

Angela M. Antonelli
Research Professor and Executive Director
Georgetown University Center for Retirement Initiatives

WillisTowersWatson 

About the Center for Retirement Initiatives (CRI)

The Center for Retirement Initiatives at Georgetown University is a research center of the McCourt School of Public Policy, one of the top-ranked public policy programs in the nation. Through its academic reputation and ability to engage with policymakers, business leaders and other stakeholders, the McCourt School attracts world-class scholars and students who have become leaders in the public, private and nonprofit sectors.

The CRI is dedicated to:

- ♦ Strengthening retirement security by expanding access and coverage for the private sector workforce;
- ♦ Providing thought leadership and developing innovative new approaches to retirement savings, investment and lifetime income;
- ♦ Serving as a trusted policy advisor to federal, state and local policymakers and stakeholders.

3300 Whitehaven Street, NW, 5th Floor
Washington, D.C. 20007
(202) 687-4901

<https://cri.georgetown.edu/>

About Willis Towers Watson

Willis Towers Watson (NASDAQ: WLTW) is a leading global advisory, broking and solutions company that helps clients around the world turn risk into a path for growth. With roots dating to 1828, Willis Towers Watson has 40,000 employees serving more than 140 countries. We design and deliver solutions that manage risk, optimize benefits, cultivate talent, and expand the power of capital to protect and strengthen institutions and individuals. Our unique perspective allows us to see the critical intersections between talent, assets and ideas – the dynamic formula that drives business performance. Together, we unlock potential. Learn more at willistowerswatson.com.

Contributing authors

- ♦ Dana Hildebrandt – Head of Lifetime Income Solutions Research, Willis Towers Watson
- ♦ David O'Meara – DC Solutions Architect, Willis Towers Watson
- ♦ Jason Shapiro – Head of QDIA Manager Research and DC Strategy, Willis Towers Watson

Contents

- Executive Summary4**
- Introduction.....7**
- I. The Importance of Lifetime Income and Associated Challenges8**
 - The Growing Demand for Lifetime Income Solutions8
 - The Challenges of Generating and Protecting Retirement Income9
 - Social Security Not Designed to Meet All Retirement Income Needs.....9
 - How Much Should We Save?9
 - The Importance of Behavioral Tools and Nudges in the Accumulation and Decumulation Phases.....10
 - Accumulation vs. Decumulation: Defaults vs. Dynamic.....10
 - If Income Replacement Is the Goal, What Are the Key Risks?.....10
 - Other Considerations12
- II. Lifetime Income Solutions13**
 - Objectives of Modeling13
 - Single-Premium Lifetime Annuity.....13
 - Laddered Bond Approach.....14
 - Target Date Fund with a Systematic Withdrawal Plan.....16
 - Managed Payout Funds17
 - Target Date Fund With Guaranteed Income Components18
 - Deferred Annuities18
 - Guaranteed Minimum Withdrawal Benefit20
 - Why Lifetime Income Solutions Are Important.....22
 - Why Isn't There More Love for Annuities?22
- III. Implementation Considerations23**
 - Plan Asset Retention23
 - Portability23
 - Recordkeeper Constraints24
- IV. Legislative and Regulatory Considerations25**
 - The Limited Impact of the Existing Annuity Safe Harbor25
 - Current Legal and Regulatory Considerations25
- V. Conclusion27**
- Appendix: Key Inputs and Assumptions28**

Executive Summary

For the first time, defined contribution (DC) plan assets account for more than 50% of total retirement assets in the seven largest pension markets globally.¹ Most employers today offer DC plans to their workers as their primary, and often sole, retirement plan. This shift toward a DC-centric system has broad implications for retirement security for individuals during both their working years and their retirement years.

With today's DC plans, the responsibility for making complex savings and investment decisions that will significantly affect the amount of money available for retirement has shifted to workers. This trend has not gone unnoticed: Innovations in plan design have focused on making the accumulation (working) period easier to manage and have increased the likelihood that a worker will begin to save and keep saving for retirement. For example, employers are commonly auto-enrolling participants into plans and, in some plan design structures, even auto-escalating their contributions.² The decision about how to invest retirement savings has also been made easier by the emergence of target date funds (TDFs) that provide a way for plan participants to choose their intended retirement date and select the corresponding fund. A professional fund manager will manage the participant's TDF assets over time, moving them from higher-risk assets focused on growth for younger participants into lower-risk assets focused on income and capital preservation as the participants move into and through retirement.

