



## Streamlining Your Practice with Model Portfolios

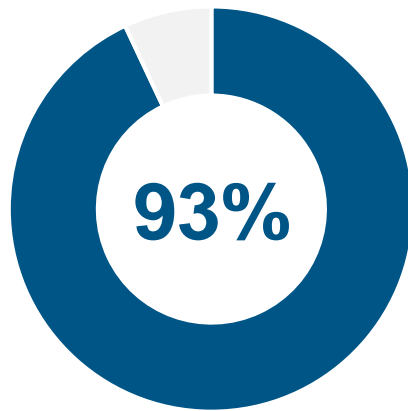
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# Advisor adoption

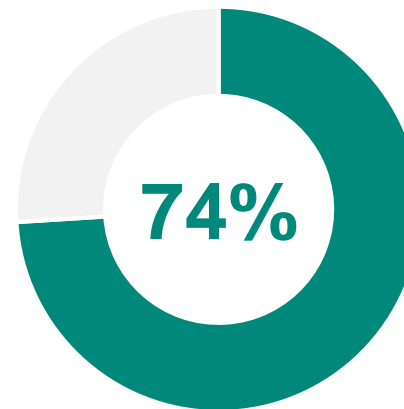
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## Greater satisfaction



Happy with decision to use model portfolios<sup>1</sup>

## Increased adoption

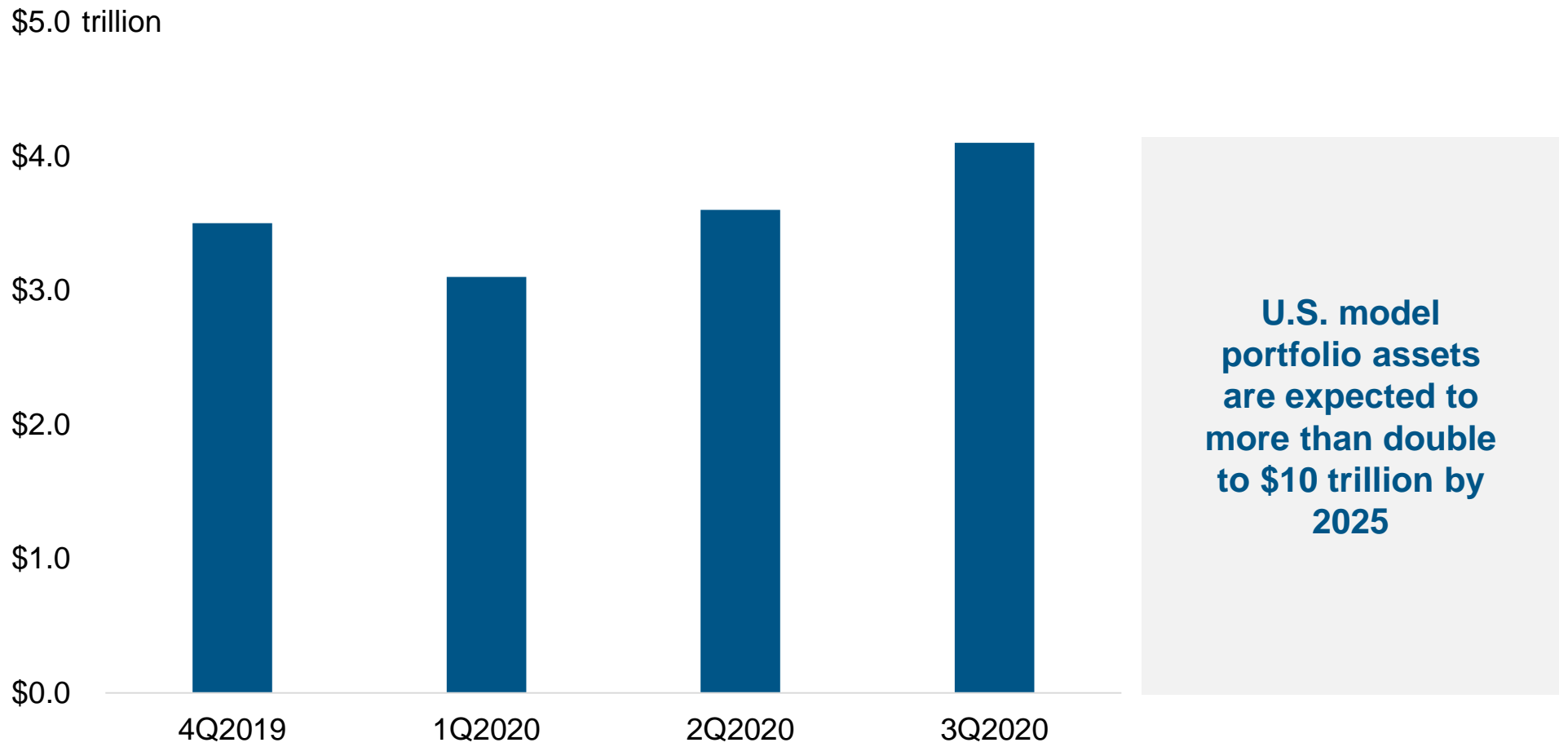


Advisors intend to increase usage of model portfolios in next 12 months<sup>2</sup>

Source: <sup>1</sup>Distribution in a Model Driven Age, Broadridge 2019; <sup>2</sup>BlackRock Investments, LLC. **Survey Methodology Overview:** In response to the COVID-19 induced volatility, during the week of 5/4/2020, BlackRock collected responses to a 15-question survey about wealth outsourcing (SMA & Models usage) experience and intentions from approximately 305 financial advisors across more than 10 independent and wire channel firms. The results above are a snapshot of the data collected as of 5/11/2020.

# Advisor adoption

Estimated assets in U.S. model portfolios



As of December 2020  
Source: Broadridge Financial Solutions  
Refer to Appendix for additional investment strategy and risk information

# Agenda

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- Evolution of advice
- Models landscape
- Benefits of model portfolios
- Portfolio construction challenges
- Implementing models into client portfolios



## Evolution of advice

## Evolution of advice

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Traditional advice model

**Security selection**  
**Asset allocation**  
Market timing

## Evolution of advice

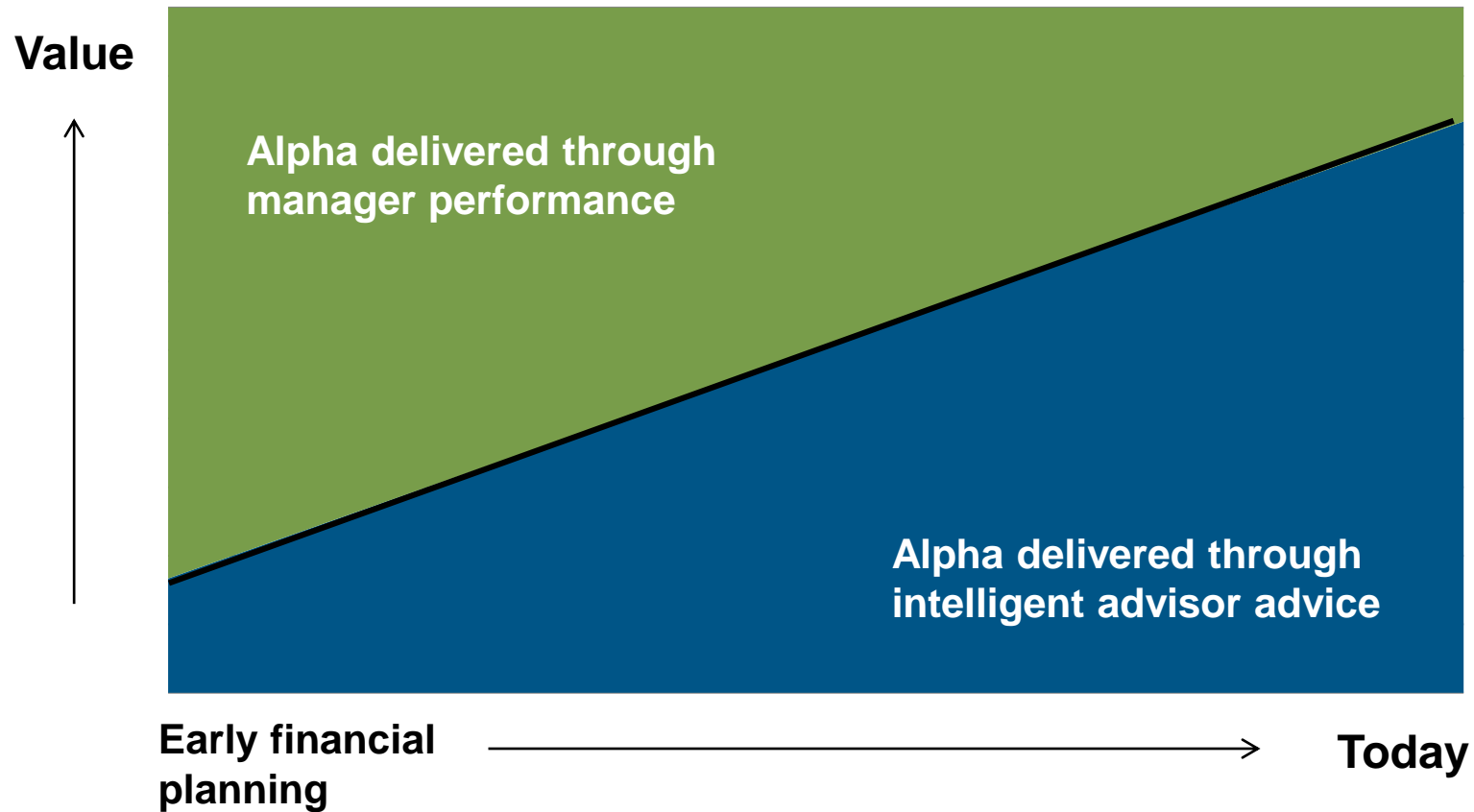
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Advisors now required to provide a larger suite of services to clients



