% annually	$2,000	66%/33%/0%/1%	61%/37%/0%/2%	63%/37%	61%/39%	0%
Vanguard	0.30% annually for the first $5 million; lower at different tiers over $5 million	$50,000	59%/41%/0%/0%	63%/37%/0%/0%	61%/39%	62%/38%	100%
Wealthfront (Risk 4.0)B	0.25% annually	$500	65%/35%/0%/0%	65%/35%/0%/1%	66%/34%	68%/32%	100%
Wealthsimple	0.50% fee on accounts less than $100k; 0.40% on accounts greater than $100k annually	No minimum for Basic, $100,000 for Black	61%/39%/0%/0%	61%/38%/0%/1%	66%/34%	68%/32%	54%
Wealthsimple SRI	0.50% fee on accounts less than $100k; 0.40% on accounts greater than $100k annually	No minimum for Basic, $100,000 for Black	60%/40%/0%/0%	61%/39%/0%/0%	68%/32%	68%/32%	40%
Wells Fargo	0.50% annually; discounted to 0.40% if subscribed to other specific Wells Fargo products	$10,000	62%/34%/0%/3%	63%/33%/0%/4%	70%/30%	72%/28%	0%
WiseBanyan	No Fee for basic package; 0.24% anually to add tax loss harvesting; other add-on packages come at additional cost.	No minimum	64%/ 36%/ 0%/ 0%	64%/36%/0%/0%	62%/38%	64%/36%	0%
Zack's Advantage	0.70% on accounts less than $100K; 0.50% on accounts less than $250K; 0.35% on accounts $250K and above	$25,000	57%/33%/0%/9%	58%/32%/0%/10%	72%/28%	74%/26%	40%

**Due to rounding, may not add to 100%*

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IRA Facts

Portfolio	Fee	Account Minimum	Initial Asset Allocation (Equities/Fixed Income/ Miscellaneous/Cash)	Current Asset Allocation (Equities/Fixed Income / Miscellaneous/Cash)	Initial Domestic/ International Equity Split	Current Domestic/ International Equity Split
Ally Financial IRA	0.30% annually	$2,500	94%/3%/2%/1%	93%/5%/0%/2%	59%/41%	62%/38%
Betterment IRA	Digital Only: 0.25%; "Premium" (unlmited chat and calls with advisor): 0.40%	"Digital Only": No minimum; "Premium": $100k Minimum	87%/13%/0%/0%	87%/13%/0%/0%	47%/53%	58%/42%
E*Trade (ETF) IRA	0.30% (promo – fee waived for 2016)	$5,000	98%/0%/0%/2%	99%/0%/0%/1%	74%/26%	67%/33%
Fidelity Go IRA	0.35% annually	$5,000	85%/15%/0%/1%	85%/14%/0%/1%	70%/30%	72%/28%
Merrill Edge IRA	0.45% annually	$5,000	89%/9%/0%/2%	88%/9%/0%/3%	62%/38%	65%/35%
Morgan Stanley IRA	0.35% annually	$5,000	79%/15%/0%/6%	79%/19%/0%/1%	47%/53%	48%/52%
Personal Capital IRA	0.89% annually for the first $1 million; lower at different tiers over $1 million	$100,000	91%/3%/2%/4%	94%/2%/3%/1%	70%/ 30%	71%/29%
Schwab IRA	No fee for digital only "Intelligent Portfolio"; Access to live advisor with "Intelligent Advisory" has 0.28% fee	"Intelligent Portfolio": $5,000; "Intelligent Advisory": $25,000	94%/0%/0% 6%	93%/0%/0%/7%	54%/46%	49%/51%
SigFig IRA	No fee for the first $10k; 0.25% annually over $10k	$2,000	91%/9%/0%/0%	90%/10%/0%/0%	45%/55%	46%/54%
SoFi IRA	No Fee on first $10k invested: 0.25% anually on funds above $10k: no fee if client also has a SoFi loan	$100	100%/0%/0%/0%	99%/0%/0%/1%	65%/35%	49%/51%
T Rowe Price IRA	No Fee	$50,000 [13]	100%/0%/0%/0%	100%/0%/0%/0%	69%/31%	69%/31%
TD Ameritrade IRA	0.30% annually for Essential Portfolios. Selective Portfolios tiered at a higher fee level depending on account balance and portfolio selected.	$5,000 for Essential Portfolios, $25,000 for Selective Portfolios	83%/15%/0%/2%	84%/12%/0%/3%	65%/35%	62%/38%
TIAA IRA	0.30% annually	$5,000	88%/11%/0%/1%	87%/12%/0%/1%	72%/28%	65%/35%
United Income IRA	Digital only "Self Service": 0.50% Anually; Access to Live advisor "Full Service": 0.80% to 0.45% depending on account balances	Self Service: $10,000; Full Service $300,000	99%/0%/0%/1%	98%/0%/0%/2%	51%/49%	52%/48%
USAA IRA	0.50% annually	$2,000	99%/0%/0%/1%	100%/0%/0%/0%	60%/40%	51%/39%
Wealthsimple IRA	0.50% fee on accounts less than $100k; 0.40% on accounts greater than $100k annually	No minimum	80%/20%/0%/0%	80%/19%/0%/1%	66%/34%	68%/32%
Wells Fargo IRA	0.50% annually; discounted to 0.40% if subscribed to other specific Wells Fargo products	$10,000	91%/7%/0%/2%	91%/6%/0%/3%	63%/37%	65%/35%
WiseBanyan IRA	No Fee for basic package; 0.24% anually to add tax loss harvesting; other add-on packages come at additional cost.	No minimum	92%/8%/0%/1%	91%/8%/0%/1%	60%/40%	61%/39%
Zack's Advantage IRA	0.70% on accounts less than $100K; 0.50% on accounts less than $250K; 0.35% on accounts $250K and above	$25,000	90%/0%/0%/10%	93%/0%/0%/7%	62%/38%	63%/37%