While these innovations are having a positive impact on savings and investing during the accumulation years, there has been less innovation in the tools and solutions to help participants once they reach retirement. However, demand is growing for DC plans to evolve from *accumulating retirement savings to generating retirement income*.

Defined benefit (DB) plans already make this easy for participants, by specifying the benefit a participant would receive in retirement, typically as a monthly lifetime stream of income. Unfortunately, DB plans are becoming less common, and workers are often having to rely primarily on DC plans even though they were originally

designed to supplement, not replace, DB plans. This shift affects retirement readiness, as DC plans focus primarily on wealth accumulation and preservation, and do not offer workers sufficient options to help them manage their income to last a lifetime.

If DC plans are to become the primary source of income in retirement, policymakers and DC industry leaders must move beyond a pure focus on inputs (e.g., the amount of savings) to include a focus on outcomes — that is, whether retirement savings plans generate and protect adequate income in retirement.

The Growing Demand for Lifetime Income Solutions

A better understanding of the retirement income problem facing our nation today is driving increased interest in lifetime income solutions. Since 2016, the number of solutions available has expanded significantly and plan sponsors are more focused on learning about these different options, both in terms of what is available on their plans' recordkeeping platforms and broader marketplace trends.

In order to meet the needs of participants with a wide range of financial situations and life goals, the solutions available reflect varying objectives and considerations:

- ♦ **Stability of income** — provides steady income even in adverse market environments
- ♦ **Income maximization** — prioritizes income generation over other potential retirement objectives
- ♦ **Longevity protection** — meets income needs if a participant lives longer than expected
- ♦ **Growth potential** — takes advantage of strong capital markets to generate higher income
- ♦ **Cost** — implicit and explicit expenses associated with the guarantees, investment management, and any other components required to execute a strategy
- ♦ **Liquidity** — converts assets invested into cash if needed
- ♦ **Residual balance** — considers the potential for assets to remain for bequests, inheritance, and so on

Challenges in Implementation and Execution

While the need for lifetime income solutions does not seem particularly controversial, adoption rates by plan sponsors and participants have been low. It can be daunting for many retirees to determine how much retirement income is “enough.”³ Deciding how much to save is difficult for participants because they do not know how long they will live or the quality of life they will have as they age. Guidelines such as retirement income replacement ratios can be useful starting points (and are used in this paper for purposes of modeling how different solutions meet participant retirement income needs). However, the complexity of assessing income needs, evaluating which solution will best meet those needs, the lag in innovation of administrative support for such solutions, and the uncertainty for plan sponsors created by existing legal and regulatory frameworks continues to slow the adoption of lifetime income solutions.

How Different Solutions Address Participant Needs

This report analyzes the outcome distribution for some of the more common lifetime income solutions. As presented in **Figure 1**, the solutions examined include an immediate annuity, a laddered bond portfolio, a TDF using a systematic withdrawal plan, a managed payout fund, a TDF with a deferred annuity, and an investment portfolio with a guaranteed minimum withdrawal benefit (GMWB)*.

Each solution was analyzed to determine how a beginning asset balance⁴ at the time of retirement would (1) generate and protect annual income, (2) preserve some or all of the starting account balance, and (3) impact the risk of running out of income at any point over a 30-year retirement horizon, by examining a range of best- and worst-case scenarios based on market performance and withdrawals decisions.

Figure 1. Outcome distribution for various lifetime income solutions: Improvements relative to basic withdrawal rules that could not otherwise be achieved in a DC structure

Solution (Results in \$000)	Immediate Annuity	Laddered Bond	Systematic Spending	Managed Payout	TDF with Deferred Annuity	GMWB*
Balance at age 65 after any guaranteed income purchases ⁵	\$0	\$640	\$640	\$640	\$466	\$640
Initial annual income generated beginning at age 65 ⁶	\$43	\$32	\$43	\$43	\$43	\$32
Annual income generated at age 85 from worst- to best-case scenario (5th / 50th / 95th)	\$43 / \$43 / \$43	\$32 / \$32 / \$32	\$0 / \$43 / \$43	\$15 / \$29 / \$50	\$43 / \$43 / \$43	\$32 / \$35 / \$54
Account balance at age 85 from worst- to best- case scenario (5th / 50th / 95th)	\$0	\$217 / \$260 / \$305	\$0 / \$191 / \$891	\$225 / \$425 / \$754	\$0 / \$54 / \$453	\$0 / \$355 / \$997
Potential of running out of income at any point — from age 65 to 95	No	No	Yes	No	Yes	No

*A GMWB is a type of contract that can be placed on a variable annuity so the level of income in retirement is determined by the performance of a portfolio of investments underlying that annuity.

