
Morningstar's 2025 Robo-Advisor Report

Our take on the best digital advice options for individual investors.

Morningstar Manager Research

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Executive Summary

The great robo-advisor disruption never arrived, but digital advice providers still have had a disruptive influence. Firms offering digital investment counsel emerged almost two decades ago with predictions that they would displace or radically alter human financial advice. The most dramatic disintermediation forecasts have proved hyperbolic, but robo-advisors have had an undeniable impact. They have not grown as expected, and just one pure robo-advisor remains that does not offer some person-to-person counsel with its algorithmic guidance. Entrenched financial titans, however, have co-opted and refined the would-be disrupters' technology, tools, and services and become the segment's leaders. As a result, investors, especially those lacking the income, appetite, or acumen to go it alone, now have multiple ways to access reliable assistance from reputable providers. For young investors with uncomplicated financial situations, robo-advisors can be good starting places and on-ramps to more-sophisticated services as their affairs develop. Robo-advisor selection still matters, though.

This report evaluates 16 major retail-oriented US digital advice providers, focusing on key characteristics like fees, investment advice quality, and financial planning tools. There are many similarities among providers. Most gather data on client goals, time horizons, and risk tolerance via questionnaires and use algorithms to recommend one of several portfolios, often of low-cost, passively managed funds. Additional financial planning levels differ. The best offer comprehensive tools and varying degrees of human financial advice for a low price. The median advisory fee among robo-advisors surveyed was 0.25% of assets per year—cheaper than the 1% that traditional financial advisors levy—though fees and methods can vary with assets and service level. Of the robo-advisors evaluated, Vanguard Digital Advisor and Fidelity Go rank among the best, thanks to low costs, sound asset-allocation approaches, broad arrays of tools, and transparency. Titan and several bank-affiliated providers remained less attractive because of higher costs, poor transparency, or limited tools.

Key Takeaways

- ▶ Digital advice providers have not taken over financial planning, but they have influenced it.
- ▶ Pure-play robo-advisors offering no option for human interaction are now rare. Most offer person-to-person advice or have been acquired by larger firms that do.
- ▶ Incumbent financial-services giants have adopted and furthered the technology and services that robo-advisors pioneered and now dominate the field.
- ▶ Digital advice remains an on-ramp to more-sophisticated financial planning for new investors, though providers report interest in online-only services across age and income ranges.

- ▶ The typical digital-advice provider offers portfolios of passive, low-cost exchange-traded funds at various risk levels. Asset allocations vary, however, and many providers also offer active strategies.
- ▶ Vanguard and Fidelity Go scored highest. Schwab Intelligent Portfolios, Betterment, and Wealthfront earned above-average scores.
- ▶ High costs, limited features, and/or poor transparency hurt the scores of others, including Titan, UBS Advice Advantage, Citi Wealth Builder, and Ally Invest.

Introduction

Instead of supplanting traditional planners as some predicted, independent digital advice providers have struggled. Some established firms they had sought to upend have co-opted robo-advisors' methods and seized the market. Estimated 2024 digital advice assets of USD 634 billion to USD 754 billion¹ were a fraction of the USD 36.8 trillion US retail market, which Cerulli Associates defines as investors with assets of USD 100,000 to USD 5 million.

Digital advice hasn't died, though. It's become another way for established firms to reach digital-savvy investors and an additional tool for human advisors to use in serving clients. Cheap, diversified portfolios and simple interfaces remain digital advisors' chief benefits; a few have added valuable features, such as nonretirement goal planning and tax-loss harvesting. Differences among platforms' fees and offerings remain, though.

We assessed 16 major robo-advisors. A couple stood out for low costs and service breadth. Higher costs and poor transparency held others back.

Definition

Morningstar defines "robo-advisors" as platforms that offer automated, semitailored strategic asset-allocation investment portfolios directly to retail customers. Algorithmic asset management separates them from do-it-yourself trading platforms, while higher touch, personalized wealth management differentiates them from advice providers. Additional services and financial planning tools are common, as is some access to human advisors, the "robo" or "robot" moniker notwithstanding.

Scope

This report focuses on US-based robo-advisors. We didn't assess Ellevest because of Morningstar's previous and current ownership stake in it. We did, however, assess Betterment even though its sustainability-focused portfolios include ETFs tracking Morningstar indexes because those funds claimed a small fraction of the firm's total assets. Consolidation contributed to a slight decline in the number of robo-advisors assessed in this year's report. J.P. Morgan shuttered its robo-advisor late in 2023, and Betterment bought Marcus Invest's investment platform in April 2024.

Our 16 assessments draw on a combination of regulatory filings, online information, survey responses, follow-up interviews, and product demonstrations. Acorns, Citi Wealth Builder, Empower, SigFig, SoFi,

¹ <https://www.condorcapital.com/the-robo-report/data/aum-statistics/> and The Cerulli Report | U.S. Retail Investor Products and Platforms 2024

Titan, and UBS Advice Advantage declined our survey request and did not grant interviews. We based their assessments on publicly available information.

Results: Vanguard Still in the Vanguard

Vanguard Digital Advisor, and its premium sibling Vanguard Personal Advisor Services, once again received the only High overall assessment, while Fidelity Go, Schwab Intelligent Portfolios, Betterment, and Wealthfront earned Above Average assessments. Only Titan received a Low.

The stasis at the top of the rankings belies some changes since our last report in 2023. Sofi Automated Investing and Wells Fargo Intuitive Investor dropped to Below Average from Average. Sofi's portfolios now charge an annual fee and include questionable investments; Wells Fargo is only open to existing bank customers, and it is hard to tell what's in its portfolios. Meanwhile, E-Trade Core Portfolios and Merrill Guided Investing rose to Average from Below Average. E-Trade added tax-loss harvesting to its services and provided more information on the funds it uses, while Merrill also added tax optimization.

Vanguard became the first and only firm to receive High marks across the board. The fund family ended a partnership with American Express that was out of character for the firm long renowned as the industry's low-cost leader; the arrangement offered certain Amex cardholders Vanguard Digital Advisor for a higher fee than they could get by going straight to Vanguard. The demise of "Invest for Amex by Vanguard" boosted Vanguard's Provider score, giving it a perfect assessment this time.

Exhibit 1 Morningstar's Robo-Advisor Assessments

Provider	Price ¹	Score	Quality of Investments/ Portfolio Construction	Score	Provider	Score	Breadth of Services	Score	Overall	Score
Acorns	Below Average	2	Average	3	Average	3	Below Average	2	Average	2.5
Ally Invest	Below Average	2	Average	3	Average	3	Low	1	Below Average	2.3
Betterment/ Betterment Premium	Above Average	4	Above Average	4	Average	3	Above Average	4	Above Average	3.8
Citi Wealth Builder	Average	3	Low	1	Average	3	Below Average	2	Below Average	2.2
Empower Personal Wealth	Low	1	Below Average	2	Average	3	Above Average	4	Below Average	2.3
E-Trade Core Portfolios ²	Average	3	Average	3	Below Average	2	Below Average	2	Average	2.6
Fidelity Go	High	5	Above Average	4	Above Average	4	Above Average	4	Above Average	4.3
Merrill Guided Investing	Below Average	2	Average	3	Average	3	Below Average	2	Average	2.5
Schwab Intelligent Portfolios/ Schwab Intelligent Portfolios Premium	Above Average	4	Below Average	2	Above Average	4	High	5	Above Average	3.6
SigFig	Above Average	4	Below Average	2	Average	3	Below Average	2	Average	2.8
SoFi Wealth	Below Average	2	Below Average	2	Below Average	2	Above Average	4	Below Average	2.4
Titan	Low	1	Low	1	Low	1	Low	1	Low	1.0
UBS Advice Advantage	Low	1	Low	1	Below Average	2	Average	3	Below Average	1.6
Vanguard Digital Advisor/ Vanguard Personal Advisor Services	High	5	High	5	High	5	High	5	High	5.0
Wealthfront	Above Average	4	Average	3	Average	3	Above Average	4	Above Average	3.5
Wells Fargo Intuitive Investor	Below Average	2	Below Average	2	Average	3	Average	3	Below Average	2.4

Source: Morningstar. Data as of Dec. 31, 2024.