*Due to rounding, may not add to 100%

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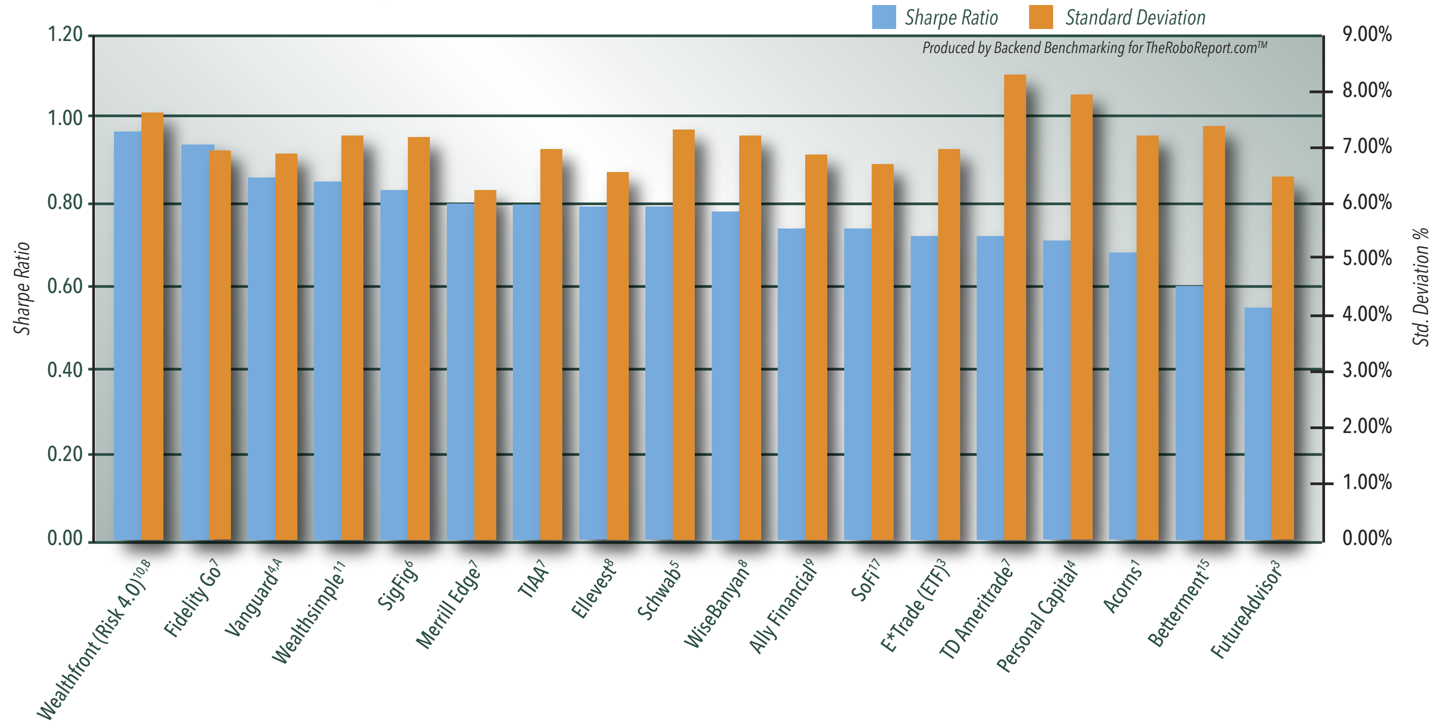
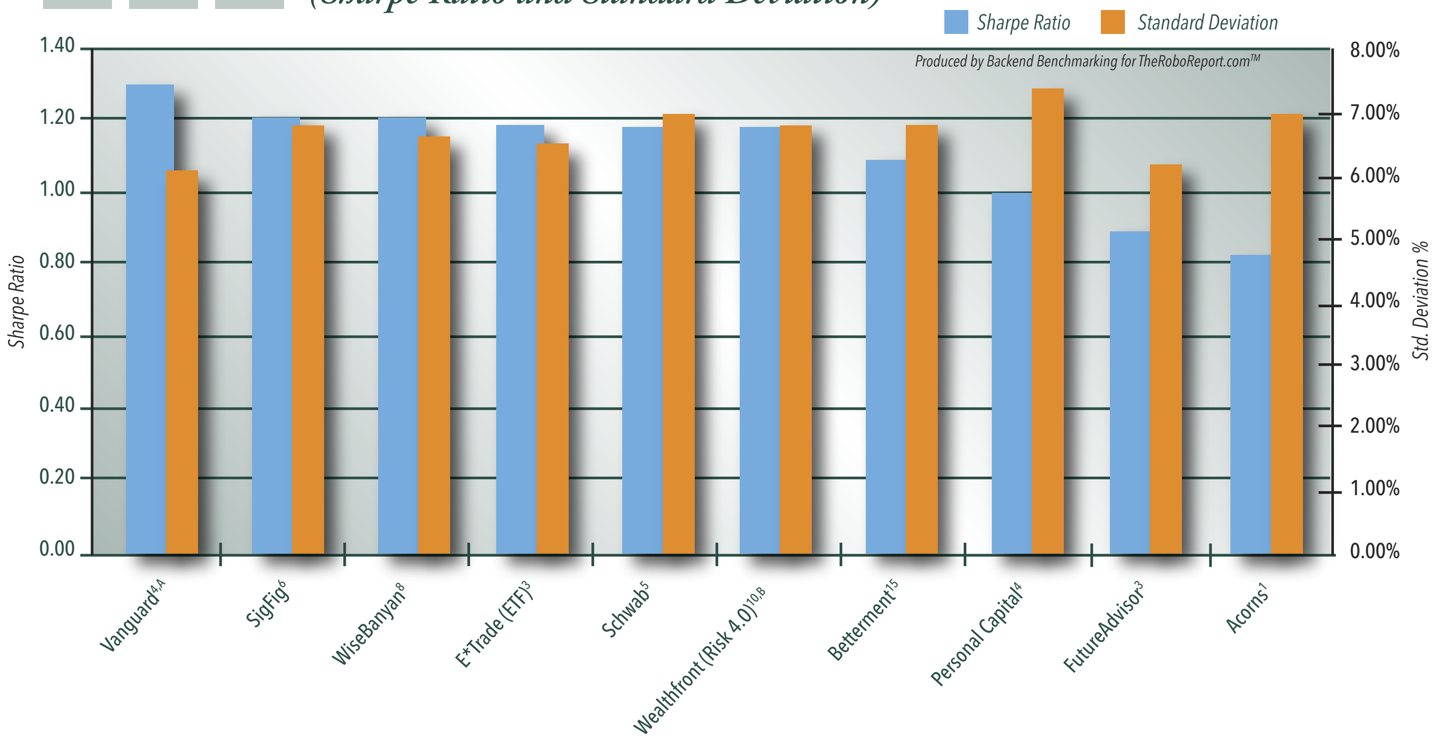
Risk/Return: Robos with 1-Year History (Sharpe Ratio and Standard Deviation)



Risk/Return: Robos with 2-Year History (Sharpe Ratio and Standard Deviation)



