



**Defined Contribution
Institutional Investment
Association**

2025 M Street, NW, Suite 800
Washington, DC 20036
www.dciia.org

Raising the Bar: Pumping Up Retirement Savings

A Research Report by DCIIA¹

Summary

Americans are saving in defined contribution plans such as 401(k)s with the understanding that these assets will provide a primary source of retirement income beyond social security. In fact, defined contribution savings in the U.S. now exceed \$4 trillion. Yet, ask just about anyone, plan sponsor or employee, if people are saving enough for retirement, the answer is a resounding, “not nearly enough.”

While progress has been made in helping people save, particularly via automatic enrollment and contribution escalation programs, in the research project “Raising the Bar: Pumping Up Retirement Savings,” the industry coalition Defined Contribution Institutional Investment Association (DCIIA) shows strong evidence² that by adjusting the implementation of these features and influencing certain employee actions, plan sponsors can materially improve retirement outcomes for all employees.

Key Findings

Participants in plans with automatic enrollment and automatic contribution can experience significantly better chances of meeting their retirement income goals depending upon how these features are implemented and communicated. New analysis by EBRI shows that the success rate of employees with 31-40 years of 401(k) eligibility reaching an 80 percent income replacement target (in real terms) increases from 45.7 percent to 79.2 percent for lower income workers and 27 percent to 64 percent for higher income earners in plans with:

- A high automatic enrollment contribution rate cap,
- Successfully reducing automatic contribution escalation opt outs,
- A higher annual automatic contribution escalation rate.

“Raising the Bar: Pumping Up Retirement Savings” uses simulation results from the EBRI Retirement Security Projection Model® to demonstrate the impact of these changes on employee retirement income adequacy, and explores what can be done by plan sponsors—as well as policymakers, and plan providers—to create better outcomes.



Background Data on 401(k) Participation and Contributions

(from a variety of sources)

- The average contribution election was 7.3%.⁴
- 28.2% of participants contributed below the company match, and that increased to 40% for employees in their 20s.⁵
- Auto-enrollment:
 - Has doubled since 2006 (up from 24%).⁶
 - Increases participation between 25%–35% (participation under opt-in: 40%–70% vs. under opt-out: 85%–95%).⁷
- Default contribution rates:
 - Average initial default rate are modest at 3%.⁸
 - Higher default rates (e.g., 6% versus 3%) do not result in increased opt-out rates.⁹
 - Between 65%–87% of participants remain at the default rate and default fund, declining to 45% after 3 years.¹⁰

Raise the Bar and Make it Automatic

About half of large plan sponsors have adopted automatic enrollment and a third have adopted automatic contribution escalation as part of their plan design.¹¹ More than two thirds of plan participants indicate that they know they should be saving about 10-12% of their paychecks to meet their retirement needs,¹² but Hewitt shows that the average savings rate is about 7%.

So where's the problem? The bar has been set too low. The research shows that even with automatic enrollment and automatic contribution escalation, the majority of plans were structured so that employees would never automatically achieve more than a 9% deferral rate unless the employee took proactive steps to do so.¹³ Research in behavioral finance tells us that because of participant inertia, automatic enrollment can be a double-edged sword—automatic enrollment gets participants into the plan, but it may anchor them to a contribution rate that may not provide sufficient wealth accumulation. In fact, research has shown that auto enrollment with a low default deferral rate and without auto escalation can actually reduce accumulation amounts for workers who would have enrolled in the plan proactively at a higher rate. That's because, due to inertia, workers who are auto enrolled tend to stick with a low default contribution rate for many years, even if they would have enrolled on their own at a higher rate. As such, while it can be said that even a low default contribution rate can benefit workers who would not have enrolled at all in the plan (e.g., 3% is better than 0%), it can be detrimental for the savings level of workers who would have set a higher savings rate on their own.¹⁴



**Defined Contribution
Institutional Investment
Association**

2025 M Street, NW, Suite 800
Washington, DC 20036
www.dciia.org

With the defined contribution plan becoming the central employer-sponsored retirement savings vehicle for many working Americans, it is critical that plan sponsors make their default decisions wisely and based on solid facts. A good decision-making framework for selecting defaults can be retirement income replacement impact. In other words, instead of focusing only on participation, plan sponsors may wish to consider the outcomes that are likely given their plan design, features, and the behaviors of their employees.

