WORKPLACE RESEARCH

How Managed Accounts Can Help Employees Save and Invest for Retirement

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Introduction

Online advice solutions have grown significantly over the past 15 years, serving as a key source of information for saving and investing decisions. Managed accounts, an online financial planning solution, or robo-advisor, has been available to employer-sponsored retirement plans for more than a decade. There is a growing body of research that suggests these solutions can lead to better retirement outcomes. This study explores the impact of managed accounts on savings and investing behaviors by observing 60,825 defined-contribution participants who used Morningstar Investment Management's managed accounts platform (Morningstar® Retirement Manager℠) from January 2007 to June 2018.

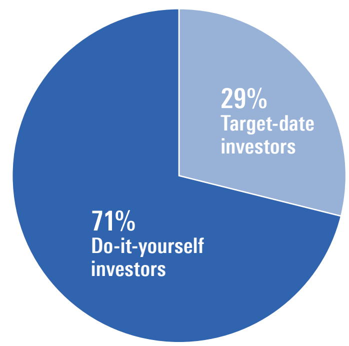
Grouping Participants

The value of managed accounts can vary by user, so we measured the impact of the service in two areas (although there are many) where managed accounts can provide value: investing and saving.

Investing

To measure the investing value of managed accounts, we looked at how these participants invested their savings before entering the service. Participants were classified as either:

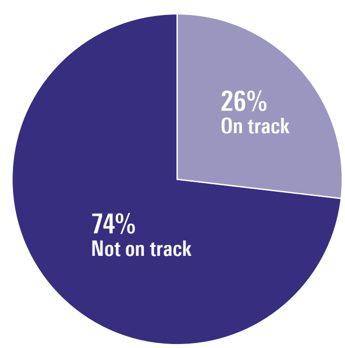
- **Self-directors, or do-it-yourself (DIY) investors—** Individuals who chose investments and built their portfolios before entering managed accounts
  - 71% of all participants observed
- **Allocation-fund users, or target-date investors[1]—** Individuals who used a prepackaged multi-asset allocation strategy, such as a target-date fund before entering managed accounts
  - 29% of all participants observed



Saving

In terms of saving enough to achieve retirement success[2], participants were forecast as either:

- **Not on track—**Less than 70% chance of achieving retirement income goal
  - 74% of all participants observed
- **On track—**More than 70% chance of achieving retirement income goal
  - 26% of all participants observed



Most Participants Were Off Track

74 percent of the participants in this study were not on track to achieve their retirement goals.

The Impact of Managed Accounts on Investing[3]

After dividing participants into two investing groups—DIY investors and target-date investors—we found that managed accounts had an investing impact on both groups. The largest impact was on DIY investors, or those who picked investments themselves before entering a managed accounts service.

	DIY Investors	Target-Date Investors
More-appropriate portfolios Managed accounts resulted in portfolio risk levels that were more appropriate for investors. We calculated the benefit of more-appropriate portfolios using utility theory* and found that they provided added returns on average.	+0.34% ↑	+0.16% ↑
More-efficient portfolios[5] On a risk-adjusted basis, having more-efficient portfolios led to a change in average, expected annual geometric return for participants after using managed accounts.	+0.23% ↑	+0.12% ↑
Higher-quality funds[6] Using Morningstar, Inc.'s Morningstar Quantitative Rating™ to measure fund quality, our study found that managed accounts resulted in portfolios with higher-quality funds. The difference in quality could be expected to result in an average improvement in returns.	+0.10% ↑	+0.06% ↑
Improved future hypothetical 1-year performance[7] More-efficient portfolios with higher-quality funds can be expected to outperform previous portfolios. Our study found a positive hypothetical difference when comparing the 1-year performance for the portfolio allocations before and after enrolling in managed accounts.	+0.50% ↑	+0.52% ↑

*Idzorek, T., Blanchett, D., & Bruns, D. 2018. "Stop Guessing: Using Participant Data to Select the Optimal QDIA." https://www.morningstar.com/lp/stop-guessing.

