BRINGING TRANSPARENCY TO ROBO INVESTING

EDITION 11

The Robo Report™ First Quarter 2019

We are proud to publish the 11th edition of *The Robo Report*™ covering the first quarter of 2019. 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.

Highlights:

- *SoFi disregards tax consequences as they switch current robo clients into their newly released proprietary ETFs. (Page 3)*
- *SigFig and Fidelity Go are emerging as longer-term performance leaders. (Page 4)*
- *U.S. Bank shared results from an internal survey showing older generations are actually more comfortable opening a digital advice account without any human interaction. (Page 9)*
- *A battle is brewing over customers' cash, with high-yield cash accounts and free checking account offerings popping up across fintech. (Page 7)*
- *Schwab converts its hybrid advice product to a subscription-based fee. (Page 7)*
- *Stash connects spending with investing, offering rewards in the form of fractional shares. (Page 7)*
- *Acorns, Personal Capital, Nutmeg, and Ellevest raised a combined nearly $250 million in capital this quarter, proving there is an appetite for investing in established digital advice players. (Page 8)*

Taxable Top Performers

Year-to-Date Top Performers

	Best	2nd	3rd
Total Portfolio	TIAA Active	Prudential	Acorns
Equity[19]	TIAA Active	Acorns	Prudential
Fixed Income	US Bank	Wells Fargo	E*Trade

1-Year Trailing Top Performers

	Best	2nd	3rd
Total Portfolio	Fidelity Go	Acorns	WiseBanyan
Equity	Acorns	Zacks Advantage	Fidelity Go
Fixed Income	Wealthfront	Ally Financial	E*Trade

2-Year Trailing Top Performers

	Best	2nd	3rd
Total Portfolio	Fidelity Go	Wealthfront	Vanguard/WiseBanyan (tie)
Equity	Fidelity Go	SigFig	WiseBanyan
Fixed Income	Fidelity Go/Wealthfront (tie)	Fidelity Go/Wealthfront (tie)	Schwab

3-Year Trailing Top Performers

	Best	2nd	3rd
Total Portfolio	SigFig	WiseBanyan	Vanguard
Equity	SigFig	Vanguard	WiseBanyan
Fixed Income	Schwab	SigFig	Betterment

**Net of Fees Returns as of: 3/31/2019*

***Total Portfolio winners are based on the portfolio's return above/below the Normalized Benchmark*

Produced by Backend Benchmarking for TheRoboReport.com™

The Executive Summary

- *SoFi disregards tax consequences as they switch robo clients into their newly released proprietary ETFs.*
- *SigFig and Fidelity Go are emerging as longer-term performance leaders.*
- *Actively managed portfolios have a strong start in 2019.*

Cash management products spread across direct-to-consumer fintech platforms

The digital advice industry continues to evolve as we enter 2019. Cash management, debit cards, and high-yield savings accounts are sweeping across direct-to-consumer fintech companies. Wealthfront announced their high-yield savings account this quarter, following Betterment's cash management program announcement late last year, while Robinhood released, then quickly shelved, their high-interest account last December.

SoFi invests managed clients into newly released proprietary funds despite tax consequences

SoFi, originally a company built on consolidating student loan debt, has been aggressively expanding into other areas of finance. In 2017 they launched a robo, in 2018 they launched their cash account, and in 2019 they launched a self-directed brokerage platform with no-commission trading. Also in April of this year, they released two ETFs with a 0% expense ratio for at least the first year. This is in addition to their recent removal of the management fee for their robo offering. Although their platform has a suite of undeniably compelling products, we question whether their customers are their top priority. The day after their ETFs began trading, they reallocated our managed portfolio, replacing the Vanguard Total Stock Market ETF (VTI) with their proprietary ETFs.

> *Although their platform has a suite of undeniably compelling products, we question whether their customers are their top priority.*

The trade caused a significant taxable event, realizing both short- and long-term capital gains. Without a track record, it is unclear what the advantages are of the new SoFi ETFs, and the cost difference between their ETFs and VTI is minimal. VTI's expense ratio was recently reduced from 0.04% to 0.03%. While the SoFi ETFs employ a different weighting method than typical indexes, with only a day-old track record at the time, it is hard to say if this method will produce better long-term results.

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While the cost of SoFi's ETFs are lower, it is unclear how long that will be true. SoFi has not committed to maintaining a 0% expense ratio for more than a year, a period far too short to recoup what the trade cost our account's owner in taxes.

SoFi is not the first robo to swap third-party funds for proprietary funds. Fidelity Go traded our account out of iShares ETFs and into their newly created no-fee mutual funds in spring of 2018, and Wealthfront swapped third-party funds for their newly created risk/parity fund in some client accounts earlier that year. Both Fidelity and Wealthfront notified their customers of the upcoming

SoFi gave no advance warning of the upcoming trades to their clients. By ignoring the tax implications, it is hard for us to believe this move was in the best interest of their clients.

trades before they occurred and gave clients the option to either opt out of owning the fund in the case of Wealthfront, or to transfer to a self-directed account in the case of Fidelity. SoFi gave no advance warning of the upcoming trades to their clients. By ignoring the tax implications, it is hard for us to believe this move was in the best interest of their clients.

In the first quarter of 2019, our robo portfolios returned to a period of strong performance both in fixed income and equity.

After a turbulent end to 2018 that saw the U.S. stock market give back all of the gains it had posted through last year's first three quarters, domestic equities staged a powerful recovery in the first quarter of 2019. In fact, the S&P 500 Index ended the quarter up 13.65%, marking the best quarter since the third quarter of 2009 and the strongest first quarter on record since 1998. Market trends witnessed during the first quarter are a continuation of trends we have seen over the past three years. Trade negotiations, Brexit, and other turmoil abroad have created volatility in international markets, while the strong performance of U.S. corporations has led domestic markets to outperform. Despite a fourth-quarter pullback, growth continued its upward rise, outpacing value in the first quarter. Meanwhile, large-cap has largely outpaced mid- and small-cap over the trailing three-year period.

Fixed income markets generally posted above average returns in the quarter as well. Corporate, government, municipal, and international bonds all posted notable gains, with high-yield and long-term bonds among the top performers. Again, this quarter's trends have largely held true over the past three years, rewarding portfolios that hold corporates, high-yield, and international bond funds.

Fidelity Go and SigFig emerging as two-year and three-year performance leaders

Among the robos with longer track records, we are witnessing SigFig and Fidelity Go emerging as leaders. Fidelity Go has earned the top total portfolio return in the three-year term. Spurred on by a lower-than-average allocation to international and higher-than-average allocation to large-cap domestic stocks Fidelity Go's equity portfolio has outperformed. Although Fidelity Go has a higher management fee than some of their lower cost peers, the portfolio holds funds with no expense ratio, which levels the playing field with other low-cost providers. In their fixed income portfolio, the performance was driven by a large allocation to the Fidelity Municipal Income Fund. This fund has a large allocation to long-term bonds, which have outperformed over the past two years.

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SigFig led the three-year returns for total return above the benchmark and for the equity portion of the portfolio. Although SigFig has a large international equity allocation, which has held other portfolios back, they have a much larger-than-average allocation to emerging markets within their international holdings that has performed far better than developed markets over the past three years. SigFig's small allocation to emerging market debt also helped their fixed income portfolio perform well.

Foreign debt holdings, as well as exposure to high-yield bonds, have helped Schwab's fixed income perform at the top of the group for the three-year period. Wealthfront's fixed income portfolio has done well over the past one- and two-year time frames by holding municipal bonds with a tilt towards longer maturities.

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Year-to-date we saw lots of new names on the leaderboard. Prudential and Acorns fall at the low end of international allocation, combined with strongly performing corporate and foreign debt exposure helped both portfolios post strong quarterly performance.

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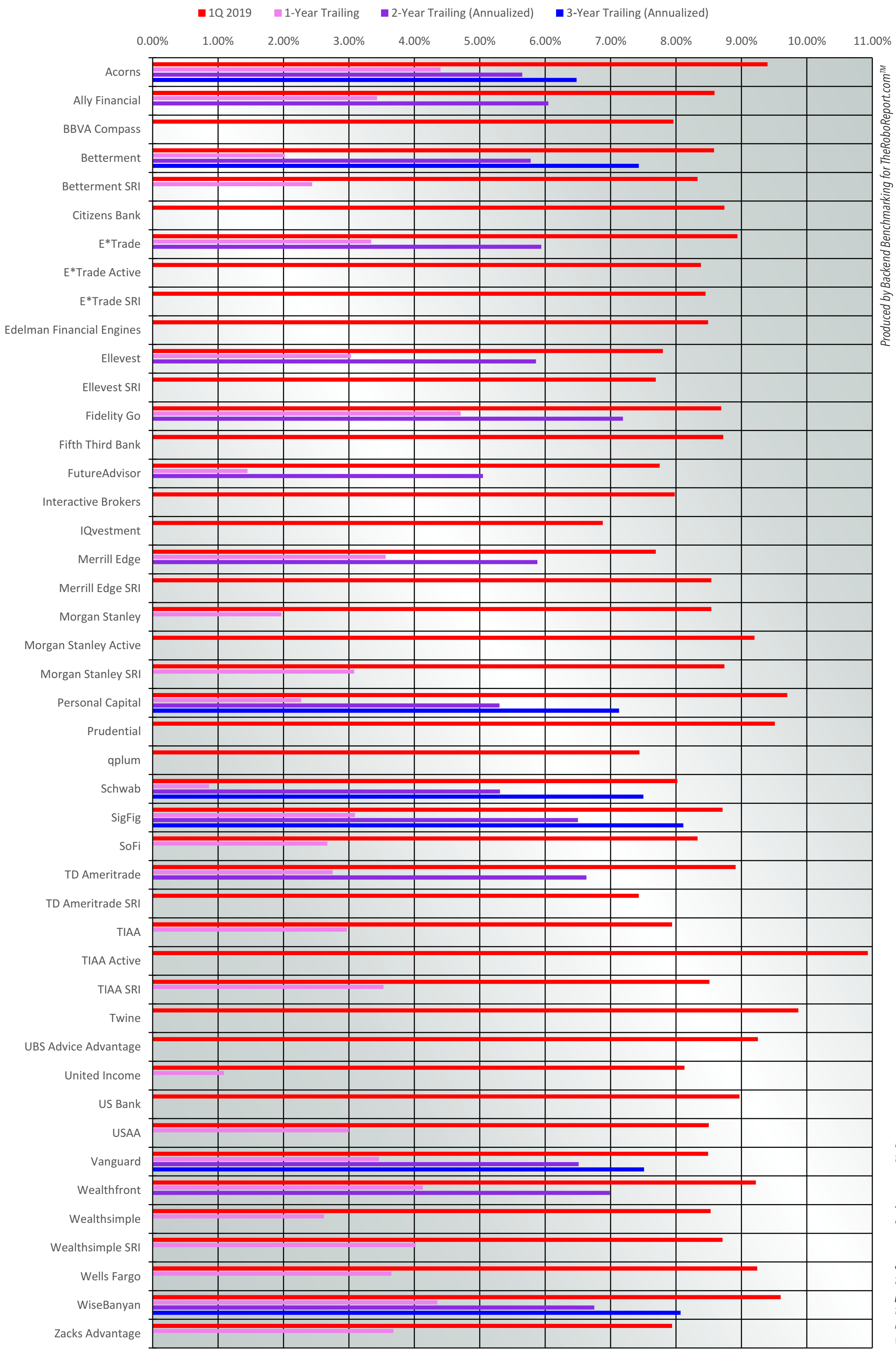
Active managed portfolios shine in the first quarter of 2019

Some of our actively managed portfolios shined in the first quarter. TIAA's actively managed portfolio took the top spot for returns above the normalized benchmark for the quarter, largely due to the outperformance of the actively managed mutual funds. TIAA accomplished this performance despite holdings in value oriented funds and a 38% allocation of equity internationally, two areas that underperformed this quarter.

Swell led our IRA universe by a wide margin. Although their primary focus is socially responsible investing, they take an active management approach and are one of the few portfolios we track that holds individual securities.

As our accounts age, and we have a longer-term to analyze the performance of different robo advisors, we look forward to gaining a better perspective on how automated investing portfolios perform over the long term.