“Raising the Bar: Pumping Up Retirement Savings” uses the retirement income replacement framework to examine the impact that different design approaches and employee behaviors had on retirement income adequacy under automatic enrollment and automatic escalation. Successful retirement savings in this analysis was defined by achieving a long-term real income replacement rate of 80% through a combination of defined contribution savings and Social Security. Using stochastic simulation, EBRI and DCIIA were able to model outcomes based on actual DC participant data, incorporating assumptions about opt-out rates and cash-outs.¹⁵

Assumptions¹⁶

Other assumptions include:

- Annuity purchase price of 18.62 for a male aged 65 for the conversion of the account balances to a real annuity.
- 401(k) projected balances include any balances that originated in a 401(k) plan that have been rolled over to an IRA.

Population

- The EBRI data set examines 225 large plan sponsors with automatic enrollment and automatic contribution escalation.
- The analysis is limited to employees with 31-40 years of 401(k) eligibility, thereby showing the impact on employees who have worked for a 401(k) sponsor for more than 30 years.
- Results are given for employees in the highest and lowest income quartiles

Plan Design and Participant Behavior Assumptions

The EBRI/DCIIA analysis assumes that participants were automatically enrolled in a plan and that their contributions were automatically escalated given the following assumptions:

- 1% versus 2% annual automatic escalation of salary deferrals.
- Varying caps on deferrals under automatic contribution escalation (6%, 9%, 12% 15%).
- A given number of participants opting out of automatic contribution escalation versus no one opting out.
- Participants “remembering” their former salary deferral level when starting a new plan and selecting that same level in the new plan versus participants failing to remember former savings rate and remaining with the auto enrollment default deferral rate of the plan.

Scenario Findings

Two scenarios were examined in the EBRI/DCIIA analysis: conservative and robust.

In the conservative scenario, it is assumed that participants don't remember their former deferral levels; opt out of automatic contribution escalation at the rates modeled in VanDerhei (2007); are capped at a maximum 6% salary deferral level; and escalate by only 1% annually.

In the robust scenario, it is assumed that participants do remember and implement their former deferral level at job change instead of merely accept the automatic enrollment default, don't opt out of contribution escalation, escalate deferrals by 2% annually, and have deferrals automatically capped at 15% of pay.

Results: Conservative Scenarios

The EBRI/DCIIA analysis finds that in the conservative scenario for the lowest income quartile, 54.3% of employees with 31-40 years of 401(k) eligibility are expected to fall short of amassing enough to provide an 80 percent real replacement rate when combined with Social Security. For the highest income quartile, 73.0% are expected to fall short.

Results: Robust Scenarios

In the robust scenario, the analysis finds that for the lowest income quartile, just 20.8% of employees with 31-40 years of 401(k) eligibility are expected to fall short of an 80 percent combined real replacement rate. For the highest income quartile, just 36.0% are expected to fall short.

In other words, there is a massive 33.5 to 37 percentage point increase in the probability of success gained from modifying the plan design features of automatic escalation and employee behavior, depending on income quartile.

What Drives Differences?

Figure 1 further explores the factors that are driving these differences:

- Increasing the automatic enrollment contribution rate cap had by far the greatest impact of any single factor on increasing the probability of success in the analysis, raising the probability or replacing 80% of real income by 16.4 percentage points for the lowest paid workers, and by 14.1 percentage points for the highest paid workers.
- Successfully encouraging workers not to opt out of their 401(k) plan, ensuring that employees remember and implement deferral levels from their prior 401(k) plan instead of remaining at the automatic enrollment default, and increasing the annual automatic contribution escalation rate from 1% to 2% individually had a much smaller impact, ranging from 0.4 percentage points to 1.8 percentage points.
- However, in combination, the impact of these changes increase substantially. When the automatic enrollment deferral cap is raised and opt outs are successfully discouraged, the probability of success increases by 23 to 24.7 percentage points depending on income quartile. When the cap is increased, opt outs successfully discouraged, and workers remember and implement prior deferral levels upon