Although the numbers in **Figure 1** provide some useful quantitative differentiators, it is important to keep in mind some qualitative considerations:

- ♦ Immediate annuities provide the opportunity for high, stable income and longevity protection; however, liquidity may be compromised.
- ♦ Laddered bond portfolios remain liquid and provide for stable income and longevity protection, but they require higher participant engagement (if constructed independently) and typically provide lower expected income than an immediate annuity.
- ♦ Systematic spending approaches provide the highest opportunity for growth as the participant has complete flexibility to invest assets as desired. The account balance remains liquid, but comes with high variability of income based on market performance and may have higher probabilities of asset depletion.
- ♦ Managed payout funds provide high levels of liquidity, growth potential, and hedge longevity risk without a guarantee, but they have variable levels of income based on market performance.
- ♦ TDFs with a deferred annuity offer longevity protection, provide the opportunity for stable income, and retain some liquidity, but they require individuals to create a systematic spending approach before the deferred annuity, which could create a variable income stream, as well as the potential for asset depletion before the annuity begins.
- ♦ Investment portfolios with a GMWB provide longevity protection, liquidity, stability of income, and growth potential, though the explicit fees will typically be higher than other guaranteed solutions, which can limit expected growth.

Do Not Make the Perfect the Enemy of the Good

The purpose of lifetime income solutions is to convert accumulated savings into a stream of income in retirement. The differences among the solutions focus on some key considerations and objectives, including liquidity, cost, and the stability of income generated. Plan sponsors should not “make the perfect be the enemy of the good” and conclude that there is one “perfect solution” when there is a range of reasonable solutions and strategies they can choose from for participants and beneficiaries. Factors such as plan design, participant demographics and behaviors, views on asset retention, portability, and regulatory flexibility will determine how, when, and what type of solutions will evolve and what individual sponsors will embrace.

Conclusion

A paradigm shift must occur in the role DC plans play in building and strengthening retirement security. It is time to move away from a myopic focus on wealth accumulation to emphasize generating and protecting lifetime income.

DC plan sponsors should be able to adopt lifetime income solutions and decumulation strategies that work well for employees without undue risk of litigation. Policymakers can address such concerns and consider how they can help pave the way for the next generation of DC plans. Workers increasingly expect their retirement savings plans to be a source of income that can last through retirement.

Congress is considering several proposals to provide greater flexibility and allow for innovation in the design of lifetime income solutions, and many of these have strong bipartisan support.⁷ They include providing better information and tools for plan participants to use in determining their income needs in retirement, facilitating portability, and establishing regulatory safe harbors to encourage the adoption of new solutions. The easier policymakers make it for plan sponsors to offer lifetime income solutions, the greater the likelihood that more employers will adopt them.

Introduction

Now more than ever, workers in the United States are being asked to take responsibility for their financial well-being in retirement. What used to be considered the foundation for building secure retirement income — Social Security, employer-provided pensions, and personal savings — has been weakening for decades as traditional defined benefit (DB) pension plans have been largely replaced by a defined contribution (DC) system of savings that was originally meant to supplement, not replace, traditional pensions. Most employers today offer DC plans to their workers as their primary, and often only, retirement program.

The deterioration of retirement security is among the greatest economic and financial challenges facing our nation today. Between now and 2030, 10,000 baby boomers will retire every day. The population age 65 and over in 2030 is projected to be more than 74 million, representing more than 20% of the total U.S. population. Approximately 60% of working age individuals do not own any retirement account assets, either from an employer-sponsored DC plan (e.g., 401(k), 403(b)) or an IRA, nor do they have DB pensions.⁸ One estimate of the median account balance for those with retirement savings accounts is approximately \$40,000.⁹

With today's DC plans, the responsibility for making the complex savings and investment decisions that will significantly affect the amount of money available for retirement has shifted to workers. Because most workers do not have the access, information, or the knowledge needed to make these decisions, it is important for DC industry leaders and policymakers to consider the ways in which DC plan structures can improve and evolve to increase participants' chances for success.