The Impact of Managed Accounts on Savings[3]

Although everyone could save more for retirement, it isn't necessary for everyone, so it's important to put the impact of saving advice within the context of those who need it. This study looked at the impact of managed accounts on those who were and those who weren't on track to meet their retirement goals, and found that the service had a significant impact on those who were off track.

- **More-appropriate savings[8]**
  - 71% of off-track participants increased their savings rate.
  - 29% of on-track participants increased their savings rate.

- **Higher savings rate for those who need to save more[9]**
  - Off-track participants increased their savings by 33% after using managed accounts, an average of 2% more of their salary.

- **Higher use of employer match[10]**
  - Among participants in plans that offered an employer match, the percent of participants electing to receive the maximum match increased by:
    - 12% for off-track participants
    - 1% for on-track participants

More Savings in Retirement

71 percent of off-track participants increased their savings rate after using managed accounts.

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Combined Impact on Retirement Wealth

By improving both saving and investment decisions, managed accounts can have a positive impact on a participant's retirement outlook. In this study, we found that making more-informed investing and savings decisions can lead participants to:

- **More wealth at retirement**[11]
  - The combined impact of managed accounts on projected wealth at retirement was positive for all groups when we didn't account for fees. Even after considering an assumed 0.40% fee, the expected difference in wealth at retirement was positive for most participants.

Group	Average Expected Difference in Retirement Wealth (Without Fees)	Average Expected Difference in Retirement Wealth (With a 0.40% Fee)
Off-Track DIY Investors	+57% ↑	+47% ↑
Off-Track Target-Date Investors	+36% ↑	+29% ↑
On-Track DIY Investors	+8% ↑	+2% ↑
On-Track Target-Date Investors	+7% ↑	+0% ↑

- **More retirement income**[12]
  - Higher projected retirement wealth for managed accounts users can translate into more income during retirement. We found that:
    - Younger participants are likely to see the largest increase in retirement income as a result of compounded growth.
    - Annual retirement income for the average 30-year-old participant using managed accounts would increase by 72%, or $8,232, on average and assuming no fees.
    - If we include a 0.40% fee, the average 30-year-old participant could expect their annual retirement income to increase by 56%, or $5,548 after using managed accounts.

More Wealth at Retirement

On average, wealth at retirement increased by 47% for off-track participants who previously managed their own investments.

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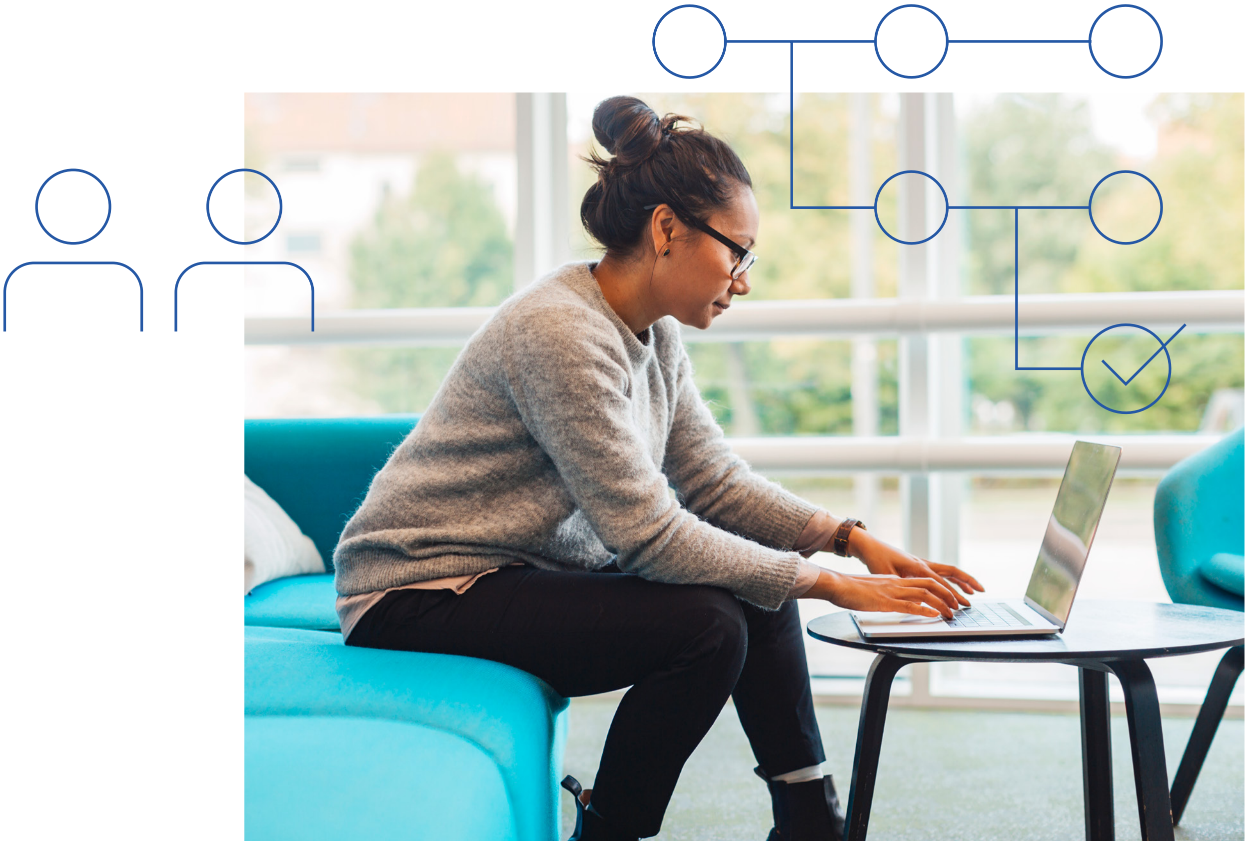