¹ High and Above Average Price ratings indicate more-modest and thus attractive fees, while Low and Below Average signify the opposite.

² E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

Details on the robo-advisor programs we assessed follow in alphabetical order.

Acorns | Average

Great things may sprout from Acorns, but not yet. Celebrities, prize-winning academics, and financial giants, including Jennifer Lopez, Richard Thaler, Harry Markowitz, and BlackRock, back the company. Its focus on micro savings, with features that help investors round up everyday spending to build nest eggs, stand out. Its "Earn Program," offering rebates on purchases at select companies, has appeal. With no investment minimum and a straightforward investment approach, it's accessible for novice investors.

However, its subscription-based pricing model is exorbitant for its audience. The company previously offered a USD 1/month option, but its cheapest tier now charges USD 3/month, or USD 36 per year. That's 24 basis points for a USD 15,000 account but a steep 2.53% for Acorn's estimated average account size of USD 1,425.

The offer also lacks features. It has automatic rebalancing but no tax-loss harvesting and few planning features. Acorns offers UTMA/UGMA accounts for the "Early" program, which offer no tax benefits. Acorns defaults these accounts into its Aggressive portfolio, which is less than ideal for kids nearing college. Customers can set up emergency funds but only as non-interest-bearing demand deposits.

Acorns offers a limited number of risk-based portfolios (five Core and four ESG portfolios). Asset allocation is straightforward, and the quality of the underlying investments from iShares, Vanguard, J.P. Morgan, and Goldman Sachs is good. However, some clients can put up to 5% of their assets in bitcoin and up to half their money directly in individual stocks.

Acorns' full-time management has a lot of tech and venture capital expertise and less investment know-how. CIO Seth Wunder, a former hedge fund manager, now also serves as CFO after some executive departures. CEO Noah Kerner still seems intent on an IPO, despite canceling one in 2022, which may be the point of the whole endeavor.

Ally Invest | Below Average

Ally Invest still has some attractive features for Ally Financial banking customers, but it has otherwise ceded ground to rivals and merits a Below Average assessment.

Ally's current suite of 32 portfolios relies on inexpensive Vanguard and iShares ETFs and comes in two basic types: Market-Focused (2% cash allocation) for a 0.30% annual advisory fee and Cash-Enhanced (30% cash allocation), which has no advisory fee. Ally defaults clients into the Cash-Enhanced portfolio, whose 30% cash allocation earns a rate slightly short of the federal-funds rate. However, this egregious cash level will drag on long-term returns as investors miss gains available from more market exposure.

Each portfolio has a core, tax-optimized, and ESG version. All three have five different allocations based on one's risk profile: conservative, moderate, moderate growth, growth, and aggressive growth. There is also an income iteration of each type.

The portfolios include domestic market-cap tilts and varied regional exposures. For example, the Market Focused Core Aggressive portfolio's 93% equity stake is divided among US large-cap (33%), mid-cap (17%), and small-cap (6%) stocks as well as non-US developed (30%) and emerging (7%) markets. A tiered rebalancing approach is distinctive; the thresholds are smaller for asset classes with single-digit allocations and larger for those with double-digit holdings, though Ally does not disclose those limits.

In May 2022, Ally launched a wealth-management service that includes access to a human advisor alongside the digital advisor for a tiered fee. Those fees, however, are high compared with the premium offers of leading rivals such as Betterment, Fidelity, and Vanguard. Ally's additional capabilities also have not kept up with competitors. Features that have become common, such as aggregation of outside accounts, multiple goal planning, and tax-loss harvesting, are not available.

Betterment/Betterment Premium | Above Average

Betterment's transparency, value, and sleek technology set it apart. It's also made some investor-friendly moves, such as making its Core portfolio series style-neutral and finding a cheaper way to offer cryptocurrency exposure.

Betterment is one of the few robo-advisors that employs a glide path, which gradually makes the portfolios more conservative over time. Portfolio construction is well-thought-out: The Core portfolios offer a mix of low-cost ETFs in several major asset classes, including US and international stocks, investment-grade bonds, world bonds, and Treasury Inflation-Protected Securities. Since our last review, Betterment split its US equity allocation into large-, mid-, and small-cap pieces to create tax-loss harvesting opportunities. While it removed the Core series' value-leaning, the firm added a Value Tilt series to complement its Core and growth-leaning Innovative Technology series. The firm also replaced a direct crypto offering that charged 1% with a simpler portfolio of iShares bitcoin and ethereum ETFs charging 0.12% each.

Betterment uses a simple risk-tolerance questionnaire emphasizing risk capacity, or the amount and timing of clients' money needs rather than their comfort with risk, to select portfolios. Its other wide-ranging services are impressive given its below-average price. It charges a 0.25% asset-based annual fee for automated portfolio management. Investors with balances below USD 20,000 pay USD 4 monthly instead of the yearly levy but can qualify for the lower annual fee by committing to automatic monthly USD 250 deposits. Investors with multiple banking and investment accounts also can get help with retirement investing, goal planning, and taxes on those accounts. Unfortunately, the firm dropped hourly paid access to human advisors. It, however, still offers Betterment Premium clients—those with at least USD 100,000 balances—access to certified financial planners. Betterment raised its premium fee to 0.65%, but it's still cheaper than most financial planners.

Citi Wealth Builder | Below Average

Citi Wealth Builder's limited transparency keeps it from earning higher marks, but it remains a viable offering for existing Citi clients.

Designed for those who are already Citibank clients, the program's flat 0.25% advisory fee is competitive. That is a large reduction from the 0.55% in 2022, but this is offset by the elimination of fund fee waivers, making the true reduction hard to determine, as Citi does not disclose the third-party funds it uses in its portfolios. The firm also rolled out a premium offering, Citi Wealth Builder Plus, that is more expensive at 0.60%. It has a higher account minimum of USD 25,000 but comes with dedicated planning resources and tax-efficient portfolio options.

It remains to be seen how, if at all, this service will be affected by the leadership change at Citigroup wealth management. The firm announced in March 2023 that it hired back Andy Sieg, who most recently ran Bank of America's Merrill wealth-management unit and worked at Citi from 2005 to 2009.

Citi Wealth Builder has a basic portfolio construction approach. Clients must have a Citibank checking or money market account to access the digital platform and can choose from three categories of portfolios—index, sustainability, and active—each of which has five risk tiers. Citi Investment Management runs the ESG and active portfolios with its own models. It announced in April 2023 that it also would bring its index portfolios, previously overseen by Invesco, in-house. Each portfolio includes a mix of stocks, bonds, and short-term investments, depending on the client's risk tolerance and time horizon, but Citi doesn't disclose much else about its asset-allocation process or the funds it uses. Citi banking clients now have two distinct, competitively priced offerings to choose from.

Empower Personal Wealth | Below Average

High fees drag on Empower's attractiveness as a robo-advisor despite its comprehensive features. The firm declined to participate in Morningstar's robo-advisor survey.

This option has a high asset hurdle, making it inaccessible and suboptimal for those just starting to save for retirement. Indeed, its lofty fees and substantial account minimums put it on par with some competitors' premium offerings. Assuming a client can gather over USD 100,000, significant benefits and lower fees only kick in at higher account sizes. Accounts below USD 200,000 have access to a basic ETF portfolio based on client goals and risk tolerance. It reserves its lowest fees for its largest clients, a level few will reach. Everyone pays 0.89% on the first USD 1 million, then 0.79% on the next USD 3 million, and so on down to 0.49% on anything above USD 11 million.