During the accumulation (working years) phase of retirement planning, default options such as auto-enrollment and auto-escalation have provided a way to improve savings rates to help support the growth and protection of retirement wealth. However, more can and should be done to educate individuals about how a pool of savings would translate into monthly

income and whether this income meets their needs in retirement. This would help frame participants' retirement objectives in terms of income, which would then support more meaningful discussions of the tools, investment options, and income solutions needed to achieve those objectives.

As interest grows in developing lifetime income solutions, regulators and policymakers have a unique opportunity to promote adoption and use. DC plan sponsors remain concerned about litigation risks associated with including an annuity or guaranteed income option in their DC plans, and support for non-guaranteed solutions has been modest at best. Nevertheless, as more DC plan participants request information and options to help them manage their portfolios after retirement, an increasing number of plan sponsors are beginning to explore retirement income options. DC plan sponsors should be able to adopt lifetime income solutions and decumulation strategies that work well for employees without undue risk of litigation. Policymakers can help address such concerns.

This paper examines:

- ♦ The need to transform DC **savings plans** into **retirement plans**
- ♦ Common lifetime income solutions and how each approaches the retirement income problem
- ♦ The trade-offs associated with each type of solution, including the stability and level of income, longevity protection, growth potential, costs, and liquidity
- ♦ The implementation, legal, and regulatory considerations important to facilitating the adoption of lifetime income solutions

DC plans must evolve to improve retirement security. An outcomes-based approach suggests looking at accumulated DC savings not as assets held today but as assets that can be transformed into retirement income in the future. This approach to retirement planning supports solutions that, if structured and implemented thoughtfully, can help to protect assets and mitigate risks.

I. The Importance of Lifetime Income and Associated Challenges

If the ultimate goal is to strengthen retirement security, then the objective must be to transform today’s DC savings plans into true retirement plans. Workers today are often simply not financially prepared for retirement. According to the Federal Reserve, fewer than 40% of non-retired adults believe their retirement savings are “on track” and 60% of non-retirees with self-directed retirement savings say they have “little or no comfort” with managing their savings.¹⁰

As traditional DB pensions become less common, addressing the challenge of generating income from retirement savings becomes more important because the responsibilities largely fall on workers to determine their own income streams, or paychecks, in a DC-centric system. If DC retirement savings plans have become the primary retirement vehicles for many workers today and workers increasingly expect these plans to provide income in retirement, then these plans must begin to encompass the full life cycle of participants, including the spend-down phase in retirement.

The Growing Demand for Lifetime Income Solutions

DC savings plans must evolve to improve retirement outcomes and help participants feel better prepared for when they no longer work. According to the Employee Benefit Research Institute’s (EBRI) 2019 Retirement Confidence Survey, eight in 10 workers expect their workplace retirement savings plan (DC) will be a source of income in retirement. Year over year, the messaging has been consistent: Workers expect to rely heavily on income from DC plan assets in retirement.

Employers seem to be listening to what their employees are saying. In just the past few years, there has been a significant shift in how employers view the role of their DC plans. According to MetLife’s Lifetime 2012 Income Poll, only 9% of employers agreed with the statement, “The primary focus of a defined contribution plan is to serve as a source of retirement income.” By 2016, 85% of plan sponsors said income should be the core purpose of a DC plan.

As more workers expect their DC plans to offer options for converting savings into lifetime income, asset managers and others in the financial industry are taking on the challenge of developing innovative new lifetime income solutions. With \$7.5 trillion in assets in DC plans at the end of 2018,¹¹ the industry certainly has incentives to retain and manage those assets for as long as possible. In addition, participants are beginning to provide clear direction to the market, with 75% of workers interested in guaranteed lifetime income at the time of retirement. Further, half of workers expect a guaranteed income product to be a source of income for them in retirement in 2018, compared with just 35% in the previous year.¹²

Since 2016, the number of lifetime income solutions has expanded significantly with new products coming to market with greater frequency. The range of lifetime income options is growing and includes a number of solutions such as:¹³

Stand-alone funds	e.g., managed payout funds or in-plan annuities
Guarantees attached to other products ¹⁴	e.g., target date funds (TDFs) combined with fixed annuities or with variable annuities that have a guaranteed minimum withdrawal benefit
Options held outside the DC plan but offered through the plan	e.g., rollover annuities

Each of these solutions, or combinations of solutions, reflects the reality that one size does not fit all, so plan sponsors and participants should evaluate the various options to determine what will work best to meet their desired goals and objectives.