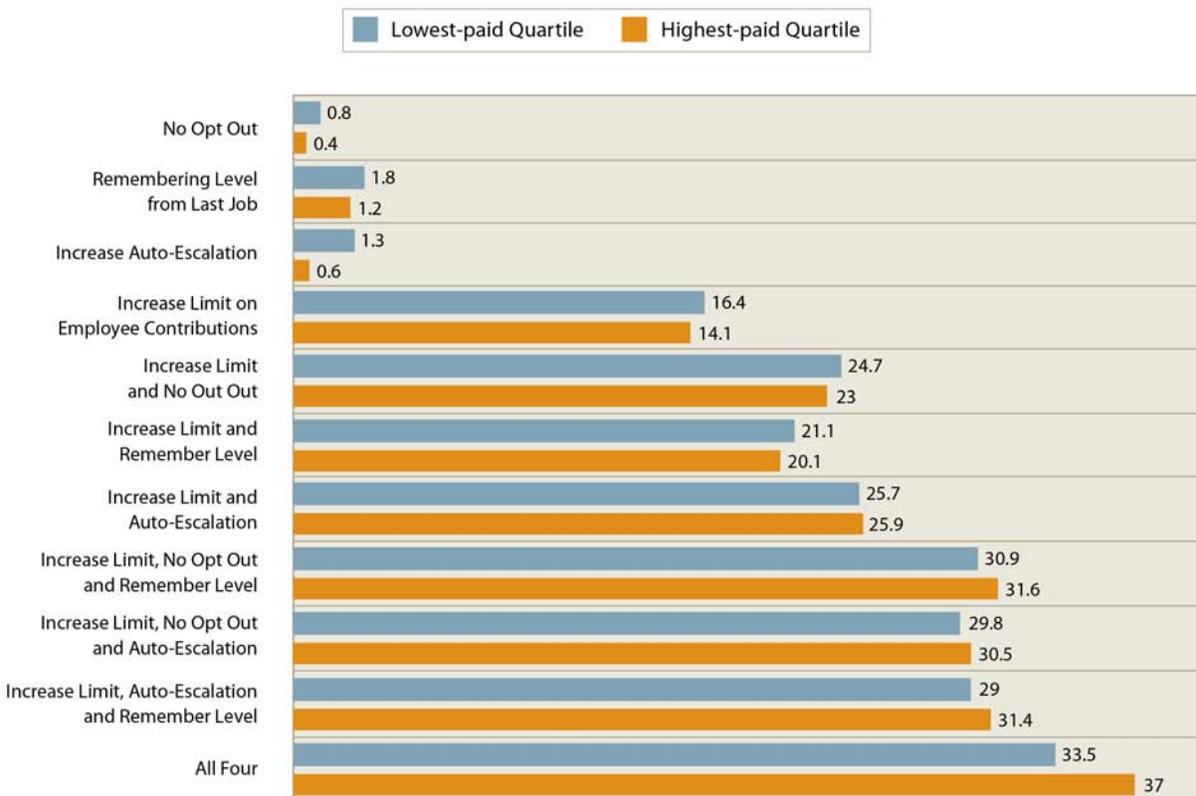


automatic enrollment, the probability of success increases 30.9 to 31.6 percentages depending on income quartile.

- When all four design elements and behaviors are optimized, the probability of success increases 33.5 to 37 percentage points depending on income quartile.

These findings clearly demonstrate the importance of optimizing the implementation of automatic enrollment and improving participant behaviors with respect to the use of automatic enrollment and automatic escalation.

Figure 1
**Increase in Probability of Success* from Modifying Plan Design
Features of Automatic Escalation and Employee Behavior**
(Total balances, baseline assumptions)