Helping Participants Achieve Better Retirement Outcomes

Through this study, we find strong evidence that managed accounts can help defined-contribution participants better prepare for retirement through the service's impact on savings and investing. It's important to note that the benefit will vary by participant and depend on the fee charged for the service. We found that participants who were self-directing their investments and not on track to retire successfully (as defined by Morningstar Investment Management) were most likely to benefit from using a managed accounts service, while participants on-track to meet their retirement goals and using prepackaged allocation funds, were less likely to benefit.

Our analysis considered only two potential areas where managed accounts can add value: saving and investing. However, the service can help participants in other areas, such as guidance on when to retire, when to claim Social Security, how to drawdown their savings in retirement, and so on. While this research suggests a positive impact to the average managed accounts user, the true value of managed accounts may be greater when considered alongside the other areas where it can add value.

Disclosures

 Opinions expressed are as of the current date; such opinions are subject to change without notice. Morningstar Investment Management shall not be responsible for any trading decisions, damages, or other losses resulting from, or related to, the information, data, analyses or opinions or their use. This commentary is for informational purposes only. The information, data, analyses, and opinions presented herein do not constitute investment advice, are provided solely for informational purposes and therefore are not an offer to buy or sell a security.

This commentary contains certain forward-looking statements. We use words such as "expects," "anticipates," "believes," "estimates," "forecasts," and similar expressions to identify forward-looking statements. Such forward-looking statements involve known and unknown risks, uncertainties, and other factors which may cause the actual results to differ materially and/or substantially from any future results, performance or achievements expressed or implied by those projected in the forward-looking statements for any reason.

Morningstar® Retirement Manager℠ is offered by Morningstar Investment Management LLC, a registered investment adviser and subsidiary of Morningstar, Inc., and is intended for citizens or legal residents of the United States or its territories. The Morningstar name and logo are registered marks of Morningstar, Inc. Investment advice generated by Morningstar Retirement Manager is based on information provided and limited to the investment options available in the defined contribution plan. Projections and other information regarding the likelihood of various retirement income and/or investment outcomes are hypothetical in nature, do not reflect actual results, and are not guarantees of future results. Results may vary with each use and over time.

[1] Users in this group could have been invested in allocation funds, target-date funds, or other prepackaged multi-asset strategies.

[2] Morningstar Investment Management defines "retirement success" as a participant having a 70%+ probability of achieving the retirement income goal, which is based on the individual achieving the same level of after-tax income during retirement.