Taxable Account Performance



**Net of Fees Total Returns as of: 3/31/2019*

***Some accounts have not been open long enough for 1 year, 2 year, or 3 year trailing returns*

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

*****Active indicates the account is invested in an active strategy with either actively managed funds or its own active manager. For these providers, the active strategy is distinct from their passive and/or SRI strategies. Other accounts may use actively managed products within their portfolios.*

- *Robos aggressively expand into banking, personal cash management, and ETFs.*
- *Schwab's transition to subscription-based pricing for their hybrid robo product makes waves.*
- *Established robo advisors raise nearly $250 million in capital in the first quarter of 2019.*

Robos expand into banking and cash management as high-yield account options have proliferated among direct-to-consumer fintech platforms

Wealthfront joined the growing trend of fintech companies that offer high-yield accounts designed for cash savings. Betterment announced their cash management program late last year, as did trading app Robinhood. Robinhood launched its product with an aggressive 3% interest rate, but made a regulatory miscalculation and quickly pulled their product offline to reconfigure it. Although these savings vehicles often appear very similar, there can be important differences. For example, Wealthfront places funds in FDIC-insured bank accounts, while Betterment's product invests funds in a conservative, low-risk, fixed income portfolio.

SoFi made waves this quarter by offering free trading in self-directed accounts, reducing their managed account fee to 0% and releasing proprietary ETFs that will initially have a 0% expense ratio.

Meanwhile, SoFi, originally a consumer lending-focused fintech company, has been aggressively expanding to other areas of finance. Their bank account product offers high interest, free accounts, and even reimburses third-party ATM fees. SoFi made waves in recent months by offering free trading in self-directed accounts, reducing their managed account fee to 0%, and releasing proprietary ETFs that will initially have a 0% expense ratio. M1 Finance, a lesser known digital advice player, also launched a cash account with a debit card this quarter. Stash, a digital investing app, continues to create features to build on their success with young investors by launching a free debit card product where spenders earn rewards in the form of fractional shares of companies or ETFs. Acorns, who launched a spending account last year, also offers promotions where participating companies will contribute to a user's investment account when qualifying purchases are made.

All said, the expansion from digital investment advice to cash management and banking is well underway. These attractive offers from fintech companies will continue to ramp up competition amongst traditional financial advice firms and banks.

More robo advisors are offering exclusive or premium features to differentiate themselves

Schwab broke the mold by switching to a subscription-based fee for their digital advice product that comes with access to live advisors. Many are questioning whether Schwab's new subscription pricing will usher in a paradigm shift in the way financial advice is paid for in the U.S. With a one-time planning fee and an ongoing fixed monthly cost, *Intelligent Portfolio Premium* will be increasingly less expensive at higher asset levels compared to the traditional AUM-based fee.

In other news, Wealthsimple, a Toronto-based robo, introduced *Wealthsimple Generation*, a premium advisory and financial planning service available to clients who invest $500,000 or more. This offering is a classic example of how the lines between traditional full-service advice and digital advice are

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becoming increasingly blurred, as robo advisors introduce high-service products and traditional advisors further integrate technology. Adoption of automated investing products amongst banks has been a trend in digital advice and may be ramping up. Most of the largest retail banks have already launched a robo advice product and the trend is now migrating to mid-sized banks. SigFig is catering to the banking channel and recently launched Atlas, a white-label digital advice product designed specifically for banks. With existing customer bases and the ability to cross-sell, it is easier for a digital advice product to find success.

Fintech companies continue fundraising and engaging in new partnerships

Personal Capital hired a new Chief Marketing Officer and secured an additional $50 million in funding earmarked for the implementation of a new marketing strategy. Goldman Sachs, which has acquired Clarity Money and Honest Dollar in years past, expanded their portfolio of digital advice assets by investing in the UK-based robo advisor Nutmeg in a recent $58 million fundraising round for the company. Ellevest also raised $33 million in additional funding this past quarter. Additionally, Acorns recently closed a $105 million funding round. As part of the deal, NBCUniversal made an equity investment, secured a board seat, and will be dedicating resources to partner with Acorns in the creation of educational and financial content. Also of note this quarter was an announcement that Plaid purchased Quovo for a rumored price of $200 million. Although Plaid and Quovo are not directly in the business of digital advice, both companies' aggregation technology is popular with fintech platforms that want to enable users to connect and view their third-party accounts. In total, Acorns, Personal Capital, Ellevest, and Nutmeg raised nearly $250 million in capital this past quarter, proving there is still an appetite for investing in established digital advice players. In other acquisition news, Envestnet acquired Money Guide for $500 million, adding to their technology assets. The acquisition could help them create a more robust digital advice offering for advisors.

In total, Acorns, Personal Capital, Nutmeg, and Ellevest raised nearly $250 million in capital this quarter, proving there is an appetite for investing in established digital advice players.

- ***Digital advice is a solution for self-directed investors who would prefer not to manage their own investments.***
- ***Industry professionals have learned that most people are not quite ready to invest without some level of human guidance.***
- ***Robo advice products are finding success with clients before they are ready or attractive to full-service advisors.***

Although initially seen as a disruptor to the financial services industry, digital investing and robo advisors continue to expand markets, engage previously underserved clients, and encourage traditional wealth managers to embrace technology. This quarter, we spoke with Karen Wimbish, Head of Product for U.S. Bancorp Investments and Financial Planning, about her experience with *Automated Investor*, U.S. Bank's digital investing platform.

Self-directed investors want help

When digital advice first gained prominence, many vocalized concerns and predictions that robo advisors would soon replace traditional wealth managers. While there is little doubt that robo advisors have increased competition, they are by and large creating new opportunities and delivering financial advice to those in need. Citing a recent internal survey of U.S. Bank mobile users, Karen shared the impetus for launching *Automated Investor*: "What we found is that a lot of people said that they did not have enough money to seek professional advice and did not know how to do it on their own. We particularly found in self-directed accounts about 32% of those had money just sitting in money markets." Digital advice has helped bridge the gap for those who do not necessarily enjoy managing their own investments and may lack the financial knowledge to do so. Karen added, "we find a majority of people with self-directed accounts have no idea what to do with the money once they put it in there; they put the money in there and sit on it."

"We particularly found in self-directed accounts about 32% of those had money just sitting in money markets."

Investors want to seek live help when opening robo accounts

As digital advice products introduce professional investment management to the masses, the model has continued to evolve. What industry professionals have learned is that most people are not quite ready to invest without some level of human guidance. This desire for human assistance is not limited to older generations, either. In fact, millennials are less comfortable with a digital-only product than their boomer counterparts. Sharing the results of U.S. Bank's recent survey, Karen explained, "83% of millennials want human help with their automated investing, and it is 73% for boomers. This thought of robos as a standalone experience, we probably didn't get that right." U.S. Bank has also found that one of the largest barriers for customers accessing and using their product was in the initial account opening phase. To adapt, they have since introduced live support and outreach during onboarding and have seen subsequent increases in customer sign-ups.

"83% of millennials want human help with their automated investing, and it is 73% for boomers. This thought of robos as a standalone experience, we probably didn't get that right."

Digital advice is finding its own place in the market below full-service advice

Like many digital advice products offered at banks or other larger institutions, *Automated Investor* is just part of a larger client acquisition strategy. While digital advice may not be appropriate for some complexities best served by full-service advisors, it is a great introduction to professional investment management. As Karen explains, “It fills in that continuum of helping people start and then, because we are engaged in all levels of that continuum of wealth advice, they can grow with us.” For now, it remains to be seen if digital advice clients will eventually graduate to full-service advice and its corresponding costs. For the time being, digital advice’s success is not coming at the expense of full-service advisors, but it may come at the expense of traditional self-directed products. Karen shared with us her prediction that self-directed is a declining segment of financial services.

“It fills in that continuum of helping people start and then, because we are engaged in all levels of that continuum of wealth advice, they can grow with us.”

Regardless of how digital advice continues to evolve, adoption by U.S. Bank and other major financial institutions means more investors will be encountering and choosing these products. Digital advice is a reasonable cost service for investors in need and it is here to stay.

Charts and Tables

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 (in millions)	Clients	Source of AUM and Clients Figures
Acorns	$207	$105	Jan, 2019	$860	$1,149	2,058,343	Recent ADV
Ally Invest Advisors	N/A	N/A	N/A	Acquired TradeKing for $294 Million June, 2016	$157	10,262	Recent ADV
Betterment	$275	$70	Jul, 2017	$800	$16,399	419,543	Recent ADV
Ellevest	$78	$33	Mar, 2019	Unknown	$283	22,824	Recent ADV
FutureAdvisor	N/A	N/A	N/A	Acquired by BlackRock for $152 Million August, 2015	$1,192	12,285	Recent ADV
Personal Capital	$265	$50	Feb, 2019	Unknown	$8,559	19,295	Recent ADV
qplum	$1	$1	Jan, 2015	Unknown	$77	726	Recent ADV
Schwab Intelligent Portfolio Products	N/A	N/A	N/A	N/A	$37,700	223,000 Accounts (# of clients unavailable)	AUM from Q1 19' Earnings Report; # of Accounts from Q4 17' Earnings Report
SigFig	$117	$50	June, 2018	$471	$485	11,168	Recent ADV
SoFi Wealth	N/A	N/A	N/A	N/A	$79	19,057	Recent ADV
TD Ameritrade Selective and Essential Portfolios	N/A	N/A	N/A	N/A	$20,500	Unknown	Company Reports
T Rowe Price ActivePlus Portfolios	N/A	N/A	N/A	N/A	$379	Unknown	Company Representative
United Income	$16	$10	Aug, 2018	$65	$722	666	Recent ADV
Vanguard Personal Advisor Services	N/A	N/A	N/A	N/A	$130,000	Unknown	Vanguard Spokesperson
Wealthfront	$205	$75	Jan, 2018	$500△	$11,454	221,142	Recent ADV
Wealthsimple	$167 (CAD)	$65 (CAD)	Feb, 2018	Unknown	$89 (U.S.)	14,869 (U.S.)	Recent ADV
WiseBanyan	N/A	N/A	N/A	Acquired by Axos Financial for undisclosed amount in Oct, 2018	$179	23,659	Recent ADV

*all funding and valuation amounts are estimates

**sources: Crunchbase, Pitchbook, News Media

△ This valuation number has been disputed

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Taxable Returns

	Total							
	1Q 2019	1Q 2019 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)	3-Year Trailing (Annualized)	3-Year Trailing Return Above/Below Benchmark (Annualized)
Acorns[1]	9.40%	0.79%	4.40%	0.90%	5.65%	-1.11%	6.48%	-1.40%
Ally Financial[9]	8.59%	0.08%	3.43%	-0.19%	6.05%	-0.59%	-	-
BBVA Compass[7]	7.96%	-0.65%	-	-	-	-	-	-
Betterment[27]	8.58%	-0.51%	2.02%	-1.46%	5.78%	-1.04%	7.43%	-0.70%
Betterment SRI[27]	8.33%	-0.28%	2.44%	-1.06%	-	-	-	-
Citizens Bank[7]	8.74%	-0.26%	-	-	-	-	-	-
E*Trade (ETF)[21]	8.94%	0.33%	3.34%	-0.16%	5.94%	-0.58%	-	-
E*Trade Active[23]	8.38%	-0.33%	-	-	-	-	-	-
E*Trade SRI[23]	8.45%	-0.26%	-	-	-	-	-	-
Edelman Financial Engines[4]	8.49%	-0.80%	-	-	-	-	-	-
Ellevest[15]	7.80%	-0.42%	3.03%	-0.48%	5.86%	-0.69%	-	-
Ellevest SRI[15]	7.69%	-0.53%	-	-	-	-	-	-
Fidelity Go[7]	8.69%	-0.02%	4.71%	1.21%	7.19%	0.61%	-	-
Fifth Third Bank[7]	8.72%	0.11%	-	-	-	-	-	-
FutureAdvisor[3]	7.75%	-0.40%	1.45%	-2.10%	5.05%	-1.31%	-	-
Interactive Brokers[24]	7.98%	-0.15%	-	-	-	-	-	-
IQvestment[19]	6.88%	-1.44%	-	-	-	-	-	-
Merrill Edge[7]	7.69%	-0.42%	3.56%	-0.04%	5.88%	-0.74%	-	-
Merrill Edge SRI[7]	8.54%	0.03%	-	-	-	-	-	-
Morgan Stanley[12]	8.54%	-0.55%	1.97%	-1.51%	-	-	-	-
Morgan Stanley Active[3]	9.20%	0.20%	-	-	-	-	-	-
Morgan Stanley SRI[7]	8.74%	0.03%	3.08%	-0.38%	-	-	-	-
Personal Capital[4]	9.70%	-0.27%	2.27%	-1.15%	5.30%	-2.05%	7.13%	-1.82%
Prudential[26]	9.51%	0.90%	-	-	-	-	-	-
qplum[7]	7.44%	0.34%	-	-	-	-	-	-
Schwab[5]	8.02%	-0.88%	0.86%	-2.66%	5.31%	-1.59%	7.50%	-0.74%
SigFig[6]	8.71%	-0.09%	3.09%	-0.40%	6.50%	-0.14%	8.11%	0.26%
SoFi[17]	8.33%	-0.28%	2.67%	-1.00%	-	-	-	-
TD Ameritrade[10]	8.91%	-0.48%	2.75%	-0.71%	6.63%	-0.33%	-	-
TD Ameritrade SRI[10]	7.43%	-1.86%	-	-	-	-	-	-
TIAA[7]	7.94%	-0.77%	2.97%	-0.53%	-	-	-	-
TIAA Active[7]	10.93%	1.06%	-	-	-	-	-	-
TIAA SRI[7]	8.51%	-0.10%	3.53%	0.03%	-	-	-	-
Twine (John Hancock)[3]	9.87%	0.39%	-	-	-	-	-	-
UBS Advice Advantage[7]	9.25%	-0.14%	-	-	-	-	-	-
United Income[16]	8.13%	-0.38%	1.09%	-2.41%	-	-	-	-
US Bank[28]	8.97%	0.36%	-	-	-	-	-	-
USAA[7]	8.50%	-0.21%	3.00%	-0.50%	-	-	-	-
Vanguard[4,A]	8.49%	-0.12%	3.46%	-0.04%	6.51%	-0.01%	7.51%	-0.16%
Wealthfront[22,B]	9.22%	0.13%	4.13%	0.65%	6.99%	0.17%	-	-
Wealthsimple[11]	8.53%	-0.08%	2.62%	-0.88%	-	-	-	-
Wealthsimple SRI[11]	8.71%	0.10%	4.02%	0.52%	-	-	-	-
Wells Fargo[14]	9.24%	0.34%	3.65%	0.16%	-	-	-	-
WiseBanyan[8]	9.60%	0.60%	4.35%	0.87%	6.75%	-0.01%	8.07%	0.03%
Zacks Advantage[4]	7.94%	-0.38%	3.68%	0.17%	-	-	-	-