# Evolution of advice

The advisor business model is changing



For Illustrative Purposes Only



## Evolution of advice

Estimated value of financial advice per year

|   | Morningstar       | Vanguard              | Investnet             |
|---|-------------------|-----------------------|-----------------------|
| Financial planning advice/Dynamic withdrawal strategies | 0.70%             |                       | 0.50%                 |
| Asset class selection/Allocation and product selection  | 0.67%             |                       | 0.28%                 |
| Investment selection (Lower cost)                       |                   | 0.45%                 | 0.82%                 |
| Systematic rebalancing                                  |                   | 0.35%                 | 0.44%                 |
| Tax-efficient withdrawal ordering                       | 0.23%             | Up to 0.70%           |                       |
| Asset location  | 0.23%             | Up to 0.75%           |                       |
| Behavioral coaching                                     |                   | 1.50%                 |                       |
| Tax loss harvesting                                     |                   |                       | 1.00%                 |
| <b>Total advisor value</b>                              | <b>1.59%/year</b> | <b>&gt;3.00%/year</b> | <b>&gt;3.00%/year</b> |

For illustrative purposes only

Source: kitces.com; Vanguard Whitepaper September 2016; Alpha, Beta, and Now...Gamma, Morningstar, 2013; Capital Sigma: The Return on Advice, Investnet 2016

Data not intended to be a recommendation for any investor's particular needs.

Refer to Appendix for additional investment strategy and risk information



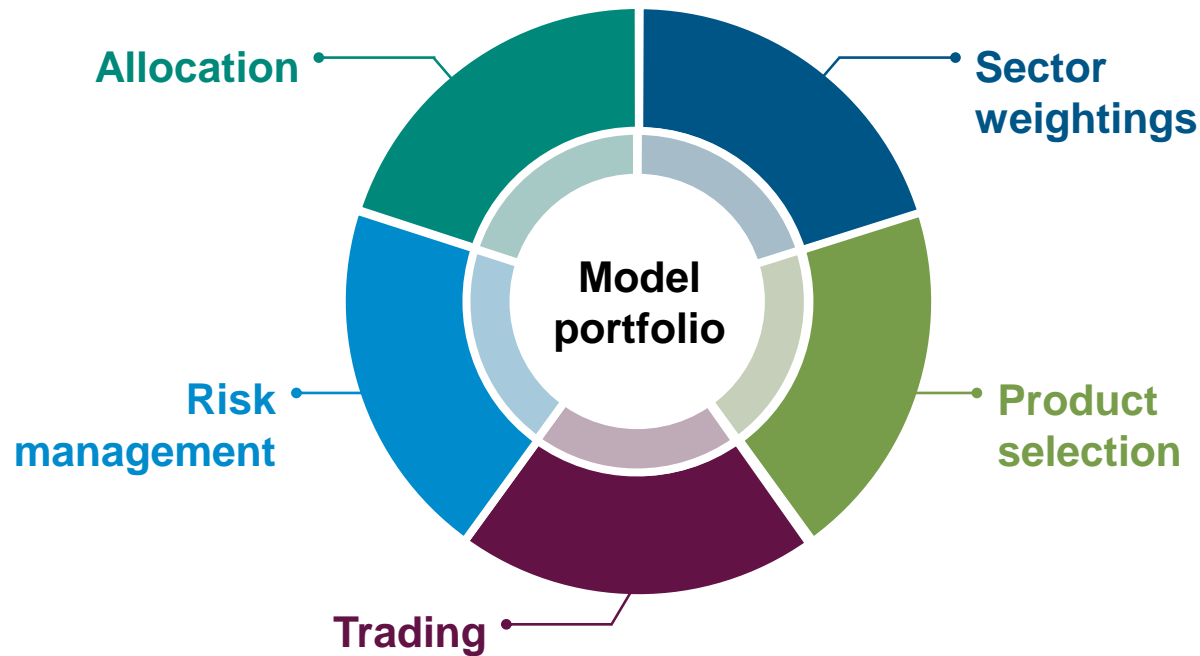
# Models landscape

# Models landscape

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## Defining models

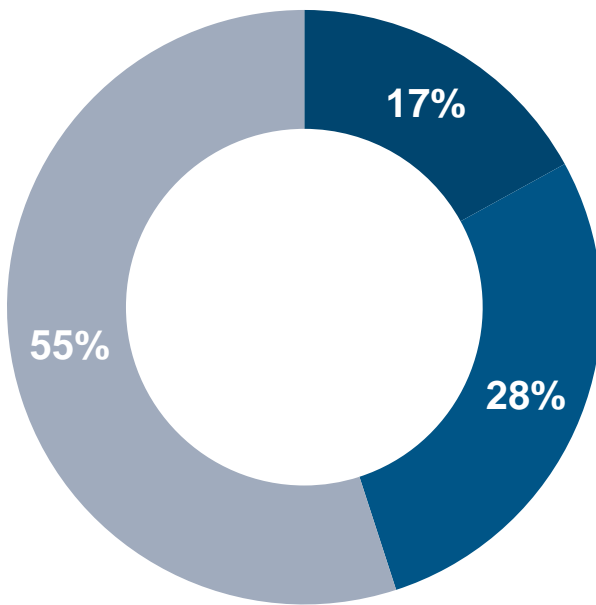
- A model portfolio combines a mix of investments into a single convenient investment offering.
- Model portfolios are managed by a team of professionals who provide macroeconomic oversight and risk management to select the best mix of underlying investments.



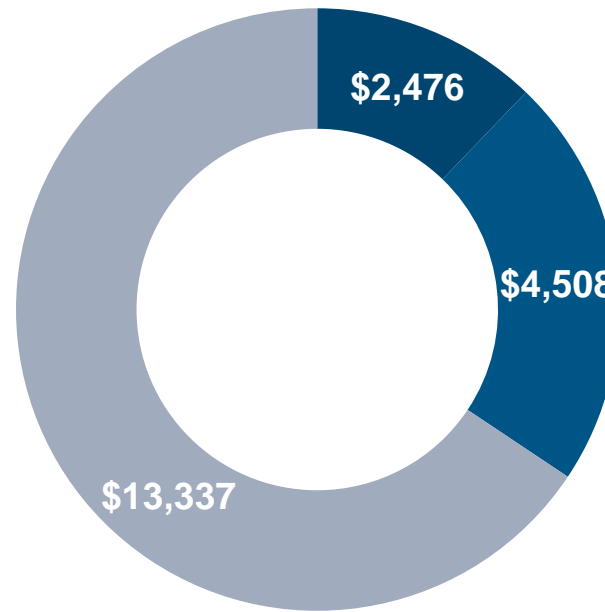
Refer to Appendix for additional investment strategy and risk information

## Models landscape

Nearly half of the advisor population is utilizing models in some fashion



**Advisor Practice  
Breakdown**



**AUM  
Breakdown (\$B)**

- Model user
- Model modifier
- Non-user

Source: U.S. Asset Allocation Model Portfolios 2018, Cerulli  
Refer to Appendix for additional investment strategy and risk information

# Models landscape

## Advisor portfolio construction process

### Outsourcers

- Cede discretion to an off-the-shelf home office, clearing/custodial firm, or asset manager/third-party model making no adjustments.

### Modifiers

- Start with home office, clearing/custodial firm or asset manager/third-party model and make customizations based on each client/client segments.

### Insourcers

- Rely primarily on practice level resources, creating own models or customizing on a client-by-client basis.

| Current portfolio construction segment | Wirehouse | National / Regional B/D | IBD | Independent RIA | Hybrid RIA | All advisors |
|--|-----------|-------------------------|-----|-----------------|------------|--------------|
| Outsourcer                             | 9%        | 12%                     | 17% | 6%              | 10%        | 16%          |
| Modifier                               | 33%       | 28%                     | 23% | 17%             | 19%        | 27%          |
| Insourcer                              | 57%       | 60%                     | 60% | 76%             | 71%        | 57%          |

Source: Cerulli Associates, U.S. Asset Allocation Model Portfolios 2020  
Refer to Appendix for additional investment strategy and risk information



## Benefits of model portfolios

# Potential benefits of model portfolios

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## Streamline practice to save time

- Additional time to broaden services and increase competency to deepen credibility with clients

