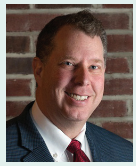


COMPUTERIZED INVESTING

Robo-Adviser 2021 Innovations and Performance Drivers

Robo-advisers are now looking beyond investment management to banking and various other services.

BY KEN SCHAPIRO



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Backend Benchmarking publishes The Robo Report, a free comprehensive quarterly newsletter reporting on the digital advice industry. Our project started in 2015 when we opened and funded accounts at major robo-advice providers to track their performance, trading and other activities. Since the project's inception, we have expanded to report on 91 accounts across 42 digital advice providers. As we grow, our mission remains the same: to bring transparency to the financial services industry.

A Note on the Portfolios Tracked

The taxable account universe in the report, which contains the portfolios discussed here, represents moderate to moderately aggressive portfolios. We aim for portfolios that contain 60% equities and 40% fixed income. While most portfolios are close to this target, the taxable account universe ranges between 50% and 75% equities.

To allow for better comparison, the full report contains allocation information, equity-only returns, fixed-income only returns and a return above and below a normalized benchmark. The normalized benchmark is a benchmark that is customized to each portfolio based on the portfolio's equity percentage. The performance discussed in this article examines the period ending March 31, 2021.

The State of Robo Advice in 2021

More than a decade has passed since the first robo-advisers were launched in the wake of the financial crisis. The algorithmic, managed-account platforms have become ubiquitous. Robo-advisers are pushing the boundaries between investment platforms and digital banks, as traditional banking services have become key elements of their offerings. However, not all success has been distributed evenly. While some firms are thriving and raising new rounds of funding, others are closing their doors. After 10 years, it is clear that robo-advisers are here to stay and have permanently changed the financial advice landscape.

Robo-advisers continue to impress with significant growth in funding, assets under management (AUM) and notable new products. For example, Betterment grew its AUM from approximately $18 billion to over $28 billion in 2020, while Schwab experienced 51% growth in digitally advised assets and Vanguard added $70 billion in robo-assets from the end of 2019 through the first quarter of 2021. Robo-advisers still have ample room to grow. According to a Hearts & Wallets survey of 5,000 participants issued last September, only 8% of U.S. households reported having money invested with a robo-adviser. There is a tremendous opportunity for this trend to spread.

Although Wealthfront, Vanguard and Schwab are dominant robo-advisers, there continues to be a steady stream of new entrants to the market. Goldman Sachs launched Marcus Invest in February of this year. This platform includes many of the features that we have come to appreciate in modern robo-advisers, including a socially responsible investing (SRI) option, a low advisory fee of 0.35% and a low minimum of $1,000. Additionally, Stash, the micro-investing online brokerage with over five million customers, launched a managed accounts product called Smart Portfolios.

The Rise of the Free Plan

Throughout 2020, there was a rise in digital financial planning apps from major incumbent institutions. Bank of America launched Life Plan, Schwab launched Schwab Plan and Fidelity launched Fidelity Spire. These planning tools are free to use but, in many cases, are expanded after signing up for the firm's managed account service. Still, many of the free features are quite robust. Schwab Plan is the most detailed of the group, allowing investors to thoroughly design their retirement plans, powered by technology from MoneyGuidePro. Fidelity Spire is focused on the younger generation, offering a sleek app that lets investors model practical expenses and goals while providing bite-sized educational content along the way. Bank of America's Life Plan is similar to Fidelity Spire in that it offers a variety of financial goals that a user can achieve using either a cash or investment product.

These apps are a win-win proposition. The investment firm can cross-sell its investment services to banking clients, while individual investors gain access to a wide variety of sophisticated financial planning tools at no cost.

Robo Innovations

Robo-advisers are now looking beyond investment management to banking and various other services.