*Net of Fees Returns as of: 3/31/2019
**Some accounts have not been open long enough for 1 year, 2 year, or 3 year trailing returns
***SRI indicates the account is invested in a Socially Responsible Investing portfolio, also known as "Impact Investing"
****Active indicates the account is invested in an active strategy with either actively managed funds or its own active manager. For these providers, the active strategy is distinct from their passive and/or SRI strategies. Other accounts may use actively managed products within their portfolios.

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Taxable Returns *(continued from previous page)*

	Equity				Fixed Income			
	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)	3-Year Trailing (Annualized)	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)	3-Year Trailing (Annualized)
Acorns[1]	13.58%	5.34%	8.00%	9.87%	3.24%	2.86%	1.65%	0.94%
Ally Financial[9]	12.37%	1.43%	7.67%	-	3.29%	5.23%	3.07%	-
BBVA Compass[7]	11.63%	-	-	-	2.80%	-	-	-
Betterment[27]	11.87%	0.64%	6.83%	9.85%	3.18%	4.40%	3.40%	2.63%
Betterment SRI[27]	12.13%	1.03%	-	-	3.23%	4.41%	-	-
Citizens Bank[7]	12.10%	-	-	-	2.83%	-	-	-
E*Trade (ETF)[21]	12.84%	2.37%	7.87%	-	4.06%	5.02%	3.02%	-
E*Trade Active[23]	12.09%	-	-	-	2.56%	-	-	-
E*Trade SRI[23]	12.29%	-	-	-	2.56%	-	-	-
Edelman Financial Engines[4]	12.05%	-	-	-	2.18%	-	-	-
Ellevest[15]	12.54%	2.56%	7.90%	-	2.23%	3.35%	2.64%	-
Ellevest SRI[15]	12.35%	-	-	-	2.16%	-	-	-
Fidelity Go[7]	12.73%	4.20%	9.25%	-	2.71%	4.80%	3.76%	-
Fifth Third Bank[7]	12.63%	-	-	-	2.80%	-	-	-
FutureAdvisor[3]	12.36%	1.01%	6.96%	-	2.80%	2.26%	2.40%	-
Interactive Brokers[24]	12.49%	-	-	-	2.95%	-	-	-
IQvestment[19]	10.31%	-	-	-	2.97%	-	-	-
Merrill Edge[7]	12.45%	2.96%	7.93%	-	2.66%	4.33%	2.90%	-
Merrill Edge SRI[7]	12.82%	-	-	-	2.83%	-	-	-
Morgan Stanley[12]	12.06%	0.65%	-	-	2.68%	4.54%	-	-
Morgan Stanley Active[3]	13.19%	-	-	-	3.08%	-	-	-
Morgan Stanley SRI[7]	13.00%	2.59%	-	-	2.25%	3.48%	-	-
Personal Capital[4]	12.35%	2.50%	6.66%	9.04%	2.79%	1.66%	1.53%	1.84%
Prudential[26]	13.54%	-	-	-	3.90%	-	-	-
qplum[7]	13.01%	-	-	-	3.12%	-	-	-
Schwab[5]	11.48%	0.11%	6.54%	9.82%	3.48%	2.21%	3.41%	4.13%
SigFig[6]	12.78%	2.66%	9.03%	11.62%	3.04%	3.93%	2.45%	2.67%
SoFi[17]	12.48%	1.25%	-	-	2.23%	4.30%	-	-
TD Ameritrade[10]	12.47%	2.04%	8.33%	-	2.66%	3.21%	2.41%	-
TD Ameritrade SRI[10]	12.43%	-	-	-	2.70%	-	-	-
TIAA[7]	11.62%	2.19%	-	-	2.81%	4.24%	-	-
TIAA Active[7]	13.83%	-	-	-	3.58%	-	-	-
TIAA SRI[7]	12.33%	2.93%	-	-	2.84%	4.08%	-	-
Twine (John Hancock)[3]	12.68%	-	-	-	4.00%	-	-	-
UBS Advice Advantage[7]	12.58%	-	-	-	3.08%	-	-	-
United Income[16]	11.80%	-0.83%	-	-	2.78%	3.00%	-	-
US Bank[28]	12.21%	-	-	-	4.45%	-	-	-
USAA[7]	12.53%	2.39%	-	-	2.81%	4.05%	-	-
Vanguard[4,A]	12.52%	2.86%	8.66%	11.09%	2.41%	4.47%	3.14%	2.05%
Wealthfront[22,B]	13.05%	3.41%	8.48%	-	2.76%	5.65%	3.76%	-
Wealthsimple[11]	12.41%	1.57%	-	-	3.13%	4.18%	-	-
Wealthsimple SRI[11]	13.14%	3.81%	-	-	2.59%	4.30%	-	-
Wells Fargo[14]	12.78%	3.88%	-	-	4.35%	3.74%	-	-
WiseBanyan[8]	12.83%	4.03%	8.84%	11.06%	3.98%	4.47%	2.77%	2.62%
Zacks Advantage[4]	12.62%	4.49%	-	-	2.29%	3.37%	-	-

**Net of Fees Returns as of: 3/31/2019*
***Some accounts have not been open long enough for 1 year, 2 year, or 3 year trailing returns*
****SRI indicates the account is invested in a Socially Responsible Investing portfolio, also known as "Impact Investing"*
*****Active indicates the account is invested in an active strategy with either actively managed funds or its own active manager. For these providers, the active strategy is distinct from their passive and/or SRI strategies. Other accounts may use actively managed products within their portfolios.*

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Retirement Returns

	Total					
	1Q 2019	1Q 2019 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)
Ally Financial IRA[9]	11.66%	-0.09%	1.82%	-1.27%	7.38%	-0.96%
Betterment IRA[27]	10.54%	-0.57%	1.65%	-1.46%	6.89%	-1.07%
E*Trade IRA[21]	12.66%	0.38%	2.23%	-0.84%	7.68%	-0.97%
Fidelity Go IRA[7]	11.17%	0.27%	4.29%	1.18%	8.15%	0.32%
Honest Dollar (Goldman Sachs) IRA[2]	12.15%	-0.24%	-	-	-	-
Merrill Edge IRA[7]	11.09%	-0.23%	2.36%	-0.74%	-	-
Morgan Stanley IRA[7]	9.89%	-0.38%	1.49%	-1.63%	-	-
Personal Capital IRA[4]	12.10%	0.03%	2.73%	-0.35%	6.81%	-1.72%
Schwab IRA[20]	11.03%	-0.83%	0.27%	-2.81%	6.27%	-2.13%
SigFig IRA[6]	11.99%	0.45%	1.75%	-1.34%	7.79%	-0.42%
SoFi IRA[18]	12.49%	0.00%	1.29%	-1.77%	-	-
Swell IRA[3]	15.42%	2.93%	-	-	-	-
T Rowe Price IRA[13]	13.24%	0.75%	2.98%	-0.08%	-	-
TD Ameritrade IRA[10]	11.01%	0.21%	2.32%	-0.79%	7.46%	-0.29%
TIAA IRA[7]	10.29%	-0.93%	2.60%	-0.50%	-	-
United Income IRA[16]	11.18%	-1.21%	-2.11%	-5.17%	-	-
USAA IRA[7]	12.13%	-0.26%	2.28%	-0.78%	-	-
Wealthsimple IRA[2]	10.43%	0.06%	2.33%	-0.79%	-	-
Wells Fargo IRA[14]	11.51%	-0.03%	1.47%	-1.62%	-	-
WiseBanyan IRA[25]	11.85%	0.21%	3.31%	0.22%	8.44%	0.16%
Zacks Advantage IRA[4]	11.51%	-0.24%	2.23%	-0.86%	-	-

*Net of Fees Returns as of: 3/31/2019

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**Some accounts have not been open long enough for 1 year, 2 year, 3 year returns, others have no fixed income holdings thus no fixed income returns

Retirement Returns *(continued from previous page)*

	Equity			Fixed Income		
	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)
Ally Financial IRA[9]	12.36%	1.53%	7.70%	3.32%	5.29%	3.26%
Betterment IRA[27]	11.75%	1.27%	7.42%	3.41%	3.94%	3.26%
E*Trade IRA[21]	12.84%	2.30%	7.89%	-	-	-
Fidelity Go IRA[7]	12.76%	4.28%	9.16%	2.97%	4.28%	2.48%
Honest Dollar (Goldman Sachs) IRA[2]	12.40%	-	-	-	-	-
Merrill Edge IRA[7]	12.31%	2.24%	-	3.50%	3.38%	-
Morgan Stanley IRA[7]	11.97%	0.80%	-	2.70%	4.50%	-
Personal Capital IRA[4]	12.50%	2.80%	6.99%	2.58%	-1.08%	0.76%
Schwab IRA[20]	11.86%	0.29%	6.69%	-	-	-
SigFig IRA[6]	12.77%	1.48%	8.38%	5.92%	4.23%	2.69%
SoFi IRA[18]	12.49%	1.31%	-	-	-	-
Swell IRA[3]	15.18%	-	-	-	-	-
T Rowe Price IRA[13]	13.24%	2.98%	-	-	-	-
TD Ameritrade IRA[10]	12.63%	2.49%	8.57%	2.83%	2.12%	2.09%
TIAA IRA[7]	11.65%	2.21%	-	2.81%	4.15%	-
United Income IRA[16]	11.39%	-2.06%	-	-	-	-
USAA IRA7	12.51%	2.43%	-	-	-	-
Wealthsimple IRA[2]	12.59%	1.85%	-	2.62%	4.26%	-
Wells Fargo IRA[14]	12.30%	1.26%	-	5.07%	4.51%	-
WiseBanyan IRA[25]	12.58%	3.13%	8.90%	4.11%	4.47%	3.01%
Zacks Advantage IRA[4]	12.31%	2.53%	-	-	-	-

*Net of Fees Returns as of: 3/31/2019

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**Some accounts have not been open long enough for 1 year, 2 year, 3 year returns, others have no fixed income holdings thus no fixed income returns