The Challenges of Generating and Protecting Retirement Income

Despite the proliferation of new options and the fact that DC assets account for over 50% of total retirement assets in the seven largest pension markets globally for the first time,¹⁵ challenges impede the adoption of lifetime income solutions by plan sponsors. One major obstacle stifling plan innovation has been the potential litigation risks related to what many consider ambiguous language for how to successfully execute fiduciary responsibilities when including lifetime income solutions.

Another major obstacle has been the lag in the operational and administrative support of lifetime income solutions. Recordkeepers and fund administrators play a critical role in the implementation and portability of solutions. An asset manager can build a product that thoughtfully weighs the trade-offs in decumulation, considers individual participant circumstances, and does so for a competitive price, but if recordkeepers do not prioritize the administration of these solutions, the efforts, innovation, and plan sponsor willingness are probably in vain.

Determining the level and stability of income needed in retirement is another challenge that may exacerbate the slow pace of adoption by key stakeholders, specifically, how much is enough?

How much is enough?

Social Security is Not Designed to Meet All Retirement Income Needs

One of the key pillars of the American retirement system is Social Security. While Social Security provides a basic retirement income floor for retirees, it is not designed to meet all retirement income needs. Social Security should be supplemented by employer-based and personal savings.

In 2019, the average monthly Social Security retiree benefit is \$1,461 per month.¹⁶ A significant proportion of the retired population in the U.S. has come to rely on Social Security for a material proportion, if not all, of their retirement income. Among elderly Social Security beneficiaries, 69% of unmarried persons receive 50% or more of their income from Social Security as do 21% of married couples. About 44% of unmarried people rely on Social Security for 90% or more of their income.¹⁷

But Social Security is not enough to maintain a pre-retirement standard of living at retirement. Social Security replaces a percentage of a worker's pre-retirement income based on lifetime earnings. The amount of average wages that Social Security retirement benefits replace varies depending on lifetime earnings and when someone chooses to start benefits. For lower-income workers, Social Security might replace more than half of their pre-retirement income, but for higher-income workers, it could replace only about one-third or less of pre-retirement income. This highlights the problem with Social Security as the only source of guaranteed income for many people today.

How Much Should We Save?

Retirement income needs can be hard to predict, and this challenge is exacerbated by the fact that savers do not know how long they will live and what their quality of life will be as they age. The reality is that many people may live longer than they anticipate, which is one reason adopting lifetime income solutions can be beneficial. According to mortality tables from the Society of Actuaries, the average person age 65 in the U.S. today will live to age 87.¹⁸ Accumulating and managing savings to last such a long time in retirement is a daunting challenge.

Although there is no consensus about how much pre-retirement income has to be replaced to ensure a retiree could maintain a pre-retirement standard of living for as long as he or she lives, experts generally believe that the target replacement should be at least 70%¹⁹ of gross pre-retirement income. Assuming an average ending salary for an individual in the U.S. of approximately \$80,000²⁰ and a 70% target replacement ratio,²¹ a "typical" retiree should have approximately \$56,000 a year in retirement income.

The level of savings needed to attain target income levels in retirement will vary based on individual circumstances such as expenses and life expectancy. Anticipated Social Security income levels, decisions about retirement age, and estimates of how long workers think they will live help shape decisions about how much to save. For example, the average monthly Social Security benefits of \$1,461 will provide about \$17,000 in annual income. This leaves the retiree in the example above needing to produce an additional \$39,000 in

annual income to reach the \$56,000 target. This income level is potentially attainable if a participant follows some basic savings guidelines. Financial planners and others will often recommend a goal for at-retirement savings of eight times (8x) ending salary. In this example, that is approximately \$640,000, which this report uses as part of the baseline assumptions for modeling different lifetime income solutions.²²

The Importance of Behavioral Tools and Nudges in the Accumulation and Decumulation Phases

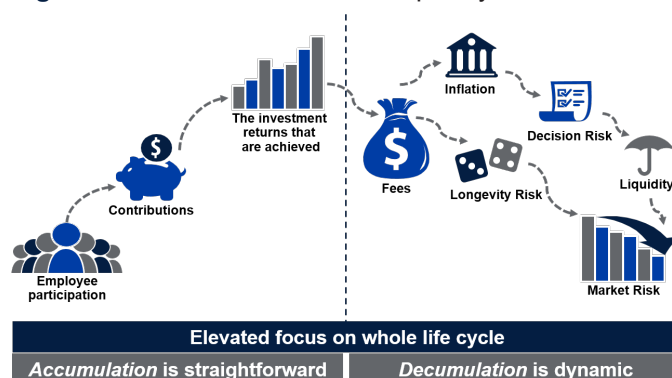
There is some good news with regard to attaining the target levels noted above: Plan design changes, informed by behavioral finance — such as the use of auto-enrollment, auto-escalation, and new or revised employer matching contributions — have increased plan participation rates and encouraged higher savings levels. Employers are using more engaging communication, education, and outreach efforts to help participants take advantage of retirement plan options, while simplifying their fund menus to make it easier for workers to make investment decisions.