Empower offers basic services at all levels, but only the largest accounts unlock the service's true value. Every client has access to the Empower Personal Dashboard, which lets users track their spending, savings, checking, investment, and other accounts in one place. This feature also suggests potential tweaks to a client's portfolio allocation. Those with USD 200,000 to USD 1 million get more-comprehensive support, including access to a dedicated CFP and more-customized portfolios that include individual securities. At higher levels, the firm layers in private banking and estate planning. Individuals and families with more than USD 5 million can invest in private equity. Empower has its merits, but it is a premium service with a high account minimum and fees. Better options exist for beginning or intermediate digital investors.

E-Trade Core Portfolios | Average

E-Trade Core Portfolios offer a straightforward, if uninspiring, automated advisory service. The flat 0.3% annual fee is about average, and its service level covers investors' basic needs but rarely goes beyond.

Since Morgan Stanley acquired it in February 2020, E-Trade has improved how clients sign up and has added tax-loss harvesting, but the low-cost ETFs it uses are its bright spot; they earn Gold or Silver Morningstar Medalist Ratings. E-Trade relies on Morgan Stanley's macro research for capital market assumptions. The investment team builds diversified portfolios that are not meant to shift much over time. They use low-cost ETFs in standard asset classes, ranging from large and small US stocks, to developed international and emerging markets, to taxable and municipal bonds.

The firm's risk-tolerance assessment process is a mixed bag. A short risk questionnaire buckets investors into one of six target risk portfolios ranging from aggressive to conservative. Once in a portfolio, investors can move their portfolio just one degree higher or lower on the risk scale. This bare-bones approach does not account for risk capacity, or how much risk an investor can handle based on their total wealth or investment horizon, or on their financial goals, something that market-leading robo-advisors do. The firm has added tax-loss harvesting in recent years, but its other services are minimal. Overall, this is a spartan offering that uses good funds in its portfolios but charges higher costs compared with similar services.

Fidelity Go | Above Average

Fidelity Go's simple but effective approach, drawing on the firm's strong global research and asset-allocation team, stands out. It is free for accounts up to USD 25,000. Above that, clients pay 0.35% annually, which entitles them to unlimited one-on-one coaching calls with a Fidelity advisor.

The program starts with a thorough risk-tolerance questionnaire covering the investor's investment goals, time horizon, risk tolerance, investment experience, and household financial situation. Fidelity then uses this information to map investors to a taxable or retirement-oriented portfolio across eight risk levels. The portfolios focus on core asset classes, such as US and non-US stocks, and intermediate core bonds. They don't include esoteric asset classes, such as cryptocurrencies, or ESG strategies.

Fidelity Go's 0% advisory fee for low balances makes it a compelling option for smaller accounts. The plan invests in a streamlined list of zero-expense-ratio Fidelity Flex funds, which keeps total costs below average even for higher-balance participants who pay the 0.35% management fee.

The program also offers ongoing support. Text alerts and other communications let customers know how they are progressing toward their goals, as well as providing behavioral nudges to encourage long-term investing. However, Fidelity Go does not currently offer tax-loss harvesting.

All Fidelity Go participants have access to tools for spending and debt management. Users can choose from a menu of coaching solutions focused on different topics, including retirement planning and

budgeting. In contrast to Betterment and Schwab, not all of Fidelity Go's financial advisors hold the CFP designation, though most do.

Merrill Guided Investing | Average

Despite enhancements, Merrill Guided Investing and Merrill Guided Investing with Advisor don't earn their high fees. The services have added in-retirement income portfolios and a tool that can provide tax-efficient rebalancing and tax-loss harvesting at no additional cost. The services, launched in 2017, remain a pricey bridge between Bank of America Merrill Lynch's self-directed investing platform and its financial advisors. MGI's and MGIA's respective 0.45% and 0.85% advisory fees are hefty. They can drop, though, to 0.30% and 0.70%, respectively, if members of the bank's Preferred Rewards program accrue assets of at least USD 100,000 across the bank's offerings; but clients with USD 20,000 or less pay the full fee. Merrill uses low-cost third-party ETFs in its core and retirement-income portfolios, but its sustainability-focused portfolios and the active/passive hybrid portfolios offered by MGIA cost more. Investors who want access to CFPs must have Merrill managed accounts or advisory relationships.

Portfolio construction is standard, with five risk-tolerance levels across a handful of portfolio types. Tax-aware core portfolios substitute munis for taxable bonds, and sustainability portfolios tilt toward holdings with better environmental, social, and governance scores.

MGIA adds hybrid active/passive versions of the taxable, tax-aware, and sustainability portfolios. Investors can see the asset-allocation details of these portfolios without signing up for the service but not the recommended active options, making it difficult to recommend them.

Merrill's short risk-tolerance questionnaire could be improved. MGI lets clients see the odds of reaching goals over various timelines but doesn't consider their risk capacity and puts too much emphasis on account funding levels. Portfolio recommendations also can include risky options, even for short-term, well-funded goals. The service has added features, and its active asset-allocation approach has appeal, but there are better and lower-cost options.

Schwab Intelligent Portfolios | Above Average

Low fees, solid investments, and extensive supporting services make Schwab a compelling robo-advisor, albeit one that makes excessive cash allocations.

Schwab's well-conceived portfolios feature comprehensive asset-class exposure. It uses an intuitive risk-tolerance questionnaire to match investors with portfolios designed for one of 12 risk profiles. The portfolios complement core asset classes, like large-cap stocks and Treasuries, with sensible satellite holdings, like small-cap and international stocks, municipal bonds, TIPS, and REITs. The underlying investment offerings are solid, and the firm rebalances thoughtfully. It also offers tax-loss harvesting. Excessive cash allocations are this program's Achilles' heel, though. Cash stakes range from 6% to 30% of assets depending on portfolio risk level. This can drag on long-term returns. Schwab links the monthly yield on customers' cash balances to Schwab Government Money Fund, which tends to pay out just under the federal-funds rate. That reduces volatility but at the expense of the potentially higher returns

those assets could earn in the market. Schwab, meanwhile, has an incentive to park customers' assets in its proprietary deposit accounts. Schwab paid USD 187 million in settlements and fees for its previous disclosure practices related to its use of cash.

Schwab Intelligent Portfolios Premium version comes closer than most of its peers to matching the value of a human financial planner. Its advice covers mortgages, college saving, retirement saving, retirement income, and budgeting. Unlimited one-on-one guidance from a CFP is also available.

Schwab levies a fixed USD 30 monthly fee for its premium services rather than a percentage of assets. The higher the account balance, the cheaper the fee becomes relative to assets. Indeed, it is cheaper than comparable services from Vanguard Personal Advisor Services or Fidelity Go for clients with more than USD 120,000. However, there are cheaper options for smaller investors.

SigFig | Average

SigFig is a lean offering that checks some, but not all, of the right robo-advisor boxes. SigFig's fees are appealing—it is free for accounts up to USD 10,000, and then 0.25% per year. It uses low-cost ETFs for its portfolios but does not waive or return fees on them. The firm also does not disclose the specific ETFs it uses, making it difficult to judge their quality.

Portfolio construction is straightforward. Allocations are strategic and reasonable, with equity weightings for taxable portfolios ranging from 26% to 90% of assets, depending on the risk level, and 13% to 85% for tax-advantaged portfolios. All the tax-deferred portfolios allocate at least 7% of assets to emerging-markets debt, which is aggressive, as well as 5% to REITs. The portfolios rely on one broad index for US stock exposure and don't slice and dice allocations by style or market cap.

SigFig has a long history as a robo-advisor and pioneered many of the features that are now common, such as tax-loss harvesting. Now, however, it does not offer a lot of extra services. It does not provide advice for multiple investment goals and lacks more dedicated educational resources that would make SigFig a one-stop shop.

The firm also saw a lot of personnel turnover in 2023. For example, Steven Mattus, formerly of UBS, Deutsche Bank, and Credit Suisse, replaced Chief Investment Officer Terry Banet, who had been with the firm since 2011. In addition, the privately held firm's focus on partnering with larger corporations like UBS and Wells Fargo raises questions about whether it will remain a stand-alone robo-advisor, though its limited revenue base may make it less attractive to potential acquirers.