1-Year Trailing Risk/Return Statistics

	Acorns[1]	Ally Financial[9]	Betterment[15]	E*Trade (ETF)[3]	Ellevest[8]	Fidelity Go[7]	Future-Advisor[3]	Merrill Edge[7]	Personal Capital[4]
Annualized StdDev, %	7.20%	6.86%	7.36%	6.96%	6.53%	6.92%	6.47%	6.25%	7.93%
Sharpe Ratio	0.68	0.74	0.6	0.72	0.79	0.94	0.55	0.8	0.71

	Schwab[5]	SigFig[6]	SoFi[17]	TD Ameritrade[7]	TIAA[7]	Vanguard[4,A]	Wealthsimple[11]	Wealthfront (Risk 4.0)[10,B]	WiseBanyan[8]
Annualized StdDev, %	7.30%	7.17%	6.68%	8.30%	6.95%	6.89%	7.21%	7.61%	7.21%
Sharpe Ratio	0.79	0.83	0.74	0.72	0.8	0.86	0.85	0.97	0.78

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2-Year Trailing Risk/Return Statistics

	Acorns[1]	Betterment[15]	E*Trade (ETF)[3]	Future-Advisor[3]	Personal Capital[4]
Annualized StdDev, %	6.99%	6.86%	6.51%	6.21%	7.39%
Sharpe Ratio	0.83	1.1	1.2	0.9	1

	Schwab[5]	SigFig[6]	Vanguard[4,A]	Wealthfront (Risk 4.0)[10,B]	WiseBanyan[8]
Annualized StdDev, %	7.00%	6.80%	6.08%	6.84%	6.64%
Sharpe Ratio	1.19	1.21	1.31	1.19	1.21

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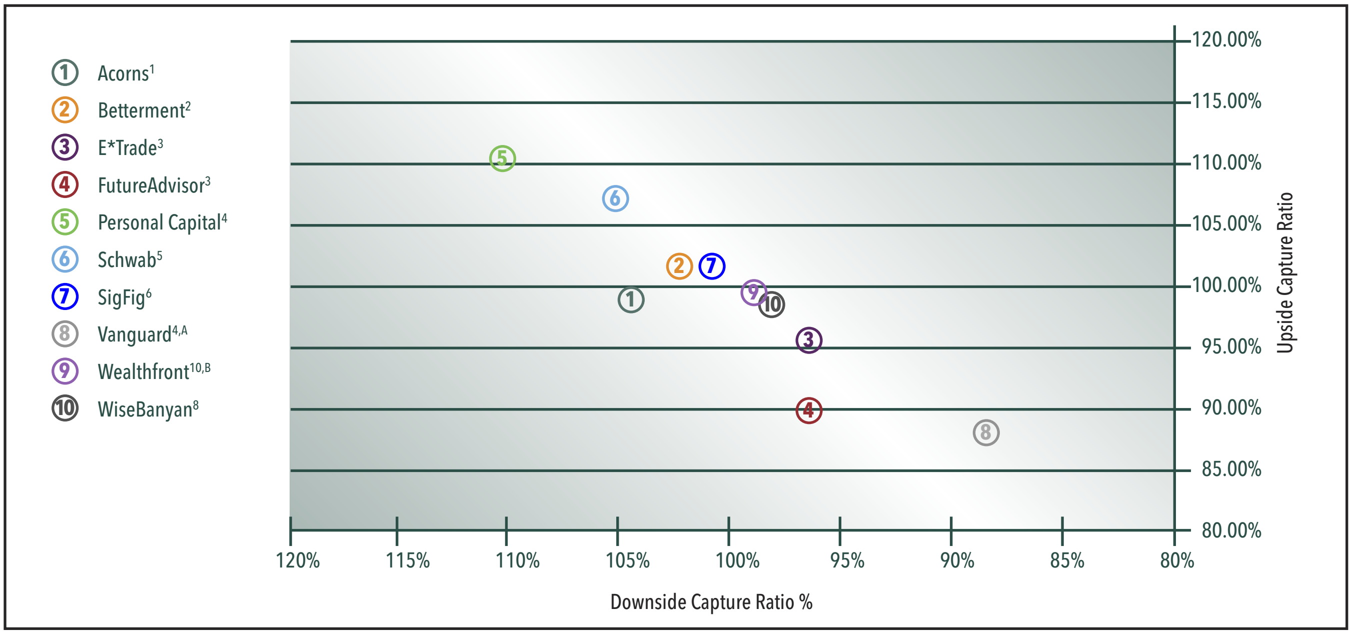
With the return of volatility to the markets over the past year, we can see that Sharpe ratios have fallen when only considering the one-year returns compared to the two-year returns. This fall happened across the board and can be expected when volatility increases. Vanguard took the top spot for two-year Sharpe ratios. Their simple, straightforward, broad-based fund approach has helped keep volatility lower than its peers while not sacrificing performance. Vanguard allocates all of their fixed income to domestic municipal bonds. With a backdrop of foreign bonds underperforming domestic ones, and muncipals outperforming domestic fixed income as a whole, Vanguard's fixed income portfolios outperformed. Schwab, on the other hand, has done well over the two-year time frame by holding more risky fixed income, like high-yield and foreign funds. This has made their portfolio more volatile, but also helped them perform well. This is true over the longer two-year period, but Schwab's fixed income has not done as well over the one-year time period.