Wealthfront's Self-Driving Money is a glimpse at the types of new capabilities being made available to investors. By creating a series of savings goals and setting an amount of everyday cash for day-to-day spending, investors enable Wealthfront to seamlessly split up paychecks into different "buckets" and monitor for excess cash to be automatically transferred to an investment account. Self-Driving Money helps users link monthly spending and saving to long-term

TABLE 1

Fees and Expense Ratios for the Major and Other Selected Robos

Portfolio	Advisory Fee	Weighted Average Expense Ratio*
Acorns	$1/mo. for Lite, $3/mo. for Personal, $5/mo. for Family	0.05%
Betterment	0.25% annually for digital, 0.40% for premium	0.09%
Betterment SRI (legacy)	0.25% annually for digital, 0.40% for premium	0.14%
E-Trade Core	0.30% annually	0.05%
E-Trade Core SRI	0.30% annually	0.14%
Fidelity Go	Digital Only: no fee for balances less than $10,000, $3/mo. for balances between $10,000 and $49,999.99, 0.35% annually for balances $50,000 and above. Personalized Planning & Advice: 0.50% annually	0.00%
Interactive Advisors	0.08% to 1.5% annually, depending on portfolio selection	0.13%
JPMorgan Chase Automated Investing	0.35% annually. JPMorgan ETF expenses will be rebated or offset against the management fee	0.11%
Merrill Edge Guided Investing	0.45% annually for digital only Guided Investing, 0.85% annually for Guided Investing with an adviser	0.07%
Merrill Edge Guided Investing SRI	0.45% annually for digital only Guided Investing, 0.85% annually for Guided Investing with an adviser	0.17%
Morgan Stanley Market-Tracking	0.35% annually	0.07%
Morgan Stanley Robotics	0.35% annually	0.47%
Morgan Stanley SRI	0.35% annually	0.48%
Personal Capital	0.89% annually; tiered discounts at higher asset levels	0.10%
Schwab	No fee for digital only Intelligent Portfolios, $300 initial planning fee & $30/mo. subscription for Intelligent Portfolios Premium	0.18%
Schwab Domestic Focus	No fee for digital only Intelligent Portfolios, $300 initial planning fee & $30/mo. subscription for Intelligent Portfolios Premium	0.12%
SigFig	No fee for the first $10k; 0.25% annually for balance over $10k	0.06%
SoFi	No management fee	0.04%
TD Ameritrade	0.75% to 0.90% for Selective Portfolios, depending on portfolio selection; discounted tiered pricing at higher asset levels	0.05%
TD Ameritrade SRI	0.75% to 0.90% for Selective Portfolios, depending on portfolio selection; discounted tiered pricing at higher asset levels	0.26%
UBS Advice Advantage	0.75% annually	0.14%
US Bank Automated Investor	0.24% annually	0.16%
Vanguard P.A.S.	Vanguard Personal Advisor Services: 0.30% annually. Vanguard Digital Advisor: combined underlying fund fees and management fees capped at 0.20%	0.07%
Wealthfront	0.25% annually	0.10%
Wells Fargo Intuitive Investor	0.35% annually; discounted relationship pricing may be available	0.13%
Zacks Advantage	0.70% annually; discounted tiered pricing at higher asset levels	0.09%

**The weighted average expense ratios of the underlying funds in each portfolio. Data as of 3/31/21.*
Source: Backend Benchmarking for TheRoboReport.com.

goals without having to decide how much money to move each month. The automation increases the likelihood of optimizing each dollar so it can be appropriately invested.

The old adage of "it's not about timing the market but time in the market that matters" applies here. While still rudimentary, this type of automated cash management is an area where we expect to see continued innovation.

Robo-Advisory Fees

Fees are one of the largest determinants of long-term performance for investors. Possibly the largest effect that robo advice has had on the financial advice industry is a redefinition of low-cost portfolio management. Prior to robo advice, most investors paid 1% or more for professionally managed portfolios. This is no longer the case.

For a primarily digital service, investors should be looking to pay 0.35% or lower annually in management fees. Many of the large existing financial institutions—like Wells Fargo, Morgan Stanley, Fidelity and JPMorgan Chase & Co.—all offer robo-advice at this price point. Independent robo-advisers Betterment and Wealthfront offer plans at just 0.25%. Vanguard, always hyper-competitive on costs, offers its digital-only robo-adviser at just 0.15% annually and offers its hybrid adviser, with access to live advisers, for 0.30%.

While Vanguard's hybrid offering, Personal Advisor Services, is very inexpensive with a 0.30% management fee, investors should generally expect to pay more for a more individualized experience with a live adviser or planner. For a hybrid adviser, a good price point for management fees is 0.50% or less. For example, Betterment Premium is priced at 0.40% and Fidelity Personalized Planning & Advice is priced at 0.50% annually. When selecting a robo-advice product, it is important for investors to think about the level of personalization and live advice they need. For example, Personal Capital offers a more individualized approach, similar to what an investor could expect from a traditional adviser, but charges 0.89% annually.