SoFi Wealth | Below Average

SoFi's new look might not be for everyone. Clients can still get access to a CFP for no additional cost, but its recently revamped portfolios now charge an annual fee and still carry questionable investments.

SoFi announced its BlackRock partnership in November 2024 as part of an overhaul to its robo-advisor. The portfolios will add more asset classes, but for the first time, it will charge an annual fee. While the

service is no longer free, its new 0.25% annual fee is still average and cheap for services that include CFP access.

The firm still offers taxable and tax-advantaged versions its Classic, Classic with Alternatives, and Sustainable portfolios. iShares ETFs form the core of most of the portfolios, supplemented by a mix of BlackRock thematic and active ETFs. The robo-advisor's portfolios have gotten more sophisticated since it partnered with BlackRock, albeit with some questionable choices. The two Classic portfolios still use SoFi Select 500 ETF as their core equity holding for taxable accounts. This fund already leans toward growth, so paring it with iShares S&P 500 Growth ETF appears unnecessary. The service's fund menu also includes thematic ETFs such as iShares Global Energy ETF and has several overlapping strategies. SoFi offers, for instance, a suite of BlackRock liquid alts funds, as well as market-neutral and systematic macro funds from other shops. Some of the newer and more niche ETFs also cost double or triple the core holdings that used to be the robo-advisor's mainstays.

CFP access is still this program's bright spot. Clients can get access to financial advisors by phone, virtual meetings, and electronic messages at no extra charge. SoFi's advisors must have Series 65 licenses and either have CFPs or be working toward them. SoFi's online article library also is helpful.

Titan | Low

Titan made sweeping changes to its pricing model and benefits but remains the least attractive robo-advisor evaluated. The firm didn't participate in this year's survey and interview.

The firm's latest new fee schedule is still pricey. Titan has changed its fee structure before, flipping from a flat fee to an asset-based one in recent years. The platform on Jan. 1, 2025, began charging a USD 25 monthly fee or USD 250 annual "membership" fee. This flat rate is on top of a 0.20% annual advisory fee and the costs of the third-party funds it uses to complement its own internal strategies. The flat advisory fee is lower than Titan's previous tiered structure, but combined with the membership levy, the program is still the most expensive robo-advisor assessed at 1.87% for a USD 15,000 account.

Portfolio options remain a mixed bag. The firm added broad and cheap stock and bond strategies in 2023. Proprietary strategies, cryptocurrency accounts, and a handful of third-party closed-end funds round out client portfolios. However, the returns of Titan's in-house actively managed equity strategies have poor-to-average historical results. Cryptocurrency is volatile, complicated, and controversial. The closed-end funds on offer are very expensive and illiquid ways to access already illiquid asset classes like private equity and credit. In regulatory disclosures, Titan also acknowledges a conflict of interest with one of those closed-end funds. ARK Investment Management holds a warrant in Titan entitling it to buy a stake in the firm depending on how many clients it steers to the ARK Venture fund. In return, ARK pays Titan a services fee allowing Titan to offer the fund without a management fee. Titan contends it has procedures to ensure it uses ARK Venture in its clients' best interests, but the deal is still a red flag.

UBS Advice Advantage | Below Average

It remains unclear how UBS Advice Advantage fits within the firm's broader wealth-management plans. Such uncertainty paired with weak transparency leaves plenty to be desired.

UBS' priorities shifted with its March 2023 acquisition of Credit Suisse, and then again with Sergio Ermotti's April 2023 return as CEO, a role he had held from 2011 to 2020. Ermotti, tasked with overseeing the Credit Suisse integration, has different views from his predecessor at UBS, Ralph Hamers, about growing the firm's US wealth-management footprint. Ermotti wants to focus on the wealthier demographics rather than attracting new clients of more modest means, while Hamers championed mass-oriented offerings like the Advice Advantage program. The firm's failed 2022 acquisition of well-respected digital advice competitor Wealthfront further muddies this picture.

Hefty costs and poor transparency diminish the appeal of what is otherwise a relatively robust offering. The program's 0.75% annual fee makes it among the priciest robo-advisors, and those fees are in addition to underlying fund expense ratios, which are difficult to determine because UBS does not disclose the funds it uses. Furthermore, the firm doesn't disclose even basic asset-allocation information about its five digital advice portfolios, which it recommends based on a standard risk questionnaire.

The platform, powered by SigFig's algorithm, has basic capabilities such as investment advice, trading/execution, and performance reporting. It also offers access to financial advisors, external account aggregation, and tax-loss harvesting. There are cheaper, more transparent offerings with comparable features.

Vanguard Digital Advisor/Vanguard Personal Advisor Services | High

Vanguard Digital Advisor and Vanguard Personal Advisor Services have upped the ante for rivals by adding more improvements and ending an ill-fitting partnership.

Vanguard Digital Advisor lowered its starting account minimum to USD 100 from USD 3,000, putting it within reach of almost everyone, a typical move for the USD 10-trillion-in-assets firm that often uses its scale and unique structure to pass on economies of scale to clients.

Vanguard has signaled it is serious about advice. It recently hired a former Fidelity executive to lead a new Advice & Wealth Management unit. Vanguard Digital Advisor also has expanded the data points, including employment income and spousal accounts, that it considers; made tax-loss harvesting more widely available, added fractional share trading, tweaked its risk questionnaire, and offered more planning tools. The firm ended its "Invest for Amex by Vanguard" program, which seemed out of character because it charged clients gained via the payments company a higher gross advisory fee.

A thorough process underpins Vanguard's services. Vanguard Digital Advisor uses the Vanguard Life-Cycle Investing Model to create customized glide paths based on an investor's age, goals, and risk profile, updating over time. The firm rebalances portfolios when allocations drift by more than 5 percentage points. Vanguard Digital Advisor and Vanguard Personal Advisor Services use similar

building blocks, including four of the family's most diversified passive equity and fixed-income ETFs. Vanguard Digital Advisor charges as little as 0.20% per year, including underlying fund fees. Clients with at least USD 50,000 qualify for Vanguard Personal Advisor Services, which charges 0.30% annually, not including fund fees, and get access to a CFP pool. Those with more than USD 500,000 get dedicated CFPs, while those with more than USD 5 million can invest in private equity and get estate and trust services; fees drop with assets to 0.05% for more than USD 25 million. That's a lot of value for modest fees.

Wealthfront | Above Average

Questionable allocation recommendations temper our enthusiasm for Wealthfront's strong combination of cost efficacy, service breadth, and investment quality.

The platform charges a 0.25% annual advisory fee, which is cheaper than most, and expense ratios for most of the underlying funds it uses are reasonable. Most of those funds also get Morningstar Medalist Ratings of Gold or Silver.

The program includes a thorough questionnaire that incorporates behavioral economics research to evaluate investors' risk tolerance, or willingness to take risk, and risk capacity, or ability to take risk given their financial situation. Wealthfront slots investors into portfolios from among 20 risk levels spanning three account types: taxable, retirement, and socially responsible. It also offers financial planning tools for spending, savings, income, inflation, Social Security, taxes, college planning, and home equity, though not human financial advisors.

The program takes a goal-centric approach designed to focus investors on the long term. Investors can set multiple goals and experiment with various assumptions to see if they're on track or not. Wealthfront also takes a thoughtful approach to tax-loss harvesting by incorporating direct indexing, which enables it to harvest losses at the individual stock level. Wealthfront allows investors to invest in individual stocks but still encourages them to build diversified portfolios.

This is a solid, inexpensive package overall, but many of Wealthfront's portfolios are on the aggressive side. For example, the highest-risk portfolios allocate up to 19% to an emerging-markets stocks ETF. Wealthfront also allows investors to invest up to 10% of their portfolio in risky cryptocurrency ETFs. Those caveats aside, Wealthfront offers many innovative and beneficial services.