Taxable Account Facts

Portfolio	Account Minimum	Advisory Fee	Average Weighted Expense Ratio	Initial Target 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 (% Muni Bonds of Overall Fixed Income)
Acorns	No minimum	$1/month for Acorns Core (free for college students); $2/month Core + Acorns Later, $3/month for Acorns Core + Acorns Later + Acorns Spend. For balances above $1 million, $100/month per $1 million in AUM	0.09%	61%/39%/0%/0%	62%/38%/0%/0%	84%/16%	78%/22%	0%
Ally Financial	$2,500	0.30% annually	0.08%	59%/39%/0%/2%	61%/37%/0%/2%	59%/41%	60%/40%	0%
BBVA Compass	$10,000	0.75% annually	0.14%	57%/39%/3%/1%	58%/37%/3%/2%	63%/37%	64%/36%	0%
Betterment	Digital: No minimum; Premium: $100,000	Digital: 0.25%, 0.15% above $2M; Premium: 0.40% (unlimited chat and calls with advisor), 0.30% above $2M	0.09%	65%/35%/0%/0%	64%/36%/0%/0%	49%/51%	56%/44%	37%
Betterment SRI	Digital: No minimum; Premium: $100,000	Digital: 0.25%, 0.15% above $2M; Premium: 0.40% (unlimited chat and calls with advisor), 0.30% above $2M	0.13%	60%/40%/0%/0%	60%/40%/0%/0%	50%/50%	52%/48%	59%
Citizens Bank	$5,000	0.50% annually	0.08%	64%/36%/0%/1%	66%/34%/0%/1%	54%/46%	55%/45%	0%
E*Trade (ETF)	$5,000	0.30% (promo – fee waived for first year, ending April 15, 2019)	0.10%	60%/39%/0%/1%	60%/40%/0%/1%	75%/25%	65%/35%	0%
E*Trade Active	$5,000	0.30% (promo – fee waived for first year, ending April 15, 2019)	0.08%	61%/35%/0%/3%	64%/33%/0%/4%	65%/35%	66%/34%	100%
E*Trade SRI	$5,000	0.30% (promo – fee waived for first year, ending April 15, 2019)	0.13%	61%/35%/0%/4%	63%/33%/0%/4%	65%/35%	66%/34%	100%
Edelman Financial Engines	$5,000	1.75% annually on accounts under $400,000. Lower at different tiers over $400,000	0.12%	67%/30%/0%/3%	67%/30%/0%/3%	80%/20%	80%/20%	0%
Ellevest	Digital: No minimum; Premium: $50,000	Digital: 0.25%; Premium: 0.50% (access to live advisors and executive coaches)	0.10%	62%/36%/0%/2%	58%/41%/0%/1%	71%/29%	63%/37%	94%
Ellevest SRI	Digital: No minimum; Premium: $50,000	Digital: 0.25%; Premium: 0.50% (access to live advisors and executive coaches)	0.20%	56%/43%/0%/1%	58%/41%/0%/1%	63%/37%	64%/36%	81%
Fidelity Go	No Minimum	0.35% annually	0.00%	61%/39%/0%/0%	60%/40%/0%/1%	71%/29%	70%/30%	100%
Fifth Third Bank	$5,000	0.50% annually	0.20%	60%/40%/0%/1%	61%/38%/0%/1%	70%/30%	71%/29%	100%
FutureAdvisor	$5,000	0.50% annually	0.08%	58%/41%/0%/1%	58%/41%/0%/1%	49%/51%	67%/33%	0%
Interactive Brokers[24]	$5,000	Asset Allocation: 0.12% annually Other Portfolio types range from 0.08% to 1.5% annually	0.14%	55%/44%/0%/0%	56%/43%/0%/1%	55%/45%	55%/45%	31%
IQvestment	$1,000	$9.95 per month	0.04%	57%/38%/0%/5%	56%/36%/0%/8%	90%/10%	95%/5%	0%
Merrill Edge	$5,000	0.45% annually	0.08%	60%/39%/0%/1%	57%/41%/0%/3%	66%/34%	75%/25%	81%
Merrill Edge SRI	$5,000	0.45% annually	0.27%	59%/37%/0%/4%	61%/34%/0%/4%	65%/35%	71%/29%	10%
Morgan Stanley	$5,000	0.35% annually	0.08%	65%/30%/0%/5%	65%/34%/0%/1%	45%/55%	47%/53%	0%
Morgan Stanley Active	$5,000	0.35% annually	0.37%	64%/35%/0%/1%	63%/36%/0%/1%	44%/56%	43%/57%	0%
Morgan Stanley SRI	$5,000	0.35% annually	0.50%	64%/35%/0%/1%	62%/37%/0%/1%	56%/44%	58%/42%	12%
Personal Capital	$100,000	0.89% annually for the first $1 million; lower at different tiers over $1 million	0.11%	69%/25%/5%/1%	70%/25%/4%/1%	70%/30%	71%/29%	0%
Prudential	$5,000	0.79% annually for first $100K; lower at different tiers above $100K	0.09%	60%/38%/0%/2%	60%/38%/0%/2%	80%/20%	80%/20%	0%

**Current Allocations as of: 3/31/2019*
***Due to rounding, may not add to 100%*
****Average weighted expense ratio calculations exclude cash holdings from the portfolio*

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Taxable Account Facts *(continued from previous page)*

Portfolio	Account Minimum	Advisory Fee	Average Weighted Expense Ratio	Initial Target 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 (% Muni Bonds of Overall Fixed Income)
qplum	For taxable accounts: $10,000; For IRA accounts: $1,000	0.50% annually	0.14%	42%/56%/0%/1%	53%/46%/0%/1%	69%/31%	76%/24%	4%
Schwab	Intelligent Portfolio: $5,000 Intelligent Portfolio Premium: $25,000	Intelligent Portfolio: No fee (digital only); Intelligent Portfolio Premium: $300 initial planning fee, $30/month subscription	0.21%	61%/23%/5%/10%	61%/26%/2%/10%	51%/49%	55%/45%	56%
SigFig	$2,000	No fee for the first $10k; 0.25% annually for balance over $10k	0.07%	62%/37%/0%/1%	61%/38%/0%/1%	58%/42%	59%/41%	0%
SoFi	$1	No management fee	0.07%	52%/48%/0%/0%	62%/38%/0%/0%	67%/33%	57%/43%	65%
TD Ameritrade	Essential Portfolios: $5,000; Selective Portfolios: $25,000	Essential Portfolios: 0.30% annually; Selective Portfolios: tiered at a higher fee level depending on account balance and portfolio selected	0.06%	65%/33%/0%/1%	68%/31%/0%/1%	65%/35%	58%/42%	0%
TD Ameritrade SRI	Essential Portfolios: $5,000; Selective Portfolios: $25,000	Essential Portfolios: 0.30% annually; Selective Portfolios: tiered at a higher fee level depending on account balance and portfolio selected	0.15%	67%/29%/0%/3%	70%/29%/0%/1%	59%/41%	57%/43%	0%
TIAA	$5,000	0.30% annually	0.06%	61%/37%/0%/2%	61%/37%/0%/1%	71%/29%	64%/36%	0%
TIAA Active	$5,000	0.30% annually	0.63%	73%/26%/0%/1%	74%/25%/0%/1%	66%/34%	62%/38%	0%
TIAA SRI	$5,000	0.30% annually	0.28%	60%/39%/0%/1%	61%/38%/0%/1%	71%/29%	65%/35%	10%
Twine (John Hancock)	$100	0.60% annually	0.08%	69%/29%/0%/2%	70%/27%/0%/3%	64%/36%	65%/35%	0%
UBS Advice Advantage	$10,000	0.75% annually	0.08%	68%/27%/0%/5%	69%/27%/0%/5%	59%/41%	61%/39%	79%
United Income	Self Service: $10,000; Full Service: $300,000	Self Service: 0.50% annually; Full Service (Access to live advisors): 0.80% to 0.45% depending on account balances	0.18%	59%/40%/0%/1%	62%/37%/0%/1%	51%/49%	57%/43%	0%
US Bank	$5,000	0.24% annually	0.23%	60%/39%/0%/1%	60%/39%/0%/1%	59%/41%	58%/42%	33%
USAA	$2,000	0.50% annually	0.05%	66%/32%/0%/1%	61%/38%/0%/1%	63%/37%	62%/38%	0%
Vanguard[A]	$50,000	0.30% annually for the first $5 million; lower at different tiers over $5 million	0.07%	60%/40%/0%/0%	62%/38%/0%/0%	60%/40%	63%/37%	100%
Wealthfront[B]	$500	0.25% annually	0.11%	65%/35%/0%/0%	65%/34%/0%/0%	67%/33%	66%/34%	100%
Wealthsimple	Basic: No minimum; Black: $100,000	Basic: 0.50% fee on accounts less than $100k; Black: 0.40% on accounts greater than $100k	0.11%	60%/40%/0%/0%	60%/39%/0%/0%	66%/34%	68%/32%	56%
Wealthsimple SRI	Basic: No minimum; Black: $100,000	Basic: 0.50% fee on accounts less than $100k; Black: 0.40% on accounts greater than $100k	0.24%	60%/40%/0%/0%	60%/39%/0%/0%	69%/31%	69%/31%	0%
Wells Fargo	$10,000	0.50% annually; discounted to 0.40% if subscribed to other specific Wells Fargo products	0.17%	63%/34%/0%/3%	62%/34%/0%/4%	77%/23%	76%/24%	0%
WiseBanyan	No minimum	No Fee for basic package; add-on packages, such as tax-loss harvesting, come at additional cost	0.09%	64%/36%/0%/0%	64%/35%/0%/0%	62%/38%	63%/37%	0%
Zacks Advantage	$25,000	0.70% on accounts less than $100K; 0.50% on accounts between $100K and $250K; 0.35% on accounts $250K and above	0.10%	57%/34%/0%/9%	59%/32%/0%/8%	72%/28%	73%/27%	39%

**Current Allocations as of: 3/31/2019*
***Due to rounding, may not add to 100%*
****Average weighted expense ratio calculations exclude cash holdings from the portfolio*

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Portfolio	Account Minimum	Advisory Fee	Average Weighted Expense Ratio	Initial Target 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	$2,500	0.30% annually	0.06%	93%/5%/0%/2%	93%/5%/0%/2%	60%/40%	61%/39%
Betterment IRA	Digital: No minimum; Premium: $100,000	Digital: 0.25%, 0.15% above $2M; Premium: 0.40% (unlimited chat and calls with advisor), 0.30% above $2M	0.07%	87%/13%/0%/0%	87%/13%/0%/0%	47%/53%	55%/45%
E*Trade IRA	$5,000	0.30% (promo – fee waived for first year, ending April 15, 2019)	0.13%	98%/0%/0%/2%	99%/0%/0%/1%	75%/25%	64%/36%
Fidelity Go IRA	No minimum	0.35% annually	0.00%	85%/14%/0%/1%	85%/14%/0%/1%	71%/29%	71%/29%
Honest Dollar (Goldman Sachs) IRA	No minimum	0.25% annually	0.06%	99%/0%/0%/1%	99%/0%/0%/1%	68%/32%	68%/32%
Merrill Edge IRA	$5,000	0.45% annually	0.06%	89%/9%/0%/2%	89%/9%/0%/2%	64%/36%	70%/30%
Morgan Stanley IRA	$5,000	0.35% annually	0.07%	79%/15%/0%/6%	79%/19%/0%/1%	47%/53%	48%/52%
Personal Capital IRA	$100,000	0.89% annually for the first $1 million; lower at different tiers over $1 million	0.09%	91%/3%/2%/4%	94%/3%/3%/1%	69%/31%	70%/30%
Schwab IRA	Intelligent Portfolio: $5,000; Intelligent Portfolio Premium: $25,000	Intelligent Portfolio: No fee (digital only); Intelligent Portfolio Premium: $300 initial planning fee, $30/month subscription	0.19%	94%/0%/0%/6%	93%/0%/0%/7%	54%/46%	54%/46%
SigFig IRA	$2,000	No fee for the first $10k; 0.25% annually for balance over $10k	0.09%	91%/9%/0%/0%	89%/10%/0%/1%	45%/55%	47%/53%
SoFi IRA	$1	No management fee	0.06%	100%/0%/0%/0%	100%/0%/0%/0%	66%/34%	57%/43%
Swell IRA	$50	0.75% annually	0.00%	100%/0%/0%/0%	99%/0%/0%/1%	79%/21%	77%/23%
T Rowe Price IRA[13]	$50,000	No Advisory Fee	0.80%	100%/0%/0%/0%	100%/0%/0%/0%	63%/37%	63%/37%
TD Ameritrade IRA	Essential Portfolios: $5,000; Selective Portfolios: $25,000	Essential Portfolios: 0.30% Selective Portfolios: tiered at a higher fee level depending on account balance and portfolio selected	0.06%	83%/15%/0%/1%	86%/12%/0%/1%	65%/35%	61%/39%
TIAA IRA	$5,000	0.30% annually	0.06%	88%/11%/0%/1%	86%/12%/0%/2%	72%/28%	65%/35%
United Income IRA	Self Service: $10,000; Full Service $300,000	Self Service: 0.50% annually; Full Service (Access to live advisors): 0.80% to 0.45% depending on account balances	0.25%	99%/0%/0%/1%	99%/0%/0%/1%	51%/49%	55%/45%
USAA IRA	$2,000	0.50% annually	0.06%	99%/0%/0%/1%	97%/0%/0%/3%	59%/41%	62%/38%
Wealthsimple IRA	Basic: No minimum; Black: $100,000	Basic: 0.50% fee on accounts less than $100k; Black: 0.40% on accounts greater than $100k	0.09%	80%/20%/0%/0%	80%/20%/0%/0%	66%/34%	68%/32%
Wells Fargo IRA	$10,000	0.50% annually; discounted to 0.40% if subscribed to other specific Wells Fargo products	0.14%	91%/7%/0%/2%	91%/7%/0%/2%	67%/33%	68%/32%
WiseBanyan IRA	No minimum	No Fee for basic package; add-on packages, such as tax-loss harvesting, come at additional cost	0.07%	92%/8%/0%/0%	91%/8%/0%/0%	60%/40%	61%/39%
Zacks Advantage IRA	$25,000	0.70% on accounts less than $100K; 0.50% on accounts between $100K and $250K; 0.35% on accounts $250K and above	0.10%	93%/0%/0%/7%	94%/0%/0%/6%	62%/38%	64%/36%