## Potential for more predictable outcomes

- Model accounts have roughly half the dispersion as Rep as PM accounts

## Instill discipline into the investment process

- Institutional approach to sector allocations and rebalancing

## Help protect against cognitive biases

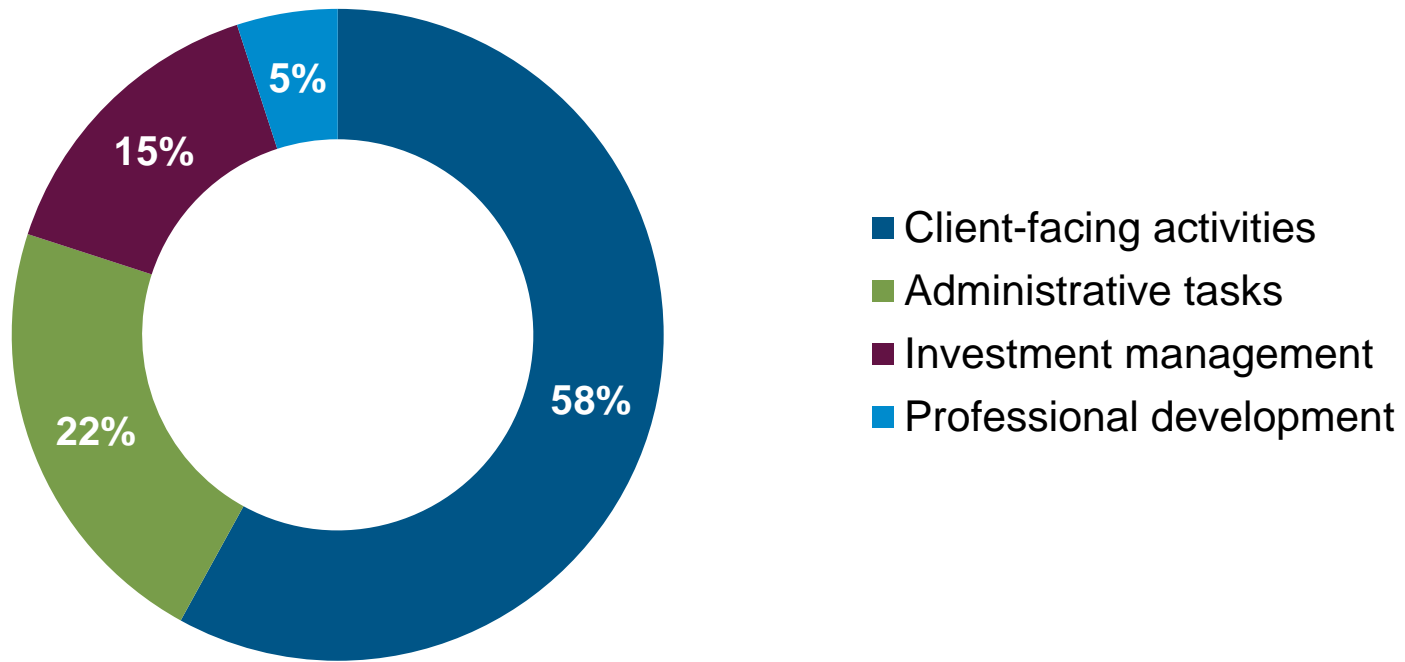
- Help avoid the temptation of allocating capital based on trailing returns (i.e., recency bias) by emphasizing forward-looking returns

Refer to Appendix for additional investment strategy and risk information

## Potential benefit #1: Time savings

Using models can produce significant time savings

**Advisor time allocation**



**On average, advisors spend an estimated 350 hours per year on investment management**

For Illustrative Purposes Only

Source: Cerulli Associates, The Cerulli Report - U.S. Intermediary Distribution 2018: A Holistic Approach to Wholesaling – Advisor Time Allocation by Core Market, 2018. Data applies to advisors with core market of \$500k to <\$2M. Refer to Appendix for additional investment strategy and risk information

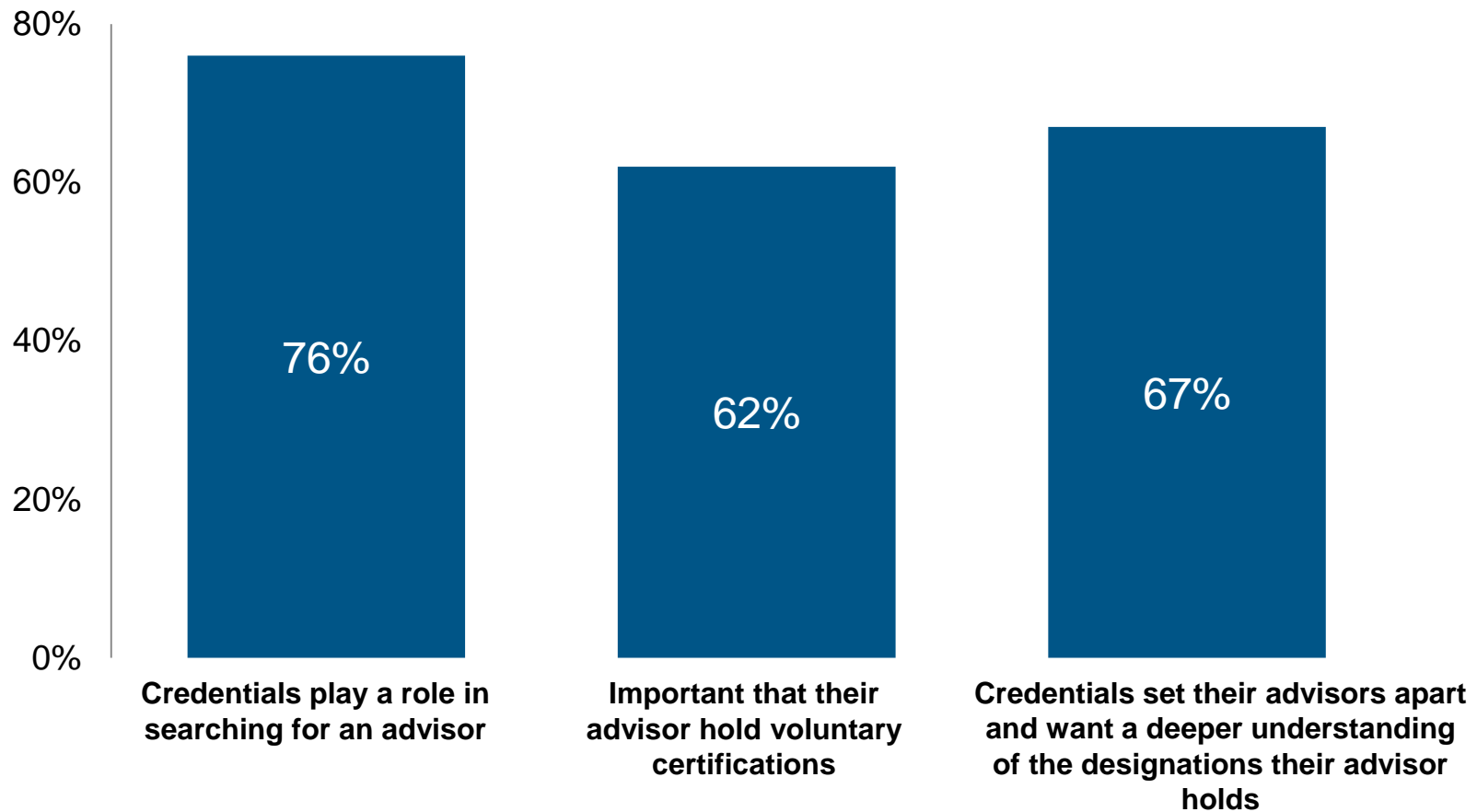


## Potential benefit #1: Time savings

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Additional capacity can be used to increase competency and credibility

### Importance of professional designations to clients



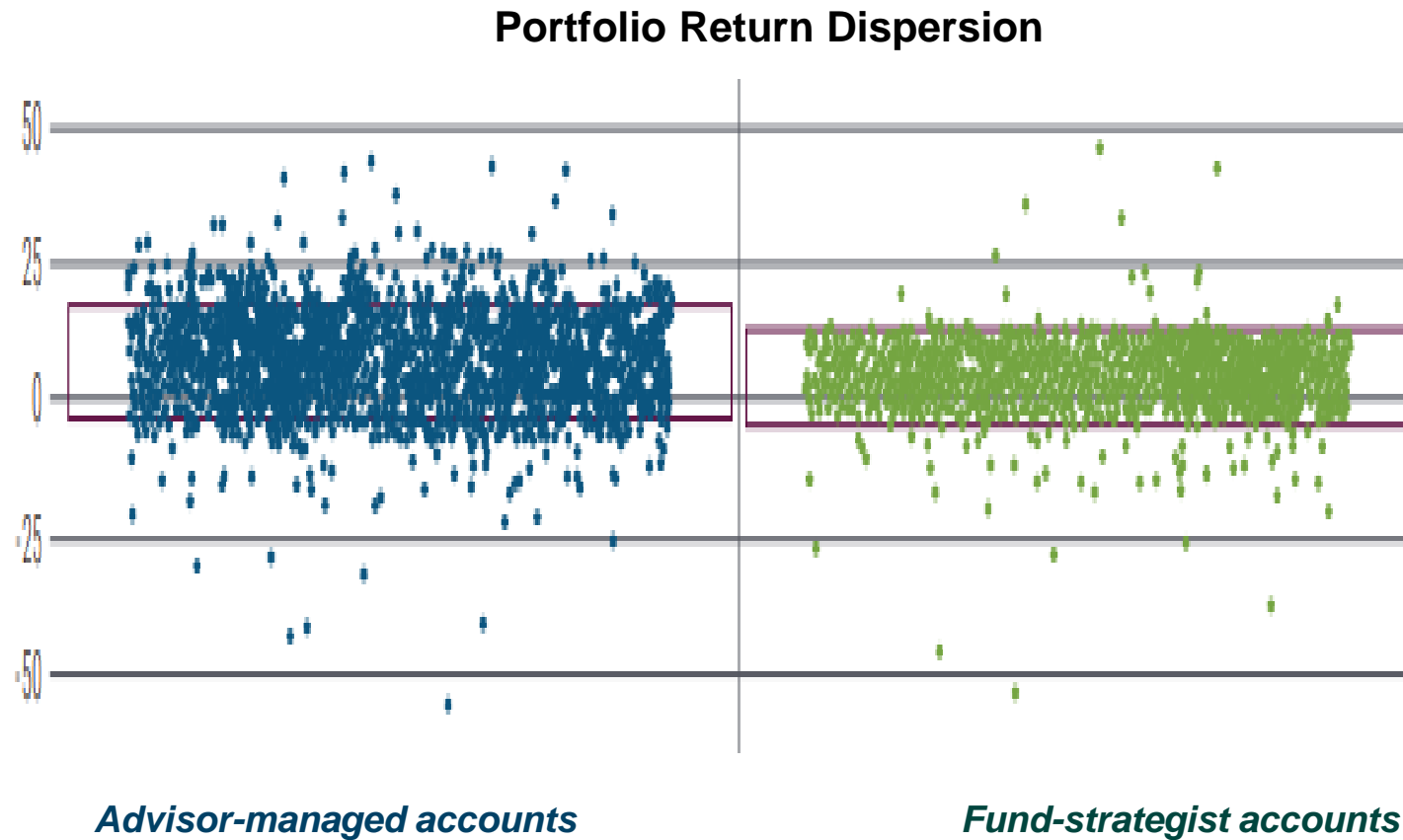
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Source: AbsoluteEngagement.com Investments & Wealth Client Research, 2018