Costs can sometimes be embedded in the portfolio construction itself. Specifically, Schwab offers its digital-only robo-adviser without a management fee. While this sounds great, it mandates a high cash balance in the managed portfolio. Our portfolio at Schwab typically holds around 10% cash. While this is not a direct cost to the investor, cash drag can significantly detract from performance over time. It is important for investors to be aware of the cash allocation at Schwab and at Ally Invest's cash-enhanced portfolio option.

Table 1 summarizes the advisory fees and reports a weighted average expense ratio for the major and other select robo-advisers.

Robo Portfolios' Performance

Robo-advisers typically offer low-cost, globally diversified, passive portfolios. That said, allocation decisions by managers—such as how much of an equity portfolio is invested in domestic versus international or large-cap versus small-cap—can produce meaningful differences in performance, even if the portfolios are invested in low-cost indexed exchange-traded funds (ETFs).

Figure 1 shows the risk-adjusted return, as measured by the Sharpe ratio, and volatility, as measured by the standard deviation, for taxable robo-adviser portfolios with a three-year history. Table 2 compares the trailing annualized returns over various time periods for the major and other select robo-advisers, showing total portfolio returns, equity-only returns and fixed-income-only returns. See the online version of this article at AAII.com/Journal for direct links to each robo's website.

Over the three-year performance period, the average moderate portfolio in our study (around 60% allocation to equities) returned 9.33% annually. The equity-only returns averaged 12.15% and the fixed-income returns averaged 4.21%.

In the next section, we review of some of the top-performing portfolios, but it is important to note that some of the simplest portfolios have been some of the best long-term performers. Vanguard and SigFig, both of which exhibit some of the simplest portfolio construction by holding just a handful of indexed ETFs, returned 9.50% and 9.85% annually over the three-year period, respectively.

Value Drives Robo Performance in the First Quarter

In the last several Robo Reports, the performance data has shown that robo-advisers with growth tilts in their equity holdings have fared better. That trend reversed in the fourth quarter of 2020 and the first quarter of 2021. The Schwab domestic-focused portfolio placed first for both total portfolio and for equity performance in the first quarter. The standard Schwab portfolio, which has more international equities than the domestic-focused portfolio, had the second-best equity performance and the sixth-best total portfolio performance in the first quarter. Schwab's first-quarter success was bolstered by the fact that it has one of the most value-oriented portfolios.

The strong fourth- and first-quarter performance was enough to push both Schwab portfolios into the top 10 over the one-year trailing period ending March 31, 2021, when looking at total portfolio performance. While value stocks experienced a strong six months, growth stocks still outperformed in periods longer than a year.

Morgan Stanley Robotics and SRI Shine

The Morgan Stanley Robotics portfolio stands out as a top performer in the one-year trailing period. Its equity holdings returned 71.90% over that time. Morgan Stanley does not pick individual stocks but rather uses specific ETFs to achieve exposure to certain industries in its thematic portfolios. The four funds specific to the robotics-themed portfolio all returned more than 65% over the one-year trailing period. The top fund, the ARK Innovation ETF (ARKK), returned 177% over a period when the S&P 500 index returned 56%. The funds that Morgan Stanley has chosen for this particular theme are technology-heavy and give the portfolio a higher growth tilt than most of the other robo-advisers. This has boded well during a period when the coronavirus pandemic environment has lent itself to remote work and an increased reliance on technology.

Morgan Stanley also claimed a top performance spot for the three-year time period. Its socially responsible investing (SRI) portfolio was the third-place equity-only performer over this time. It is one of the few SRI portfolios whose entire equity holdings are invested in SRI-themed funds.

Three-Year Returns: Zacks and Wells Fargo Rely on Domestic and Small Caps

Over the three-year period, Zacks Advantage and Wells Fargo's Intuitive Investor were the best equity performers, with annual returns of 14.02% and 13.99%, respectively. During this period, the Russell 3000 index returned over 17% annualized and the MSCI foreign developed and emerging markets indexes returned between 6% and 7% annualized.