[3] **Research on The Impact of Managed Accounts on Participant Savings and Investment Decisions**
A total of 60,825 retirement plan participants were included in Morningstar Investment Management's study, "The Impact of Managed Accounts on Participant Savings and Investment Decisions." Participants were selected for use based on available information and various filters and include those participants that used the Morningstar Retirement Manager managed accounts service between the dates of January 5, 2007 and June 4, 2018.

In no way should any performance shown be considered indicative or a guarantee of the future performance of an actual defined-contribution plan participant's portfolio with the same investment option or viewed as a substitute for an investment option recommended to an individual participant. Actual results of an individual participant may differ substantially from the historical performance shown for an investment option and may include an individual participant incurring a loss. Past performance is no guarantee of future results.

Performance returns were calculated using a time-weighted, geometrically linked rate-of-return formula. Returns for periods over one year are annualized.

Morningstar Investment Management does not guarantee that the results of their advice, recommendations, or the objectives of an investment option will be achieved.

In no way should the results of this analysis be considered indicative or a guarantee of the future performance of an actual participant using Morningstar Retirement Manager or considered indicative of the actual performance achieved by an individual participant using Morningstar Retirement Manager.

To download the full research paper, please go to: https://www.morningstar.com/lp/impact-of-managed-accounts.

[4] This figure represents the estimated alpha cost of being invested in a portfolio that is not appropriate given the participant's target risk level. The median absolute difference between the Morningstar Retirement Manager managed accounts service's recommended asset allocation and the participant's portfolio prior to the use of managed accounts is calculated for each participant. The managed accounts service recommendation assumes that Morningstar Investment Management uses all of the known information about a given participant and the participant is ultimately assigned to the ideal asset allocation. Using Morningstar Investment Management's Capital Market Assumptions and solving for the implied risk-aversion coefficient, the utility of the allocations for the participant's portfolios before and after using the managed accounts services are compared.

[5] This figure represents the assumed difference in forecasted geometric returns for portfolios before and after a participant's use of the Morningstar Retirement Manager managed accounts service. Morningstar Investment Management's Capital Market Assumptions were used to calculate the assumed return and standard deviation for each portfolio. This analysis does not include an advisory fee, which is typically charged to users of a managed accounts service on an annual basis. If included, the performance shown would be reduced. The relative portfolio efficiency is determined using a returns-based style analysis to calculate the risk exposure and Morningstar Investment Management's Capital Market Assumptions.

[6] Morningstar Quantitative Ratings™ were used as a proxy for fund quality for this analysis. Morningstar Quantitative Ratings are statistical ratings that range from Gold, Silver, Bronze, Neutral, or Negative. Higher ratings reflect Morningstar's conviction in a fund's ability to outperform its peer group and/or benchmark on a risk-adjusted basis over a full market cycle of at least 5 years. Using these ratings, the weighted average "quality" of a portfolio was estimated. Prior to enrolling in the Morningstar Retirement Manager managed account service, allocation-fund users had an average fund quality score of 3.8 while self-directors had an average fund-quality score of 3.7. After enrolling in managed accounts, the average fund quality score for users was 3.9.

Morningstar Quantitative Rating™

Morningstar's quantitative fund ratings consist of: (i) Morningstar Quantitative Rating (overall score), (ii) Quantitative Parent Pillar, (iii) Quantitative People Pillar, (iv) Quantitative Performance Pillar, (v) Quantitative Price Pillar, and (v) Quantitative Process Pillar (collectively the "Quantitative Fund Ratings").

The Quantitative Fund Ratings are calculated monthly and derived from the analyst-driven ratings of a fund's peers as determined by statistical algorithms. Morningstar, Inc. calculates Quantitative Fund Ratings for funds when an analyst rating does not exist as part of its qualitative coverage.

