2022 Model Portfolio Landscape

Morningstar Manager Research
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Executive Summary

Model portfolios continue to gain traction. As of March 2022, approximately USD 349 billion was following model portfolios based on a combination of surveyed data from model providers under Morningstar analyst coverage and assets reported to Morningstar's models database. That is a 22%[1] increase since June 2021, despite a highly volatile market. These conservative estimates only account for assets where model providers maintain clear visibility. Model providers have also taken notice. As of May 2022, more than 2,400 models were reported to Morningstar. Since the model portfolio database was launched in 2019, nearly 2,000 individual model portfolios have been reported, and more than a third of those were new launches.

In this report, we review the growing popularity of model portfolios and touch on ways Morningstar has expanded its ratings to help advisors. We also examine the increasing breadth of model offerings and what types are gaining the most traction, while highlighting their fee advantage. Lastly, we touch on the various avenues for accessing and implementing models.

Key Takeaways

- Total assets following model portfolios grew to USD 349 billion as of March 2022, a 22% increase since June 30, 2021.
- BlackRock led all providers, with USD 50 billion of assets following its models, though Wilshire Associates' USD 46 billion and Capital Group's USD 41 billion were not far behind.
- Since Morningstar launched model portfolio coverage in March 2019, manager research analysts have ramped up coverage—more than doubling the total series under coverage in 2021's second half alone. As of May 31, 2022, more than 500 individual model portfolios have forward-looking Morningstar Analyst Ratings™.
- Three years after the launch of the Morningstar Analyst Ratings for models, Silver- and Bronze-rated series delivered positive alpha versus their respective category benchmarks, while Neutral-rated series did not, on average.

1 BlackRock's June 30, 2021, assets figure surveyed for Morningstar's 2021 Model Landscape Report was reported inaccurately. That figure, previously reported at USD 69.5 billion, has been corrected to accurately reflect USD 41.9 billion for the purposes of this report. This growth rate accounts for the corrected figure.

- Asset-allocation models are still the top option for model providers; over 70% of models reported to Morningstar land in one of the five equity allocation categories. However, asset-class-specific model portfolios and those with a focused objective, such as tax efficiency, are gaining traction.
    - Equity and fixed-income-specific model portfolios accounted for 31% of new model launches in 2021, up from 21% in 2019.
- Allocation model portfolios hold a notable fee advantage, costing 11 basis points less on average than the cheapest mutual fund offerings.
- Advisors can access model portfolios in many ways, from wirehouses to paper portfolios, depending on their circumstances. This report includes a broad overview on accessing models.

Introduction

What Is a Model Portfolio?

For this report, a "model portfolio" is an investment blueprint that advisors can follow and implement on behalf of their clients. We do not include home office models from firms like Merrill Lynch because usually only those firms' advisors can use them.

Model portfolios typically come in the form of asset-allocation and fund-selection recommendations for multi-asset portfolios. They frequently come in series that deliver multiple portfolios designed for a variety of investor risk tolerances. Models also can recommend security picks in specific asset classes, which can complete or complement an existing portfolio.

Asset-management firms and strategists offer models. Asset managers often leverage their own proprietary investment offerings to fill their models' fund lineups, even offering models that resemble their existing mutual funds. Strategists usually lack proprietary products, so they tap third-party strategies to build their model portfolios.

Model Portfolios Are Attracting Assets …

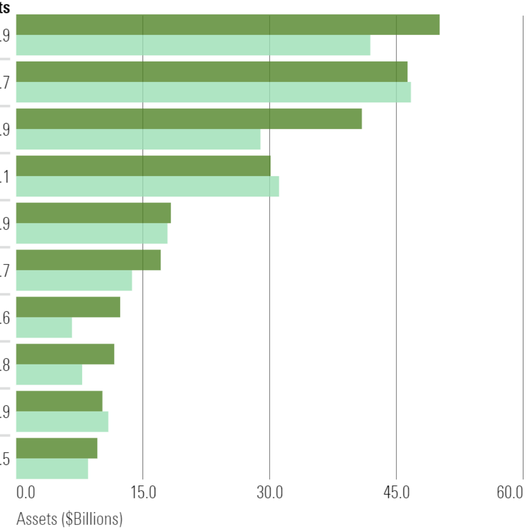
Model portfolios allow advisors to outsource some, or all, of their investment management responsibilities. This allows advisors to dedicate more time to other client needs and on growing their practices.

These characteristics have attracted advisors. Over the last nine months, assets following models have risen despite substantial market volatility. As of March 2022, model portfolios guided over USD 349 billion in assets, a 22% increase.

Exhibit 1 shows the breakdown of the top 10 providers by reported assets. These figures are based on a survey of nearly 40 leading model providers as well as data reported to Morningstar Direct.

Exhibit 1 Top 10 Model Providers by Assets (USD Bil)

Firm Name	March 31, 2022	June 30, 2021 Assets
*BlackRock	50.1	41.9
Wilshire	46.3	46.7
Capital Group	40.9	28.9
Vanguard	30.1	31.1
Russell Investments	18.3	17.9
WestEnd Advisors, LLC	17.1	13.7
**Morningstar	12.3	6.6
^Columbia Threadneedle	11.6	7.8
^^Brinker Capital	10.2	10.9
Richard Bernstein Advisors	9.6	8.5



Source: Surveyed Data. Data as of March 31, 2022.
*June 30, 2021, assets of USD 69.5 billion were reported in error by BlackRock for Morningstar's 2021 Model Portfolio Landscape. Those figures were corrected and now accurately reflect USD 41.9 billion.
**Morningstar Investment Management LLC and Morningstar Investment Services LLC.
^2021 surveyed assets as of March 31, 2021.
^^Assets from Morningstar Direct.

BlackRock leads the pack with USD 50.1 billion in assets across its U.S. model portfolios. Prior to publication, we were notified by BlackRock that the model assets it reported to us as of June 2021 were inaccurate. The corrected figure of USD 41.9 billion would have placed it second in our previous landscape report, trailing Wilshire Associates.

Wilshire' assets remained flat over the period, though it still held the second spot thanks to the USD 45 billion with Ameriprise Advisors—an exclusive relationship.

BlackRock's model lineup includes a range of target allocation series—15 in total. Its target allocation exchange-traded fund series holds most of the assets, followed by its tax-aware ETF series and multi-asset income offerings.

There was some movement among the top 10 providers. Capital Group's USD 12 billion increase in assets helped it jump past Vanguard to third on the list. New firms to make the list included Morningstar and Columbia Threadneedle. Morningstar's reported figure includes both Morningstar Investment Management LLC and Morningstar Investment Services LLC, whereas last year the reported figure focused solely on the Investment Management group. Columbia Threadneedle took over management of BMO's models in 2021 as the firm exited the U.S. market. The transfer aligned with Columbia's acquisition of BMO Financial Group's EMEA asset-management business.

Three of the top 10 providers are strategists. WestEnd Advisors leads this group with USD 17.1 billion in assets, a 25% increase over the trailing nine months. Brinker Capital and Richard Bernstein Advisors round out the trio; both held their top 10 positions from last year.

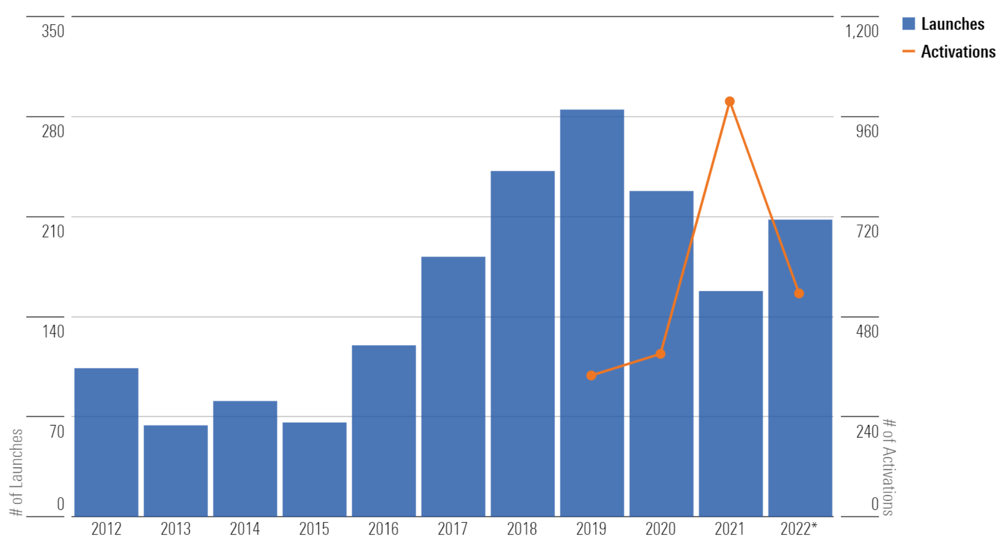
Tracking the total assets following model portfolios can be an arduous task. Looking at Morningstar's database, it is seen that not all providers report the entirety of their models, making a total estimate of a firm's assets difficult. Additionally, asset managers and strategists struggle to fully understand the reach of their model portfolios given the various avenues from which an advisor can access them, from third-party platforms to paper models. Thus, the reported figures are conservative estimates of the assets. For this report, we have both surveyed model providers under Morningstar analyst coverage and leveraged the reported assets in Morningstar Direct.

The total assets documented in this report are a conservative estimate for the total assets tracking model portfolios. Given our use of both surveyed and reported data, the assets will not directly reflect those depicted in Morningstar Direct.

… and the Number of Offerings Is Growing

Exhibit 2 shows the number of model portfolios launched and activated over the past decade since Morningstar's models database was established. Launches are based on a model's inception date, while activations are based on the date a reported model is added to Morningstar's database.

Exhibit 2 Total Model Portfolio Launches and Activations by Year



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.
*Annualized figure.

Model portfolio launches were on a tear in the mid-to-late 2010s, posting four consecutive years when growth in absolute models outpaced the year prior. Over the last two years, launches slowed, potentially driven by large model players having fully entered the fold. However, Morningstar's large push to activate models into the database over late 2020 and 2021 (roughly 1,000 models were activated that year) might also contribute to this perceived slowdown. That said, 50 models have already launched through the first quarter of this year.