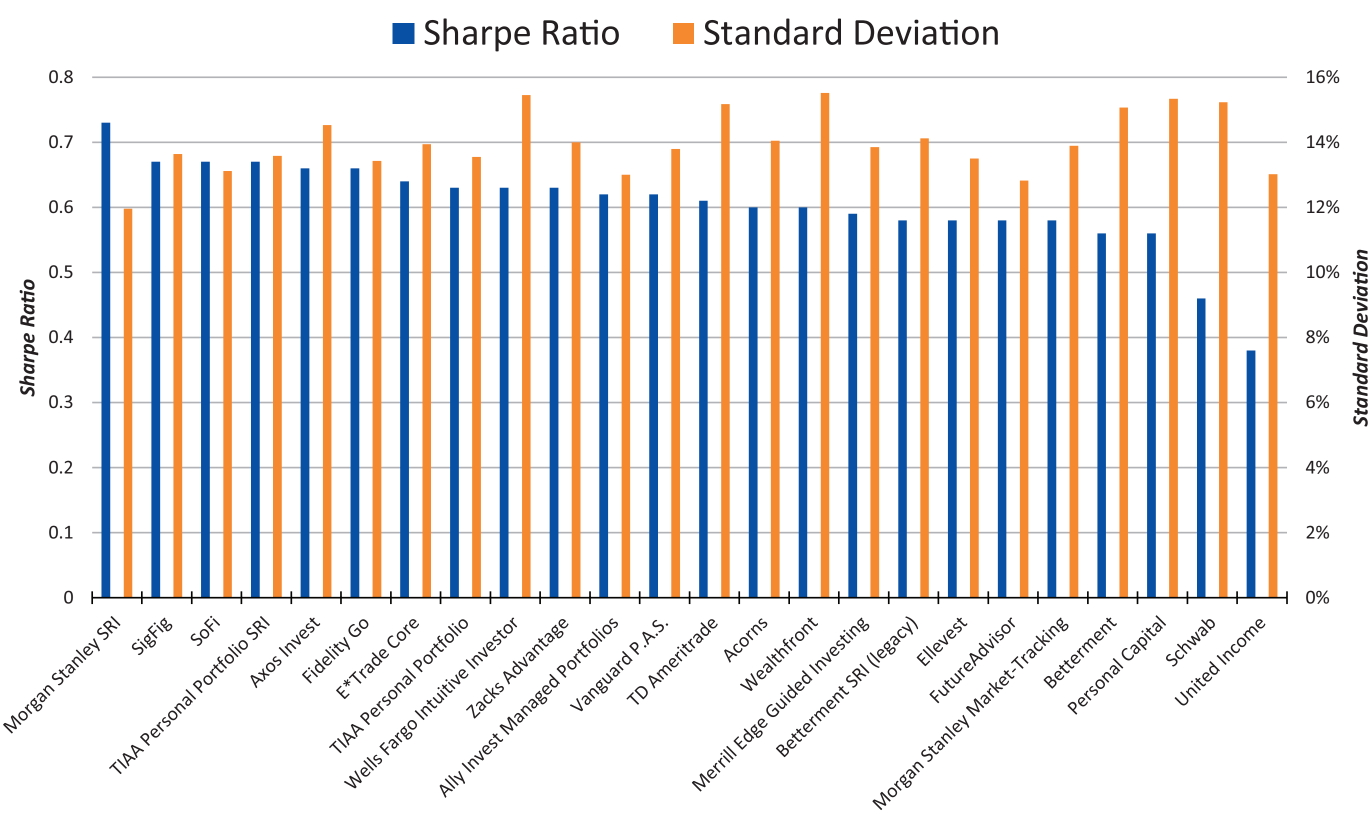
Zacks and Wells Fargo outperformed by holding a larger percentage of their equities in domestic stocks than international stocks. Zacks ended the quarter with 83% domestic exposure as a percentage of equities.

Both Zacks and Wells Fargo also have more mid- and small-cap exposure than many other robo-advisers. While small- and mid-cap holdings generally underperformed large-cap stocks over the three-year period, the fantastic run in small caps during the fourth quarter of 2020 and the first quarter of 2021 has boosted performance.

FIGURE 1

Performance of Taxable Robo-Advisers With Three-Year History

Risk-Adjusted Return (Sharpe Ratio) and Volatility (Standard Deviation)



Source: Backend Benchmarking for TheRoboReport.com. Net of fees returns are as of 03/31/2021.