Both SigFig and WiseBanyan rely on broad-based domestic and international funds for their equity exposure, taking a market-neutral rating across sectors, market cap, and style. This helped them tie for second when judging by a two-year historical Sharpe ratio. As historically low volatility markets give way to periods of increased uncertainty, we look forward to keeping a close eye on how the robo portfolios perform on a risk-adjusted returns basis.

Upside/Downside Capture Ratio 2-Year History



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1-Year Trailing Upside/Downside Capture Ratio

	Acorns[1]	Ally Financial[9]	Betterment[2]	E*Trade (ETF)[3]	Ellevest[8]	Fidelity Go[7]	Future-Advisor[3]	Merrill Edge[7]	Personal Capital[4]
Up Market Capture Ratio, %	101.61%	96.06%	102.10%	96.76%	92.60%	96.12%	90.54%	86.74%	114.77%
Down Market Capture Ratio, %	102.79%	97.74%	104.34%	98.37%	94.47%	94.20%	96.61%	89.79%	111.31%

	Schwab[5]	SigFig[6]	SoFi[17]	TD Ameritrade[7]	TIAA[7]	Vanguard[4,A]	Wealth Simple[11]	Wealthfront (Risk 4.0)[10,B]	WiseBanyan[8]
Up Market Capture Ratio, %	106.22%	103.38%	89.32%	118.81%	97.88%	95.82%	100.97%	110.38%	101.78%
Down Market Capture Ratio, %	104.41%	101.65%	92.22%	113.46%	97.95%	95.37%	99.21%	103.85%	101.05%

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2-Year Trailing Upside/Downside Capture Ratio

	Acorns[1]	Betterment[2]	E*Trade (ETF)[3]	Future-Advisor[3]	Personal Capital[4]	Schwab[5]	SigFig[6]	Vanguard[4,A]	Wealthfront (Risk 4.0)[10,B]	WiseBanyan[8]
Up Market Capture Ratio, %	99.80%	102.69%	96.63%	90.36%	111.99%	108.49%	102.78%	88.25%	100.36%	99.33%
Down Market Capture Ratio, %	104.15%	102.19%	96.15%	96.21%	110.36%	105.06%	100.60%	88.11%	98.63%	98.00%

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Trades

Fidelity Go replaced the holdings in their portfolios with a new set of mutual funds. This was part of a larger product change. In the pursuit of fee transparency, Fidelity Go replaced their existing funds with their Fidelity Flex fund family. This fund family does not charge expense ratios on their funds. The result is Fidelity's 0.35% management fee is the only fee charged on the account, and is the total cost customers pay for management. We applaud this move by Fidelity to pursue pricing transparency.

Schwab also saw significant movement in their portfolio. Schwab cut their gold ETF exposure from 4% to 2%. They also significantly reduced their exposure to high-yield and foreign bond funds, while replacing these bond funds with a broad-based municipal bond fund and a TIPS fund. This move also came with what appears to be rebalancing from equity to fixed income.

The other large shift in portfolios was in our SoFi portfolio. This portfolio went from holding 53% equities to 60% equities. We presume that this is a strategy shift for them, as the stated target allocation from our portfolio also went from a 50% to a 60% allocation. Offering a 60/40 portfolio is a very common allocation for portfolio managers.