Morningstar’s Ratings and Efficacy

Morningstar's Top Picks

The Morningstar Analyst Rating is a forward-looking, qualitative rating that Morningstar’s manager research analysts assign based on their assessment of a strategy’s investment merits. The ratings range from Gold, Silver, Bronze, Neutral, and Negative. The highest ratings go to strategies that analysts conclude will outperform their Morningstar Category benchmarks over a full market cycle on a risk-adjusted basis net of fees. Neutral- and Negative-rated strategies are those that analysts expect to underperform.

Morningstar manager research analysts began assigning Morningstar Analyst Ratings for separate accounts that represented models in March 2019. In 2021, we expanded the eligible universe to include hypothetical models to better reflect advisors’ opportunity sets and help them assess their options. As the number of model portfolio offerings has expanded, so has Morningstar’s coverage. Since June 30, 2021, Morningstar manager research analysts picked up coverage of over 50 new model series, bringing the total number of model portfolios under coverage to over 500.

Advisors and individuals can use the Analyst Rating as a starting point for their due diligence efforts when navigating models.

Exhibit 3 shows the Morningstar Analyst Ratings for model series earning Morningstar’s highest and second-highest ratings of Gold and Silver. It also highlights if and how the Morningstar Analyst Ratings and underlying People, Process, and Parent Pillar ratings have changed since May 2021.

Exhibit 3 Morningstar's Highest-Rated Model Portfolio Series

Model Portfolio Series	Morningstar Analyst Rating	Pillar Rating: People	Process	Parent
BlackRock Long-Horizon ETF	Gold **	Above Average	Above Average	Above Average
BlackRock Target Allocation ETF	Gold	Above Average	High	Above Average
Vanguard Core	Gold	Above Average	Above Average	High
Vanguard Tax-Efficient	Gold	Above Average	Above Average	High
Alger Mid Cap Focus	Silver	Above Average	Above Average	Average
Alger Small Cap Focus	Silver	Above Average	Above Average	Average
American Funds Growth	Silver	Above Average	Above Average	High
American Funds Growth & Income	Silver	Above Average	Above Average	High
American Funds Retirement Income Series	Silver	Above Average	Above Average	High
American Funds Tax Aware Growth and Income	Silver	Above Average	Above Average	High
BlackRock Target Allocation ESG	Silver **	Above Average	Above Average	Above Average
BlackRock Target Allocation Tax-Aware ETF	Silver	Above Average	Above Average	Above Average
Dimensional Core Wealth	Silver	Above Average	Average	High
Fidelity Target Allocation Index-Focused	Silver	Above Average	Average	Above Average
Hotchkis & Wiley Value Opportunities	Silver	Above Average	Above Average	Above Average
Schwab A	Silver ↑	Above Average	Average	Above Average
State Street Strategic Asset Allocation	Silver ↑	Above Average	Average	Above Average ↑
Vanguard CRSP	Silver	Above Average	Above Average	High
Vanguard Russell	Silver	Above Average	Above Average	High
Vanguard S&P	Silver	Above Average	Above Average	High
American Funds Tax Aware Preservation and Income	Silver / Bronze *	Above Average	Above Average	High
Dimensional Sustainable	Silver / Bronze *	Above Average	Above Average / Average	High
American Funds Preservation and Income	Silver / Neutral *	Above Average / Average	Above Average / Average	High

↑ = Upgrade ↓ = Downgrade

Source: Morningstar Direct. Analyst Ratings as of May 31, 2022.
*Model portfolio series holds a split rating across the portfolios.
**Morningstar analysts rate the separate account offering only.

Four series earn a Morningstar Analyst Rating of Gold: BlackRock Long-Horizon ETF, BlackRock Target Allocation ETF, Vanguard Core, and Vanguard Tax-Efficient series.

Both of BlackRock's Gold-rated series benefit from a dedicated model portfolio team, strong underlying ETFs, and research-driven processes. BlackRock Long-Horizon ETF focuses on the team's longer-term views (typically those with greater than a one-year time horizon) that inform its strategic asset-allocation decisions. The Target Allocation ETF series uses those as a starting point and features the team's deliberate and thoughtful tactical views to take advantage of shorter-term opportunities.

The Vanguard Core series also offers topnotch, highly diversified underlying index-based funds. Its combination of simplicity and low costs should prove hard to beat over the long term. The Vanguard Tax Efficient Series offers similar benefits as its sibling but emphasizes aftertax returns, hence its use of municipal-bond funds in the bond portfolio.

Sixteen series earn a Morningstar Analyst Rating of Silver. The American Funds' Growth & Income and Tax Aware Growth & Income series feature skilled underlying active managers and implement a thoughtful objective-based approach. The Fidelity Target Allocation Index-Focused series and State Street Strategic Asset Allocation series also earn strong marks. The Fidelity models offer a solid portfolioconstruction process that uses low-cost index funds. The State Street series benefits from its sensible team-based approach supported by seasoned managers and a deep analyst bench. The firm's Parent rating was upgraded to Above Average from Average in June 2021, which boosted its Analyst Rating to Silver from Bronze.

For an exhaustive list of Morningstar's analyst-rated model portfolio series, see the Appendix. Detailed written analyses can be found in select Morningstar products like Morningstar Direct.

How Have Our Model Picks Performed?

We started assigning Analyst Ratings to model portfolios in March 2019. At the end of April 2022, 43 model portfolios spanning seven Morningstar Categories had at least a three-year track record with a Morningstar Analyst Rating. It is a small sample size and a short track record, but the early results are promising.

Our initial coverage focused on separate accounts that were representative of model portfolios, which we view as the manager's "golden copy" of the model. In 2021, we expanded our coverage to include hypothetical models as well.

Exhibit 4 shows the model series under coverage as of May 2019, their Analyst Ratings at the time, and the number of models in each series.

Exhibit 4 Morningstar-Rated Model Portfolio Series: May 2019

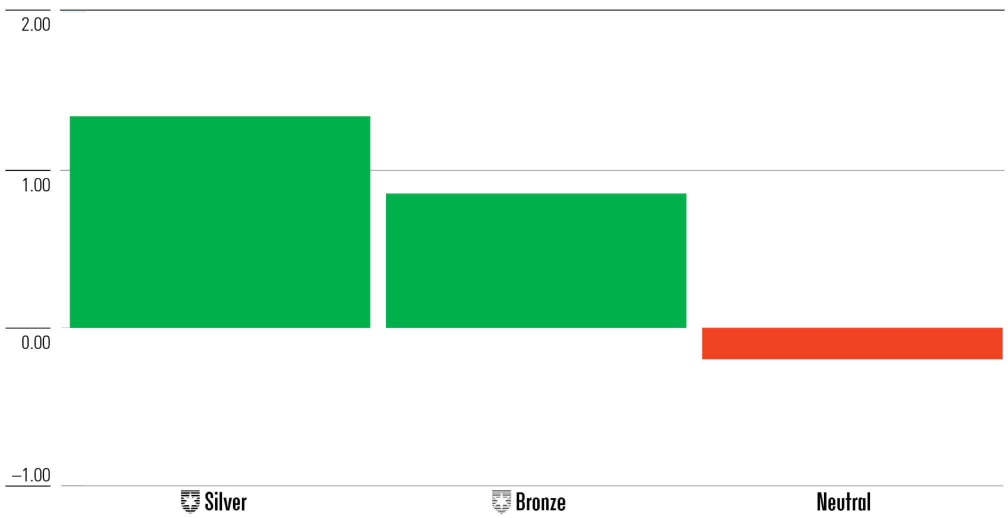
Model Series	Analyst Rating May 1, 2019	# Models
BlackRock Target Allocation ETF	Silver	11
American Funds Growth & Income	Silver	3
Fidelity Target Allocation*	Bronze	10
T. Rowe Price Active	Bronze	7
Invesco Cornerstone Total Beta	Neutral	7
Invesco Pinnacle Hybrid Plus Multi-Manager	Neutral	5

Source: Morningstar Direct.
*Includes I and Z share classes.

We use the capital asset pricing model to evaluate an investment's performance versus its Morningstar Category benchmark. Strategies that outperform using this methodology will have positive alpha compared with their category benchmark. Alpha is the excess return not explained by the strategy's beta, or systematic risk, compared with the benchmark.

Exhibit 5 shows the average alpha versus the category benchmark for each of our Analyst Ratings for model portfolios.

Exhibit 5 Morningstar Analyst Ratings: Alpha vs. Morningstar Category Index



Source: Morningstar Direct, Author's Calculations. Data as of April 30, 2022.

The Morningstar Analyst Rating has done a good job of sorting models based on our conviction that they could outperform their category benchmarks thus far. On average, Silver-rated models outperformed Bronze-rated models and Neutral-rated models had slightly negative alpha versus their category benchmarks.

Adding Stars to Advisors' Due-Diligence Toolkit

The Analyst Rating isn't the only tool we have launched to help advisors sort through the fast-growing model universe. The Morningstar Rating for models, otherwise known as the "star rating," was launched in the fall of 2021.

The star rating for models follows the same approach used to assign star ratings to mutual funds and separate accounts. It uses trailing three-, five-, and 10-year risk-adjusted returns and distributes ratings on a bell curve. The best-performing 10% of funds in each category will get 5 stars, the next 22.5% 4 stars, the middle 35% 3 stars, the next 22.5% 2 stars, and the bottom 10% 1 star.

There are additional criteria a model needs to meet to receive a star rating. Because models are not regulated with the same scrutiny as mutual funds, we also require:

- The provider must be compliant with the Global Investment Performance Standards or have a minimum of USD 10 billion in regulated vehicles, like mutual funds or ETFs. This ensures the providers meet minimum professional performance-reporting standards or manage material sums of assets while complying with regulations.

- Models must report at least quarterly holdings data for the ratings periods. This should allow advisors to conduct holdings-based analysis to help validate and understand models' reported performance and ensure the accuracy of Morningstar Category assignments.
- Models must have a minimum of 18 months of postactivation returns. The use of preactivation performance in star rating calculations will be limited to 18 months. A model, therefore, won't be eligible for a three-year star rating until 18 months after it is reported to Morningstar, regardless of the length of its preactivation track record.

Providers can submit historical performance records for their models that predate their appearance in databases like Morningstar's that were more recently established. These requirements should help discourage back-fill bias in these reported return streams, a phenomenon where providers may cherry-pick their returns.