Given the complexities of transitioning from saving pre-retirement to generating income in retirement, similar behavioral tools and nudges will be necessary to help workers with their decisions about how to turn their pots of money into monthly income streams. While some workers may want lifetime income solutions that are “do it yourself” and assume the responsibilities for making the right choices on their own, others may want a “do it for me” approach to lifetime income generation where plan sponsors and providers offer solutions that allow workers to “set it and forget it.” What we know about the use of behavioral tools in the accumulation phase may offer some lessons about what we might expect to see when similar approaches are used with lifetime income solutions.

Defaults have proven an effective way of overcoming participant inertia to help participants become better savers. When shifting the focus to decumulation, the risks that affect how success is measured are varied and complex. Careful weighing of the trade-offs is required to select the correct spend-down strategy.

Accumulation vs. Decumulation: Defaults vs. Dynamic

Figure 2. Decumulation adds complexity



During the time a worker is saving for retirement, the decision steps to save and invest funds are generally more straightforward than when it is time to determine a sufficient stream of retirement income. As illustrated in **Figure 2**, workers make decisions in the accumulation phase about (1) whether to participate in a savings plan, (2) how much to save, and (3) how those savings are invested. Reducing the number of options and decision points is a common trend in retirement plans today, and those decisions are made easier through the use of auto-features and Qualified Default Investment Alternatives (QDIAs).²³ Automatic features require workers to take action to stop saving rather than start. By recognizing participant inertia as a behavioral bias, defaults capitalize on the tendency to avoid complicated decision-making.

These behavioral findings are important because the industry has to overcome a number of perceived risks and barriers for participants transitioning into retirement when considering lifetime income solutions.

If Income Replacement Is the Goal, What Are the Key Risks?

As DC participants consider the risks in accumulation, they may focus on market risk (vulnerability to large losses from investments) or savings risk (under-saving and putting retirement goals in danger); however, a multitude of additional risks arise in decumulation.

Longevity Risk: Predicting How Long We Will Live

Outliving one's savings is referred to as longevity risk. How long one lives in retirement determines the amount of income needed. Every individual's life expectancy is unique and dependent on a host of life and health factors, some of which can be controlled and others that are simply unknown. One of the advantages of a DB plan is the investment and mortality risks are pooled together and borne by the plan sponsor, but a DC plan is essentially a pool of one with those risks borne fully by the individual. Given the ambiguity in how long retirement may actually last and, subsequently, how long retirees' money will need to support their lifestyles, mitigating longevity risk is a primary focus for lifetime income solutions.

Inflation Risk: Ensuring Income Needs Continue to Be Met Over Time

During the accumulation phase, when a worker is saving, a portfolio is often highly growth-focused. Given the long time horizon of a participant's working career, a growth portfolio is generally expected to outpace inflation in the majority of cases. During decumulation, inflation risks are more direct. Inflation risks may be addressed by investment portfolios through holding inflation-sensitive assets such as real estate, treasury inflation-protected securities (TIPS), and commodities. Additionally, certain lifetime income solutions may be structured to provide explicit inflation adjustments, if desired, using features such as a cost-of-living adjustment.²⁴

Market Risks: Equities, Interest Rates, and Why Timing Matters

In the context of equity investments, exposure to the market has great wealth-building and inflation-hedging benefits for participants and retirees alike. However, the other side of that coin is the exposure to market volatility, which may have a meaningful impact on accumulated savings. While this may be less of a consideration for someone early in their working career, the impact can be quite dramatic for someone in retirement who is no longer receiving steady income from employment.