Wells Fargo Intuitive Investor | Below Average

Wells Fargo Intuitive Investor remains a fine choice for existing Wells Fargo clients. Designed for those who are already banking clients, the program's 0.35% asset-based fee is on the pricier side of the robo-advisors we surveyed, but there are discounted rates as low as 0.25% available for qualifying clients depending on their type of checking account. The bank lowered its investment minimum to USD 500 from USD 5,000 in recent years, following a trend across the digital advice arena. It discloses underlying fund expense ratios, which are reasonable, but does not make specific portfolio building blocks available to prospective clients. This lack of transparency detracts from its assessment.

Like UBS, Wells Fargo uses SigFig's proprietary portfolio management algorithm to monitor, rebalance, and harvest tax losses. Clients can move up or down one risk level from the recommended investment objective based on responses to an industry-standard questionnaire focused on investment objectives, time horizons, risk tolerance, and liquidity needs.

Suggested asset-allocation strategies are spread across a series of nine portfolio risk levels. Judging from publicly available information, these allocations are prudent, with minimum cash allocations and adequate exposure to core asset classes. Clients can also opt for sustainably focused portfolios, though these come with marginally higher underlying fund fees.

Access to a phone-based team of financial advisors and tax-loss harvesting are clear positives, particularly given the overall cost of the offering. The bank's goal-oriented resources that help investors stay on track are encouraging, too, as is its educational content for beginning investors.

Industry History & Trends

Robo-advisors promised to replace traditional advisors when they emerged in the early 2010s. They haven't, but they have widened the availability of advice and influenced how all firms serve clients.

The digital advice industry has consolidated in recent years as many struggled to meet their growth expectations. J.P. Morgan shut down its robo-advisor in December 2023 due to weak demand, and Goldman Sachs in April 2024 sold its Marcus Invest to Betterment. Other major financial institutions either closed their robo-advisors or merely maintained them without updating or adding features. The robo buzz has quieted.

The landscape has been shifting for years. In 2015, Northwestern Mutual bought LearnVest, which launched in 2008, only to shut down three years later. BlackRock sold FutureAdvisor's direct-to-consumer business to Ritholtz Wealth Management in 2023, eight years after buying it. UBS was going to acquire Wealthfront but called the deal off in September 2022, nine months after announcing it. Morgan Stanley's 2020 acquisition of E-Trade seemed to be an outlier. Morgan Stanley phased out its own robo-advisor after the acquisition, opting instead to rely on E-Trade's more established brand.

Most robo-advisors now serve as young investors' first saving and investing steppingstone. Many offer premium services that include more-personalized, human-provided advice once clients accumulate enough assets. Over the past decade, more former digital-only advisors have added access to human advisors; the hybrid approach is now the norm.

As most of the portfolio-construction process gets automated or outsourced, either via a robo-advisor or model portfolio, the real value of advice becomes apparent. Decades ago, financial advisors focused on picking stocks or actively managing mutual funds for clients. Now, they add the most value by helping clients sort through other complex issues, such as insurance, estate planning, stock-based compensation, and tax planning.

A pure robo-advisor can suffice for investors with simple financial lives. For them, cost is a key differentiator. Robo-advisors are still much cheaper than traditional advice, even as cost-cutting competition has abated some as the industry has matured. Most services have either maintained or raised fees since our last report.

Exhibit 2 Robo-Advisor Historical Milestones (2007-24)

	Date	Activity
Startups create the robo-advisor concept	● 2007	Feb Mar Wealthfront predecessor KaChing raises Series A funding SigFig predecessor Wikinvest raises Series A funding
	● 2008	Jan Betterment's parent company founded in New York
	● 2010	May Nov Betterment officially launches at TechCrunch Disrupt New York Betterment raises Series A funding
	● 2011	Jun Dec SoFi created by four Stanford students to disrupt student-loan market Wealthfront launches new online financial advice service
	● 2012	Jan May Acorns launched by father-and-son team with focus on micro-investing Wikinvest rebrands as SigFig and shifts focus to digital portfolio allocation and rebalancing
	● 2014	Nov Ellevest ¹ co-founded by Sallie Krawcheck and Charlie Kroll
	● 2015	Mar May Sep Charles Schwab introduces Schwab Intelligent Portfolios Vanguard launches Vanguard Personal Advisor Services, a hybrid advice offering BlackRock acquires FutureAdvisor
Incumbents enter the market	● 2016	Jun Jul Ally Financial acquires robo-advisor platform by purchasing TradeKing Fidelity Investments introduces Fidelity Go
	● 2017	Feb May Nov Dec Bank of America/Merrill Lynch introduces Merrill Guided Investing service SoFi introduces SoFi Wealth service Wells Fargo launches Intuitive Investor service with technology from SigFig Morgan Stanley introduces Morgan Stanley Access Investing platform
	● 2018	Feb Apr Titan Invest launches as a robo-advisor with a self-styled hedge fund focus UBS launches UBS Advice Advantage designed with SigFig technology
	● 2019	Aug Capital One Financial acquires United Income ²
Acquisitions & Consolidation	● 2020	May Oct Vanguard introduces Vanguard Digital Advisor platform E-Trade Financial is acquired by Morgan Stanley ³
	● 2021	Feb May Dec Goldman Sachs introduces robo-advisor Marcus Invest after delaying its planned 2020 launch by one year SoFi goes public through a reverse merger and begins trading on the Nasdaq SageView Advisory Group acquires USD 900 million of client portfolios from Capital One Investing
	● 2022	Jan Aug Sep Nov Wealthfront agrees to be acquired by UBS Group for USD 1.4 billion Truist Wealth introduces robo-advisor Truist Invest UBS/Wealthfront deal canceled J.P. Morgan introduces hybrid robo-advisor
	● 2023	Feb Apr Dec BlackRock agrees to sell direct-to-consumer FutureAdvisor business to Ritholtz Wealth Management Betterment agrees to pay USD 9 million SEC fine over tax-loss harvesting mishap J.P. Morgan shuts robo-advisor citing weak demand
	● 2024	Apr Goldman Sachs sells Marcus Invest to Betterment

Source: Morningstar research, PitchBook, and online articles. Data as of Dec 31, 2024.

1 Morningstar is a minority owner of Ellevest, Inc. Ellevest has separately engaged Morningstar to provide certain services, including licensing the Wealth Forecast Engine and consulting on portfolio allocations (including specific ETFs included in client portfolios).