Models that meet these additional criteria should give advisors additional confidence in the quality of data reported. As of March 2022, just over 600 models, roughly 25% of models in Morningstar's database, received a star rating.

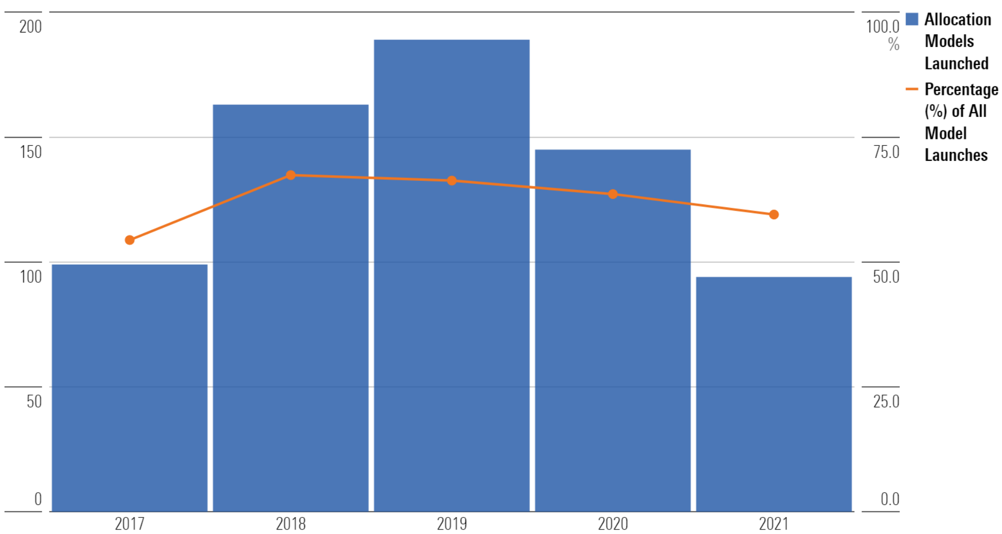
What's Gaining Interest?

Asset-Allocation Models Remain Dominant

Model portfolios tend to use a mix of mutual funds and exchange-traded funds to offer exposure to stocks and bonds. Such offerings align with demand from advisors and their clients.

As of March 2022, asset-allocation model portfolios falling in Morningstar's five equity allocation categories accounted for over 70% of the total models in Morningstar's database. Exhibit 6 shows the yearly launches of allocation model portfolios and their percentage share of total launches. After three years of steady expansion, averaging 37% growth per year from 2017 to 2019, there has been a slight slowdown, though they still dominate.

Exhibit 6 Allocation Model Portfolio Launches Dominate



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.
Data based on current Morningstar categorization.

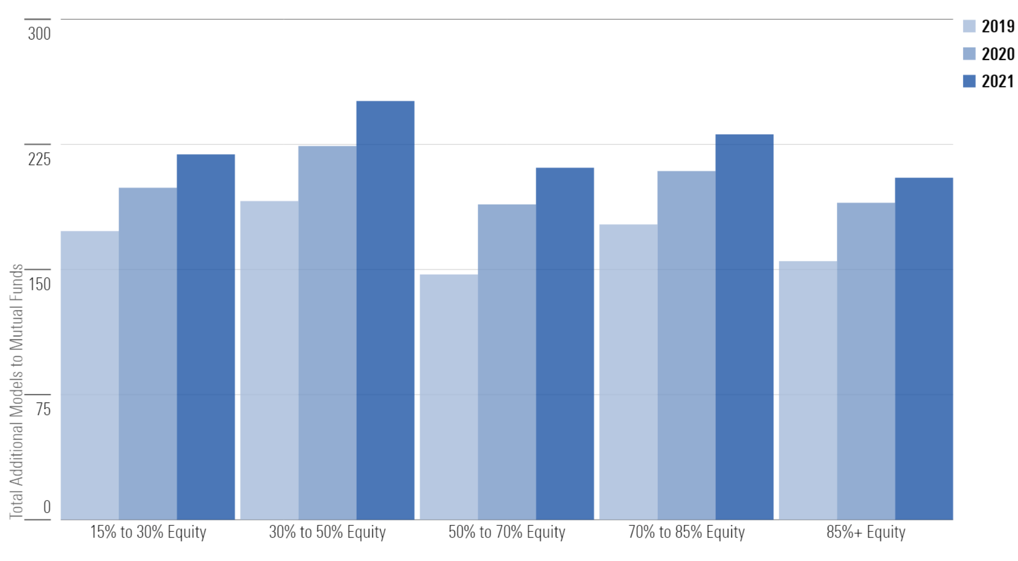
Asset-allocation models continue to dominate for a few reasons. One is the tendency of these offerings to come in a series format, delivering a variety of portfolios across different stock/bond mixes; some series include five to more than 10 mixes to meet a wide array of investor risk profiles. For example, Vanguard's four allocation series (Core, CRSP, S&P, and Russell) each include nine multi-asset portfolios with stock/bond exposures that vary by 10 percentage points.

More broadly, providers have lower barriers to entry when launching models than other more highly regulated investment offerings. For instance, models lack the regulatory guardrails that come with launching a mutual fund. They do not have to register with the U.S. Securities and Exchange Commission and aren't subject to SEC regulation.

That said, on June 15, 2022, the SEC issued a request for comments on the extent to which model providers should be regulated similar to investment advisors. In general, regulation drives increased transparency for advisors utilizing models for their end clients, which should be beneficial.

The rapid growth in allocation models underpins the widening gap between the total number of models and mutual funds across the five equity allocation categories. Exhibit 7 shows the difference over the last three years. Currently, the number of model portfolios outpaces mutual funds by over 220 on average across the categories.

Exhibit 7 Model Portfolios to Mutual Funds by Equity Allocation Category



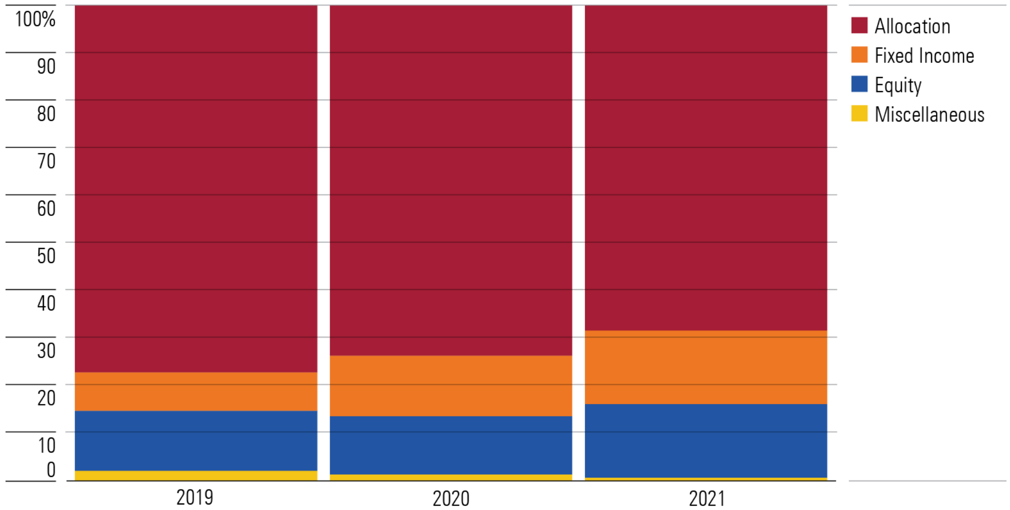
Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Momentum Is Building Behind Asset-Class-Specific Models

Despite asset-allocation models flooding the space, advisors have a plethora of other options to choose from when trying to meet the client needs. These options are becoming more robust. For instance, asset-class-specific models offering all equity or fixed-income exposures have grown.

Exhibit 8 shows the percentage of total new model portfolio launches falling outside Morningstar's traditional allocation categories, broken down by broad asset class: equity, fixed income, allocation, and miscellaneous for more-esoteric model offerings. Over the last three years, equity- and fixed-income-specific models have risen to 31% of new launches from 21%.

Exhibit 8 Equity and Fixed-Income Model Launches Are Rising



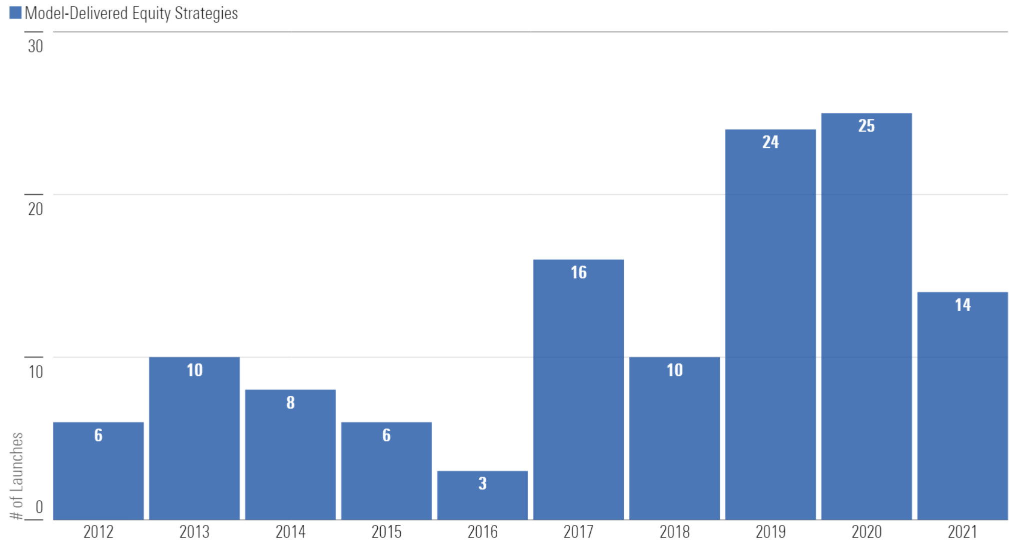
Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.
Data based on current Morningstar Global Broad Category Group.

These offerings may still be part of target-risk series. For instance, all Dimensional series offer a 0% stocks/100% bonds portfolio, which falls into a Morningstar fixed-income category. They can also act as stand-alone offerings. Fidelity offers fixed-income models like Fidelity Core Bond and Fidelity Core Plus Bond to act as core or complementary fixed-income holdings for advisors to utilize in a client's portfolio.