TABLE 2

Returns for the Major and Other Selected Robos

Robo Portfolio	Total				Equity Only			Fixed Income Only		
	Allocation to Equity (%)	1-Yr Trailing (%)	3-Yr Trailing (Anlzd) (%)	5-Yr Trailing (Anlzd) (%)	1-Yr Trailing (%)	3-Yr Trailing (Anlzd) (%)	5-Yr Trailing (Anlzd) (%)	1-Yr Trailing (%)	3-Yr Trailing (Anlzd) (%)	5-Yr Trailing (Anlzd) (%)
Acorns	65	33.31	9.26	8.56	57.05	12.75	12.53	2.95	3.68	2.19
Betterment	65	39.71	9.13	9.57	61.19	11.13	12.57	5.59	4.26	3.25
Betterment SRI (legacy)	60	35.78	9.01	—	58.95	11.53	—	5.64	4.27	—
E-Trade Core	60	37.94	9.93	—	64.67	12.71	—	4.68	5.20	—
E-Trade Core SRI	60	36.24	—	—	60.10	—	—	4.63	—	—
Fidelity Go	60	34.53	9.86	—	57.07	12.86	—	5.63	4.14	—
Interactive Advisors	56	31.20	—	—	59.21	—	—	4.41	—	—
JPMorgan Chase Automated Investing	54	26.27	—	—	53.93	—	—	1.37	—	—
Merrill Edge Guided Investing	65	34.70	9.10	—	57.62	12.48	—	4.64	3.68	—
Merrill Edge Guided Investing SRI	65	37.17	—	—	59.39	—	—	4.28	—	—
Morgan Stanley Market—Tracking	68	36.08	8.99	—	58.54	10.97	—	1.17	4.18	—
Morgan Stanley Robotics	73	49.21	—	—	71.90	—	—	3.06	—	—
Morgan Stanley SRI	65	33.65	9.98	—	57.69	13.66	—	3.25	3.76	—
Personal Capital	73	41.33	9.27	9.42	59.78	11.44	11.85	4.40	3.07	2.62
Schwab	59	37.72	7.65	8.97	64.46	10.23	12.12	7.78	4.28	4.61
Schwab Domestic Focus	64	41.91	—	—	68.31	—	—	6.08	—	—
SigFig	64	35.26	10.16	10.38	59.21	12.71	14.17	3.69	5.05	3.84
SoFi	66	35.27	9.85	—	59.12	13.09	—	4.79	4.23	—
TD Ameritrade	73	39.06	10.04	—	57.53	11.86	—	1.44	3.74	—
TD Ameritrade SRI	73	39.82	—	—	58.72	—	—	1.20	—	—
UBS Advice Advantage	72	40.04	—	—	56.86	—	—	6.08	—	—
US Bank Automated Investor	58	37.31	—	—	64.93	—	—	5.48	—	—
Vanguard P.A.S.	64	35.56	9.50	9.54	58.72	12.78	13.84	4.96	4.22	2.87
Wealthfront	68	41.46	10.08	—	62.90	11.95	—	5.47	5.05	—
Wells Fargo Intuitive Investor	62	42.07	10.45	—	66.70	13.99	—	6.78	4.10	—
Zacks Advantage	61	35.94	9.79	—	61.41	14.02	—	3.28	3.39	—

Returns are net of fees and are as of 03/31/2021. All returns for periods longer than one year are annualized.
Source: Backend Benchmarking for TheRoboReport.com.

SigFig Remains Top Five-Year Performer

SigFig maintained its top spot for five-year performance for both total portfolio and equity performance. Over the five-year period, SigFig's portfolio returned 10.38% annually and its equities returned 14.17% annually.

SigFig has benefited from a straightforward approach. The majority of its equities are held in total U.S. stock market ETFs. These ETFs are composed mainly of large-cap stocks, which have outperformed mid caps and small caps, and entirely of domestic equities, which have widely outperformed foreign ones over the past five years. SigFig has also made good choices within its international holdings, having more emerging markets than developed as a percentage of its international exposure. Lastly, its fixed income is heavily investment-grade, with allocations to Treasury inflation-protected securities (TIPS) and high-quality domestic corporate bonds. These two areas of fixed income have performed well, especially over the past year, and made SigFig the second-best fixed-income performer over the five-year trailing period.

Filling out the five-year total portfolio spots are Axos Invest (not included in Table 2) and Vanguard Personal Advisor Services, which placed second and third, respectively. Vanguard, true to form, keeps its strategy simple and utilizes only two equity funds—a total U.S. market fund and total international market fund—and three municipal fixed-income funds. This simple strategy has returned 9.54% annually over the past five years.