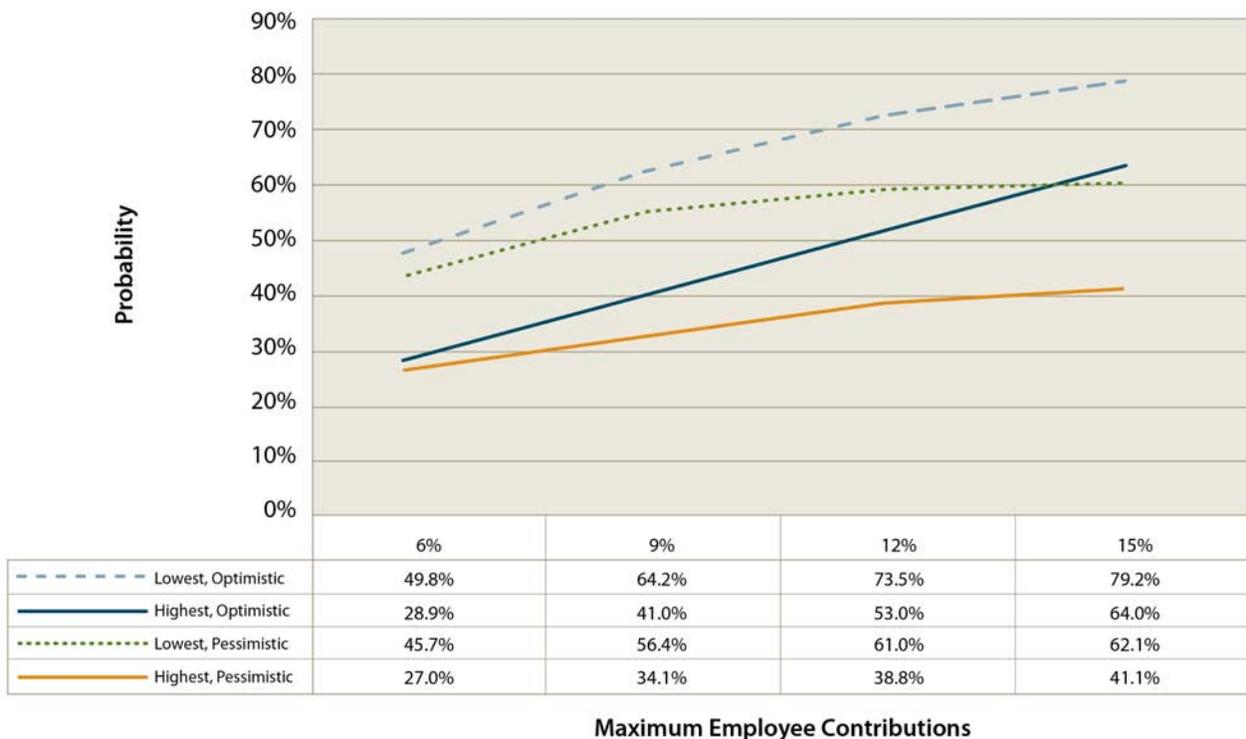


Source DBRI/ERF Retirement Security Projection Model, Versions 100810a1 - 100810a16.
*Success is defined as achieving an 80 percent real replacement rate from Social Security and 401(k) accumulations combined as defined in the text. The population simulated consists of workers currently ages 25-29 who will have more than 30 years of simulated eligibility for participation in the 401(k) plan. Workers are assumed to retire at age 65 and all 401(k) balances are converted into a real annuity at an annuity purchase price of 18.62.



Figure 2 provides the full range of outcomes by income quartile. In the table, four possible contribution escalation maximum cap rates are shown (6%, 9%, 12%, 15%). For each, the probability of achieving an 80% real replacement rate from Social Security and 401(k) accumulations is given assuming a conservative scenario (some participants opt out; they do not remember and implement the contribution rate they used in their prior plan, but merely accept the default contribution rate; and a 1% annual automatic escalation rate is in place) and a robust scenario (no participants opt out; they do remember and implement the contribution rate they used in their prior plan; and a 2% annual automatic contribution rate is in place.)

Figure 2
Success Rates of Achieving a Combined 80% Real Replacement Rate from Social Security and 401(k) Accumulations, as a Function of Maximum Employee Contributions



Source: EBRI/ERF Retirement Security Projection Model, versions 100810a1–100810a16.



**Defined Contribution
Institutional Investment
Association**

2025 M Street, NW, Suite 800
Washington, DC 20036
www.dciia.org

Figure 2 confirms the power of the contribution escalation maximum cap. For low income workers (represented by the two uppermost lines), even in the conservative scenario, moving from a 6% to a 9% contribution escalation maximum cap improves the probability of achieving an 80% real replacement rate by 11 percentage points. In the robust scenario, it improves the probability by 15 percentage points. However, for low-income workers, there is a law of diminishing return. In the robust scenario, moving from a 9% to a 12% maximum cap increases the probability of achieving an 80% real replacement rate by only 9 percentage points; moving from 12% to 15% only increases the probability by 6 percentage points.