Model-Delivered Equity Portfolios

Asset managers are increasingly emphasizing this newer offering, with some expecting considerable uptake in the next 12 to 24 months. Exhibit 9 shows the number of actively managed equity models launched by year.

Exhibit 9 Model-Delivered Equity Strategy Launches



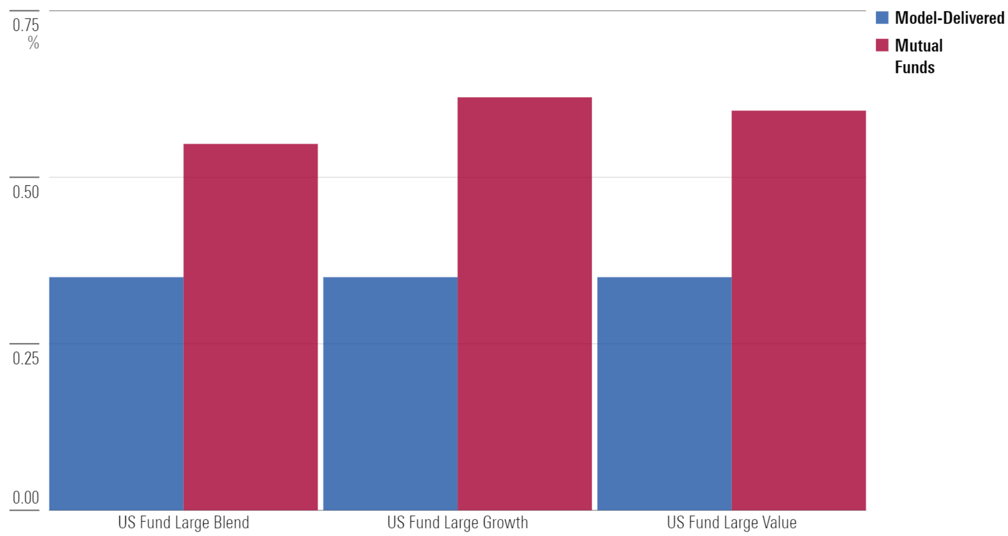
Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Active equity models recommend individual stocks selected by the managers. As such, they are most comparable to single-strategy separately managed accounts or mutual funds. Unlike SMAs or mutual funds, however, external platforms implement and trade model portfolios rather than asset managers, which allows firms to charge less for their models. This unbundling results in lower fees that advisors can pass along to end investors.

Exhibit 10 compares the average fee for model-delivered equity strategies (based on surveyed data from firms with model-delivery SMAs) compared with "unbundled"[2] actively managed mutual funds. These funds have the lowest built-in costs. Across Morningstar's three large-cap equity categories, the model-delivered offerings are 20 to 27 basis points cheaper.

2 These share classes aren't typically available to advisors; they are mostly for defined-contribution plans.

Exhibit 10 Model-Delivered Equity Strategies Have an Edge on Fees



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Model-delivered equity strategies are poised for growth. Their lower cost provides one advantage, and they deliver benefits like direct indexing offerings that have seen substantial growth. Both allow advisors to tailor specific managed allocations to clients, with better tax management as the biggest benefit of greater personalization. Other client considerations, including environmental, social, and governance approaches, stock-specific preferences, and factor tilts, can also be layered into these strategies.

Model-Delivered Equity Portfolios Require Additional Due-Diligence Considerations

Morningstar has expanded analyst coverage in this area over the last year, adding six model-delivered equity strategies that closely resemble versions offered as mutual funds. Exhibit 11 shows the equity models covered to date and their open-end fund counterparts.

Exhibit 11 Morningstar Medalist-Rated Model-Delivered Equity Strategies

Name	Morningstar Analyst Rating	Investment Type	Ticker	Morningstar Category	3-Yr Gross Return %	Return Date	Inception Date
Alger Mid Cap Focus Model	Silver	Model	—	Mid-Cap Growth	19.71	4/30/22	12/28/18
Alger Mid Cap Focus Z	Silver	Open-End Fund	AFOZX	Mid-Cap Growth	—	4/30/22	6/14/19
Alger Small Cap Focus Model	Silver	Model	—	Small Growth	-0.31	4/30/22	4/1/15
Alger Small Cap Focus Z	Silver	Open-End Fund	AGOZX	Small Growth	-0.89	4/30/22	12/29/10
ARK Disruptive Innovation Model Portfolio	Negative	Model	—	Large Growth	11.64	4/30/22	10/2/17
ARK Innovation ETF	Negative	Exchange-Traded Fund	ARKK	Mid-Cap Growth	1.79	4/30/22	10/30/14
Glenmede Quant US Large Cap Core Model	Neutral	Model	—	Large Blend	10.28	4/30/22	12/31/15
Glenmede Quant US Large Cap Core	Neutral	Open-End Fund	GTLOX	Large Blend	10.59	4/30/22	2/27/04
Glenmede Quant US Large Cap Growth Model	Neutral	Model	—	Large Growth	14.94	4/30/22	12/31/15
Glenmede Quant US Large Cap Growth Model	Neutral	Open-End Fund	GTLLX	Large Growth	14.87	4/30/22	2/27/04
Hotchkis & Wiley Large Cap Value Model	Bronze	Model	—	Large Value	10.81	4/30/22	7/1/80
Hotchkis & Wiley Large Cap Value Z	Bronze	Open-End Fund	HWLZX	Large Value	—	4/30/22	9/30/19
Hotchkis & Wiley Large Cap Value I	Neutral	Open-End Fund	HWLIX	Large Value	10.21	4/30/22	6/24/87
Hotchkis & Wiley Value Opps Model	Silver	Model	—	Large Value	12.59	4/30/22	11/1/02
Hotchkis & Wiley Value Opps Z	Silver	Open-End Fund	HWAZX	Large Value	—	4/30/22	9/30/19
Hotchkis & Wiley Value Opps I	Bronze	Open-End Fund	HWAIX	Large Value	12.50	4/30/22	12/31/02

Source: Morningstar Direct. Analyst Ratings as of May 31, 2022.

The Morningstar Analyst Ratings of the model-delivered strategies fall in line with the cheapest share classes of the mutual fund sibling, though there are some notable discrepancies. Hotchkis & Wiley introduced the cheapest Z share class across its mutual funds in 2019, but we also listed the pricier Institutional shares, which rank a notch below, because they have extensive track records. Alger, meanwhile, introduced the model-delivered version of Amy Zhang's Alger Mid Cap Focus strategy, an outgrowth of her success on Alger Small Cap Focus, before it launched the first mutual fund share class.

Stacking model-delivered versions against their sibling offering does not produce apples-to-apples comparisons. For example, the returns between models and similarly managed mutual funds or ETFs can diverge. ARK's model portfolio outpaced the ETF by nearly 10 percentage points annualized over the three-year period ended April 2022. The difference can be attributed to a few factors like the model's positions in Grayscale Bitcoin Trust (BTC) GBTC and Grayscale Ethereum Trust (ETH) ETHE, which the ETF does not hold, or differences in individual position sizing.

Capacity is another important consideration, especially for strategies with larger asset bases. It is difficult for asset managers to track overall liquidity and trading efficiency without clear visibility into assets traded elsewhere. Some asset managers have noted that the infrastructure for tracking and monitoring these assets traded elsewhere needs improvement. The complexity when closing strategies to new and existing investors also increases significantly as asset managers enter new platforms and distribution channels.

Advisors should also consider the manager's investable universe. Those fishing in less liquid, niche asset classes can have reduced trading efficiency as trading gets scattered across vehicles and external partners. In certain instances, asset managers could end up directly competing with clients when moving in and out of positions. While there are compliance guardrails in place to ensure that asset managers do not give preferential treatment to certain vehicles, there can certainly be instances where two channels tracking the same strategy could be competing. The difference in timing and trading efficiency gets magnified in less liquid markets.

Model Providers Are Keeping a Close Eye on Taxes

Tax efficiency has also become a key area of focus and differentiation for model portfolios. With model portfolios providing individual ownership of the underlying holdings, a characteristic not available through asset-allocation mutual funds, advisors can make trades to manage a client's tax hit. However, the approach can be difficult to implement efficiently and at scale.

That said, improving tax implications can also be done at the product level. Model providers offer portfolios that leverage tax-efficient underlying holdings to damp an investor's tax drag. Roughly 16% of the models in Morningstar's database focus on tax-efficiency.

Currently, Morningstar manager research analysts cover 13 series. They are shown in Exhibit 12.

Exhibit 12 Morningstar's Rated Tax-Aware Model Portfolios

Model Portfolio Series	Morningstar Analyst Rating	Pillar Rating		
		People	Process	Parent
Vanguard Tax-Efficient	Gold	Above Average	Above Average	High
American Funds Tax Aware Growth and Income	Silver	Above Average	Above Average	High
BlackRock Target Allocation Tax-Aware ETF	Silver	Above Average	Above Average	Above Average
American Funds Tax Aware Preservation and Income	Silver / Bronze *	Above Average	Above Average	High
BlackRock Global Allocation Tax-Aware	Bronze	Above Average	Average	Above Average
Dimensional Tax-Sensitive	Bronze	Above Average	Average	High
American Century Tax-Efficient	Neutral	Average	Average	Average
JPMorgan Tax Aware	Neutral	Average	Average	Above Average
Madison Mosiac Tax-Sensitive	Neutral	Average	Average	Average
Neuberger Berman Sustainable Tax-Efficient	Neutral	Average	Average	Above Average
New Frontier ETF Global (Tax)	Neutral	Average	Average	Above Average
Nuveen Tax Exempt	Neutral	Average	Average	Average
Russell Tax-Managed	Neutral	Average	Average	Average

Source: Morningstar Direct. Analyst Ratings as of May 31, 2022.
*Model portfolio series holds a split rating across the portfolios.

The Tax Toolkit

The most common tool in tax-efficient model portfolio lineups are municipal-bond funds. Taxable bonds' yields are treated as ordinary income; federal income tax rates currently reach up to 37%, with state and local taxes on top of that. Meanwhile, most (but not all) municipal bonds offer yields that are completely tax-free. Many tax-managed models start by simply swapping taxable- for municipal-bond funds in their standard tax-agnostic models. Some series, such as the Vanguard Tax-Efficient series, use 100% municipal-bond funds. Others, like the Neuberger Berman Sustainable Tax-Efficient model series, still own some taxable offerings in areas such as high yield and emerging markets.