Schwab remains the top fixed-income performer over five years. Unlike Vanguard, which holds only municipal bonds, Schwab holds a broad mix of fixed income, including mid-duration TIPS, emerging market bonds, municipals and high-yield corporates. Over the last five years, emerging market bonds and corporate bonds did better when markets were calmer and riskier debt was under less duress. Mid-duration TIPS, on the other hand, have done well in the second half of 2020 as investors shifted into inflation-protecting assets.

Socially Responsible Investing Performance

Socially responsible investing remains a hot trend. At Backend Benchmarking, we compare the equity performance of the SRI options and the standard options at the same robo-adviser to analyze their differences.

Over the two-year trailing period, the equity-only performance of the SRI portfolios outperformed the standard option at all providers except for E-Trade. The biggest performance gap was at Morgan Stanley, whose SRI equity portfolio outperformed the standard option by 3.11% annually.

Over the last quarter, however, the results were mixed and there were many instances in which the standard option outperformed the SRI option. One factor is that SRI screens often exclude fossil fuel and many energy companies, which have lagged over the past two years but had a very strong first quarter as the cyclical sectors have bounced back.

While investors can expect higher portfolio costs due to the underlying ETFs used in SRI portfolios, our study has so far shown that there is not a significant performance premium paid for selecting an SRI option.

Which Robo-Advisers Took Your Tax Bill Seriously?

The large sell-off at the beginning of the pandemic has provided the opportunity to assess the efficacy of tax-loss harvesting services at major robo-advisers. Backend Benchmarking tracks a set of specific accounts offering tax-loss harvesting that were all opened and funded at the same time and receive monthly deposits. As of the end of 2020, the insight is clear: Not all tax-loss harvesting services are made equally. TD Ameritrade Essential Portfolios and Schwab Intelligent Portfolios stand out for the highest percentage of realized net losses for the year. As of the end of 2020, TD Ameritrade realized over 9.5% of its portfolio in net short-term losses, while Schwab realized over 8.3%. Meanwhile, our tax-loss harvesting study group of 11 robo-advisers averaged 3.6% realized net losses as a percentage of year-end value. The benefits of a more aggressive tax-loss harvesting strategy accrue to the investor's bottom line. Short-term losses not only offset gains but can also be used to offset some ordinary income in many cases. Both bolster the aftertax performance of these robo-advisers.

Toward the middle of the pack, Wealthfront realized net losses of just under 5% of its total portfolio, while Wells Fargo realized losses of 3.8%. Both portfolios were fairly active, with Wealthfront standing out with a portfolio turnover rate of 87%. Morgan Stanley Access Investing captured 2.1% of its portfolio in net realized losses.

At the bottom of the pack were SigFig, Citizens Bank SpeciFi and UBS. SigFig did not realize any losses. SpeciFi, a robo-adviser backed by SigFig's technology, only realized 0.05% net losses in the year. This is in light of estimated unrealized net losses above 9% of the account value for both accounts at the end of the first quarter of 2020. UBS Advice Advantage, another SigFig-backed robo-advice product, reported only 0.13% net losses for the year. The year 2020 included a quarter when stock indexes were down over 30% from market highs. We expected robo-advisers to sell struggling asset classes to harvest losses for later use, but this was not the case for these three accounts.

When selecting a robo-adviser for its ability to execute tax-loss harvesting, it is important to be aware that implementations vary widely. For some, it seems to be a major feature, while others may be struggling to find the right algorithm for harvesting losses. While tax-loss harvesting can improve aftertax returns, the benefits can often appear greater than they are. When a tax loss is harvested, the resulting portfolio has a lower cost basis. So, realized gains will be higher when assets are sold in the future. Additionally, as markets rise, the opportunities to harvest losses fall. Tax-loss harvesting opportunities occur more frequently in newer accounts, since older accounts are more likely to hold assets that have already significantly appreciated above their original cost basis.

Final Thoughts

The last year reveals a few major trends in the industry. First, there continues to be consolidation as the U.S. marketplace becomes increasingly competitive. Due to the advent of robo-advisers, there is a great deal of value accruing to the average investor, including free financial planning, access to SRI options at low minimums, digital banking services and new innovative features like Self-Driving Money by Wealthfront.

If there is one thing that we have learned from the pandemic, it is that investing online continues to gain popularity and trust. Firms such as Betterment, Acorns and Schwab have grown tremendously in the last year, and investors can rest assured that digital investing is here to stay. ■

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