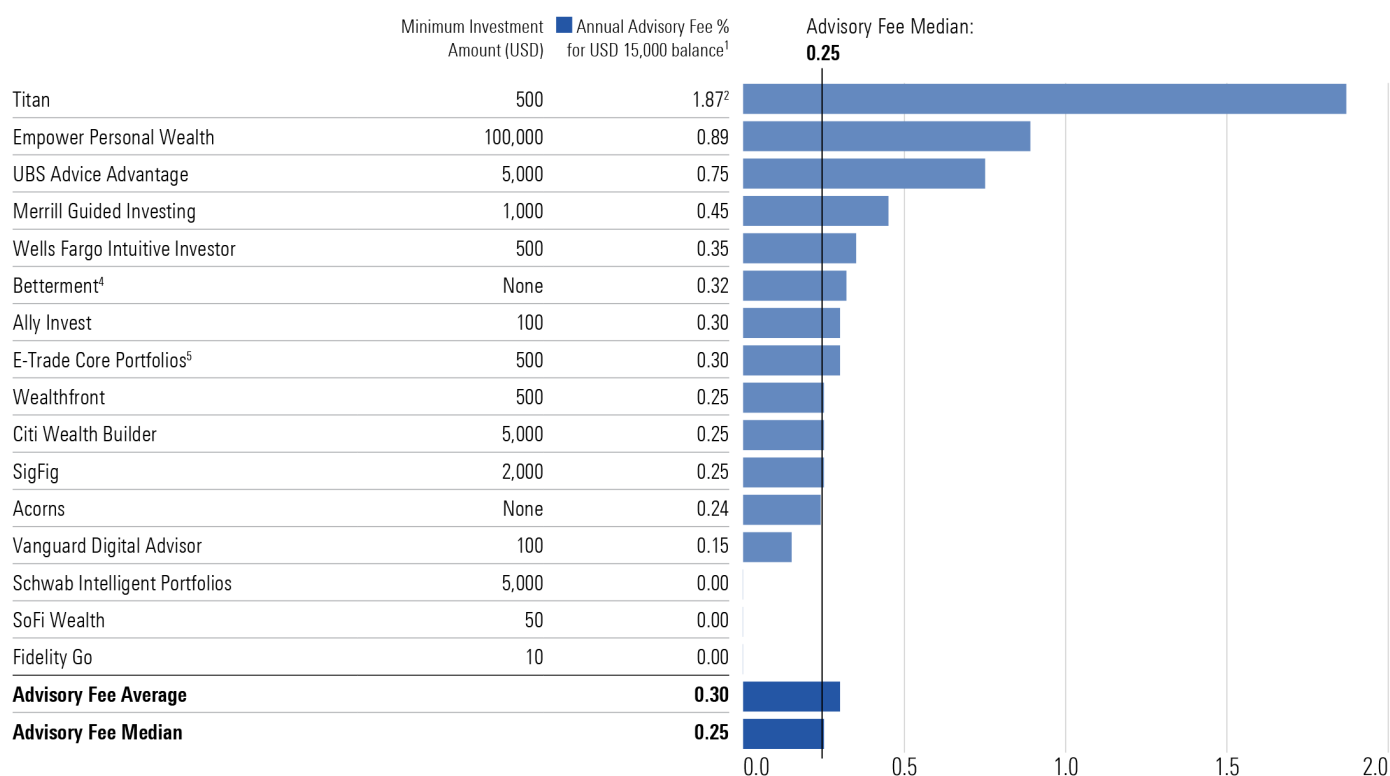
2 Morningstar was previously a minority owner of United Income, which was acquired by Capital One in 2019.

3 E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

Pricing

Price gets a 30% weight in our rankings. This assessment considers more than just providers' headline fees but is based on one of investing's few certainties: The less you pay, the more you keep.

Exhibit 3 Annual Advisory Fees for Selected Robo-Advisors



Source: Company surveys, Form ADV and 13-F filings, and Morningstar research. Data as of May 31, 2023.

¹ Does not reflect potential fluctuations due to account appreciation or depreciation.

² Titan fee includes USD 250/year membership charge.

³ Morningstar is a minority owner of Ellevest, Inc. Ellevest licenses Morningstar's Wealth Forecast Engine and for portfolio allocations and ETF selection.

⁴ Betterment charges USD 4/month for accounts less than USD 20,000. That fee can convert to the 0.25% fee with USD 250/month automated deposits.

⁵ E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

Advisory fees ticked up since the 2023 study. This year they ranged as high as 1.87%, far more than last year's upper bound of 0.89%. The median of 0.25% was the same. Most still charge clients a fixed percentage of assets under management. Others, like Acorns and Titan, have flat monthly fees that can eat into smaller account sizes. Some providers, such as Schwab Intelligent Portfolios, don't charge for underlying funds, while others, such as Fidelity Go and SoFi Wealth, waive those levies.

Fee transparency also is important. Investors should be able to understand how much they are paying, what they are paying for, and whether their providers are making money off their assets in ways beyond their headline fees, such as funneling assets into in-house cash accounts or not waiving the fees of underlying in-house funds. Robo-advisors also can make money from clients' trading. Many receive payment for order flow, which entails executing ETF trades via unaffiliated brokers who pay the robo-advisors for the traffic. Although tiny, the sums can add up and tempt robo-advisors to promote trading.

Providers should share the benefits of scale with investors, lowering fees and/or offering more services as assets increase.

Exhibit 4 Other Fee Details (Excluding Premium Offerings)

	Fee Waiver Credit for Underlying Funds?	Additional Details
Acorns	No	USD 3/month regardless of investing or retirement account size.
Ally Invest	No	Advisory fee is for "Market Focused" portfolios. "Cash Enhanced" portfolios do not charge an advisory fee since they allocate 30% to an Ally high-yield savings account.
Betterment	No	Betterment charges USD 4/month for accounts less than USD 20,000. However that fee converts to 0.25% a number of ways, including with a USD 250/month automated deposit into a Betterment account at any balance.
Citi Wealth Builder	No	Citi has a limited time promotional offer waiving its advisory fee for the first six months after a new account is funded with the required minimum investment.
Empower Personal Wealth	No	0.89% for 0 to USD 1 million; 0.79% for next USD 3 million; 0.69% for next USD 2 million, 0.59% for next USD 5 million; 0.49% for more than USD 10 million. Four levels of service: Investment service for less than USD 250,000; Wealth Management for USD 250,000 to USD 1 million; Private Client for more than USD 1 million; more than USD 5 million eligible for private equity.
E-Trade Core Portfolios ¹	No	—
Fidelity Go	Yes	Free up to USD 25,000. Investors are automatically opted into a 0.35% asset-based fee as soon as they reach USD 25,000 in assets.
Merrill Guided Investing	Currently waiving program fee for new accounts for 6 months	Tiered fee for clients enrolled in Preferred Rewards: 0.45% for accounts with less than USD 20,000 (inclusive of linked Bank of America and Merrill Lynch assets), 0.40% for USD 20,000–USD 50,000, 0.35% for USD 50,000–USD 100,000, 0.30% for more than USD 100,000.
Schwab Intelligent Portfolios	No	Requires keeping a significant portion of portfolio assets in a cash sweep option.
SigFig	No	No fee for accounts with less than USD 10,000.
SoFi Wealth	Limited	Proprietary ETF fees waived until mid-2025; no waiver or credit for nonproprietary ETF fees.
Titan	Limited	Fee for ARK Ventures fund waived.
UBS Advice Advantage	No	—
Vanguard Digital Advisor	Yes	Vanguard Digital Advisor's 0.20% gross advisory fee comes with a 0.05% credit for underlying fund fees of 0.05%. Thus, the net advisory fee is 0.15%.
Wealthfront	No	From time to time, Wealthfront may offer waivers for referrals. In the past, when a client referred a friend that opened an account, both would be eligible for USD 5,000 managed free for life.
Wells Fargo Intuitive Investor	No	Wells Fargo clients enrolled in other services at the bank are granted reduced fee rates of 0.30% (Prime Checking account) or 0.25% (Premier Checking or Private Bank Interest Checking accounts).

Source: Company surveys, Form ADV and 13-F filings, and Morningstar research. Data as of May 31, 2023.

¹ E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

Risk-Tolerance Questionnaires

The process for most newcomers starts with a risk-tolerance questionnaire—a series of questions to gauge the “target risk” potential that clients can endure. Questions typically focus on an investor’s level of investment experience and feelings about risk, losses, and likelihood of selling in a drawdown.

As a rule of thumb, robo-advisors typically adjust the recommended portfolios based on a clients’ age and liquidity requirements, but the questionnaire helps them craft portfolios that clients can tolerate over their time horizons. But there’s no consensus on what questions to ask. A handful of services—like Betterment and Ellevest—opt instead for portfolios based on the client’s investing horizon and ultimate investment goal. Robo-advisors’ questionnaires vary in depth and breadth. Some ask a handful of questions, others more than a dozen.

Portfolio Construction

Robo-advisors offer low-cost portfolios diversified across stocks and bonds. Risk levels range from equity-oriented portfolios for the young who have longer time horizons and can afford to be more aggressive, and older investors who should be reining in their portfolios’ risks. Our analysis does not prescribe the best way to build portfolios. It looks for clear, well-researched, long-term investment theses and questions shorter-term strategies, like market-timing.

Simple vs. Complex

Good portfolios can have numerous or few asset classes. For example, Fidelity Go holds six stock and bond ETFs and a bit of cash. Meanwhile, Schwab Intelligent Portfolios uses more than 50 funds from around 20 categories ranging from gold, commodities, and real estate to emerging-markets debt and value-leaning fundamental index funds.