Refer to Appendix for additional investment strategy and risk information

## Potential benefit #2: More predictable client outcomes

Model portfolios demonstrate lower return dispersions



For Illustrative Purposes Only

Source: Envestnet, as of 30 September 2019

Data covers 3-year performance for accounts in the "moderate" risk category, net of fees

**Past performance is not a guarantee or a reliable indicator of future results.** Chart is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.

Refer to Appendix for additional investment strategy and risk information

## Potential benefit #3: Instill discipline

### Portfolio rebalancing

#### Potential benefits

- Addresses unintentional portfolio allocation “drift.” Seeks adherence to stated investment policy guidelines
- Can reduce overall portfolio volatility with the potential for higher returns
- Instills a disciplined approach to investment decisions, aims to minimize behavioral tendencies
- Requires investor to do what is emotionally uncomfortable, but often financially productive: buy low, sell high

#### Additional considerations

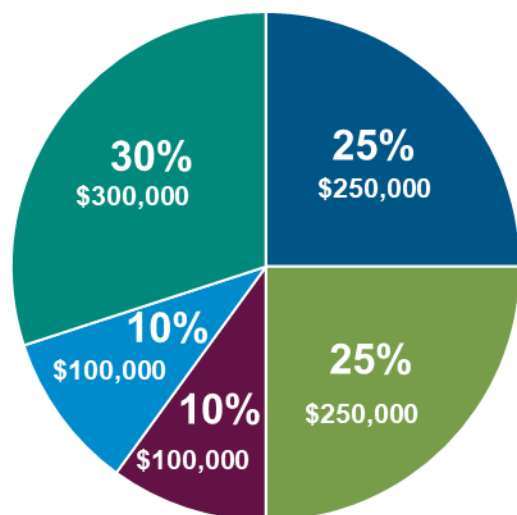
- Impact of taxes and fees
- Sources of funds: deposits and withdrawals
- Methodology:
  - Calendar: portfolio rebalanced to target at pre-determined intervals (month/quarter/year) regardless of interim deviations
  - Threshold: portfolio allocations rebalanced to target only when exceed pre-determined range (ex: 35% +/-5%)

Source: PIMCO  
Refer to Appendix for additional investment strategy, tax and risk information.

## Potential benefit #3: Instill discipline

### Portfolio rebalancing illustration

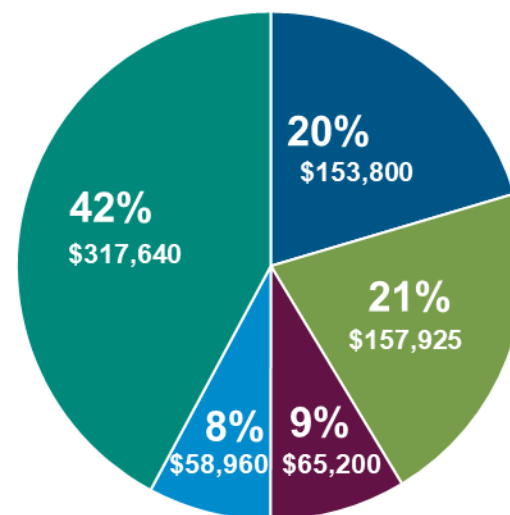
**Initial allocation January 2008**  
\$1,000,000



**Performance 2008**

|               |         |
|---------------|---------|
| Large growth  | -38.48% |
| Large value   | -36.83% |
| Small cap     | -34.80% |
| International | -41.04% |
| Fixed income  | +5.88%  |

**Allocation January 2009**  
\$753,525

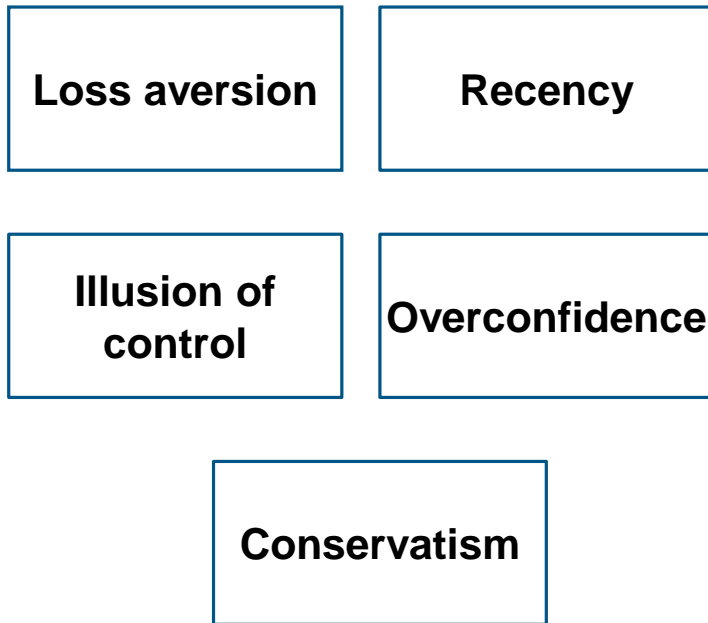


|               | 2009 portfolio | Target allocation | Required change |
|---------------|----------------|-------------------|-----------------|
| Large growth  | \$153,800      | \$188,381         | +\$34,581       |
| Large value   | \$157,925      | \$188,381         | +\$30,456       |
| Small cap     | \$65,200       | \$75,353          | +\$10,153       |
| International | \$58,960       | \$75,353          | +\$16,393       |
| Fixed income  | \$317,640      | \$226,057         | -\$91,583       |

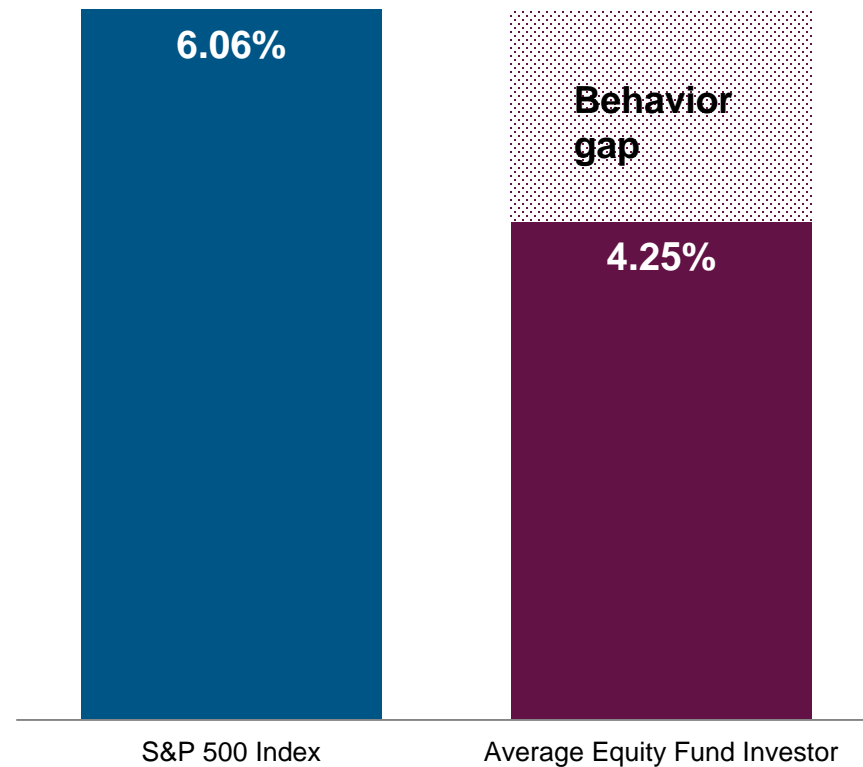
As of May 2021  
 Source: PIMCO; Large growth = Russell 1000 Growth Index, Large value = Russell 1000 Value Index, Small Cap = Russell 2000 Index; International = MSCI EAFE; Fixed Income = Bloomberg Barclays US Aggregate Bond Index.  
**Hypothetical example for illustrative purposes only.** No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those shown.  
 Refer to Appendix for additional hypothetical example, index, investment strategy and risk information.