Normalized Benchmarking Methodology

Normalized Benchmarking is a method to compare portfolios with differing equity and fixed income allocations. The percent allocated to equities in a portfolio is one of the largest drivers of returns. Because of this, comparing two portfolios that have a different level of equity allocation is difficult and can be misleading. Normalized Benchmarking controls for differences in equity holdings by adjusting the benchmark to match the equity/fixed income ratio of the portfolio. When this is done across a group of portfolios, the portfolios can then be measured against each other by their return above or below the benchmark specific to the portfolio. Below is a more detailed explanation of how the benchmark is constructed and used.

To begin, one must define the universe of portfolios that will be analyzed. This step is easy for our purposes, as the universe for ***The Robo Report***™ is our taxable portfolios.

To construct the Normalized Benchmark, each portfolio within the investment universe must be separated into a portfolio of equity holdings and a portfolio of fixed income holdings (cash is included with the fixed income). This means that for each robo portfolio in our universe, we now have two portfolios, one of made up of fixed income and one made up of equities. We then take all of the equity portfolios, equal weight them, and make them into one Equity Aggregate Portfolio. This portfolio contains a piece of every fund held in each equity portion of the portfolios. The same is done for fixed income.

After this step is completed, each aggregate portfolio is analyzed to determine the type and weight of assets held in each. The Equity Aggregate Portfolio is analyzed to determine the allocation of the portfolio to domestic equities and the allocation to international equities. For the Fixed Income Aggregate Portfolio, allocations to the following categories are determined: municipal bonds, investment-grade corporate bonds, high-yield corporate bonds, foreign emerging markets debt, foreign developed markets debt, TIPS, short-term treasuries (0-3 year maturities), mid-term treasuries (3-10 year maturities), long-term treasuries (maturities of 10 years or greater), multi-sector bond funds, and cash.

Next, we select a broad-based, passive, low-cost, commonly used ETF to represent each asset type. For example, the Vanguard Total Stock Market and Vanguard Total International Stock Market ETFs are used for the domestic and international positions in the equity benchmark portfolio, respectively. These are widely used, highly liquid, low-cost ETFs that are representative of the type of asset to which they are assigned.

We then match the weight of the selected ETFs to the allocation of the corresponding asset types within its respective aggregate portfolio. For example, the amount of the Vanguard Total Stock Market ETF in the Equity Portfolio of the Normalized Benchmark matches the weight of domestic stocks in the Equity Aggregate Portfolio. This creates the Equity and Fixed Income Portfolios of the Normalized Benchmark that represent the robo portfolios' equity and fixed income holdings, respectively.

Now that we have constructed the Normalized Benchmark, we can use it to compare performance across accounts within the previously determined investment universe. To compare an account, we first determine the asset allocations to equity and fixed income, including cash. Then, we proportion the Equity and Fixed Income Portfolios of the Normalized Benchmark to match that of the portfolio being compared. For example, if we are measuring a portfolio with 60% equities and 40% bonds and cash, we create a benchmark that is made up of 60% of the equity benchmark and 40% of the fixed income benchmark. If we are measuring a portfolio with 65% equities and 35% fixed income, a benchmark is created, again using the Equity and Fixed Income Portfolios of the Normalized Benchmark, but in a 65% to 35% proportion.

The Equity and Fixed Income Portfolios of the Normalized Benchmark are consistent, holding the same funds, in the same weights, regardless of the account you wish to compare, but the proportion of all of the equities and all of the fixed income changes to match the target allocation of the portfolio we are comparing. Therefore, a 65/35 portfolio is measured against a 65/35 benchmark, and a 70/30 portfolio is measured against a 70/30 benchmark. Each of the underlying equity and fixed income assets of the benchmark are consistent in each case, but the amount of the benchmark that is fixed income or equities changes to match the portfolio.

Portfolios can then be measured based on their returns above or below the Normalized Benchmark. These returns for each portfolio above or below the Normalized Benchmark can then be compared to each other. This gives the investor a good idea of how the portfolios are performing, regardless of how much is in equities and how much is in fixed income.