To illustrate the risk, consider that according to a survey of institutional target date providers conducted by Willis Towers Watson, the median TDF equity allocation at retirement is approximately 45% as of January 1, 2019.²⁵ A participant invested in a similar portfolio²⁶ starting in January 2008, intending to retire at the end of March 2009, would have experienced a portfolio return of approximately –23%. In fact, any participant who intended to retire between October 2008 and June 2009 would have experienced a double-digit loss over the trailing year, ranging from –11% to –24%, depending on the month of retirement.

While this is an extreme example, participants would have also experienced significant losses in other recent historical downturns, including the dot-com bubble (worst experience from September 2000 to September 2001 would have resulted in an approximate –10% for the portfolio) and the market downturn in 2011 due to fears related to European debt crises, slow economic growth in the U.S., and the U.S. credit rating being downgraded (worst experience from May 2011 to September 2011 would have resulted in approximately –7% for the portfolio).

For those more inclined to consider lifetime income solutions, annuities can shield against potential asset loss and provide a steady, predictable stream of income. However, those payments are not guaranteed to keep pace with inflation (without purchasing a cost-of-living adjustment feature), and the value of the benefit received will largely be predicated on the prevailing interest rate environment at the time of purchase. Insurers have found ways to mitigate or remedy both of those issues, although the fact remains that capital markets, inflation, and interest rates are all related when it comes to considering various types of income solutions.

Decision Risks: Electing a Strategy and Managing Income Generation

Decision risk addresses both (1) making the active election for a decumulation strategy and (2) engaging in the effective management of generating income. Highlighting the potential need for retirement spending assistance, MetLife released its Paycheck or “Pot of Gold” study in 2017, noting that one in five individuals who took a lump sum either from a DB plan or DC plan depleted his or her assets, on average, in 5½ years.²⁷ However, the most recent Retirement Confidence Survey by EBRI indicates that three in four workers (and two in three retirees) say income stability is more important than maintaining their wealth.²⁸ Other studies also have shown that retirees are hesitant to spend and may spend less than they actually have to in retirement. The rationale for this is a fear that they will deplete their assets too soon before they die. The key takeaway is that whether exhausting assets too quickly or spending too slowly, participants can benefit from improved income solution design to bring greater stability and predictability to managing their income needs as long as they live.

Other Considerations

Fees: Determining the Right Benchmark

Investment management fees in accumulation should be reasonable to allow for the greatest amount of wealth accumulation. In terms of measuring whether fees for an investment are reasonable, a worker or retiree may consider a comparable peer group; however, when there are not enough like-to-like products to create a peer group, it becomes harder to evaluate the reasonableness of fees. Further, when the objective is to provide a steady stream of income that will never deplete, value for fees must also be considered. Participants with concerns about asset depletion may be willing to pay a premium to insure against it.

Liquidity: How Much Flexibility Do You Need

Traditional annuities may be the most effective way to hedge longevity risk, but they generally lack liquidity and can be less flexible. This has been one of the contributing factors preventing participants from purchasing annuities, despite some key benefits they provide. Those who elect an annuity have to consider how much of their savings to annuitize while also considering the needed level of liquidity to respond to an emergency or to have extra cash on hand. This is not typically a consideration in accumulation, because balances are generally more liquid.

By recognizing the clear difference between accumulation and decumulation risks, it is easy to understand why income solutions can vary so greatly in terms of composition and the risks they seek to address. While there are certainly challenges in accumulation, this highlights the heightened variety and complexity of individual retirement needs and desires. The next section is based on this understanding and describes the composition of various solutions and the ways they address and balance key risks.

II. Lifetime Income Solutions

Lifetime income solutions are designed to convert accumulated saving into a stream of income in retirement. As shown in **Figure 3**, the solutions can range from those that allow for more flexible distribution of accumulated assets based on investment returns (investment only) to those that provide some form of guaranteed income for life. In most cases, these solutions prioritize addressing longevity risk, aiming to make sure that assets will last as long as the participant lives. Hybrid approaches - combining investment products and income guarantees - are another effective retirement income strategy. These products can be offered in or out of plan, providing varying degrees of portability, flexibility, and liquidity.

Lifetime income solutions, as defined in this paper, is not meant to reference a single “solution” given the multitude of often-competing risks participants seek to balance. Several solutions can be combined to create a strategy that effectively addresses customized participant objectives, and the way they are put together differentiates the solutions and strategies from one another.

Solutions can range from those that allow for more flexible distribution of accumulated assets based on investment returns (investment-only solutions) to those that provide some form of guaranteed income for life.