The diminishing impact reflects the fact that so much of the replacement rate for low income workers comes from Social Security, that at a certain point it becomes difficult to materially move the dial in terms of increasing the probability of success. In contrast, because higher income workers must derive proportionally more of their retirement income from 401(k) savings in order to replace pre-retirement income, there are ongoing significant gains in the probability of success to be made by capping the automatic contribution escalation maximum at a level as high as 15%.

The following sections provide perspectives on how plan sponsors, providers, and policy makers might be able to facilitate better design and usage of these auto features.

Implications for Plan Sponsors

As Richard Thaler of University of Chicago and Cass R. Sunstein remind us in their book, *Nudge*, any plan design decision will impact behavior. This is called choice architecture. A plan sponsor will always make plan design decisions—whether intentionally or not. This includes whether or not to require participants to opt-in or opt-out of the plan. In adding an automatic enrollment (i.e. opt-out) feature to the plan, the plan sponsor has many decisions to make on what the appropriate default contribution rates should be and whether to change those results over time through auto-escalation. Thaler and Sunstein argue that given the impact that these design features have, a plan sponsor should design them in a way that leads to better outcomes while still giving individuals the opportunity to make their own choices.

Our research now provides plan sponsors with data that they can use to make more informed decisions on how best to design auto-escalation features. Until now, plan sponsors have had to rely on peer comparisons, implied government recommendations through safe harbor rules, or gut instincts. However, we now have rigorous research that can be utilized.

The research identified four factors that can have profound impacts on retirement savings, particularly when combined with each other. Of the four, two are directly within the control of the plan sponsor while two are not.

Specifically, increasing the limit of auto-escalation to a more robust level is within the plan sponsor's control, and seems to have the greatest impact of the four factors. The other factor that is within the plan sponsor's control and can have a meaningful impact is increasing the annual auto-escalation from 1% to 2%.

If these have such a meaningful impact, what would stop a plan sponsor from implementing this?



1) Desire to minimize opt-outs. Because auto-escalation is still relatively new and not yet widely adopted, we don't have enough empirical evidence that would confirm or refute the notion that opt-outs are likely to increase with more robust caps and increase rates. However, most initial indications are that these design features have little to no impact on opt out rates. Further, research shows that when participants do proactively choose their own automatic contribution escalation maximum cap, it most commonly is 15% or higher.¹⁷

2) Cost. While it may certainly be true that more aggressive defaults (e.g., escalating deferrals at a 2% rather than a 1% rate) may result in a quicker increase in matching costs, there are two important things to remember: 1) The additional costs will lead to additional retirement security for employees, which is a valued benefit. 2) It is important that plan sponsors look at all design features in aggregate. Match formulas need not be assumed to be a constant. They can be designed in different ways to incorporate changes in contribution patterns. Indeed, the implementation of automatic features can be an opportunity for plan sponsors to re-examine the role of the company matching contribution in the plan. Can it be configured differently to accommodate the more aggressive defaults? And what would the impact be?

3) Concerns about participant objections. It is important for plan sponsors to remember that workers always have the opportunity to opt out of these programs, or reduce the aggressive defaults. Plan sponsors obviously won't want to encourage this behavior, but they will certainly wish to educate participants so that they are well aware of their options.

4) Safe harbor effect. Plan sponsors who are not seeking a non-discrimination testing safe harbor under the Pension Protection Act realize no explicit added fiduciary protection in adhering to the safe harbor required defaults. The required defaults must only be adhered to if the Pension Protection Act non-discrimination testing safe harbor is being sought.

The two other factors we have identified that also have a large impact on the probability an individual will meet retirement goals are less in the control of the plan sponsor. Yet, plan sponsors can take actions to influence these outcomes.

Reducing participant opt-outs.

There are two ways that plan sponsors can potentially reduce opt-outs. One is to provide their participants with on-track reporting tools that reinforce the importance of increased savings rates to meet retirement goals. Second, plan sponsors can again use the match formula to influence results by increasing the level of contributions to which the match will be made. This can be done in a cost neutral way. For example, instead of matching 50% on the first 6% of contributions, match 25% on the first 12% of contributions. After all, research shows that any match at all encourages 401(k) savings, and that the structure of the match largely determines the level at which individuals save.¹⁸

Encouraging use of prior contribution levels.