*Current Allocations as of: 3/31/2019

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

***Average weighted expense ratio calculations exclude cash holdings from the portfolio

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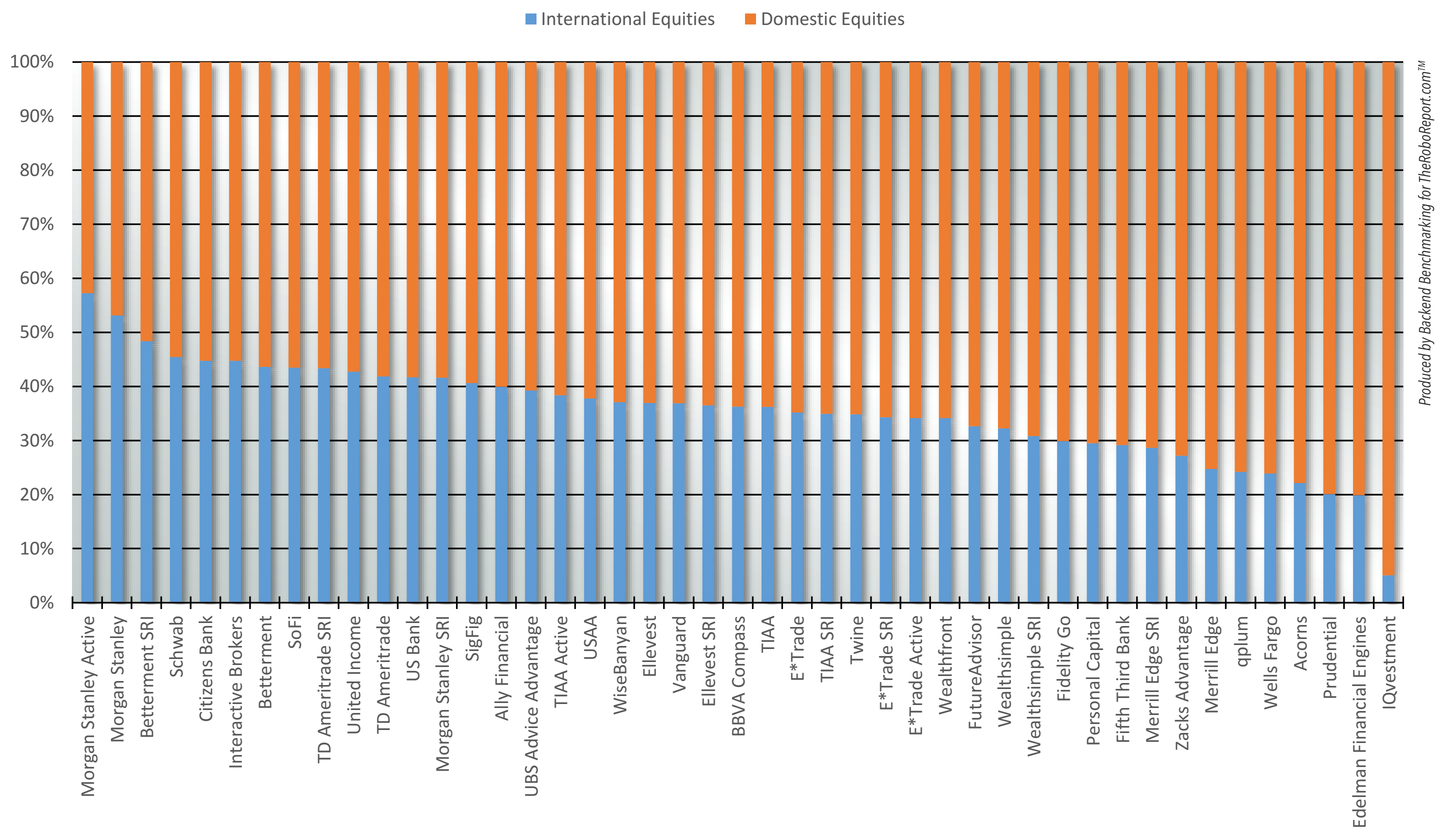
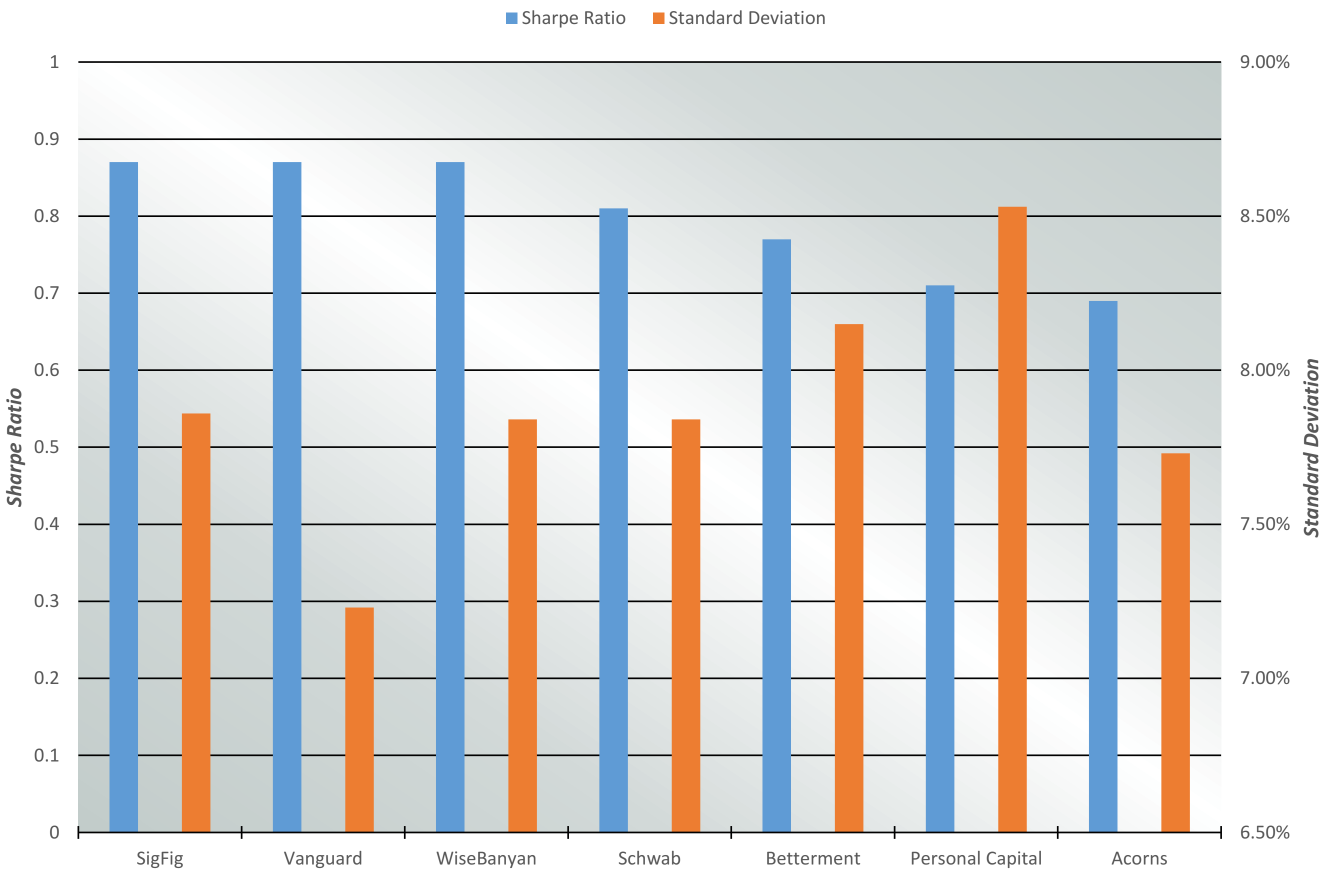
International Allocation of Total Equity for Taxable Robos



Taxable Risk/Return Charts and Tables

Taxable Robos with 3-Year History (Sharpe Ratio and Standard Deviation)



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Taxable Robos with 3-Year History (Sharpe Ratio and Standard Deviation)

	Acorns	Betterment	Personal Capital	Schwab	SigFig	Vanguard	WiseBanyan
Annualized StdDev, %	7.73%	8.15%	8.53%	7.84%	7.86%	7.23%	7.84%
Sharpe Ratio	0.69	0.77	0.71	0.81	0.87	0.87	0.87

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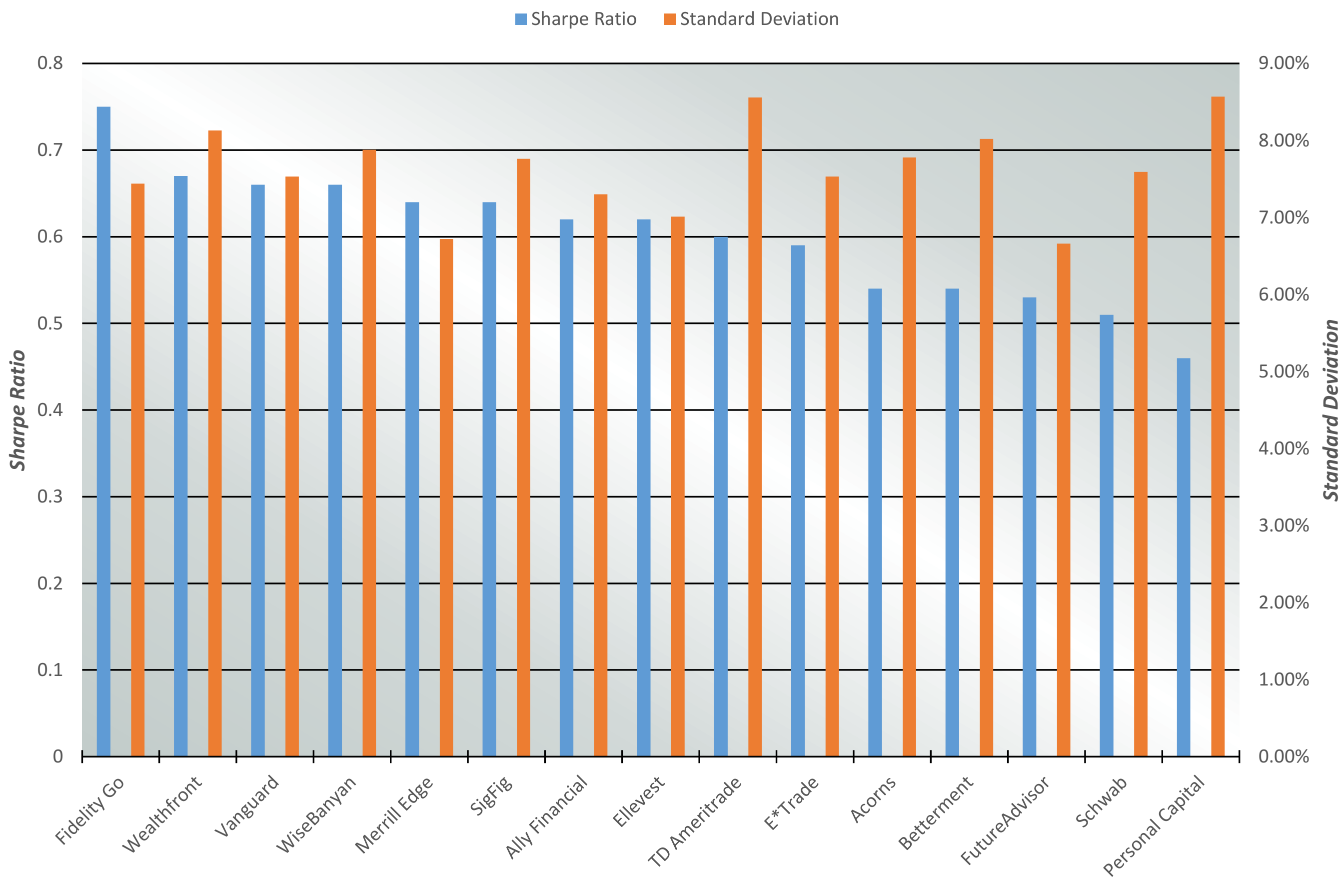
Taxable Robos with 2-Year History (Sharpe Ratio and Standard Deviation)



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Taxable Robos with 2-Year History (Sharpe Ratio and Standard Deviation)