## Potential benefit #4: Protection against behavioral biases

The cost of bad behaviors



20-year average index vs. investor returns ending 12/31/19



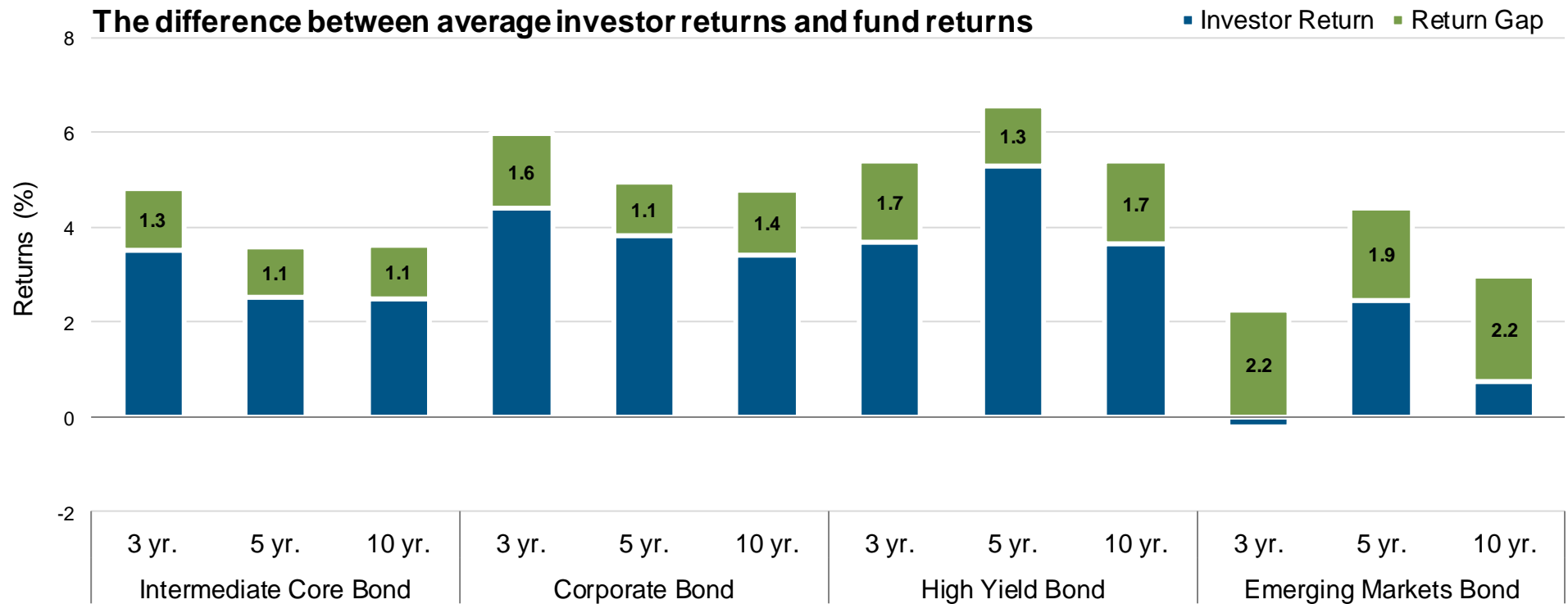
Period ended 31 December 2019

Source: Quantitative Analysis of Investor Behavior, 2020, DALBAR, Inc., dalbar.com.

Refer to Appendix for additional investment strategy and risk information

# Potential benefit #4: Protection against behavioral biases

Fixed income investor returns lag fund returns



As of 31 March 2021. SOURCE: Morningstar.

Data includes all share classes and is after fees. Average investor returns is the dollar-weighted return, accounting for all cash inflows and outflows from purchases/sales and the growth in fund assets. Average fund returns are not asset-weighted.

Past performance is not a guarantee or a reliable indicator of future results. Chart is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.

Refer to Appendix for additional investment strategy, Morningstar category, and risk information.



## Portfolio construction challenges

# Portfolio construction challenges

## MARKET CHALLENGES

- In fixed income, low yields and elevated volatility make portfolio construction a challenge



- Returns are likely to be more muted while downside risks are increasing

## BEHAVIORAL CHALLENGES

- Across a range of categories, average investor returns are well below the average fund return



- Flow patterns indicate many fixed income investors are following past returns

## IMPLEMENTATION CHALLENGES

- Value of active management varies by asset class and sector



- Manager selection and efficient use of fee budget is critical in a low return environment

As of 30 June 2020. Source: PIMCO

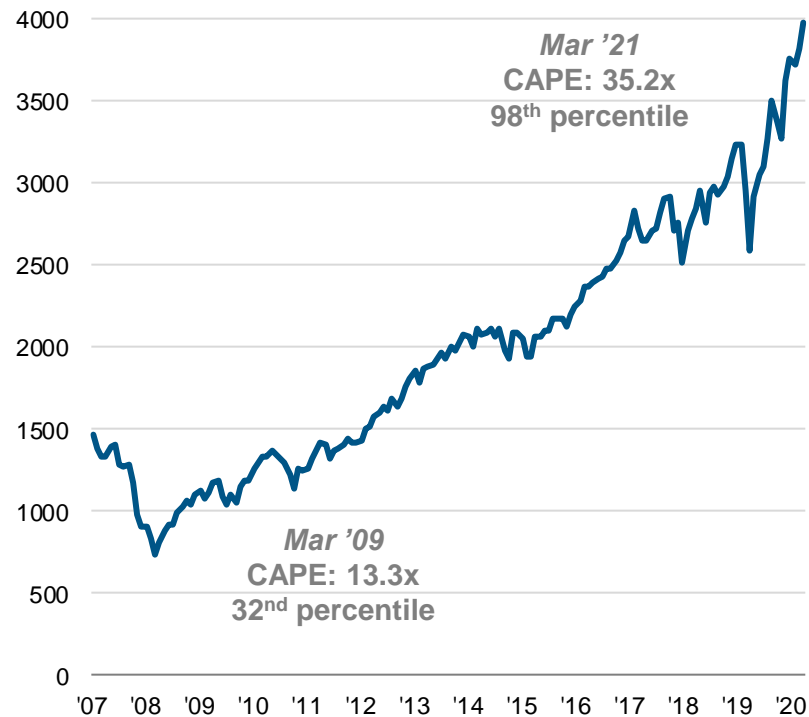
Refer to Appendix for additional investment strategy, outlook and risk information



# Portfolio construction challenges

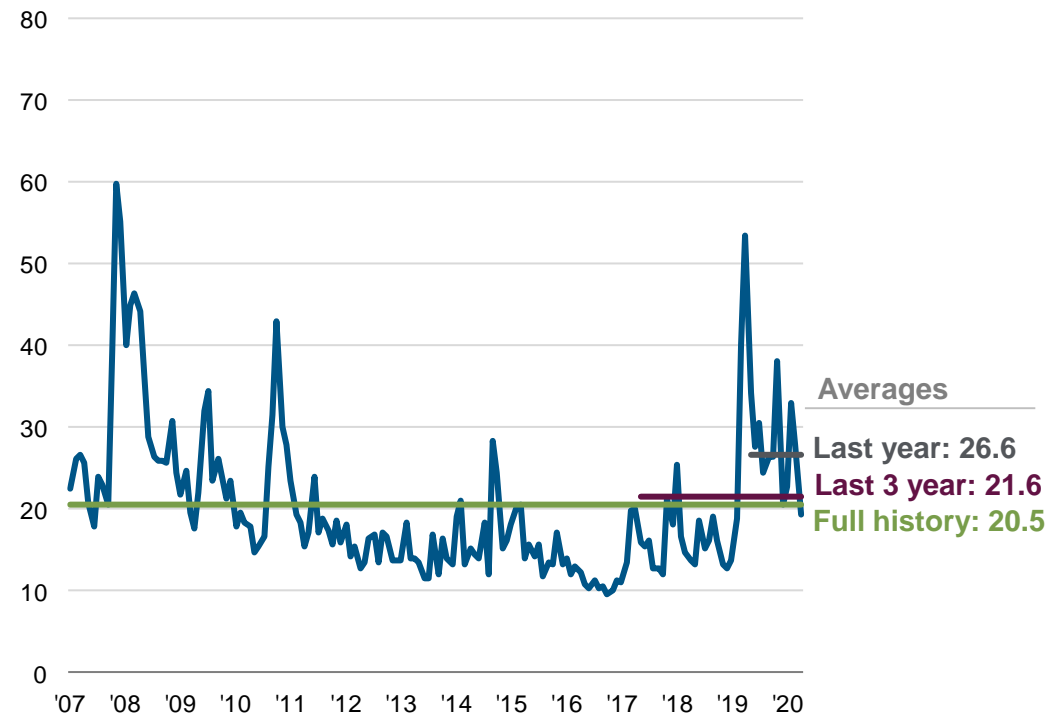
Increasingly challenging markets

## S&P 500 Index



CUMULATIVE RETURN OF 390+% SINCE MARCH 2009

## VIX Level



VOLATILITY SPIKED MEANINGFULLY IN 2020, BUT IS REVERTING BACK TO LOWER HISTORICAL AVERAGES

As of 31 March 2021.