Getting participants to reject the automatic enrollment default and adhere to the contribution level that is most appropriate for them is arguably one of the most challenging tasks for plan sponsors identified in this paper. Yet, clever, targeted, and persistent communication could potentially have an impact. Perhaps, however, a better idea is



to set the starting default rate at an already higher rate. Research shows that when automatic enrollment contribution defaults are as high as 6%, opt out rates are no higher across demographic groups than when they are as low as 3%.¹⁹

Implications for Policymakers

Policy can also influence improvement on savings adequacy. First, policymakers should examine the signals that are being sent by the defaults that are used in the automatic enrollment non-discrimination testing safe harbor. QACA requires that automatic enrollment start at 3% and increase to at least 6% over four years. The maximum allowed cap under QACA is 10%. At a minimum, guidance should be given to explain that there is no “inferred” safe harbor for non-QACA plans. Ideally, QACA itself should be revisited, increasing the maximum allowed cap from 10% to a higher level, or eliminating it altogether so that plan sponsors can choose their own cap. Starting the automatic enrollment deferral at 6% immediately (and requiring that it escalate to 9%), as opposed to starting it at 3% and having it escalate to 6% is another possible avenue that should be explored.

Since a key reason that some plan sponsors do not implement automatic enrollment at a higher rate, and do not incorporate automatic escalation aggressively or at all is the cost associated with matching contributions, policymakers may also wish to explore ways to incentivize more robust implementation of these features.

Implications for Providers

Record keepers, consultants, and others can facilitate better implementation of auto features by proactively educating plan sponsors on the impact of their decisions.

- They can explain that QACA defaults are not a signal from the government about appropriate defaults for non-QACA plans
- They can give statistics on opt-out rates for automatic enrollment and automatic contribution escalation and for higher versus lower defaults, showing how opt-outs do or don't increase with more robust defaults.
- They can supply statistics on benefits center experience for plans with automatic enrollment and automatic contribution escalation for plans with higher versus lower defaults, showing the extent to which participant “noise” increases with more robust defaults.

Many providers are already proactive in providing both general and targeted communication to encourage robust savings. They can also specifically develop communication geared to encourage participants to determine their own appropriate contribution level, auto escalation level, etc. independent of the defaults.

Conclusion

In the past, DC participants—and plan sponsors—may have relied on the stock market to fill in the gap of low savings by workers, and help them generate a sufficient 401(k) retirement nest egg. However, the last few years has shown that the market cannot be expected to “bail out” workers who don't save enough. Indeed, a recent Callan study showed that the annualized total return experienced by DC plan participants since early 2006 has been 0.11%: virtually all of the growth experienced by participant balances over that time came from plan sponsor and



**Defined Contribution
Institutional Investment
Association**

2025 M Street, NW, Suite 800
Washington, DC 20036
www.dciia.org

participant contributions.²⁰ It follows then, that to ensure retirement income security for workers, plan sponsors must either commit to contributing more, or to finding ways of increasing participant savings.

The EBRI/DCIIA study demonstrates that automatic enrollment and automatic contribution escalation provide a good starting point to improve worker savings behaviors. However, not enough attention has been spent on ensuring that plan defaults lead to robust outcomes from a retirement income adequacy standpoint. In this paper we demonstrate that much can be done from a plan sponsor, policymaker, and provider perspective to facilitate very strong outcomes within the context of the existing framework of automatic enrollment and automatic contribution escalation. Thoughtful plan design and communication can materially alter the long-term savings levels of millions of Americans. In contrast, the alternative—plan design and communication that does not consider long-term income replacement ramifications—may have painful long-term social and economic consequences when it comes to American’s retirement security.

About DCIIA

The Defined Contribution Institutional Investment Association (DCIIA) is a non-profit association dedicated to enhancing the retirement security of American workers. To do this, DCIIA fosters a dialogue among the leaders of the defined contribution community who are passionate about improving defined contribution plan design. DCIIA members include investment managers, consultants, law firms, record keepers, insurance companies, plan sponsors and others committed to the best interests of plan participants. www.dciia.org

DCIIA's mission is underpinned by five core beliefs:

- The primary role of defined contribution retirement plans is to create retirement income adequacy: Helping plan participants build sufficient savings to achieve their goals while working (accumulation) supports their income needs in retirement (distribution).
- Well-designed default programs can improve retirement outcomes: Auto enrollment and auto-escalation (of participant contribution levels), when combined with default investment options that take advantage of institutional asset management techniques, help increase savings levels and promote better retirement outcomes.
- The regulatory framework and industry infrastructure must offer full support for all types of institutional investment approaches and products, giving defined contribution plans access to the complete toolkit of investment, retirement income and advice solutions.
- Plan sponsors and their consultants should have the ability to select the best combination of partners to meet plan needs, including investment and retirement solutions, record keeper, custodian, managed account, advice and other service providers..
- Full transparency on pricing and revenue sharing is critical for plan sponsors to evaluate the optimal combination of solutions to deliver improved retirement outcomes for their participants.