Model portfolios also often use ETFs to reduce taxes. Broad, market-cap-weighted, passive ETFs tend to have low turnover rates, which organically lower the number of taxable events. Second, the ETF structure makes them more tax-efficient than mutual funds. When mutual funds sell securities, they can create taxable capital gains that flow through to fund owners even when they haven't recently bought or sold shares in the fund. On the other hand, ETFs use an in-kind creation-and-redemption mechanism, meaning taxes usually flow only to those buying and selling shares of the ETF rather than to all owners. As a result, ETFs tend to be more tax-efficient than even tax-efficient mutual funds. For example, the passive index mutual funds in the large-blend category—a fairly tax-efficient group—have a median five-year tax-cost ratio of 1.23, while the comparable large-blend ETFs in the corresponding category have a median five-year tax-cost ratio of just 0.54.

A less common tax-reduction strategy is to reduce model portfolios' rebalancing frequency. Whether firms rebalance their models on a set calendar date or when allocations shift by a set amount, the rebalancing creates a taxable event for shareholders. Therefore, some firms, such as BlackRock, rebalance their tax-aware models less often than their other models, reducing the number of taxable events.

Some firms tilt their portfolios away from dividend-paying stocks, whose payouts, like bond coupons, are taxable. While some dividends are qualified dividends, taxed at a 15% rate, others are taxed like ordinary income (and thus called "ordinary dividends") at a higher rate. American Century employs this approach. The series' balanced portfolio holds a 12-month asset-weighted yield of 1.25% as of March 2022, compared with 1.84% for Vanguard's tax-efficient 60% equity/40% bond portfolio, which simply mirrors the market.

We cover one model portfolio, the Russell Tax-Managed series, whose equity mutual fund managers harvest losses to offset taxable gains, thereby lowering tax bills. The Russell Tax-Managed U.S. Large Cap and Tax-Managed U.S. Mid & Small Cap funds have five-year tax-cost ratios of 0.22 and 0.09, respectively.

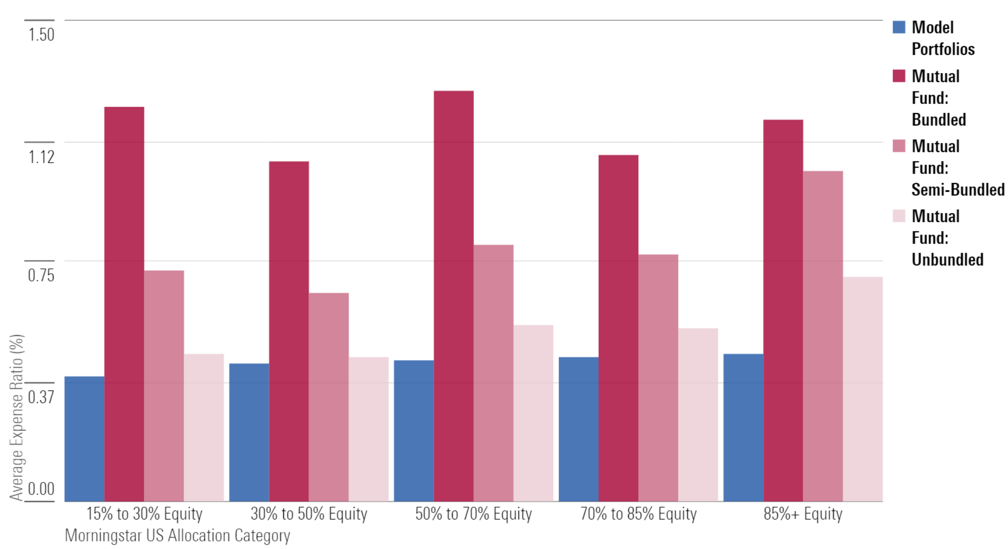
A recent development we have seen is the use of separate accounts within model portfolios. For instance, Russell's Tax-Aware Unified Series mixes mutual funds and separate accounts. Fidelity recently launched two model portfolios with SMAs, one of them tax-aware. The most important tax-shaving feature of separate accounts is that owners are only subject to the purchases and sales within their own accounts, not those of the firm's other clients. So, asset managers can perform personalized tax-loss harvesting. Separate accounts, however, can have trouble building diversified municipal-bond portfolios for some clients. Municipal bonds tend to be denominated in USD 5,000 increments. So, an investor would need at least USD 250,000 to own just 50 muni bonds in a separate account, an unusually low number that would elevate liquidity and default risk compared with a more broadly diversified muni portfolio. So, tax-efficient models built with separate accounts are really only for those with millions of dollars to invest.

Models Maintain Their Fee Advantage

Low costs remain an appealing characteristic of model portfolios versus similar mutual funds. To measure model portfolios' fee advantage, we calculated the asset-weighted fee for each allocation model that reported its most recent portfolio between December 2021 and March 2022. We did not account for the strategist fee, which some models may layer on as an additional cost. For mutual funds, we broke down each allocation category by Morningstar's "Clean Share – Service Fee Arrangement" data point. This data point designates each fund share class into one of the following groups:

- Bundled: The mutual fund share class includes load sharing or payments to third parties for distribution fees.
- Semibundled: The mutual fund share class does not pay third-party distribution fees or engage in load sharing. However, the "semibundled" share class may pay these third parties for subtransfer agent services or engage in revenue sharing.
- Unbundled: The mutual fund share class does not pay third parties, either through share class expenses or revenue-sharing arrangements.

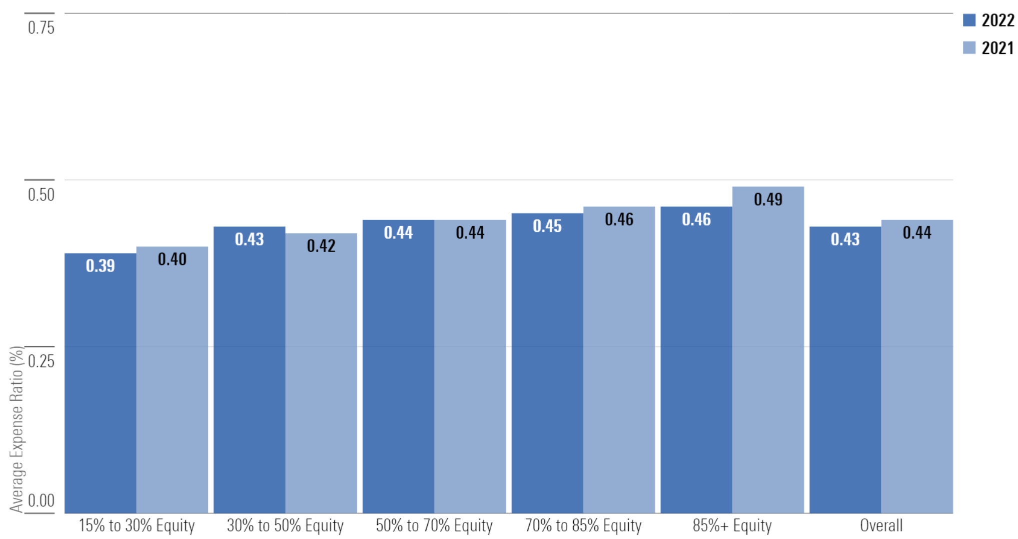
Exhibit 13 Models Hold a Fee Advantage



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

As shown in Exhibit 13, model portfolios continue to hold a significant fee advantage against their mutual fund peers within each equity allocation category. This advantage holds true regardless of the fee arrangements. Even when compared against unbundled mutual funds' shares that have the lowest built-in expenses, an average model portfolio still costs 2 to 24 basis points less. It is worth noting, though, that the fee edge for models looks less remarkable than that of last year, when an average model portfolio was at least 8 basis points cheaper than an average mutual fund. While mutual funds have lowered their average fees for “unbundled” shares by 3 to 7 basis points since our previous review, the average model portfolio fees have mostly stayed flat. See Exhibit 14 below.

Exhibit 14 Average Asset-Weighted Model Portfolio Fee by Equity Allocation Category

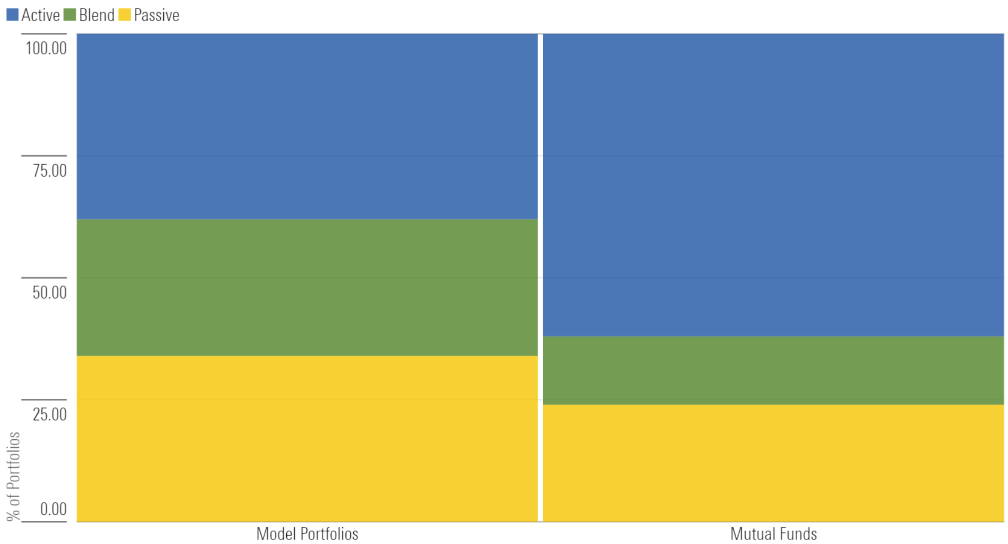


Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Although models’ fee advantage on average looks muted compared with last year's, this is not because model providers have been complacent. Models with inception dates in the past year (April 2021 – March 2022) had an average asset-weighted fee of 0.39, which is 4 basis points lower than last year’s average.