Normalized Benchmark

Equity Portfolio				
Category	**Asset Type**	**Ticker**	**Name**	**Weight**
Equity	Domestic	VTI	Vanguard Total Stock Market ETF	64%
Equity	International	VXUS	Vanguard Total International Stock ETF	36%

Bond Portfolio				
Category	**Asset Type**	**Ticker**	**Name**	**Weight**
Fixed Income	Multi-Sector US	AGG	iShares Core US Aggregate Bond ETF	30%
Fixed Income	Investment Grade Corporates	LQD	iShares iBoxx $ Investment Grade Corporate Bond ETF	7%
Fixed Income	High-Yield Corporates	JNK	SPDR Bloomberg Barclays High Yield Bond ETF	4%
Fixed Income	International Developed	IGOV	iShares International Treasury Bond ETF	5%
Fixed Income	International Emerging Markets	EMB	iShares J.P. Morgan USD Emerging Markets Bond ETF	5%
Fixed Income	Municipals	MUB	iShares National Muni Bond ETF	28%
Fixed Income	TIPS	TIP	iShares TIPS Bond ETF	7%
Fixed Income	Short-Term Treasuries (0-3 Year Maturity)	VGSH	Vanguard Short-Term Treasury ETF	3%
Fixed Income	Intermediate-Term Treasuries (3-10 Year Maturity)	VGIT	Vanguard Intermediate-Term Treasury ETF	3%
Fixed Income	Securitized	VMBS	Vanguard Mortgage-Backed Securities ETF	1%
Fixed Income	Cash	FDRXX	Fidelity® Government Cash Reserves	6%

Benchmark Returns for Each Equity Weight				
Initial Allocation to Equity	**2nd Quarter Return**	**YTD**	**1 Yr Trailing**	**2 Yr Trailing Annualized**
55%	0.59%	-0.09%	6.78%	8.51%
56%	0.61%	-0.07%	6.90%	8.67%
57%	0.62%	-0.05%	7.01%	8.82%
59%	0.65%	-0.01%	7.25%	9.13%
60%	0.67%	0.01%	7.36%	9.29%
61%	0.68%	0.03%	7.48%	9.44%
62%	0.70%	0.05%	7.60%	9.60%
64%	0.73%	0.10%	7.83%	9.91%
65%	0.75%	0.12%	7.95%	10.06%
66%	0.76%	0.14%	8.07%	10.22%
67%	0.78%	0.16%	8.18%	10.37%
68%	0.79%	0.17%	8.30%	10.53%
73%	0.87%	0.27%	8.88%	11.31%

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DISCLOSURE:

[1] These accounts were funded with more than the minimum amount required to establish an account. Had the accounts been funded with more assets, they would be charged a same flat dollar fee up to $5,000 or a flat percentage on assets under management fee over $5,000. A higher advisory fee would have the result of decreasing reflected performance, while a lower advisory fee would have the result of increasing reflected performance.

[2] This account has no minimum required to establish an account, but had the account been funded with more assets, it would, at certain asset levels, be eligible for a lower advisory fee. The lower advisory fee would have the result of increasing reflected performance.

[3] These accounts were funded with more than the minimum amount required to establish an account. Due to the flat advisory fee, performance is not affected by the accounts' asset levels.

[4] This account was funded with the minimum amount required to establish an account. Had the account been funded with more assets it would, at certain asset levels, be eligible for a lower advisory fee. The lower advisory fee would have the result of increasing reflected performance.

[5] This account was funded with more than the minimum in order to take advantage of tax-loss harvesting. However, due to the flat advisory fee, performance is not affected by the account's asset level. Tax-loss harvesting may result in better or worse performance compared to similarly positioned accounts that do not have tax-loss harvesting associated with the account.

[6] This account was funded with the minimum amount required to establish an account. Had the account been funded with more assets it would be charged the same or, in the case of over $10,000, a higher advisory fee. A higher advisory fee would have the result of decreasing reflected performance.

[7] These accounts were funded with the minimum amount required to establish an account. Due to the flat advisory fee, performance is not affected by the accounts' asset levels.

[8] These accounts have no minimum required to establish an account. Due to the flat advisory fee, performance is not affected by these accounts' asset level.

[9] This account was funded with the minimum investment amount at the time. At the time of opening, the account had a 0.25% management fee. Due to changes in the service at the end of the 1st quarter 2017, new accounts are charged a 0.30% management fee. The fee on our account was grandfathered in and remains at 0.25%. The higher advisory fee would have the result of decreasing reflected performance.

[10] These accounts were funded with more than the minimum amount required to establish an account. The first $10k in the account is not charged an advisory fee. New accounts are charged an advisory fee on the full amount of assets which would decrease reflected performance.

[11] This account has no minimum required to establish an account, but had the account been funded with more assets, it would, at certain asset levels, be eligible for a lower advisory fee. The lower advisory fee would have the result of increasing reflected performance. A special request was made for an allocation of 60% equities and 40% fixed income or close to it, but this allocation was not one of the standard models at the time of account opening. At the time of account opening the closest standard models offered were a in the range of 50/50 or 75/25 equity to fixed income split.