***Defined Contribution
Institutional Investment
Association***

2025 M Street, NW, Suite 800
Washington, DC 20036
www.dciia.org

To further its mission, DCIIA:

- Aims to make it simpler for defined contribution plan sponsors to implement appropriate institutional investment management approaches in DC plans focused on delivering higher returns and reduced risks;
- Provides an independent forum for thought leadership on advancing defined contribution and retirement income design, including institutional default investment strategies and retirement income solutions;
- Conducts research, publish analysis and insights and host events that support the advancement of institutional approaches and better defined contribution design;
- Identifies and removes barriers for plan sponsors so that they may pursue improved defined contribution institutional investment structures;
- Encourages improved fiduciary practices and tools to support institutional defined contribution plan design; and
- Educates legislators and regulators about issues and challenges in institutional defined contribution plan design and better approaches to retirement security.

Endnotes

- ¹ Thanks to Ingrid Maltrud of Blackrock, Jack VanDerhei of EBRI, Josh Cohen of Russell, and Lori Lucas of Callan for their contributions to this work.
- ² The findings in this research come from November 2010 EBRI Issue Brief by the Employee Benefit Research Institute, "The Impact of Auto-enrollment and Automatic Contribution Escalation on Retirement Income Adequacy," using results from the EBRI Retirement Security Projection Model.[®]
- ³ Ibid.
- ⁴ Hewitt's 2010 "How Well Are Employees Saving and Investing in 401(k) Plans:"
- ⁵ Hewitt's 2010 "How Well Are Employees Saving and Investing in 401(k) Plans:"
- ⁶ Hewitt's "Survey Results: Hot Topics in Retirement 2010."
- ⁷ Beshears, John, James J. Choi, David Laibson, Brigitte C. Madrian (2006). "The Importance of Default Options for Retirement Savings Outcomes: Evidence from the United States."
- ⁸ Watson Wyatt, "2009 Defined Contribution Plan Trends Report."
- ⁹ Choi, James J., David Laibson, Brigitte C. Madrian, and Andrew Metrick. "Saving for Retirement on the Path of Least Resistance," July 19, 2004.
- ¹⁰ Choi, James J., David Laibson, Brigitte Madrian, Andrew Metrick (2001). "For Better or Worse: Default Effects and 401(k) Savings Behavior."
- ¹¹ "2010 Callan Defined Contribution Trends Survey."
- ¹² "2010 Participant Attitudes and Behaviors Survey," BlackRock.
- ¹³ "The Next DC Frontier: An Outcome-Based Approach to DC Plan Management." Lori Lucas. Benefits Quarterly, Fourth Quarter 2010.
- ¹⁴ "For Better or For Worse: Default Effects and 401(k) Savings." Choi et al. November 9, 2001.
- ¹⁵ Jack VanDerhei, The Expected Impact of Automatic Escalation of 401(k) Contributions on Retirement Income (9th ed., vol. 28, pp. 1-8). EBRI Notes. September 2007.
- ¹⁶ Detailed discussion of the assumptions used in the simulation can be found in VanDerhei, "The Impact of Automatic Enrollment in 401(k) Plans on Future Retirement Accumulations: A Simulation Study Based on Plan Design Modifications of Large Plan Sponsors." EBRI Issue Brief, no. 341. April 2010.
- ¹⁷ "Improving Defined Contribution Plan Utilization through Retirement IMPACT." Hewitt Associates. September 2005.
- ¹⁸ "Impact of Introducing a Match on the Quality of Participation." Hewitt Associates. May 2002.
- ¹⁹ Choi, James J., David Laibson, Brigitte C. Madrian, and Andrew Metrick. "Saving for Retirement on the Path of Least Resistance," July 19, 2004.
- ²⁰ June 2010 Callan DC Index[™] results.