Models’ heavier use of low-cost index funds compared with mutual funds helps drive their fee advantage. Exhibit 15 illustrates the breakdown of strategies in the allocation—50% to 70% equity Morningstar Category. “Active” strategies have less than 25% exposure to index funds, “passive” ones feature greater than 75% exposure to index funds, and “blend” funds refer to strategies that have an index fund allocation between those two thresholds. We compare the portfolios to fund-of-fund mutual funds in the same category. To note, Morningstar considers all allocation portfolios to be actively managed, and these tags specifically describe the attributes of their underlying holdings.

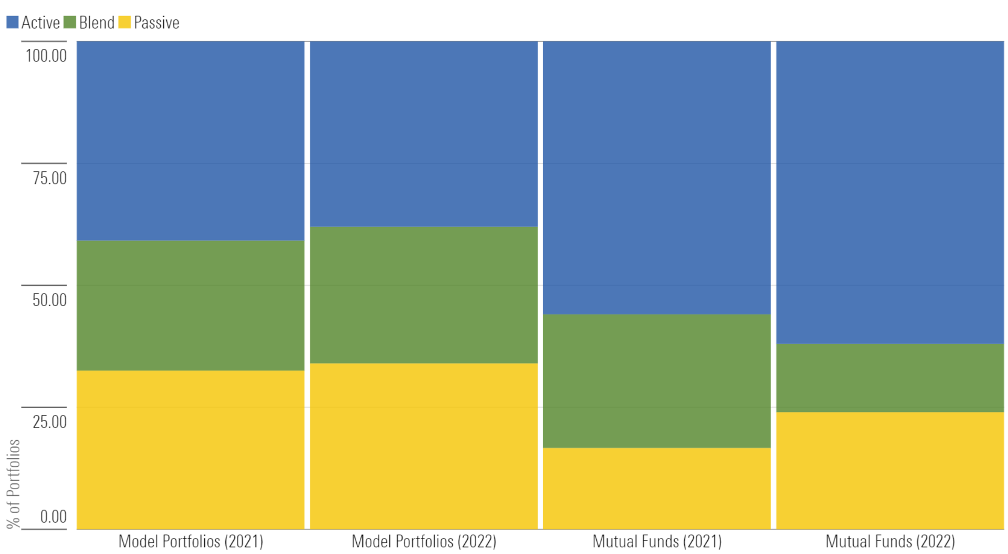
Exhibit 15 A Propensity for Passives



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Roughly an even number of models in the allocation—50% to 70% equity category fall in the active and passive buckets, respectively, but an overwhelming 62% of mutual funds in the category prefer active funds to fill their underlying fund lineups. This trend looks more pronounced when compared year-over-year:

Exhibit 16 Underlying Exposures Are Changing

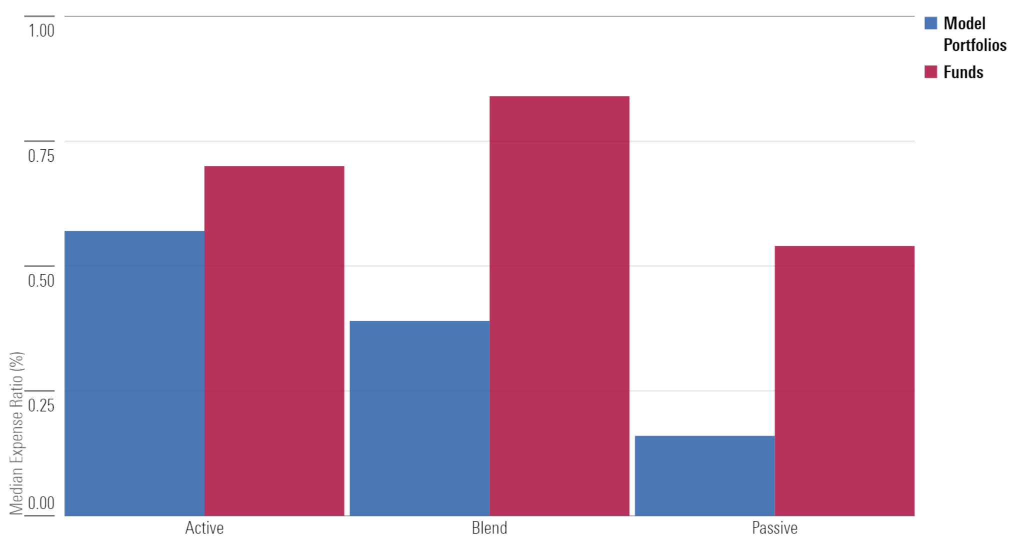


Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Compared with models, which have collectively inched toward more passive or blend approaches to their underlying funds, mutual funds have made a move away from blend and into either ends of the active/passive spectrum. The increase in passive funds of funds helps somewhat explain the smaller fee gap between models and mutual funds from certain angles, while mutual funds' general strong preference for active underlying funds—which tend to be more expensive—leads to a continued fee advantage for model portfolios.

The cost for models remains significantly lower than mutual funds, even within similar underlying fund characteristics. The median expense ratio for models favoring active underlying funds is 13 basis points lower than similar mutual funds. For blend and passive-focused portfolio buckets, the models cost less than half and less than a third of the cost for comparable mutual funds, respectively.

Exhibit 17 Cheaper Any Way You Slice It



Source: Morningstar Direct, Author's Calculations. Data as of March 31, 2022.

Access & Implementation

As models proliferate and grow more popular, it is important to understand how advisors can access them. There are a wide variety of ways to access model portfolios, from wirehouses to paper models. We have detailed a broad overview of the ecosystem, but the availability of these avenues can depend on each advisor's own circumstance.

Navigating the Changing Model Portfolio Ecosystem

The unbundled structure of model portfolios provides considerable pricing advantages over the legacy mutual fund vehicle. While this helps promote competition and lower costs, it also broadens the considerations that advisors must make when navigating the landscape. Specifically, advisors need to determine the services that fit their business models.

Turnkey asset-management platforms (or programs), otherwise known as TAMPs, are key cogs in the model portfolio value chain. Yet the term has become a catch-all, from separately managed accounts to modular financial technology software to full-service platforms and broker/dealers. Exhibit 18 highlights some of the major channels that offer model portfolios and relevant examples within each bucket.

Exhibit 18 Model Portfolio Availability by Channel

Wirehouses	Broker/Dealers	Independent Technology Platforms	Model Marketplaces	Paper Portfolios
Merrill Lynch	Edward Jones	Morningstar Advisor Wealth Platform	Morningstar Model Marketplace	American Funds
Morgan Stanley	LPL	Envestnet	Orion	BlackRock
UBS	Ameriprise	AssetMark	T.D. Ameritrade	WisdomTree

Source: Author Created.

This is not meant to be an apples-to-apples comparison within or across categories. Each provider attempts to differentiate itself with its own services and offerings, and most have different levels of service depending on advisor preferences. LPL, for example, allows advisors to fully outsource investment management on one end, while allowing those interested in retaining full discretion to do so on the other. Still, this guideline is meant to provide a broad overview of the options available for advisors looking to add model portfolios to their toolkits.

Thinking along four dimensions—implementation, customization, lineup, and cost—can help advisors navigate this emerging space.

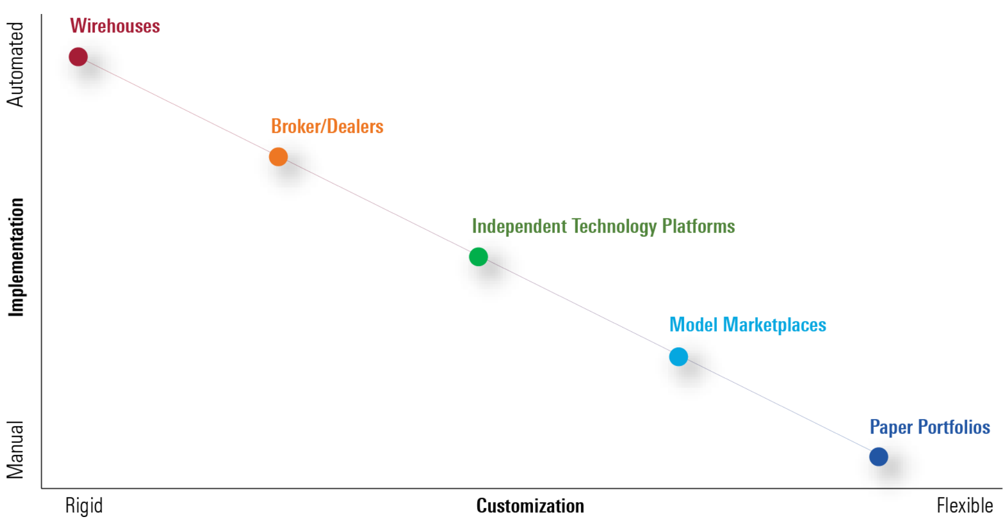
The Trade-Offs of Implementation and Customization

Model portfolios require enrollment, trading, rebalancing, and ongoing monitoring; these activities can be broadly defined as *implementation*. Yet, depending on how advisors access model portfolios, there are varying degrees of implementation assistance available.

Some platforms offer seamless, automated implementation to advisors, which frees up time and reduces hassle. Yet to qualify for this fully automated experience, advisors must usually stick with off-the-shelf model portfolios. This can hamper one of the core benefits of model portfolios: greater customization. It also makes managing the tax implications of transitioning assets into model portfolios more difficult. For instance, shifting into model portfolios can require wholesale redemptions of clients' existing investments, which can produce significant tax consequences. Centralized implementation is built for scale, which means managing and trading thousands of client accounts, not individualized, tailored portfolios.

Exhibit 19 displays the five categories on an implementation basis, from manual to automated, and customization scale, from rigid to flexible, highlighting the trade-offs.

Exhibit 19 Implementation vs. Customization



Source: Author Created.

Advisors working at large wirehouses and broker/dealers receive top-down guidance, for the most part. Those services handle the implementation, and all the requisite rebalancing and trading it entails, on behalf of their advisors and clients using model portfolios. This allows them to keep costs down by aggregating trading but also reduces potential compliance headaches that come from advisors straying from recommendations. For instance, advisors relying on central implementation services would have a difficult time swapping out one of the underlying positions in a recommended model portfolio. Indeed, many advisors at wirehouses and broker/dealers elect to maintain full discretion over their clients' portfolios because they have framed their investment management capabilities as a feature[3].