While there’s little portfolio-construction consensus, there are a couple of universal truths: Lower costs are better, and portfolios should suit investors’ needs. Many robo-advisors target younger investors with smaller accounts; thus, simplicity and affordability trump exhaustive asset-class exposure. Investors who have amassed wealth in taxable accounts, however, may prefer a little more complexity, such as Betterment’s practice of subdividing broad asset classes into smaller buckets, such as large-, mid-, and small-cap US stocks, to better harvest tax losses.

Exhibit 5 Asset Classes Used as Underlying Holdings

	Bank-Loan Funds	Commodities	Crypto	Dividend Yield	Gold	High-Yield Corp	International Bond	Mortgage-Backed Securities	Muni Bonds	Private Equity or Alts	REITs	TIPS
Acorns			✓									
Ally Invest				✓			✓	✓	✓			
Betterment/ Betterment Premium ¹			✓			✓	✓		✓			✓
Citi Wealth Builder ²	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Empower Personal Wealth		✓			✓		✓					✓
E-Trade Core Portfolios ³									✓			
Fidelity Go									✓			
Merrill Guided Investing						✓	✓	✓	✓			
Schwab Intelligent Portfolios/ Schwab Intelligent Portfolios Premium	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓
SigFig							✓		✓	✓	✓	✓
SoFi Wealth				✓		✓			✓			✓
Titan			✓	✓		✓	✓	✓	✓	✓	✓	✓
UBS Advice Advantage	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Vanguard Digital Advisor/ Vanguard Personal Advisor Services							✓			✓		
Wealthfront ⁴			✓	✓			✓		✓		✓	✓
Wells Fargo Intuitive Investor	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

✓ Has capability or attribute, blank if not
 ✗ Insufficient portfolio data disclosed

Source: Company surveys, Form ADV and 13-F filings, and Morningstar research. Data as of Dec. 31, 2024.

¹ Betterment offers commodities, high-yield bonds, and REITs only within its Flexible portfolios.

² Citi Wealth Builder, Empower, and E-Trade do not disclose sufficient portfolio data to determine their asset-class exposures.

³ E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

⁴ Wealthfront clients have access to a broader range of asset classes if they choose to customize.

Static vs. Dynamic

The typical robo-advisor default portfolio features a static stock/bond split matching the investor's risk tolerance. Portfolio allocations correspond to risk levels, with stock/bond weightings of 90%/10%, 60%/40%, or 40%/60%, for example. The portfolio managers run them as stand-alone funds and stick to the prescribed stock/bond splits. Investors must manage their portfolios' risk over time, either by opting into more-conservative options or by retaking the investment risk questionnaire. Some robo-advisors, such as Betterment and Fidelity Go, prompt investors to retake the questionnaire at least once per year. A few providers—notably Betterment and Vanguard Digital Advisor—also offer glide paths that shift clients from aggressive to conservative allocations as they approach goals, like target-date funds.

Portfolio Variety

A wide variety of investment options are available, depending on provider. Most robo-advisor portfolios use low-cost index-tracking ETFs, but a few offer actively managed open-end funds, individual stocks, and closed-end funds. Growth or value tilts and international stock and bond exposure varies. Some even offer limited helpings of cryptocurrencies. For taxable portfolios, providers lean on municipal-bond

funds to minimize taxes. In almost every case, investors in these accounts get municipal bonds regardless of their tax brackets, which may not be ideal for every situation. Some providers also offer tax-friendly rebalancing and automated tax-loss harvesting, which look to sell losing investments to offset capital gains. ESG has become a standard robo-advisor offering. iShares ETFs are the dominant ESG building block, particularly iShares ESG Aware MSCI USA ETF. On the other hand, Schwab Intelligent Portfolios and Fidelity Go do not offer ESG portfolios and have no plans to. ESG portfolios tend to be more expensive than non-thematic portfolios.

Exhibit 6 Overall Investment Approach and Options Available

	Actively Managed or Thematic Funds	Custom/Flexible Portfolios	Growth Tilt	Index Funds	Strategic Beta	Sustainable/ ESG	Value Tilt	Primary Fund Providers Used
Acorns				✓		✓		iShares
Ally Invest				✓		✓		iShares, Vanguard
Betterment/ Betterment Premium	✓	✓	✓	✓	✓	✓	✓	iShares, Vanguard, SPDR, Schwab
Citi Wealth Builder	✓		✗	✓	✗	✓	✗	✗
Empower Personal Wealth		✓	✗	✓		✓	✗	✗
E-Trade Core Portfolios ¹				✓				iShares, Vanguard, SPDR, J.P. Morgan
Fidelity Go				✓				Fidelity
Merrill Guided Investing				✓		✓		iShares, Vanguard, SPDR
Schwab Intelligent Portfolios/ Schwab Intelligent Portfolios Premium		✓		✓			✓	Schwab, Vanguard
SigFig				✓				iShares, Vanguard, Schwab
SoFi Wealth			✓	✓				SoFi, iShares, Vanguard
Titan	✓	✓	✓	✓	✓			iShares, Vanguard, ARK, Apollo, Carlyle
UBS Advice Advantage ²	✗	✗	✗	✗	✗	✗	✗	✗
Vanguard Digital Advisor/ Vanguard Personal Advisor Services	✓	✓		✓		✓		Vanguard
Wealthfront ³	✓	✓	✓	✓	✓	✓	✓	Vanguard, iShares, Schwab
Wells Fargo Intuitive Investor				✓	✓	✓		iShares, Goldman Sachs

✓ Portfolio

✗ Insufficient portfolio data disclosed

Source: Company surveys, Form ADV and 13-F filings, and Morningstar research. Data as of Dec. 31, 2024.

¹ E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

² UBS does not disclose sufficient portfolio data to determine its investment approach. E-Trade, Wells Fargo and Empower do not disclose information about their underlying fund holdings.

³ Wealthfront clients have access to a broader range of asset classes if they choose to customize.

The Cash Drag

Robo-advisor portfolios typically allocate up to 3% of assets to cash. A few, like Schwab Intelligent Portfolios and Ally Invest, have large cash allocations. Ally offers Cash-Enhanced portfolios, which have 30% cash stakes but no advisory fee, for its risk-averse customers who already have most of their assets at the bank. Schwab's hefty cash allocations are more problematic. The portfolios' 13% average cash stake is nearly twice that of the typical moderate allocation Morningstar Category fund's roughly 7% cash stake, and more than 4 times the 3% that most target-date funds hold. At least Schwab now links the cash yield to the Schwab Government Money Fund, which had a competitive 4.32% seven-day yield,

as of mid-December 2024. Schwab's big cash stakes buoy its portfolios during market declines, such as 2022's bear market, but more often drag on long-term results.

Financial-Planning Services

Most individuals who sign up for a robo-advisor get digital investment management consisting of a diversified portfolio made up of low-cost, passive mutual funds or ETFs. Nearly every robo-advisor offers a range of portfolios with different risk levels.

Automatic rebalancing is essential—without it, investors would have to manually adjust portfolio holdings to keep asset allocations in line with the original targets. Most robo-advisors buy and/or sell some underlying holdings to rebalance portfolios back when a major asset class drifts higher or lower than its original target by a certain amount, such as 5 percentage points.

Nice to Haves

Tax-loss harvesting, or selling securities to realize capital losses that can be used to offset realized gains, is also useful. To implement this strategy, robo-advisors designate more than one underlying holding that can be used for each asset class. If the program sells a holding to realize tax losses, it can replace it with a similar fund in the same asset class as long as it is not substantially identical to the sold holding. Most core ETFs used by robo-advisors tend to not fluctuate much in price, so they offer fewer tax-loss harvesting opportunities than do stocks. This feature can offer some additional tax savings, but it's not a necessity for a robo-advisor.

Most investors would probably appreciate account aggregation, or digitally linking to assets held outside the robo-advisor. By providing outside account information, customers allow programs to pull in updated values and asset allocations for all their accounts, not just those at the robo-advisor. This can help robo-advisors provide more accurate and holistic advice.