	Acorns	Ally Financial	Betterment	E*Trade	Ellevest	Fidelity Go	FutureAdvisor	Merrill Edge
Annualized StdDev, %	7.78%	7.30%	8.02%	7.53%	7.01%	7.44%	6.66%	6.72%
Sharpe Ratio	0.54	0.62	0.54	0.59	0.62	0.75	0.53	0.64

	Personal Capital	Schwab	SigFig	TD Ameritrade	Vanguard	Wealthfront	WiseBanyan
Annualized StdDev, %	8.57%	7.59%	7.76%	8.56%	7.53%	8.13%	7.88%
Sharpe Ratio	0.46	0.51	0.64	0.60	0.66	0.67	0.66

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Taxable Robos with 1-Year History (Sharpe Ratio and Standard Deviation)

	Acorns	Ally Financial	Betterment	Betterment SRI	E*Trade	Ellevest	Fidelity Go
Annualized StdDev, %	8.57%	8.01%	8.89%	8.20%	8.36%	7.69%	8.30%
Sharpe Ratio	0.30	0.20	0.03	0.08	0.18	0.15	0.34

	FutureAdvisor	Merrill Edge	Morgan Stanley	Morgan Stanley SRI	Personal Capital	Schwab	SigFig
Annualized StdDev, %	7.09%	7.41%	9.10%	7.88%	9.54%	8.13%	8.59%
Sharpe Ratio	-0.06	0.22	0.03	0.16	0.06	-0.11	0.15

	SoFi	TD Ameritrade	TIAA	TIAA SRI	United Income	USAA	Vanguard
Annualized StdDev, %	8.32%	9.35%	8.35%	9.99%	7.98%	8.34%	8.48%
Sharpe Ratio	0.10	0.11	0.14	0.19	-0.09	0.14	0.19

	Wealthfront	Wealthsimple	Wealthsimple SRI	Wells Fargo	WiseBanyan	Zacks Advantage
Annualized StdDev, %	9.04%	8.56%	8.20%	9.05%	8.83%	8.22%
Sharpe Ratio	0.26	0.10	0.26	0.21	0.29	0.22

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Retirement Risk/Return Charts and Tables

Trailing 2-Year Risk/Return Statistics of Retirement Robos

	Ally Financial IRA	Betterment IRA	E*Trade IRA	Fidelity Go IRA	Personal Capital IRA	Schwab IRA	SigFig IRA	TD Ameritrade IRA	WiseBanyan IRA
Annualized StdDev, %	11.66%	10.84%	12.61%	10.46%	11.30%	11.14%	11.46%	10.88%	11.51%
Sharpe Ratio	0.53	0.52	0.52	0.65	0.50	0.46	0.57	0.57	0.62

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Trailing 1-Year Risk/Return Statistics of Retirement Robos

	Ally Financial IRA	Betterment IRA	E*Trade IRA	Fidelity Go IRA	Merrill Edge IRA	Morgan Stanley IRA	Personal Capital IRA	Schwab IRA
Annualized StdDev, %	13.00%	12.04%	14.26%	11.84%	12.29%	11.14%	12.62%	12.30%
Sharpe Ratio	0.04	0.02	0.08	0.24	0.08	0.00	0.11	-0.09

	SigFig IRA	SoFi IRA	T Rowe Price IRA	TD Ameritrade IRA	TIAA IRA	United Income IRA	USAA IRA	Wealthsimple IRA
Annualized StdDev, %	12.84%	14.18%	16.06%	12.25%	12.18%	13.85%	13.85%	11.30%
Sharpe Ratio	0.04	0.01	0.13	0.08	0.10	-0.23	0.08	0.07

	Wells Fargo IRA	WiseBanyan IRA	Zacks Advantage IRA
Annualized StdDev, %	12.87%	12.97%	13.17%
Sharpe Ratio	0.01	0.15	0.07

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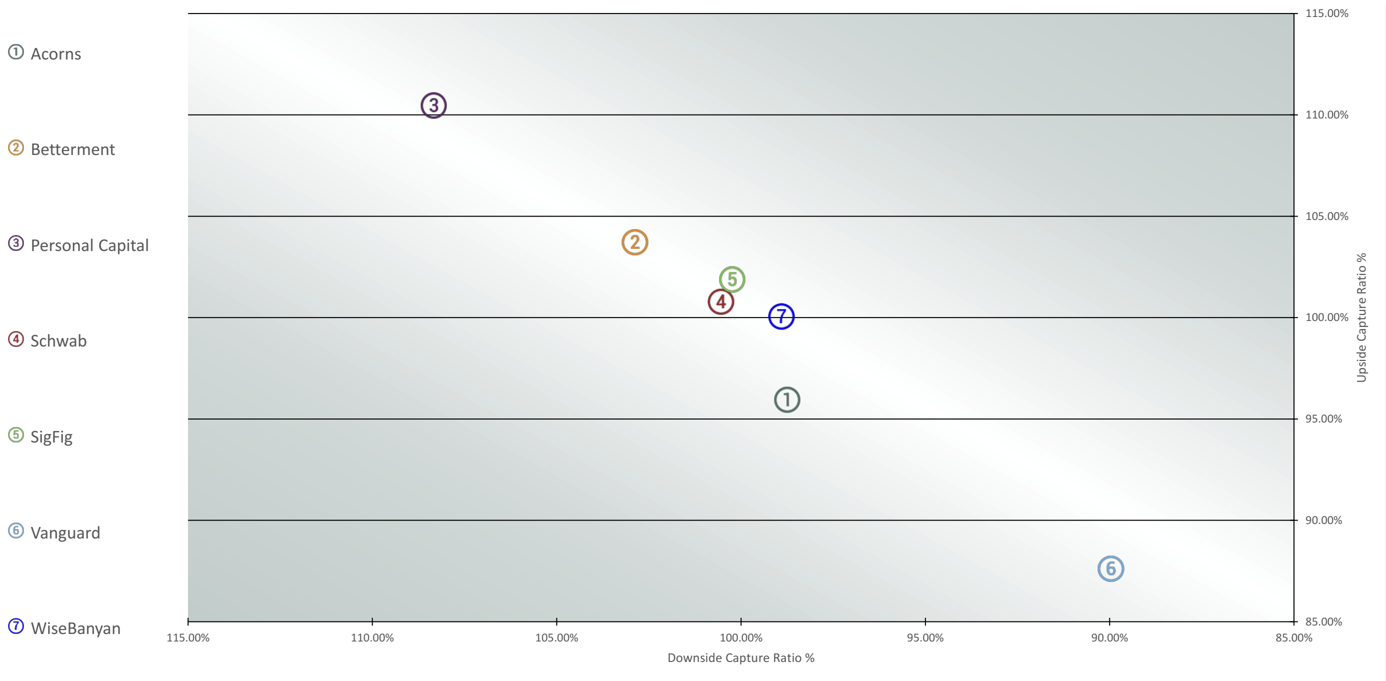
Taxable Upside/Downside Capture Ratios

Upside/Downside Capture Ratio 3-Year History of Taxable Robos



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Upside/Downside Capture Ratio 3-Year History of Taxable Robos

	Acorns	Betterment	Personal Capital	Schwab	SigFig	Vanguard	WiseBanyan
Up Market Capture Ratio, %	95.95%	103.72%	110.47%	100.79%	101.89%	87.62%	100.05%
Down Market Capture Ratio, %	98.75%	102.88%	108.34%	100.54%	100.24%	89.97%	98.90%

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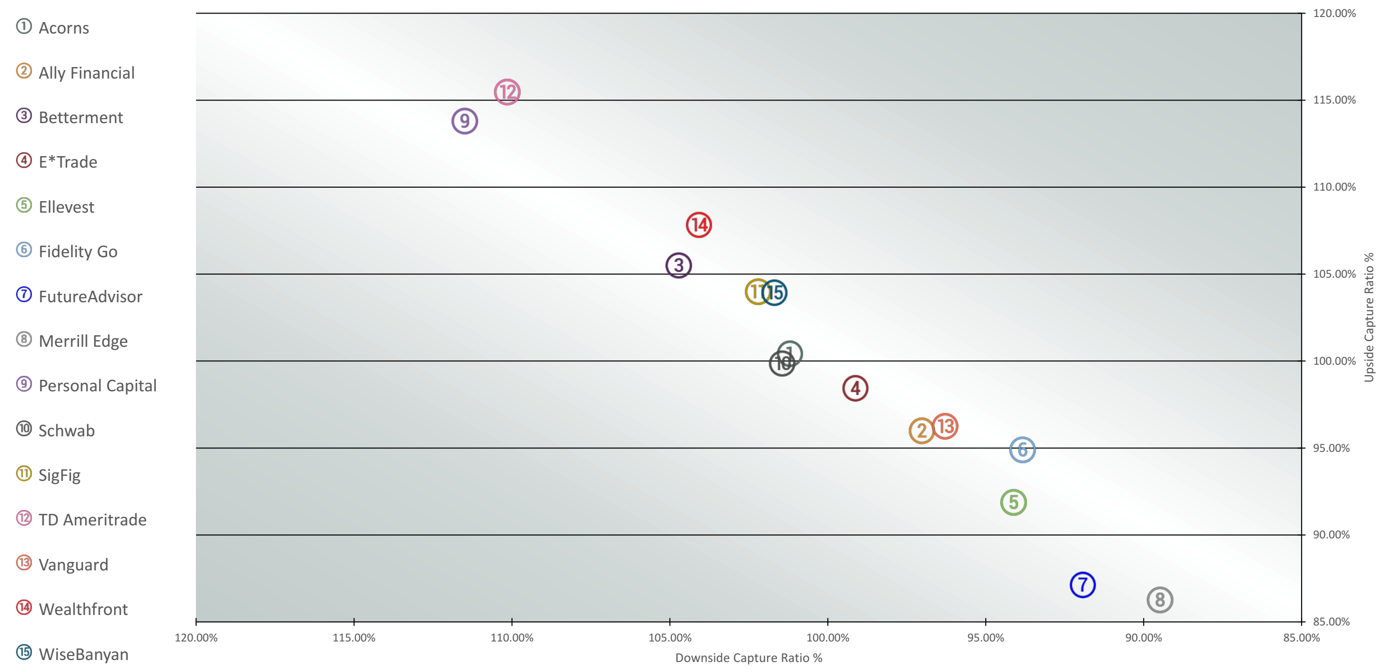
Upside/Downside Capture Ratio 2-Year History of Taxable Robos



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Upside/Downside Capture Ratio 2-Year History of Taxable Robos

	Acorns	Ally Financial	Betterment	E*Trade	Ellevest	Fidelity Go	FutureAdvisor	Merrill Edge
Up Market Capture Ratio, %	100.43%	96.00%	105.50%	98.45%	91.87%	94.89%	87.14%	86.26%
Down Market Capture Ratio, %	101.20%	97.02%	104.72%	99.13%	94.12%	93.84%	91.93%	89.48%

	Personal Capital	Schwab	SigFig	TD Ameritrade	Vanguard	Wealthfront	WiseBanyan
Up Market Capture Ratio, %	113.80%	99.86%	103.98%	115.48%	96.26%	107.83%	103.94%
Down Market Capture Ratio, %	111.50%	101.45%	102.21%	110.15%	96.29%	104.08%	101.69%

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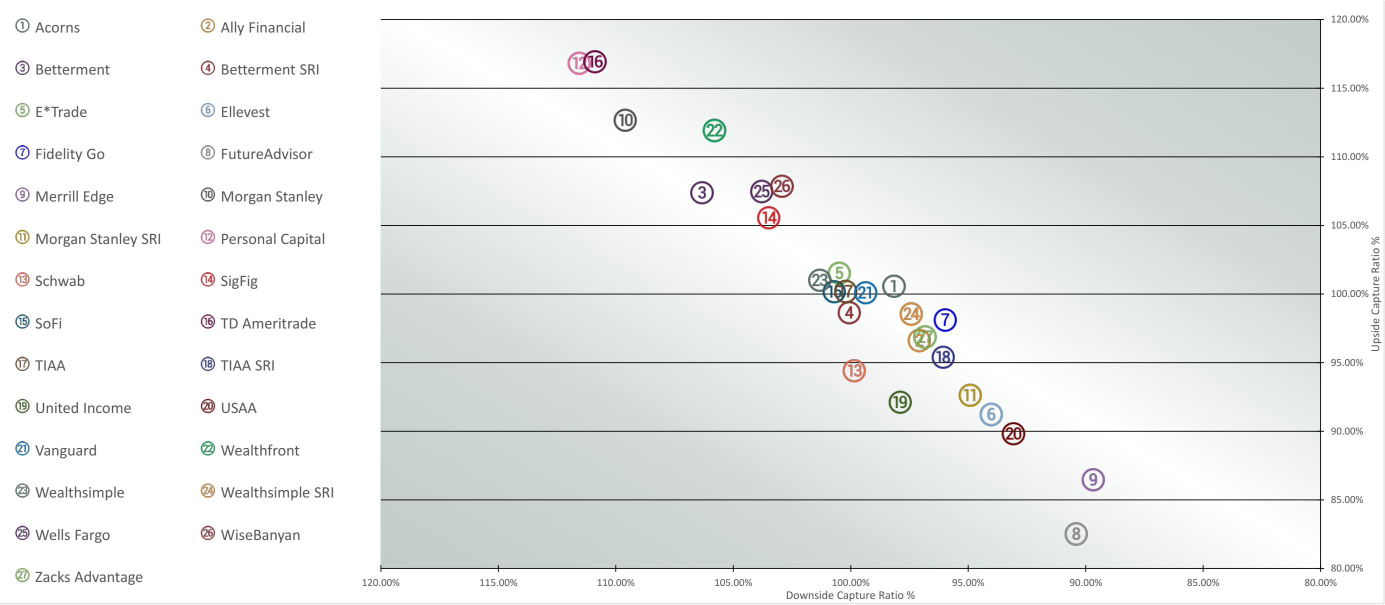
Upside/Downside Capture Ratio 1-Year History of Taxable Robos