- **Morningstar Quantitative Rating:** Intended to be comparable to Morningstar's Analyst Ratings for open-end funds and ETFs, which is the summary expression of Morningstar's forward-looking analysis of a fund. The Morningstar Analyst Rating is based on the analyst's conviction in the fund's ability to outperform its peer group and/or relevant benchmark on a risk adjusted basis over a full market cycle of at least 5 years. Ratings are assigned on a five-tier scale with three positive ratings of Gold, Silver, and Bronze, a Neutral rating, and a Negative rating. Morningstar calculates the Morningstar Quantitative Rating using a statistical model derived from the Morningstar Analyst Rating our fund analysts assign to open-end funds. Please go to: https://www.morningstar.com/content/dam/marketing/shared/research/methodology/778136_Morningstar_Analyst_Rating_for_Funds_Methodology.pdf for information about Morningstar Analyst Rating that Morningstar's fund analysts assign to funds.

- **Quantitative Parent Pillar:** Intended to be comparable to Morningstar's Parent Pillar scores, which provide Morningstar's analyst opinion on the stewardship quality of a firm. Morningstar calculates the Quantitative Parent Pillar using an algorithm designed to predict the Parent Pillar score our fund analysts would assign to the fund. The quantitative rating is expressed as Positive, Neutral, or Negative.

- **Quantitative People Pillar:** Intended to be comparable to Morningstar's People Pillar scores, which provide Morningstar's analyst opinion on the fund manager's talent, tenure, and resources. Morningstar calculates the Quantitative People Pillar using an algorithm designed to predict the People Pillar score our fund analysts would assign to the fund. The quantitative rating is expressed as Positive, Neutral, or Negative.

- **Quantitative Performance Pillar:** Intended to be comparable to Morningstar's Performance Pillar scores, which provide Morningstar's analyst opinion on the fund's performance pattern of risk-adjusted returns. Morningstar calculates the Quantitative Performance Pillar using an algorithm designed to predict the Performance Pillar score our fund analysts would assign to the fund. The quantitative rating is expressed as Positive, Neutral, or Negative.

- **Quantitative Price Pillar:** Intended to be comparable to Morningstar's Price Pillar scores, which provide Morningstar's analyst opinion on the fund's value proposition compared to similar funds sold through similar channels. Morningstar calculates the Quantitative Price Pillar using an algorithm designed to predict the Price Pillar score our fund analysts would assign to the fund. The quantitative rating is expressed as Positive, Neutral, or Negative.

- **Quantitative Process Pillar:** Intended to be comparable to Morningstar's Process Pillar scores, which provide Morningstar's analyst opinion on the fund's strategy and whether the management has a competitive advantage enabling it to execute the process and consistently over time. Morningstar calculates the Quantitative Process Pillar using an algorithm designed to predict the Process Pillar score our fund analysts would assign to the fund. The quantitative rating is expressed as Positive, Neutral, or Negative. Morningstar Quantitative Ratings **have not been made available** to the issuer of the security prior to publication.

Risk Warning
The quantitative fund ratings are not statements of fact. Morningstar does not guarantee the completeness or accuracy of the assumptions or models used in determining the quantitative fund ratings. In addition, there is the risk that the return target will not be met due to such things as unforeseen changes in changes in management, technology, economic development, interest rate development, operating and/or material costs, competitive pressure, supervisory law, exchange rate, and tax rate. For investments in foreign markets there are further risks, generally based on exchange rate changes or changes in political and social conditions. A change in the fundamental factors underlying the quantitative fund ratings can mean that the recommendation is subsequently no longer accurate.

For more information about Morningstar's quantitative methodology, please visit https://www.morningstar.com/research/signature.

[7] The hypothetical future risk-adjusted performance is calculated for each participant's portfolio prior to and after a participant's use of the Morningstar Retirement Manager managed accounts service, and then projected forward. This analysis does not account for all portfolio costs such as fees, taxes, or expenses and does not include an advisory fee, which is typically charged to users of a managed accounts service on an annual basis. If included, the performance shown would be reduced. It is net of the portfolios' underlying holdings' fees and expenses and assumes all dividends and capital gains distributions are reinvested.

[8] This figure quantifies the change in savings rates for participants prior to and after using the Morningstar Retirement Manager managed accounts service. (Total savings rates include employee deferrals and employer matching contributions. If an employer matching contribution rate was not available for a plan, an assumed match rate of 50% on the first 6% of deferrals was assumed.) The majority of participants who were not on track increased their savings rate (71.5%) while the majority of participant who were on track did not change their savings rates (64.8%). Changes in savings rates were not constant across age ranges, with younger participants having larger average changes than older participants. Total savings rates increased more than employee deferral rates because Morningstar Retirement Manager considers whether a participant is achieving the maximum employer match, and recommends a deferral rate increase up to the employer match amount regardless of whether the participant is on track or not on track to meet their retirement goals.