Important but Not Widespread

Most robo-advisors do not currently help investors figure out how to draw down assets during retirement. Their target clientele tends to be younger, but as more reach retirement age, this will become more important.

A few programs offer tools to aid investors looking for retirement spending advice. Vanguard Personal Advisor Services has a dynamic spending capability that helps guide clients toward prudent spending from their retirement portfolios. Vanguard Digital Advisor's calculators include rainy-day, Medicare match, and Social Security tools and emergency savings and healthcare estimators. Schwab Intelligent Portfolios also help investors determine how much they can afford to withdraw and schedule recurring withdrawals from taxable and tax-deferred accounts. The program incorporates required minimum distributions and taxes in its calculations.

Some robo-advisors bridge this gap by offering access to CFPs, often in their more-expensive service levels. Schwab Intelligent Portfolios Premium users get access to a dedicated CFP at no extra cost. SoFi Automated Investing offers CFP access free of charge to all of its customers regardless of tier.

Finally, some robo-advisors offer other bells and whistles, such as cash management, career coaching, and spending rebates. Price and portfolio construction are the most important differences among robo-advisors, but breadth of services also distinguishes the best.

Exhibit 7 Key Features and Benefits

	Aggregation of Outside Accounts	Automatic Rebalancing	Drawdown/Retirement Income Advice	Multiple Goal Planning	Tax Options		Cash Management or Savings Account
					Tax-Efficient Investments	Tax-Loss Harvesting	
Acorns		✓					
Ally Invest		✓		✓	✓		✓
Betterment/Betterment Premium	✓	✓	✓	✓	✓	✓	✓
Citi Wealth Builder		✓			✓ ⁴		✓
Empower Personal Wealth	✓	✓	✓	✓	✓	✓	✓
E-Trade Core Portfolios ¹		✓			✓	✓	✓
Fidelity Go		✓			✓		✓
Merrill Guided Investing	✓	✓	✓		✓		✓
Schwab Intelligent Portfolios/ Schwab Intelligent Portfolios Premium	✓ ²	✓	✓	✓ ²	✓ ³	✓ ³	✓
SigFig	✓	✓			✓	✓	
SoFi Wealth	✓	✓		✓	✓		✓
Titan	✓	✓			✓	✓	✓
UBS Advice Advantage	✓	✓	✓	✓		✓	✓
Vanguard Digital Advisor/ Vanguard Personal Advisor Services	✓	✓		✓	✓	✓	✓
Wealthfront	✓	✓	✓	✓	✓	✓	✓
Wells Fargo Intuitive Investor		✓		✓		✓	✓

Source: Company surveys, Form ADV Part II filings, and Morningstar research. Data as of Dec. 31, 2024.

¹ E-Trade Core Portfolios licenses certain services from Morningstar, including fund fact sheets and a risk-tolerance questionnaire.

² Account aggregation and multiple goal planning only available for Premium members.

³ Tax-loss harvesting only available for accounts of USD 50,000 and above.

⁴ Tax-efficient portfolios only available for premium accounts.

Do You Need a Premium Service?

Premium robo-advisory services can be convenient and useful for investors with more-complex portfolios and needs. But investors should think carefully before making the leap; they may not need them.

Consider a hypothetical example. Abigail is starting to invest by saving 15% of her annual salary of USD 53,000, about average for a 25-year-old in the US. She starts with USD 15,000 in a robo-advisor but likes the idea of speaking with a human advisor at least once a year. In her first year, Abigail pays about USD 60, not bad for an hour of an advisor's time. However, by the time she's 35, assuming conservative

asset growth and added premium fees, she will pay more than USD 500 for that benefit. If she doesn't use her premium service, she will have paid almost USD 3,000 for little benefit over that decade. If Abigail's financial situation gets more complex and she uses the added benefits, the service may make sense; however, for many who just need a check-in every few years, touching base with a human planner might be cheaper.

Conclusion

"Robo-advisor" has become a misnomer. Few digital-first advisory firms rely solely on computer algorithms—or robots—any more. The disruptors have evolved to look more like those they sought to disrupt or have been taken over or surpassed by them. Most digital advisors now offer some human counsel, and many diversified financial firms include sophisticated online guidance. They all continue to compete on costs and new features, which is good for users. A few remain pricey and opaque, though, and portfolio quality varies. Some say artificial intelligence will make client interfaces simpler and more efficient; none foresee using AI to generate recommendations, yet—the risks of hallucinations and personal data exposure are too great. There remains as much art as science in investing and financial planning, so while digital advisors have become welcome on-ramps for novice investors and viable options for the more seasoned, they have supplemented rather than supplanted traditional advisors. ■■■

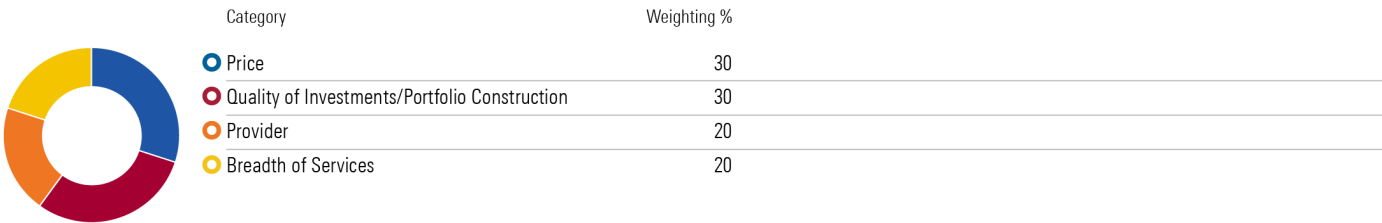
Appendix

Methodology

Our assessments draw on the Morningstar Medalist Rating for funds and other evaluations.

We scored robo-advisors on a five-point scale in four categories: total price (30% weighting); the process used to select investments, construct portfolios, and match portfolios with investors (30%); the platform provider (20%); and breadth of services (20%). We ranked the robo-advisors by a weighted average of these scores. Providers with opaque disclosures earned a Quality of Investments/Portfolio Construction score of 1 out of 5.

Exhibit 8 Morningstar's Robo-Advisor Assessment Criteria



Source: Morningstar. Data as of Dec. 31, 2024.

The key assumptions and questions of the four categories include:

Price (30%)

- Assumption:
 - The lower and more understandable the fee structure, the better.
- Questions:
 - What is the total annual cost (including underlying fund expense ratios) for an account with a USD 15,000 balance, assuming no market fluctuations, and how does that cost change with asset levels?
 - Aside from asset-based fees, how does the platform make money?
 - What role do fee waivers play?

Quality of Investments/Portfolio Construction (30%)

- ▶ Assumption:
 - ▶ An experienced team with strong resources selects investments and constructs portfolios that emphasize client results.
- ▶ Questions:
 - ▶ Who is in charge, and what are their qualifications?
 - ▶ Does the team select quality investments across a range of proven asset classes and assemble sensible portfolios?
 - ▶ How does the platform collect information on client risk tolerance and other factors, and how does that influence portfolio construction?
 - ▶ What drives portfolio changes?

Provider (20%)

- ▶ Assumption:
 - ▶ The organization behind the robo-advisor is thoughtful and long-term-focused and puts clients' interests first.
- ▶ Questions:
 - ▶ Are topnotch investment research leaders in charge?
 - ▶ Does the platform stand on its own, or is it part of the firm's broader offerings?
 - ▶ Are there potential conflicts between the firm's owners and its clients?
 - ▶ Have there been regulatory missteps or other red flags?

Breadth of Services (20%)

- ▶ Assumption:
 - ▶ A wide array of tools and services supports holistic financial planning for varied goals.
- ▶ Questions:
 - ▶ What is the breadth of investing and planning features available?
 - ▶ Does the program include key features, such as account aggregation, tax-loss harvesting, and planning for multiple goals?
 - ▶ Do tools and services consider investors' total assets and tax situation?
 - ▶ Do investors have access to humans, especially qualified financial professionals?

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