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Upside/Downside Capture Ratio 1-Year History of Taxable Robos

	Acorns	Ally Financial	Betterment	Betterment SRI	E*Trade	Ellevest	Fidelity Go
Up Market Capture Ratio, %	100.58%	96.62%	107.38%	98.64%	101.51%	91.22%	98.11%
Down Market Capture Ratio, %	98.16%	97.08%	106.33%	100.07%	100.49%	94.02%	95.98%

	FutureAdvisor	Merrill Edge	Morgan Stanley	Morgan Stanley SRI	Personal Capital	Schwab	SigFig
Up Market Capture Ratio, %	82.52%	86.46%	112.66%	92.62%	116.83%	94.42%	105.55%
Down Market Capture Ratio, %	90.41%	89.68%	109.60%	94.92%	111.56%	99.85%	103.49%

	SoFi	TD Ameritrade	TIAA	TIAA SRI	United Income	USAA	Vanguard
Up Market Capture Ratio, %	100.17%	116.94%	100.18%	95.39%	92.10%	89.82%	100.09%
Down Market Capture Ratio, %	100.71%	110.89%	100.21%	96.07%	97.90%	93.08%	99.37%

	Wealthfront	Wealthsimple	Wealthsimple SRI	Wells Fargo	WiseBanyan	Zacks Advantage
Up Market Capture Ratio, %	111.93%	101.00%	98.55%	107.47%	107.85%	96.87%
Down Market Capture Ratio, %	105.80%	101.32%	97.42%	103.80%	102.93%	96.84%

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Retirement Upside/Downside Capture Ratios

Upside/Downside Capture Ratio 2-Year History of Retirement Robos

	Ally Financial IRA	Betterment IRA	E*Trade IRA	Fidelity Go IRA	Personal Capital IRA	Schwab IRA	SigFig IRA	TD Ameritrade IRA	WiseBanyan IRA
Up Market Capture Ratio, %	104.11%	95.41%	113.86%	87.56%	99.46%	96.54%	106.18%	94.99%	102.88%
Down Market Capture Ratio, %	102.52%	97.81%	107.64%	91.06%	100.42%	99.27%	103.25%	96.86%	100.57%

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Upside/Downside Capture Ratio 1-Year History of Retirement Robos

	Ally Financial IRA	Betterment IRA	E*Trade IRA	Fidelity Go IRA	Merrill Edge IRA	Morgan Stanley IRA	Personal Capital IRA
Up Market Capture Ratio, %	102.27%	94.34%	117.36%	90.66%	95.92%	84.08%	99.78%
Down Market Capture Ratio, %	101.27%	97.43%	107.72%	92.87%	97.58%	91.88%	99.20%

	Schwab IRA	SigFig IRA	SoFi IRA	T Rowe Price IRA	TD Ameritrade IRA	TIAA IRA	United Income IRA
Up Market Capture Ratio, %	91.68%	104.28%	117.94%	115.41%	95.77%	94.00%	109.48%
Down Market Capture Ratio, %	97.36%	102.31%	108.76%	106.24%	97.54%	96.34%	108.14%

	USAA IRA	Wealthsimple IRA	Wells Fargo IRA	WiseBanyan IRA	Zacks Advantage IRA
Up Market Capture Ratio, %	99.09%	84.71%	98.98%	104.23%	104.21%
Down Market Capture Ratio, %	99.28%	91.40%	99.98%	100.86%	101.84%

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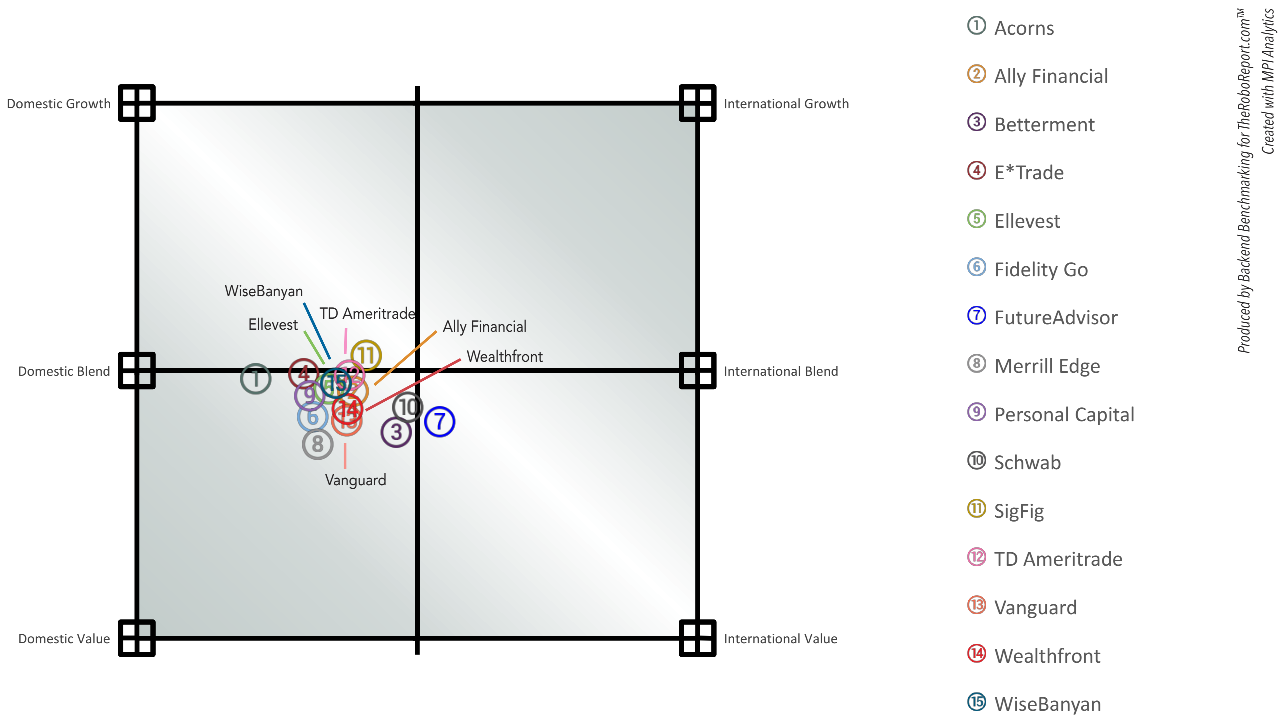
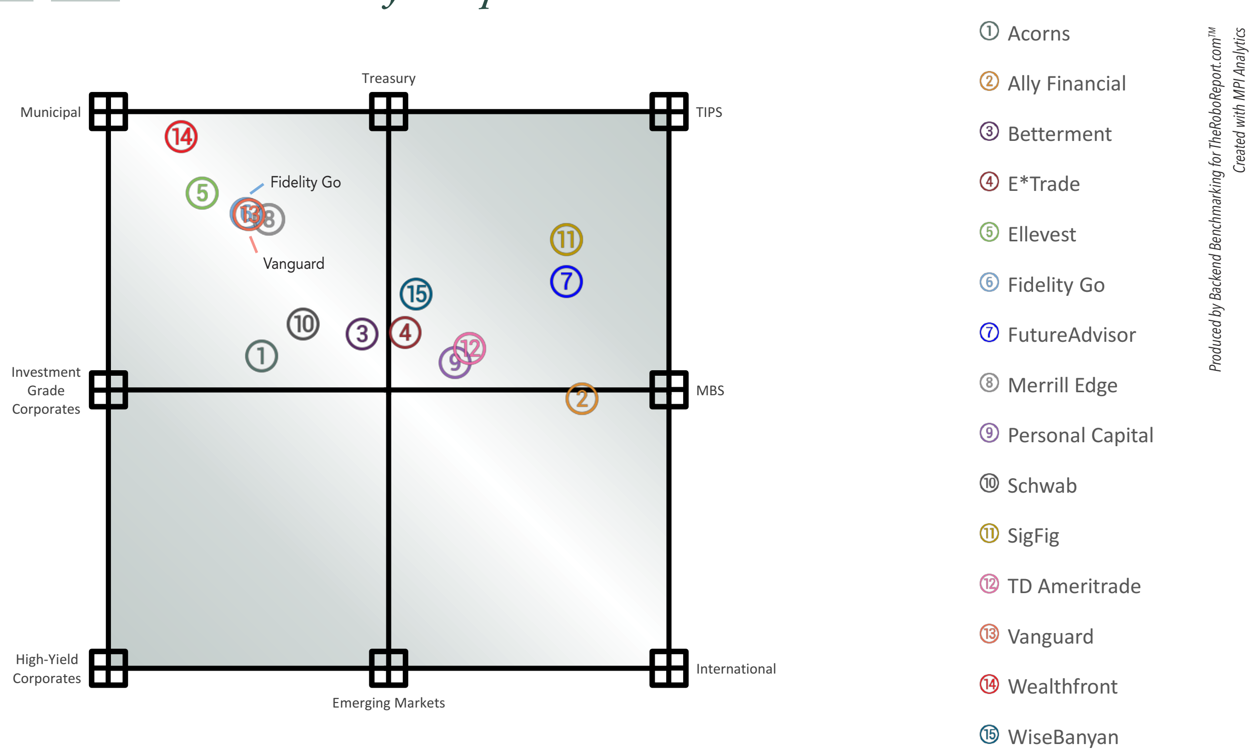
Trailing 2-Year Style Maps for Taxable Robos

Equity Style Map



Fixed Income Style Map



Normalized Benchmarking

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. For our purposes, we analyzed taxable accounts at robo advisors as one universe, and retirement accounts at robo advisors as a separate universe.

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 a universe, we now have two portfolios, one 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 Equity and Fixed Income Normalized Benchmark Portfolios, we can use it to compare performance across accounts within the previously determined investment universes. To compare an account, we first determine the initial target asset allocations to equity and fixed income, including cash. Next, we take note of significant shifts to these target allocations and when they occur. 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. For portfolios that experienced significant shifts to their target allocations, their benchmark reflects these shifts. For example, if a portfolio experiences a shift from a 60% equity and 40% fixed income target allocation to a 55% equity and 45% fixed income target allocation on January 1, 2016, their Normalized Benchmark would reflect a 60% equity and 40% fixed income portfolio prior to January 1, 2016, and a 55% equity and 45% fixed income allocation thereafter.

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.

After Benchmarks are created we introduce a 0.30% annual management fee to make the benchmark comparable to the fee charged by the most prominent robo advisors.

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.