Independent technology platforms fit in the middle. Most offer a menu of model portfolios with requisite screening and analysis tools and will also handle implementation. This largely means following the selected model portfolio off the shelf, limiting customization. Some of these platforms, however, also offer services that allow advisors to modify and change model portfolios based on client needs or preferences. Yet any change increases the implementation burden, as the advisors would need to handle the rebalancing and monitoring.

The offerings in the model marketplaces bucket, to include financial technology software, operate as their name suggests. They typically offer a marketplace of model portfolio options but largely eschew implementation. This allows advisors to build more-customized portfolios tailored to their preferences or client needs. Model marketplaces offered by custodians, however, tend to assist with implementation if client assets are kept in custody there. There are also financial technology solutions focusing on certain parts of the advisor workflow that tack onto a model marketplace and then assist advisors with implementation through alerts and rebalancing recommendations.

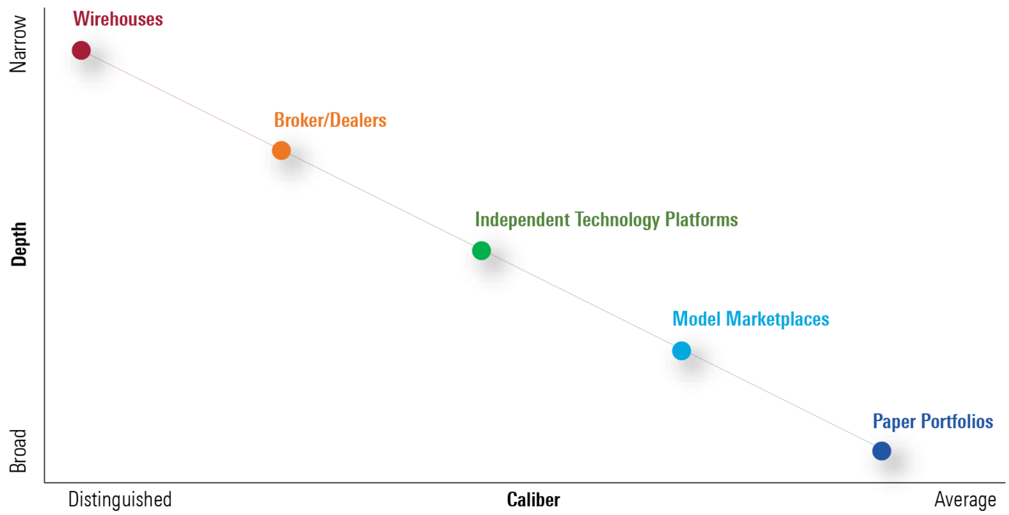
Paper portfolios are the most flexible but also the most manual for advisors. Many asset managers and model providers post their model portfolios to their website, with some allowing advisors to sign up for alerts and mailing lists whenever changes are recommended. Because the advisors retain full discretion, they have complete control over the portfolio and its inner workings. That said, they will need to rely on either account aggregation software or manual tracking to handle rebalancing and trading for client accounts.

Consider the Depth and Quality of Model Portfolio Lineups

The five categories have different offerings, both in terms of breadth and quality. Exhibit 20 scales the five categories based on the lineups offered, highlighting the trade-offs between lineup depth and caliber.

3 The Cerulli Report: US Asset Allocation Model Portfolios 2021, P. 39

Exhibit 20 Depth vs. Caliber



Source: Author Created.

Based on conversations with model providers, wirehouses and broker/dealers tend to have more compact, curated model portfolio menus. Their home offices tend to create and disseminate their own proprietary model portfolios for use by internal advisors. They also have their own due diligence processes that third-party model providers must pass to comply with risk categorization and supervision standards. These two factors explain the relatively limited shelf space. Independent technology platforms again fit squarely in the middle, aiming to offer advisors their own due-diligence capabilities, including risk-tolerance questionnaires and screening tools to sift through the universe, though certainly some have their own due-diligence arms as well. Model marketplaces have mostly been additional offerings of financial technology providers and, as such, do not have the same due-diligence standards as their fully integrated counterparts. That creates an easier path for model providers to join. Finally, paper portfolios distributed over the internet have limited barriers to entry—anyone can post a model portfolio and recommended rebalances to those who sign up for alerts.

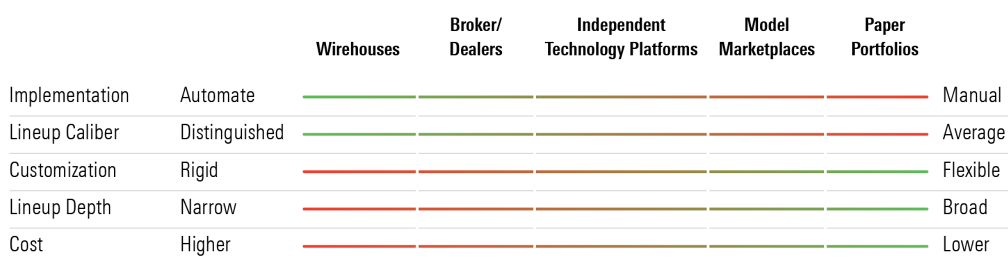
Advisors should also consider the quality of offerings. Those interested in more-focused options, such as ESG, retirement income, and tax efficiency, should review the model portfolio lineups offered to ensure the options meet client demands. Advisors should also question how a model portfolio made it onto a given platform, as it might not always come down purely to investment merit. There can, for example, be underlying revenue-sharing agreements between the platform and model provider, while some platforms will default to the largest names. Advisors should also consider whether a platform is "open" architecture. Those selecting "closed" platforms, which exclusively offer proprietary model portfolios, should determine whether the platform’s investment philosophy aligns with their own.

It is important to review the model provider as well. Advisors should seek to determine whether model providers are merely using model portfolios to steer assets into proprietary strategies. Asset managers with sensible lineups that play to their strengths, like American Funds and Vanguard, should earn higher marks than those seemingly chasing the latest fads to gather assets.

Getting What You Pay For

Finally, costs are an important consideration for advisors and are directly driven by all the elements discussed. Advisors that cede implementation and other parts of their workflows to centralized services will pay a greater cost than those that go it alone through model marketplaces or paper portfolios. (These are costs that would detract from the fee advantage noted previously). By selecting providers with curated, compact model portfolio lineups, advisors are outsourcing parts of the due-diligence process, which incurs additional cost. Exhibit 21 ties the analysis together, placing the five distribution channel categories on the implementation, customization, lineup offering, and cost spectrums.

Exhibit 21 Cost Comparison



Source: Author Created.

Advisors can expect to pay costs commensurate with the breadth of features used and the degree of outsourcing. Model portfolios help push advisors to confront the offsetting dynamic between time and cost savings. Those outsourcing most elements of professional investment management will pay more but have more freedom to build client relationships and scale their practice by pursuing new clients. The opposite is true for advisors that exercise greater control over investment decisions.

Yet most practices have varying degrees of outsourcing depending on client preferences. Indeed, the use of model portfolios does not force advisors into binary decisions. For some clients, outsourcing the full investment management piece is sensible, while others prefer fully customized portfolios. Most of the platforms discussed recognize this reality and offer a broad menu of services. As such, advisors select services that align with the strengths of their practice and optimal time and cost savings balance.

Appendix: Model Portfolio Scorecards

To help investors navigate the model portfolio landscape, we have assigned more-granular attributes to the models that have Morningstar Analyst Ratings.

Portfolio Goals

Target-Risk
These portfolios seek to deliver a consistent level of risk by sticking close to long-term strategic equity and bond allocations. They are usually offered in a series that spans conservative, moderate, and aggressive investor risk tolerances. The allocation to equities typically stays within 10 percentage points of its strategic allocation.

Tax-Aware
These portfolios are similar to target-risk portfolios, but their investment strategy prioritizes aftertax returns. They typically substitute tax-advantaged municipal bonds for taxable bonds in the fixed-income sleeve and favor companies with qualified dividends on the equity side.

Income-Oriented
These portfolios prioritize asset classes with higher levels of income than target-risk or tax-aware portfolios. This typically leads to larger allocations to dividend-paying equities, high-yield bonds, and more-niche markets like REITS, emerging-markets debt, master limited partnerships, and preferred securities.

Equity
These portfolios are model-delivered equity strategies. Unlike diversified model portfolios, which mostly comprise ETFs and mutual funds, active equity models recommend individual stocks selected by the managers. As such, they are most comparable to single-strategy separately managed accounts.

Fixed Income
These portfolios hold a single asset focus delivering fixed-income exposure through a mix of primarily actively managed mutual funds and passive exchange-traded funds.

Portfolio

- Passive: More than 75% of the portfolio's assets reside in passively managed, index-based underlying funds.
- Active: More than 75% of the portfolio's assets reside in actively managed underlying funds.
- Blend: The portfolio holds a more balanced mix of active and passive underlying funds.

Additional Tags

- # of Portfolios: The total number of individual portfolios included in the series. Multiple share class offerings for a single portfolio are counted as one.
- Average # of Underlying Funds: The average number of underlying holdings within each portfolio across the series based on the most recent portfolio data available.
- Average % Medalist Exposure: This indicates the percentage of underlying strategies that receive a Morningstar Analyst Rating or Morningstar Quantitative Rating of Gold, Silver, or Bronze. These ratings indicate the conviction level in the fund's ability to outperform its category benchmark over the long term. For passive funds, they indicate the conviction level in the fund to outperform the average peer in the category.
- Average Asset-Weighted Fee: This shows the average asset-weighted fee across each portfolio in the series. The calculation uses the most recent underlying holdings, weights, and corresponding prospectus adjusted expense ratio.
- Average Star Rating: The average Morningstar star rating of each portfolio in the series as of March 31, 2022. Model portfolio eligibility for a star rating can be found in Appendix 3 of Morningstar's methodology document titled, "The Morningstar RatingTM for Funds."