[12] These accounts were funded with more than the minimum amount required to establish an account. Due to the flat advisory fee, performance is not affected by the accounts' asset levels. In previous reports we reported the performance of two accounts that were combined to achieve a 60/40 allocation. Due to our introduction of Normalized Benchmarking we are no longer reporting the combined account, but just the account with the closest to a 60/40 allocation as we could achieve at this provider.

[13] These accounts were funded with less than the minimum investment through an agreement between BackEnd Benchmarking and the provider. At higher levels of assets the fee remains the same and will not affect performance.

[14] This account was funded with the minimum amount required to establish an account. Had we subscribed to additional, specific, Wells Fargo Products the account would be eligible for a lower advisory fee. Lower advisory fee would have the result of increasing reflected performance.

[15] This account has no minimum required to establish an account and is enrolled in the Digital Only plan. If the account was enrolled in the premium service with access to live advisors there would be a higher advisory. The higher advisory fee would have the result of decreasing reflected performance.

[16] This account is enrolled in the Self Service plan. If the account was enrolled in the Full Service Plan service the fee would be higher or lower depending on the level of assets in the account. The higher/lower advisory fee would have the result of decreasing/increasing reflected performance.

[17] These accounts were funded with more than the minimum amount required to establish an account. This account is not charged an advisory fee because there is less than $10,000 invested. At a higher account balance a fee would be charged and would decrease reflected performance. In previous reports we reported the performance of two accounts that were combined to achieve a 60/40 allocation. Due to our introduction of Normalized Benchmarking we are no longer reporting the combined account, but just the account with the closest to a 60/40 allocation as we could achieve at this provider. When this account was opened there were fewer options for portfolio models and this account was invested with a target equity weight of 50%. In Q2 2018 the target equity allocation for the account was adjusted to 60% equities. Because the target weight going forward is 60% equities this account is compared to a 60% equity benchmark when calculating returns above or below the Normalized Benchmark.

[18] These accounts were funded with more than the minimum amount required to establish an account. This account is not charged an advisory fee because there is less than $10,000 invested. At a higher account balance a fee would be charged and would decrease reflected performance.

[A] *On June 19th, 2017, Vanguard removed Backend Benchmarking's primary Vanguard account from the Vanguard Personal Advisor Services program. As of June 20th, 2017, the primary account was replaced by a secondary account with the same risk profile as the primary account. The returns for the secondary account have been linked to the original primary account. Asset type and allocation between the two accounts at the time of the switch were very close but not identical.*

[B] *In the 1st Quarter of 2018 Wealthfront liquidated the positions in the account used for the 4th Quarter 2017 and previous editions of this report. A different account was used for this report and is labeled "Wealthfront (Risk 4.0)". The performance numbers from the previous account are available in the addendum labeled as "Wealthfront (Risk 3.0)". The risk scores and thus allocations of the two accounts are different and labeled as such. Asset type and allocation between the two accounts at the time of the switch were close but not identical. The difference of equity allocation between the accounts on 12/31/2017 was approximately 5.4%*

Unfortunately the previous version of this report was released with an error. None of the data used in calculating The Robo Ranking, or that was published in the July 27th article in Barron's, was affected. The YTD above below the benchmark returns column contained errors. The Wells Fargo YTD fixed income return was missing. Other corrections and updates can be found in the AUM and funding table, the taxable and IRA facts, in the 1-year risk/return table, and performance chart. We have implemented new procedures at Backend Benchmarking to avoid mistakes in future reports. For those looking for historical quarterly returns an full history of accounts has been made available on the website.

This report represents Backend Benchmarking's research, analysis and opinion only; the period tested was short in duration and may not provide a meaningful analysis; and, there can be no assurance that the performance trend demonstrated by Robos vs indices during the short period will continue. Backend Benchmarking is under common ownership and control with Condor Capital Management, an SEC registered investment adviser. A copy of Condor's disclosure Brochure is available at www.condorcapital.com. Condor Capital initiated a position in Schwab and TD Ameritrade in one of the strategies used in many of their discretionary accounts on 5/30/2017 and 5/31/2017. As of 6/30/2018 the total size of the position is 35,760 shares of Schwab common stock and 33,752 shares of TD Ameritrade common stock.

For more information, please contact BackendBenchmarking at Info@BackendB.com

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