Equity Portfolio

Category	Asset Type	Ticker	Name	Current Taxable Benchmark Weight	Current Retirement Benchmark Weight
Equity	Domestic	VTI	Vanguard Total Stock Market ETF	62%	62%
Equity	International	VXUS	Vanguard Total International Stock ETF	38%	38%

**Benchmark weights updated at the end of each calendar year. Benchmark updates do not affect performance prior to update.*

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Bond Portfolio

Category	Asset Type	Ticker	Name	Current Taxable Benchmark Weight	Current Retirement Benchmark Weight
Fixed Income	Multi-Sector US	AGG	iShares Core US Aggregate Bond ETF	37%	26%
Fixed Income	Investment-Grade Corporates	LQD	iShares iBoxx $ Investment Grade Corporate Bond ETF	6%	6%
Fixed Income	High-Yield Corporates	JNK	SPDR Bloomberg Barclays High Yield Bond ETF	3%	2%
Fixed Income	International Developed	IGOV	iShares International Treasury Bond ETF	4%	3%
Fixed Income	International Emerging Markets	EMB	iShares J.P. Morgan USD Emerging Markets Bond ETF	3%	6%
Fixed Income	Municipals	MUB	iShares National Muni Bond ETF	28%	3%
Fixed Income	TIPS	TIP	iShares TIPS Bond ETF	4%	3%
Fixed Income	Short-Term Treasuries (0-3 Year Maturity)	VGSH	Vanguard Short-Term Treasury ETF	4%	0%
Fixed Income	Intermediate-Term Treasuries (3-10 Year Maturity)	VGIT	Vanguard Intermediate-Term Treasury ETF	2%	3%
Fixed Income	Long-Term Treasuries (10+ Year Maturity)	VGLT	Vanguard Long-Term Treasury ETF	0%	0%
Fixed Income	Securitized	VMBS	Vanguard Mortgage-Backed Securities ETF	2%	1%
Fixed Income	Cash	FDRXX	Fidelity® Government Cash Reserves	7%	48%

**Benchmark weights updated at the end of each calendar year. Benchmark updates do not affect performance prior to update.*

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Taxable Benchmark Returns

	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)	3-Year Trailing (Annualized)
Acorns Normalized Benchmark	8.61%	3.50%	6.76%	7.88%
Ally Financial Normalized Benchmark	8.51%	3.62%	6.64%	-
BBVA Compass Normalized Benchmark	8.61%	-	-	-
Betterment Normalized Benchmark	9.09%	3.48%	6.82%	8.13%
Betterment SRI Normalized Benchmark	8.61%	3.50%	-	-
Citizens Bank Normalized Benchmark	9.00%	-	-	-
E*Trade Normalized Benchmark	8.61%	3.50%	6.52%	-
E*Trade Active Normalized Benchmark	8.71%	-	-	-
E*Trade SRI Normalized Benchmark	8.71%	-	-	-
Edelman Financial Engines Normalized Benchmark	9.29%	-	-	-
Ellevest Normalized Benchmark	8.22%	3.51%	6.55%	-
Ellevest SRI Normalized Benchmark	8.22%	-	-	-
Fidelity Go Normalized Benchmark	8.71%	3.50%	6.58%	-
Fifth Third Bank Normalized Benchmark	8.61%	-	-	-
FutureAdvisor Normalized Benchmark	8.15%	3.55%	6.36%	-
Interactive Brokers Normalized Benchmark	8.13%	-	-	-
IQvestment Normalized Benchmark	8.32%	-	-	-
Merrill Edge Normalized Benchmark	8.11%	3.60%	6.62%	-
Merrill Edge SRI Normalized Benchmark	8.51%	-	-	-
Morgan Stanley Normalized Benchmark	9.09%	3.48%	-	-
Morgan Stanley Active Normalized Benchmark	9.00%	-	-	-
Morgan Stanley SRI Normalized Benchmark	8.71%	3.46%	-	-
Personal Capital Normalized Benchmark	9.97%	3.42%	7.35%	8.95%
Prudential Normalized Benchmark	8.61%	-	-	-
qplum Normalized Benchmark	7.10%	-	-	-
Schwab Normalized Benchmark	8.90%	3.52%	6.90%	8.24%
SigFig Normalized Benchmark	8.80%	3.49%	6.64%	7.85%
SoFi Normalized Benchmark	8.61%	3.67%	-	-
TD Ameritrade Normalized Benchmark	9.39%	3.46%	6.96%	-
TD Ameritrade SRI Normalized Benchmark	9.29%	-	-	-
TIAA Normalized Benchmark	8.71%	3.50%	-	-
TIAA Active Normalized Benchmark	9.87%	-	-	-
TIAA SRI Normalized Benchmark	8.61%	3.50%	-	-
Twine Normalized Benchmark	9.48%	-	-	-
UBS Advice Advantage Normalized Benchmark	9.39%	-	-	-
United Income Normalized Benchmark	8.51%	3.50%	-	-
US Bank Normalized Benchmark	8.61%	-	-	-
USAA Normalized Benchmark	8.71%	3.50%	-	-
Vanguard Normalized Benchmark	8.61%	3.50%	6.52%	7.67%
Wealthfront Normalized Benchmark	9.09%	3.48%	6.82%	-
Wealthsimple Normalized Benchmark	8.61%	3.50%	-	-
Wealthsimple SRI Normalized Benchmark	8.61%	3.50%	-	-
Wells Fargo Normalized Benchmark	8.90%	3.49%	-	-
WiseBanyan Normalized Benchmark	9.00%	3.48%	6.76%	8.04%
Zacks Advantage Normalized Benchmark	8.32%	3.51%	-	-

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Retirement Benchmark Returns

	1Q 2019	1-Year Trailing	2-Year Trailing (Annualized)
Ally Financial IRA Normalized Benchmark	11.75%	3.09%	8.34%
Betterment IRA Normalized Benchmark	11.11%	3.11%	7.96%
E*Trade IRA Normalized Benchmark	12.28%	3.07%	8.65%
Fidelity Go IRA Normalized Benchmark	10.90%	3.11%	7.83%
Honest Dollar IRA Normalized Benchmark	12.39%	-	-
Merrill Edge IRA Normalized Benchmark	11.32%	3.10%	-
Morgan Stanley IRA Normalized Benchmark	10.27%	3.12%	-
Personal Capital IRA Normalized Benchmark	12.07%	3.08%	8.53%
Schwab IRA Normalized Benchmark	11.86%	3.08%	8.40%
SigFig IRA Normalized Benchmark	11.54%	3.09%	8.21%
SoFi IRA Normalized Benchmark	12.49%	3.06%	-
Swell IRA Normalized Benchmark	12.49%	-	-
T Rowe Price IRA Normalized Benchmark	12.49%	3.06%	-
TD Ameritrade IRA Normalized Benchmark	10.80%	3.11%	7.75%
TIAA IRA Normalized Benchmark	11.22%	3.10%	-
United Income IRA Normalized Benchmark	12.39%	3.06%	-
USAA IRA Normalized Benchmark	12.39%	3.06%	-
Wealthsimple IRA Normalized Benchmark	10.37%	3.12%	-
Wells Fargo IRA Normalized Benchmark	11.54%	3.09%	-
WiseBanyan IRA Normalized Benchmark	11.64%	3.09%	8.28%
Zacks Advantage IRA Normalized Benchmark	11.75%	3.09%	-

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Disclosures:

[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 flat dollar fee up to $1,000,000. Because the fee is a flat dollar amount, a higher account balance would have the result of increasing reflected performance, while a lower account balance would have the result of decreasing reflected performance. In December of 2018 a $1 fee was not recorded. Performance has been updated to include this fee as of Q1 2019.

[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. There is no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level.

[4] This account was funded with the minimum or more than the minimum amount required to establish an account at the time of opening. 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. Tax-loss harvesting may result in better or worse performance compared to similarly positioned accounts that are not enrolled in tax-loss harvesting. This account is enrolled in their digital only "Intelligent Portfolios", thus it is not charged an advisory fee. If one were to upgrade to "Intelligent Advisory" which introduces access to live advisors, a subscription fee would be levied, which would decrease reflected performance.

[6] These accounts were funded with the minimum amount required to establish an account. At balances less than $10,000, there is no advisory fee. Had the account been funded with $10,000 or more, an asset-based advisory fee would be levied, which would decrease reflected performance.

[7] These accounts were funded with the minimum amount required to establish an account at the time of opening. There is no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level.

[8] These accounts have no minimum required to establish an account. There is no advisory fee on these accounts. Had additional service packages, such as tax-loss harvesting, been added, the lesser of an asset-based fee or flat dollar fee would have been assessed. These fees would decrease the reflected performance.

[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 the minimum amount required to establish an account. This account is enrolled in their digital only "Essential Portfolios" and is charged an asset-based advisory fee. If one were to upgrade to "Selective Portfolios" which introduces access to live advisors, a higher asset-based advisory fee schedule would apply, 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. There is no advisory fee levied regardless of the amount of assets invested.

[14] This account was funded with the minimum amount required to establish an account. A flat, asset-based advisory fee is levied on the account. Had we subscribed to additional, specific, Wells Fargo Products the account would be eligible for a lower asset-based advisory fee. A 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 asset-based advisory fee. 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, 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] This account was funded with more than the minimum amount required to establish an account. This account will not be charged an advisory fee through 2019. 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 only the account with the closest to a 60/40 allocation as we could achieve at this provider.

[18] This account was funded with more than the minimum amount required to establish an account. This account will not be charged an advisory fee through 2019.

[19] These accounts were funded with the minimum required to establish an account. Had the account been funded with a greater amount, it would still be charged the same flat dollar fee. Because the fee is a flat dollar amount, a higher account balance would have the result of increasing reflected performance, while a lower account balance would have the result of decreasing reflected performance. The fee was waived for the first year starting in June 2018. Had a fee been levied, reflected performance would have been lower. Due to a miscategorization of a security as fixed income in 3Q 2018 a correction was made to the 3Q 2018 report. In Q1 2019 a transaction resulting from an acquisition of a company held by the IQvestment portfolio was incorrectly recorded. This resulted in a miscalculation of performance and incorrectly awarding IQvestment the top performing equity YTD award. A correction was made to the Q1 2019 report. This robo advisor changed their name from tZERO to IQvestment in January 2019.

[20] This account was funded with the minimum required to establish an account. This account is enrolled in their digital only "Intelligent Portfolios", thus it is not charged an advisory fee. If one were to upgrade to "Intelligent Advisory" which introduces access to live advisors, an asset-based advisory fee would be levied, which would decrease reflected performance.

[21] These accounts were funded with more than the minimum amount required to establish an account. There is no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level. Fee was waived for the first year. Had a fee been levied, reflected performance would have been lower.

[22] These accounts were funded with more than the minimum amount required to establish an account. There is currently no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level. Previously, the fee was only assessed on balances in excess of $10,000.

[23] These accounts were funded with the minimum amount required to establish an account. There is no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level. Fee was waived for an initial promotional period. Had a fee been levied, reflected performance would have been lower.

[24] This account was funded with the minimum required to open an account and is invested in their Asset Allocation portfolio. It is charged an asset-based fee. There is no fee schedule on this account; therefore performance is not affected by the account's asset levels. Previously, the account was charged a lower asset-based fee; the increase took effect starting March 2019. Interactive Brokers offers multiple strategies each with a different set of fees. They also offer an advisor marketplace for actively managed accounts in which each individual advisor sets their own fees.

[25] Originally, there was no advisory fee on these accounts. Had additional service packages, such as tax-loss harvesting, been added, the lesser of an asset-based fee or flat dollar fee would have been assessed. In June 2018, one package was activated, resulting in a fee on these accounts. This fee decreases the reflected performance.

[26] This account was enrolled in Prudential's Strategic Portfolios. It was funded with the minimum required to open 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. Prudential also offers Reserve Portfolios for short-term investing, which have a lower account minimum and fee. However, the Reserve Portfolios do not allow asset-allocation customization based on individual demographic and risk tolerance.

[27] This account has no minimum required to establish an account and is enrolled in the Digital Only plan. If more was invested, the account would be assessed a lower asset-based fee, which would increase reflected performance. If the account was enrolled in the premium service with access to live advisors, there would be a higher asset-based advisory fee. The higher advisory fee would have the result of decreasing reflected performance. The 2018 end-of-year statement for Betterment did not include dividends received near the end of 2018, these dividends first appeared on the March 31st, 2019 statement. These dividends are reflected as of the Q1 2019 Robo Report™ but were not reflected in performance reported in the Q4 2018 Robo Report™.

[28] These accounts were funded with the minimum amount required to establish an account. There is no fee schedule; all accounts are charged the same asset-based fee. Therefore, performance is not affected by the account's asset level. Fee was waived for an initial promotional period. Had a fee been levied, reflected performance would have been lower. As of March 27, 2019, the management fee has been lowered. The lower advisory fee will increase 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%.

In previous reports the initial target asset allocation was calculated as the asset allocation at the end of the first month after the account was opened. In the Q3 2018 report we adjusted our method to calculate the initial target asset allocation as of the end of the trading day after all initial trades were placed in the accounts. This adjustment has caused some portfolio's initial target allocation to be updated from previous reports. These updates did not change any initial target allocations of equity, fixed income, cash, or other by more than 1%.

Prior to Q3 2018, due to technological limitations of our portfolio management system, some accounts which contained fractional shares had misstated the quantity of shares when transactions quantities were smaller than 1/1000th of a share in a position as a result of purchases, sales, or dividend reinvestments. This had a marginal effect on historical performance of the accounts. The rounding of position quantities caused by this limitation has been resolved, and quantities have been adjusted to reflect the full position to the 1/1,000,000th of a share as of the end of Q3 2018. Therefore, this rounding of fractional shares will not be necessary in the future.

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 3/31/2019 the total size of the position was 35,946 shares of Schwab common stock and 33,203 shares of TD Ameritrade common stock.

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