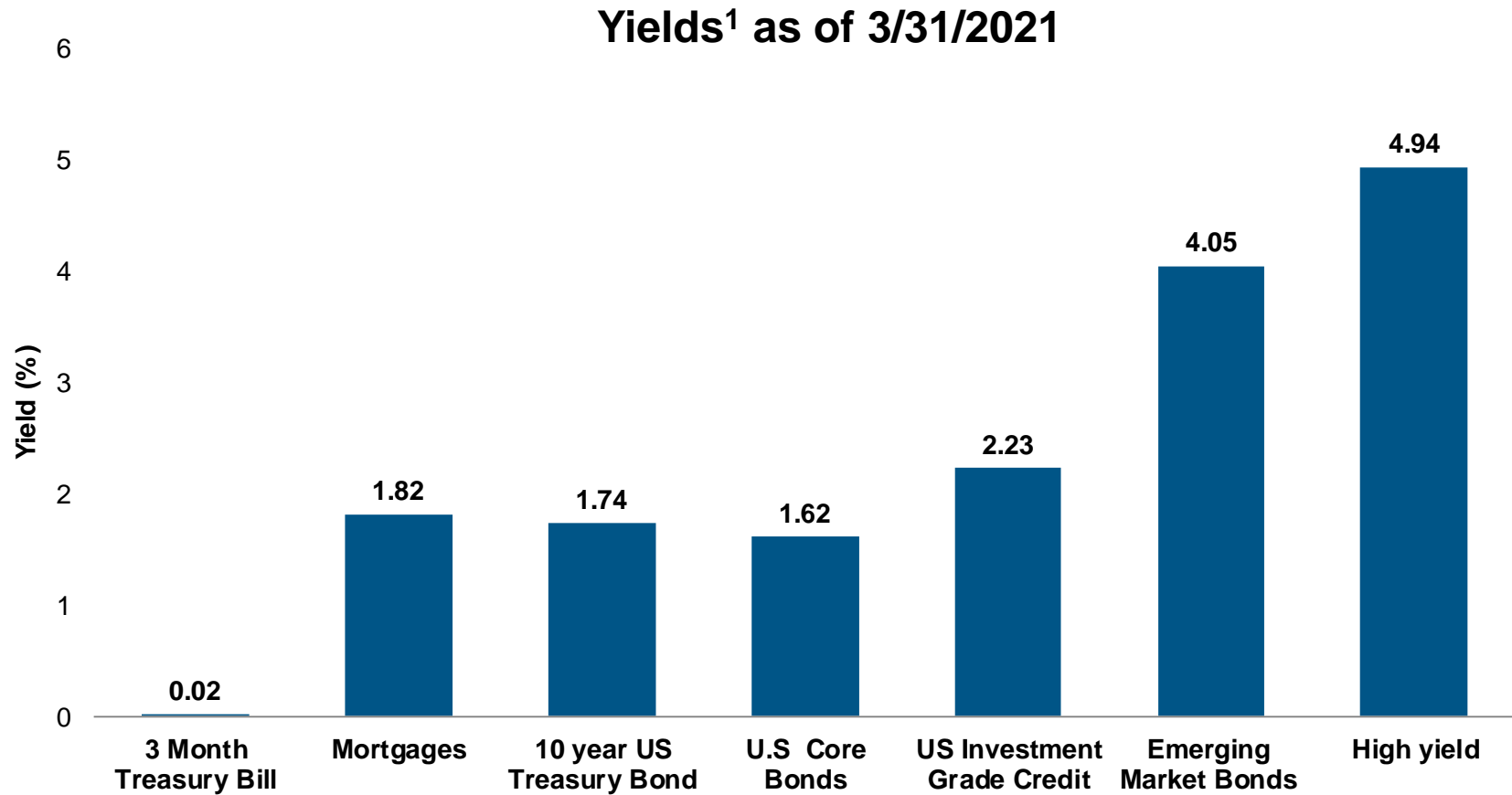
SOURCE: PIMCO, Bloomberg

CAPE refers to the Cyclically Adjusted P/E. S&P return assumes dividend reinvestment.

Refer to Appendix for additional index and risk information.

# Portfolio construction challenges

Short-term and U.S. Treasury yields are historically low



Sample for illustrative purposes only.

As of 3/31/2021 Source: PIMCO

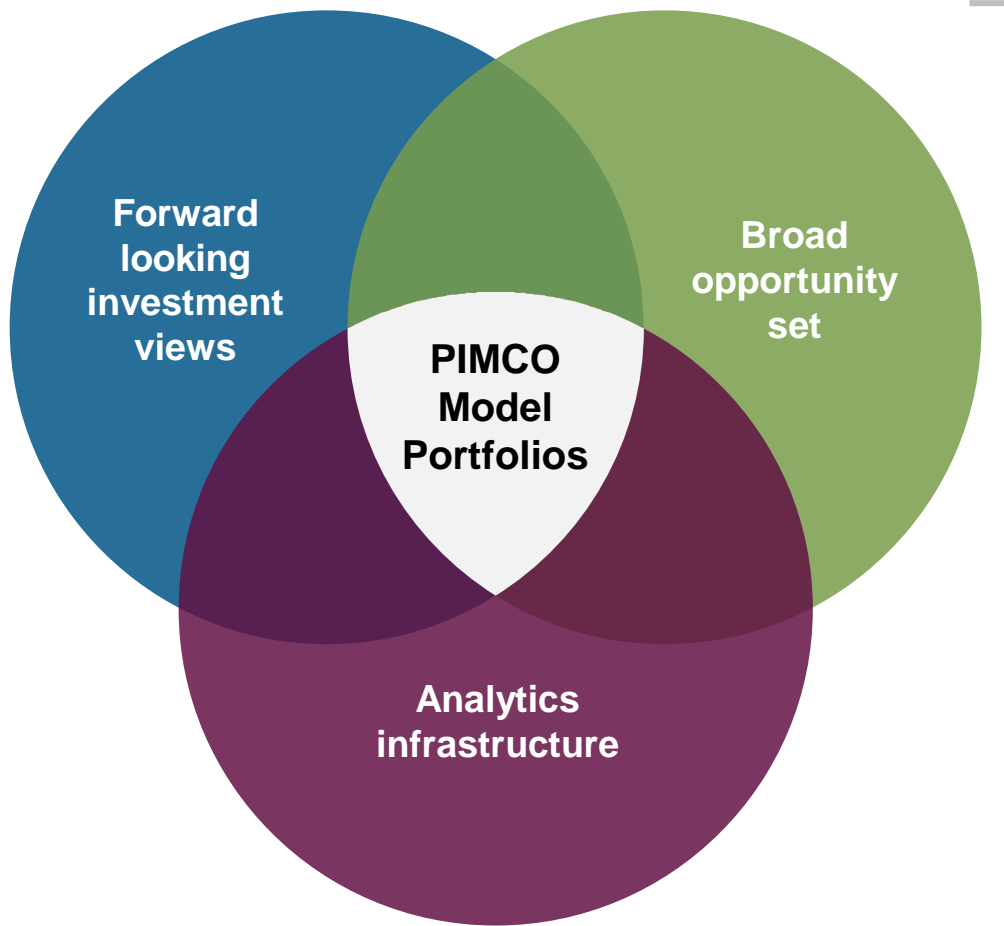
<sup>1</sup> Yields shown are yield-to-maturity.

The following indices were used – 3 Month Treasury Bill: FTSE 3-Month Treasury Bill Index; U.S. Core Bonds: US Barclays Aggregate; Mortgages: Barclays GNMA Index; US Investment Grade Credit : Barclays U.S Credit Index; Emerging Market Bonds: JPM EMBI Global; High Yield: ICE BofAML US HY BB-B Constrained Index

Refer to Appendix for additional investment strategy, index and risk information.

# PIMCO approach

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## Forward looking investment views

Allocations reflect active, forward-looking views driven by our investment process

## Broad opportunity set

Models utilize PIMCO flagship funds, where active management seeks to add alpha

## Analytics infrastructure

PIMCO's proprietary risk analytics infrastructure provides a robust engine to optimize and stress test allocations

Refer to Appendix for additional investment strategy and risk information.

# PIMCO approach

## Investment process

**ESTABLISH FORWARD-LOOKING INVESTMENT VIEWS**



**DEFINE OPPORTUNITY SET AND MODEL GUARDRAILS**



**GENERATE RISK AND RETURN INPUTS**



**PORTFOLIO CONSTRUCTION AND RISK MANAGEMENT**

### FIRMWIDE CYCLICAL / SECULAR FORUMS

- Firm-wide discussion and debate to determine key macro themes, opportunities and risks

### OPPORTUNITY SET

- Strategy selection criteria include geography/sector coverage, track record, asset base and platform availability

### MODEL GUARDRAILS

- Establish total risk and active risk budgets
- Define concentration limits

### MODEL INPUTS

- Strategy returns estimated using PIMCO's forward-looking capital market assumptions
- Volatilities and correlations estimated from underlying holdings using risk factor approach

### ALLOCATION PROCESS

- Optimize allocations using risk and return inputs, remaining within model guardrails
- Regularly review risk factor exposures to ensure consistency with PIMCO's views