Exhibit 22 Morningstar Model Portfolio Series Scorecard: Target-Risk

Model Portfolio Series	Morningstar Analyst Rating	Portfolio	# of Portfolios	Average # of Underlying Funds	Average % Medalist Exposure	Average Asset-Weighted Fee %	Average Star Rating
BlackRock Long-Horizon ETF	Gold ^	Passive	8	5	96.2	0.04	3.9
BlackRock Target Allocation ETF	Gold	Passive	11	14	97.9	0.14	-
Vanguard Core	Gold	Passive	11	4	98.0	0.04	3.1
American Funds Growth & Income	Silver	Active	3	8	100.0	0.41	4.0
American Funds Growth	Silver	Active	3	7	100.0	0.50	3.3
BlackRock Target Allocation ESG	Silver ^	Passive	4	9	97.3	0.15	3.8
Dimensional Core Wealth	Silver	Active	6	7	60.0	0.20	-
Fidelity Target Allocation Index-Focused	Silver	Passive	9	6	97.9	0.06	3.4
Schwab A	Silver	Passive	12	8	96.0	0.04	-
State Street Strategic Asset Allocation	Silver	Passive	6	13	90.2	0.10	-
Vanguard CRSP	Silver	Passive	11	9	98.0	0.05	3.1
Vanguard Russell	Silver	Passive	11	9	98.0	0.06	3.2
Vanguard S&P	Silver	Passive	11	8	98.0	0.05	3.1
Dimensional Sustainable	Silver / Bronze *	Active	6	3	45.5	0.23	—
BlackRock Global Allocation	Bronze	Blend	5	22	91.9	0.26	—
BlackRock Target Allocation Long Horizon	Bronze	Active	5	14	88.0	0.58	—
BlackRock Target Allocation with Alternatives	Bronze	Blend	5	21	88.7	0.41	—
Dimensional Core Plus	Bronze	Active	6	10	60.9	0.23	—
Fidelity Target Allocation Blend	Bronze	Blend	9	16	89.6	0.38	—
Goldman Sachs ETF	Bronze	Passive	8	10	58.6	0.15	—
Goldman Sachs Multi-Manager ETF	Bronze	Passive	8	12	95.1	0.12	3.4
JHancock Multimanager Active/Passive	Bronze	Blend	5	17	77.8	0.54	—
Nuveen ESG Target Risk	Bronze	Passive	5	7	66.9	0.23	—
Schwab AB	Bronze	Passive	12	14	95.1	0.08	—
T. Rowe Price Active	Bronze	Active	8	8	79.8	0.46	—
American Funds Preservation and Income	Silver / Neutral *	Active	2	5	32.7	0.35	4.5
AllianceBernstein Dynamic Multi-Asset Growth	Neutral	Blend	2	14	80.4	0.46	1.0
Avantis Target-Risk	Neutral	Active	5	7	48.5	0.18	—
Calvert Responsible Target-Risk	Neutral	Blend	5	14	42.9	0.54	—
Columbia Active Risk Allocation	Neutral	Blend	3	12	43.6	0.52	2.0
Fidelity Target Allocation	Neutral	Blend	9	16	89.5	0.34	4.0
Franklin Templeton Target-Risk	Neutral	Active	7	12	36.6	0.47	—
Franklin Templeton Core Multi-Manager	Neutral	Active	8	15	69.0	0.42	3.0
Goldman Sachs Hybrid	Neutral	Blend	3	13	30.5	0.34	—
Goldman Sachs Multi-Manager Mutual Fund	Neutral	Active	8	13	75.7	0.71	3.0
Invesco Cornerstone Total Beta	Neutral	Blend	7	6	29.8	0.17	3.6
Invesco Pinnacle Hybrid Plus Multi-Manager	Neutral	Blend	5	14	37.7	0.45	2.0
Janus Henderson Global Adaptive	Neutral	Blend	3	18	60.0	0.14	2.0
Janus Henderson Global Allocation	Neutral	Active	3	19	19.0	0.65	—
JPMorgan Multi-Asset Tactical	Neutral	Active	6	15	94.4	0.59	—

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.

*Model series holds a split rating across portfolios.

^Morningstar analysts rate the separate account offering only.

^^Holds individual stocks.

Exhibit 22 Morningstar Model Portfolio Series Scorecard: Target-Risk (Continued)

Model Portfolio Series	Morningstar Analyst Rating	Portfolio	# of Portfolios	Average # of Underlying Funds	Average % Medalist Exposure	Average Asset-Weighted Fee %	Average Star Rating
iMGP Target Risk	Neutral	Active	5	20	75.3	0.89	2.0
Madison Mosiac	Neutral	Blend	7	19	79.1	0.39	3.5
Madison Mosiac ETF	Neutral	Passive	7	17	78.3	0.18	3.0
Manning & Napier MEP	Neutral ^	Passive	8	15	76.2	0.06	3.4
Manning & Napier MEP ESG	Neutral ^	Passive	2	13	86.4	0.11	—
Neuberger Berman Sustainable	Neutral	Active	3	12	78.3	n/a	—
New Frontier ETF Global	Neutral	Passive	6	23	89.4	0.12	—
PGIM Strategiest	Neutral	Blend	5	19	81.9	0.33	3.4
Putnam Target-Risk	Neutral	Blend	6	8	49.2	0.37	—
RiverFront Global Allocation	Neutral	Passive	2	38^^	68.2	0.23	4.0
RiverFront Moderate Growth and Income	Neutral	Passive	2	28^^	79.7	0.11	3.5
Russell Core Model	Neutral	Active	7	8	0.0	0.74	1.4
Russell Hybrid Model	Neutral	Blend	7	11	40.9	0.43	3.1
State Street Active Asset Allocation	Neutral	Blend	6	15	72.6	0.28	—
Wilshire Premier Allocation	Neutral	Active	6	10	20.4	0.85	—
WisdomTree Select (incl.PIMCO)	Neutral	Blend	3	14	68.0	0.39	1.7

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.
*Model series holds a split rating across portfolios.
^Morningstar analysts rate the separate account offering only.
^^Holds individual stocks.

Exhibit 23 Morningstar Model Portfolio Series Scorecard: Tax-Aware

Model Portfolio Series	Morningstar Analyst Rating	Portfolio	# of Portfolios	Average # of Underlying Funds	Average % Medalist Exposure	Average Asset-Weighted Fee %	Average Star Rating
Vanguard Tax-Efficient	Gold	Passive	9	6	98.0	0.05	2.8
American Funds Tax Aware Growth and Income	Silver	Active	3	7	100.0	0.35	4.0
BlackRock Target Allocation Tax-Aware ETF	Silver	Passive	10	14	97.9	0.13	—
American Funds Tax Aware Preservation and Income	Silver / Bronze *	Active	3	5	90.2	0.28	4.0
BlackRock Global Allocation Tax-Aware	Bronze	Blend	4	23	90.9	0.29	—
Dimensional Tax-Sensitive	Bronze	Active	6	3	50.0	0.23	—
American Century Tax-Efficient	Neutral	Active	5	12	36.4	0.30	—
JPMorgan Tax Aware	Neutral	Active	4	15	93.0	0.50	—
Madison Mosiac Tax-Sensitive	Neutral	Blend	3	16	91.1	0.16	4.0
Neuberger Berman Sustainable Tax-Efficient	Neutral	Active	3	11	50.1	n/a	—
New Frontier ETF Global (Tax)	Neutral	Passive	6	23	86.1	0.13	—
Nuveen Tax Exempt	Neutral	Active	3	4	22.1	0.54	—
Russell Tax-Managed	Neutral	Active	7	6	0.0	0.77	3.3

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.
*Model series holds a split rating across portfolios.

Exhibit 24 Morningstar Model Portfolio Scorecard: Income-Oriented

Model Portfolio Series	Morningstar Analyst Rating	Portfolio	# of Portfolios	Average # of Underlying Funds	Average % Medalist Exposure	Average Asset-Weighted Fee %	Average Star Rating
American Funds Retirement Income Series	Silver	Active	3	10	100.0	0.38	3.3
PIMCO Retirement Income Series	Bronze	Blend	3	10	95.0	0.45	2.3
T. Rowe Price Income Series	Bronze	Active	2	9	72.9	0.50	—
Vanguard Income Models	Bronze	Passive	11	6	98.0	0.07	2.2
AB Dynamic MA Income Series	Neutral	Blend	4	13	67.4	0.41	1.7
Fidelity Multi-Asset Income	Neutral	Blend	1	8	62.0	0.63	—
JHancock Multi Asset Income	Neutral	Active	1	14	66.8	0.58	—
New Frontier Multi-Asset Income Model Series	Neutral	Passive	3	19	61.6	0.27	—
Nuveen Multi-Asset Income Series	Neutral	Active	2	9	36.2	0.60	—
NYLIM Multi-Asset Income Series	Neutral	Active	3	14	36.8	0.65	—
PGIM Income Builder Model	Neutral	Blend	1	16	73.4	0.47	1.0

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.

Exhibit 25 Morningstar Model Portfolio Scorecard: Equity

Model Portfolio Series	Morningstar Analyst Rating	# of Holdings	Star Rating
Alger Mid Cap Focus	Silver	49	5.0
Alger Small Cap Focus	Silver	48	2.0
Hotchkis & Wiley Value Opportunities	Silver	59	—
Hotchkis & Wiley Large Value	Bronze	61	—
Glenmede Quant US Large Core	Neutral	97	2.0
Glenmede Quant US Large Growth	Neutral	79	3.0
ARK Disruptive Innovation Strategy	Negative	32	—

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.

Exhibit 26 Morningstar Model Portfolio Scorecard: Fixed Income

Model Portfolio Series	Morningstar Analyst Rating	Portfolio	# of Portfolios	Average # of Underlying Funds	Average % Medalist Exposure	Average Asset-Weighted Fee %	Average Star Rating
Fidelity Bond Income	Bronze	Active	1	8	83.0	0.50	—
Fidelity Core Bond	Bronze	Blend	1	6	73.0	0.34	—
Fidelity Core Plus Bond	Bronze	Blend	1	6	73.0	0.41	—
Fidelity Dynamic Bond	Bronze	Blend	1	6	76.0	0.38	—
PIMCO Fixed-Income Series	Bronze	Active	3	6	98.3	0.57	—
Voya Fixed-Income Mutual Fund	Neutral	Active	3	4	55.0	0.53	—

Source: Morningstar Direct. Author's calculations use most recent reported portfolio as of April 30, 2022. Star ratings as of April 30, 2022. Analyst Ratings as of May 31, 2022.

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