[9] This figure quantifies the change in deferral rates for participants prior to and after using the Morningstar Retirement Manager managed accounts service. The median absolute difference for those not-on-track users was 2 percentage points with a relative change of 33.3%. The median absolute difference for on-track users was zero percentage points with a relative change of 0%. Changes were not constant across age ranges.

[10] This figure quantifies the percentage of participants who received the maximum employer match prior to and after using the Morningstar Retirement Manager managed accounts service. Only plans that offered an employer match were included in this analysis. On average, 12% more not-on-track participants received the maximum employer match, when a match was available, versus 1% of on-track participants.

[11] This figure represents the average potential change in wealth at retirement an individual could realize when using a managed accounts service. For each participant, the expected geometric return of the participant's portfolio prior to and after using the Morningstar Retirement Manager managed accounts service is calculated using the portfolio's asset class exposures. The difference between these results was then projected forward to the participant's assumed retirement at age 65. Participants are grouped by (i) self-directors versus allocation-fund users and (ii) whether they are on track or off track for meeting the retirement goal. A retirement age of 65 is assumed, and each portfolio's fund allocation and the participant's savings rate are held constant over time. This analysis reviewed the impact on participants when the advisory fee, which is typically charged to users of a managed accounts service on an annual basis, is not included. The analysis also reviewed the impact on participants with a 40-basis-point annual advisory fee. This analysis does not account for all portfolio costs such as fees, taxes, or expenses. If included, these fees would lower the potential amount of additional wealth at retirement shown in this analysis.

[12] The amount of annual income a participant could receive in retirement was determined by calculating the expected geometric return for each participant's portfolio prior to and after using the Morningstar Retirement Manager managed accounts service using the portfolio's asset-class exposures. The difference between these results was then projected forward to the participant's assumed retirement at age 65. Participants are grouped by (i) age, (ii) self-directors versus allocation-fund users, (iii) whether they are on track or off track for meeting the retirement goal, and (iv) annual advisory fee. Each portfolio's fund allocation and the participant's savings rate are assumed to remain constant over time and a retirement age of 65 is assumed. In reality, these would likely change over time and would differ by individual participants.

For this calculation, 40 basis points was used as a proxy for the average fee assessed by a managed accounts provider. This analysis does not account for all portfolio costs such as fees, taxes, or expenses other than the annual advisory fee. If included, these fees would lower the potential amount of additional wealth at retirement shown in this analysis.

Overall, an average 25- to 34-year-old participant in this scenario could potentially realize an additional $5,548 in annual retirement income. (In this age group, not-on-track self-directors could realize an additional $8,212 by enrolling in managed accounts; not-on-track allocation-fund users could realize an additional $3,279, and on-track self-directors could realize an additional $3,418. On-track allocation-fund users were found to potentially realize $496 less by using managed accounts than by using an allocation fund.)

The average amount a participant could realize in annual retirement income by enrolling in managed accounts with an annual 40-basis-point investment management fee varies across age groups, with an average 35- to 44-year-old having the potential to realize an additional $2,566 and an average 45- to 54-year-old has the potential to realize an additional $690. A 55- to 65-year-old could potentially realize $66 less by using managed accounts.

About Morningstar's Investment Management Group

Morningstar's Investment Management group is a leading provider of discretionary investment management and advisory services. Guided by seven investment principles, the group is committed to focusing on its mission to design portfolios that help investors reach their financial goals. The group's global investment management team works as one to apply its disciplined investment process to all strategies and portfolios, bringing together core capabilities in asset allocation, investment selection, and portfolio construction. This robust process integrates proprietary research and leading investment techniques.

In addition to advisory services, the group's investment professionals build and manage model portfolios for financial advisors in the United States, United Kingdom, Australia and South Africa to create strategies that incorporate a wide variety of investment objectives.

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Workplace Solutions

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