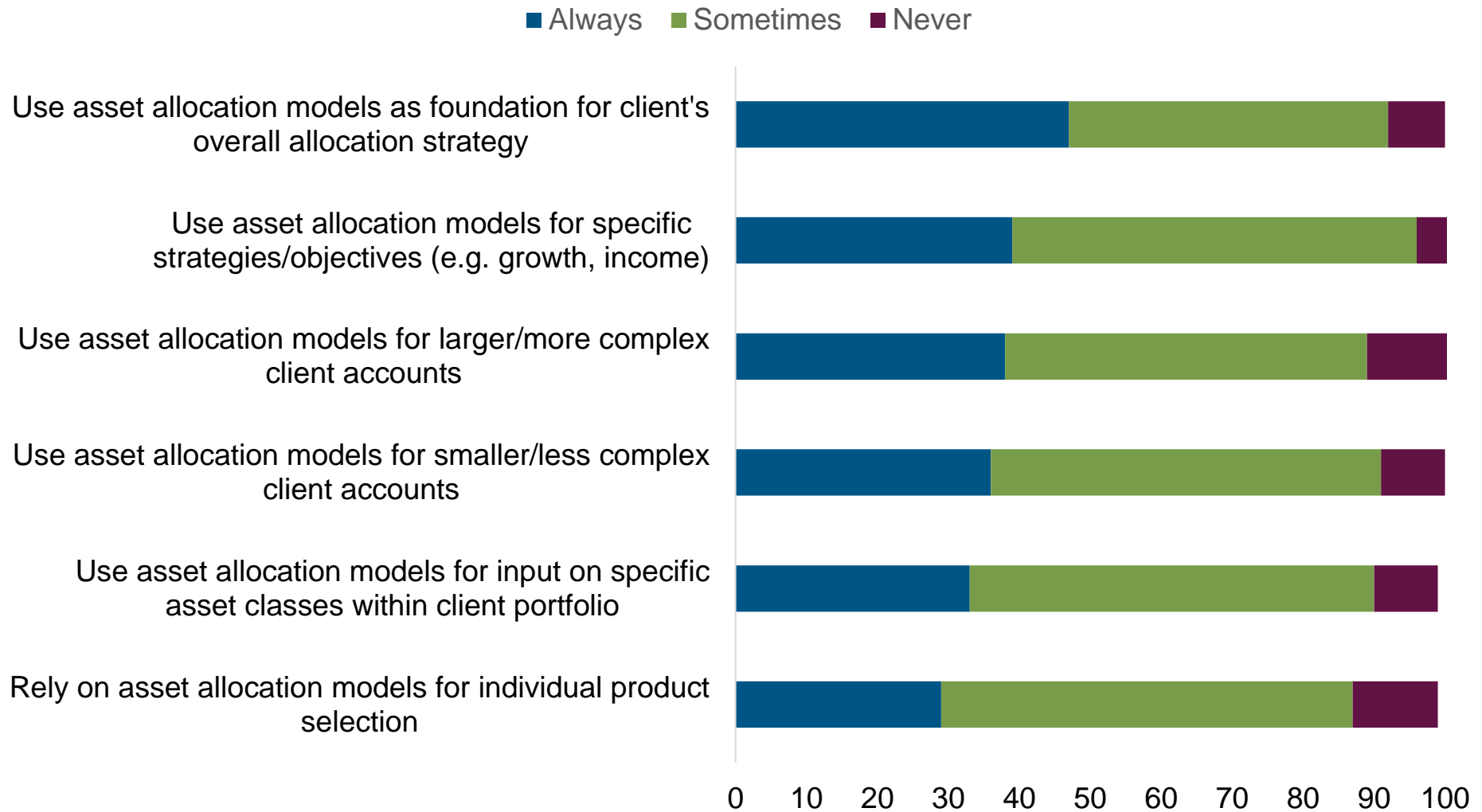
For illustrative purposes only.  
Refer to Appendix for additional investment strategy and risk information.



## Implementing models into client portfolios

# Implementing models

## How advisors use models



Source: Cerulli Associates, U.S. Asset Allocation Model Portfolios 2020

# Implementing models

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## Advisor questions for consideration

- How much of your time do you spend on portfolio construction and conducting investment research vs. financial planning?
- Do you have the bandwidth to conduct in-house investment research and due diligence on investments?
- What is your onsite due diligence process and what are your procedures to mitigate litigation risk?
- Describe your investment philosophy. Does it resonate well with clients?
- What is your investment benchmark? How do your results compare against it?
- Do you have a goals-based practice and do you offer outcome-oriented solutions for your clients?
- How do you currently use model portfolios with clients?
- Have you segmented your business to determine which clients are appropriate for model solutions? If so, how—by AUM, relationship with client, etc?
- When using model portfolios, do you use multiple models in concert or pair portfolios with tactical strategies?

# Implementing models

Manager  
Discretion



## Selecting the right type of Model for your clients

Tactical asset Allocation, actively managed underlying funds

Hybrid approach (tactical asset allocation with passive funds, strategic asset allocation with active funds)

Strategic asset allocation, passively managed underlying funds

Advisor  
Discretion



## Implementing Models in your practice

You maintain control in area of expertise (e.g. picking stocks, individual munis), but use Completion Portfolios

You manage stock/bond mix, choose the “building blocks” (e.g. pair Equity ETF Model & FI Completion Portfolio)

Choose a Total Portfolio Model provider that sets asset allocation and manages underlying vehicles

For Illustrative Purposes Only

Refer to Appendix for additional investment strategy and risk information.



# Implementing models

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## Evaluating model managers

- **Philosophy** – Approach to managing client assets
- **People** – Tenure, talent, skill set
- **Product** – AUM, style approach
- **Business plans** – Analyzing a portfolio manager's internal business structure, business composition, and distribution
- **Processes** – Investment strategy including method of security evaluation
- **Future progress** – Development of organization that may affect abilities
- **Price** – Cost of management, incentive fees, competitive positioning
- **Performance** – Absolute and relative returns over various market cycles

# Implementing models

Persistent inefficiencies can create opportunities for active managers.

## Overview

## Implication

### Market Structure

The bond market is large and complex and participants have varied goals: **344,000 issues representing \$110T worth of debt**<sup>1</sup>

- **Not all investors are profit-maximizing, creating opportunities for those who are**
- For example, central banks buying bonds to influence interest rates

### Index Structure

Index construction may be sub-optimal and is complex: Barclays US Aggregate has over 10,000 securities

- Largest weightings are often the most in-debt issuers
- Full replication may not be practical: **leading ETFs only held 30% - 70% of Barclays US Agg securities**

### Trading

Majority of bonds are traded over-the-counter vs. an exchange

- **Size makes a difference when purchasing bonds;** purchasing meaningful blocks of new issues may result in better pricing

### Investor Segmentation

Credit research is often based on the reviews of a handful of nationally rating organizations

- **Active managers can identify fallen angels** (downgrades from IG to HY) **and rising stars** (upgrades from HY to IG)

For illustrative purposes only.

Source: PIMCO, Bloomberg, Haver Analytics.

<sup>1</sup> As of January 21, 2020

Refer to Appendix for additional index, investment strategy, outlook and risk information.

# Implementing models

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## Identifying clients for model portfolios

### Client factor

### Consideration

**Account size**

**Smaller accounts producing lower advisor revenue receive efficient access to diversified, institutionally managed portfolios, while helping you scale your practice**

**Level of unique circumstances**

**Clients with unique circumstances (cash flow needs, liquidity horizons, tax constraints, etc.) may require a more bespoke approach**

**Susceptibility to headline risk**

**Clients more sensitive to media, news cycles may benefit from disciplined trading process of model managers**

Refer to Appendix for additional investment strategy and risk information.

## Implementing models

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Communicate the potential benefits to clients

- Access to institutional investment capabilities
- Disciplined investment process designed to reduce behavioral errors
- More consistent investment experience
- Improved diligence and risk management
- Goals-based/outcome-oriented solutions
- Capacity to provide valuable planning services

# Implementing models

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## Advisor communication with model portfolio clients



### Email

Send economic outlook and market commentaries to clients on a frequent basis



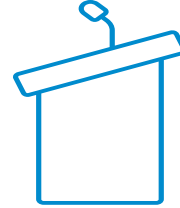
### Website

Develop a list of website resources for clients to access additional information



### Print resources

Provide clients relevant whitepapers, commentaries to remain informed about their investments



### Live events

Hold an annual webinar or in-person meeting if appropriate for model portfolio clients



# Appendix

## Comments on advisor adoption

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“Financial Advisors are recognizing the importance of building scale and efficiency into their practices in order to enhance client engagement and grow their businesses”

*Brian Rosevear, head of model solutions, Morgan Stanley*

“Packaged products are becoming incredibly popular, as more wealth management firms are encouraging advisors to shift their focus away from investment management to financial planning”

*Tom O’Shea, director of managed account research, Cerulli*

“These models give our financial advisors an opportunity to allocate day-to-day investment management responsibilities to an outside strategist, and that frees up financial advisors’ time to focus on deepening the relationships that they have with clients”

*Steve Mattus, head of advisory and planning, UBS Global Wealth Management*

# Implementing models

## Advisor portfolio construction process

| Portfolio Construction Process   | Main Influence   | Channel   |                           |     |                 |            |               | All Advisors |
|--|------------------|-----------|---------------------------|-----|-----------------|------------|---------------|--------------|
|  |                  | Wirehouse | National and Regional B/D | IBD | Independent RIA | Hybrid RIA | Insurance B/D |              |
| Create custom portfolio for each client                                | Practice         | 29%       | 21%                       | 36% | 27%             | 22%        | 22%           | 28%          |
| Start with models developed by practice and alter as necessary         | Practice         | 18%       | 16%                       | 12% | 29%             | 28%        | 13%           | 19%          |
| Use models developed by practice                                       | Practice         | 15%       | 21%                       | 17% | 21%             | 19%        | 12%           | 17%          |
| Start with models suggested by B/D or custodian and alter as necessary | B/D or custodian | 23%       | 22%                       | 11% | 10%             | 6%         | 18%           | 15%          |
| Use models suggested by B/D or custodian                               | B/D or custodian | 8%        | 6%                        | 5%  | 1%              | 4%         | 9%            | 6%           |
| Start with third-party provider models and alter as necessary          | Third party      | 5%        | 5%                        | 13% | 11%             | 13%        | 12%           | 11%          |
| Use third-party provider models  | Third party      | 3%        | 9%                        | 6%  | 2%              | 8%         | 13%           | 6%           |
| Model User?  | Yes              | 71%       | 79%                       | 64% | 73%             | 78%        | 78%           | 72%          |
|  | No               | 29%       | 21%                       | 36% | 27%             | 22%        | 22%           | 28%          |

Source: Cerulli Associates, U.S. Asset Allocation Model Portfolios 2020



# Implementing models

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## Communicating your role and your value

- The role of an advisor is to help identify your most important goals, develop a road map to achieve them, and provide ongoing counsel to increase your chances of success.
- The financial landscape has evolved and increased in complexity. A skilled advisor can help to make better informed choices.
- Emotions play an important role in investing. An experienced advisor can help investors successfully manage these emotions to ensure productive behavior.
- The cost of personal advice can often be less than the cost of the mistakes made without it.
- Investors who work with professional advisors often enjoy a greater probability of success than those who don't.
- Working with an advisor allows clients to spend their time and energies on things that are more enjoyable (family) or more productive (career)

# Appendix

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The PIMCO Models described in this material are available exclusively through investment professionals.

PIMCO Models are created based on what Pacific Investment Management Company LLC (together with its affiliates, “PIMCO”) believes to be generally accepted investment theory. In adjusting PIMCO models PIMCO considers, among other things, the results of quantitative modeling. Such quantitative modeling is designed to optimize each Model’s allocation and align with the Model’s investment objective, and takes into account various factors or “inputs”, determined by PIMCO, including third party data, to generate a suggested allocation for the PIMCO Models. PIMCO’s investment team then reviews the quantitative output and adjusts the output to reflect variables, which may include, among other things, the anticipated trade size, target total expense ratio for the Model, and qualitative investment insights. PIMCO Model allocations are ultimately subject to the discretion of PIMCO’s investment team. PIMCO Models are for illustrative purposes only and may not be appropriate for all investors. PIMCO Models are not based on any particularized financial situation, or need, and are not intended to be, and should not be construed as, a forecast, research, investment advice or a recommendation for any specific PIMCO or other strategy, product or service. Individuals should consult with their own financial advisors to determine the most appropriate allocations for their financial situation, including their investment objectives, time frame, risk tolerance, savings and other investments. Volatility is historical and is likely to change over time. PIMCO has not undertaken, and will not undertake, any analysis to determine any specific models’ suitability for specific investors.

The risks of a PIMCO Model’s allocations will be based on the risks of the PIMCO mutual funds (each, a “Fund”) included in the PIMCO Model’s allocation (“Underlying Fund”). The PIMCO Model’s allocations are subject to the risk that the Underlying Funds and the allocations and reallocation (or “rebalancing”) of the PIMCO Model among the various Underlying Funds may not produce the desired result. The PIMCO Model allocations to Underlying Funds have changed over time and are expected to change in the future. As described above, the selection and weighting process across Underlying Funds is informed based on return estimates driven by PIMCO’s quantitative models and forecasts for key risk factor inputs and forward looking view and risk estimates informed by PIMCO’s analytic infrastructure (“Systems”). These Systems rely heavily on the use of proprietary and nonproprietary data, software, hardware, and intellectual property, including data, software and hardware that may be licensed or otherwise obtained from third parties. The use of such Systems has inherent limitations and risks. Although we take reasonable steps to develop and use Systems appropriately and effectively, there can be no assurance that we will successfully do so. Errors may occur in the design, writing, testing, monitoring, and/or implementation of Systems, including in the manner in which Systems function together. The effectiveness of Systems may diminish over time, including as a result of market changes and changes in the behavior of market participants. The quality of the resulting analysis, including the PIMCO Model allocations depends on a number of factors including the accuracy and quality of data inputs into the Systems, the mathematical and analytical assumptions and underpinnings of the Systems’ coding, the accuracy in translating those analytics into program code or interpreting the output of a System by another System in order to facilitate a change in market conditions, the successful integration of the various Systems into the portfolio selection and trading process and whether actual market events correspond to one or more assumptions underlying the Systems. Management risk is the risk that the investment techniques and risk analyses applied by PIMCO will not produce the desired results, and that certain policies or developments may affect the investment techniques available to PIMCO in connection with managing the strategy.

PIMCO Model allocations are licensed or otherwise made available to investment professionals. PIMCO Models’ allocations are updated on a defined production cycle. The Underlying Funds are available by prospectus only. Implementing investment professionals may or may not implement the PIMCO Model’s allocation as provided, and actual allocations to Underlying Funds may vary. There are expenses associated with the Underlying Funds in addition to any fees charged by implementing investment professionals. Additionally, the implementing investment professional may include cash allocations, which are not reflected herein.

## **ASSET ALLOCATION**

Asset allocation is the process of distributing investments among various classes of investments (e.g., stocks and bonds). It does not guarantee future results, ensure a profit or protect against loss.

## **CHART**

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any PIMCO product.

## **HYPOTHETICAL EXAMPLE**

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS.

# Appendix

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## INVESTMENT STRATEGY

There is no guarantee that these investment strategies will work under all market conditions or are appropriate for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market.

## OUTLOOK

Statements concerning financial market trends or portfolio strategies are based on current market conditions, which will fluctuate. There is no guarantee that these investment strategies will work under all market conditions, and each investor should evaluate their ability to invest for the long-term, especially during periods of downturn in the market. Outlook and strategies are subject to change without notice.

## RISK

All investments contain risk and may lose value. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Equities** may decline in value due to both real and perceived general market, economic and industry conditions.

## STRATEGY AVAILABILITY

Strategy availability may be limited to certain investment vehicles; not all investment vehicles may be available to all investors. Please contact your PIMCO representative for more information.

## TAX

PIMCO does not provide legal or tax advice. Please consult your tax and/or legal counsel for specific tax or legal questions and concerns.

## VOLATILITY (ESTIMATED)

We employed a block bootstrap methodology to calculate volatilities. We start by computing historical factor returns that underlie each asset class proxy from January 1997 through the present date. We then draw a set of 12 monthly returns within the dataset to come up with an annual return number. This process is repeated 25,000 times to have a return series with 25,000 annualized returns. The standard deviation of these annual returns is used to model the volatility for each factor. We then use the same return series for each factor to compute covariance between factors. Finally, volatility of each asset class proxy is calculated as the sum of variances and covariance of factors that underlie that particular proxy. For each asset class, index, or strategy proxy, we will look at either a point in time estimate or historical average of factor exposures in order to determine the total volatility. Please contact your PIMCO representative for more details on how specific proxy factor exposures are estimated.

## MORNINGSTAR CATEGORIES

**EMERGING MARKETS** Emerging-markets portfolios tend to divide their assets among 20 or more nations, although they tend to focus on the emerging markets of Asia and Latin America rather than on those of the Middle East, Africa, or Europe. These portfolios invest predominantly in emerging market fixed income investments. **HIGH-YIELD BOND** High-yield bond portfolios concentrate on lower-quality bonds, which are riskier than those of higher-quality companies. These portfolios generally offer higher yields than other types of portfolios, but they are also more vulnerable to economic and credit risk. These portfolios primarily invest in U.S. high-income debt securities where at least 65% or more of bond assets are not rated or are rated by a major agency such as Standard & Poor's or Moody's at the level of BB (considered speculative for taxable bonds) and below. **INTERMEDIATE-TERM BOND** Intermediate-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed-income issues and typically have durations of 3.5 to 6.0 years. These portfolios are less sensitive to interest rates, and therefore less volatile, than portfolios that have longer durations. Morningstar calculates monthly breakpoints using the effective duration of the Morningstar Core Bond Index in determining duration assignment. Intermediate-term is defined as 75% to 125% of the three-year average effective duration of the MCBI. **CORPORATE BONDS** Corporate bond portfolios concentrate on investment-grade bonds issued by corporations in US dollars, which tend to have more credit risk than government or agency-backed bonds.

## INDEX DESCRIPTIONS

The S&P 500 Index is a capitalization-weighted index of 500 stocks.

The CBOE Volatility Index (VIX) is a measure of expected price fluctuations in the S&P 500 Index options over the next 30 days.

The FTSE 3 Month US Treasury Bill Index is an unmanaged index designed to represent the average of T-bill rates for each of the prior three months, adjusted to a bond-equivalent basis.

Bloomberg Barclays U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

# Appendix

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## INDEX DESCRIPTIONS (continued)

Bloomberg Barclays GNMA Index is an unmanaged index comprised of all fixed-rate, securitized mortgage pools backed by GNMA, with principal amounts outstanding in excess of \$50 million.

Bloomberg Barclays U.S. Credit Index is an unmanaged index comprised of publicly issued U.S. corporate and specified non-U.S. debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

ICE BofA Merrill Lynch U.S. High Yield, BB-B Rated, Constrained Index tracks the performance of BB-B Rated US Dollar-denominated corporate bonds publicly issued in the US domestic market. Qualifying bonds are capitalization-weighted provided the total allocation to an individual issuer (defined by Bloomberg tickers) does not exceed 2%. Issuers that exceed the limit are reduced to 2% and the face value of each of their bonds is adjusted on a pro-rata basis. Similarly, the face value of bonds of all other issuers that fall below the 2% cap are increased on a pro-rata basis.

The JPMorgan Emerging Markets Bond Index Global is an unmanaged index which tracks the total return of U.S.-dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady Bonds, loans, Eurobonds, and local market instruments.

It is not possible to invest directly in an unmanaged index.

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