To better understand how lifetime income solutions in the marketplace work in practice, this paper defines each and then analyzes them to determine how they meet a participant’s income needs in retirement. This includes providing an understanding of what a projected solution benefit looks like in terms of the amount of annual income generated and residual asset balances.

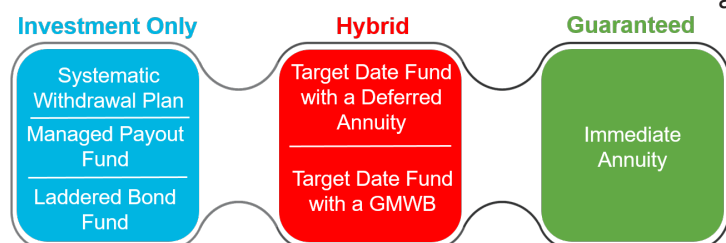
Objectives of Modeling

To better understand the range of lifetime income solutions and how they add value, this section models different solutions using forward-looking economic and capital market scenarios (see Appendix for assumptions). This is done to test the likelihood that each solution meets its primary objective (e.g., generating lifetime income), along with any additional qualitative considerations. This analysis starts by reviewing a single-premium lifetime annuity because of its simple, direct approach to generating lifetime retirement income.

Single-Premium Lifetime Annuity

The solution that most directly addresses the lack of guaranteed income in a DC plan is an immediate annuity, where the participant converts an entire DC balance into guaranteed lifetime income by transferring assets to an insurance company or other provider. Immediate annuities, which start paying benefits immediately upon purchase, may be offered with lifetime benefits or for a specified period, and can cover a single life or include a spousal benefit. For annuities offered within a DC plan, pricing may be lower than a similar annuity purchased outside the plan because the scale of institutional DC plans provides the ability to avoid paying commissions, and the potential for broader annuity adoption further improves insurer pricing.

Figure 3. Common lifetime income solutions



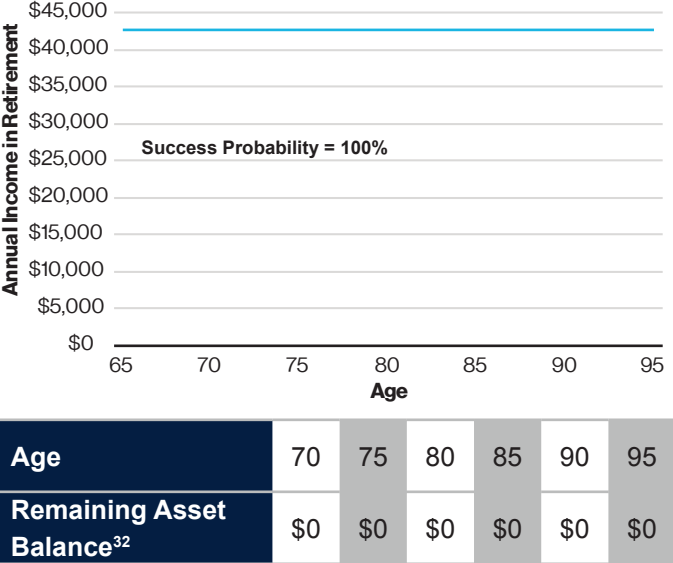
Many products are available offering varying degrees of portability, flexibility, and liquidity

For a typical age 65 retiree with a pre-retirement salary of approximately \$80,000 and DC balance of \$640,000, or 8x final salary,²⁹ and based upon current market conditions, an estimate for the income that can be generated by purchasing an institutionally priced immediate annuity without inflation adjustments is **\$42,620** a year, equivalent to 6.7% of initial balance.³⁰

For each of the alternatives, **the immediate annuity income pattern is used as a benchmark**, with the understanding that to obtain this income with certainty, a participant needs to transfer the entire balance to an insurance company or other provider to purchase the annuity and therefore will neither have residual assets for other objectives nor liquidity if needed. **Figure 4** provides a summary of the implications of the immediate annuitization decision.

The success probability used throughout the modeling specifically measures a strategy’s ability to generate lifetime income, which may differ from other objectives a participant may have. The success probability is defined as the sum of a strategy’s ability to generate income in each year of retirement, weighted by expected mortality.³¹ Specifically, a participant who can generate income in a given year and has not had any prior years where income was zero (e.g., deferred annuity scenarios with shortfalls before annuity commencement) gets credit for that specific year.

Figure 4. Immediate annuity scenario: Generate stable income by transferring assets to a provider and forgoing liquidity



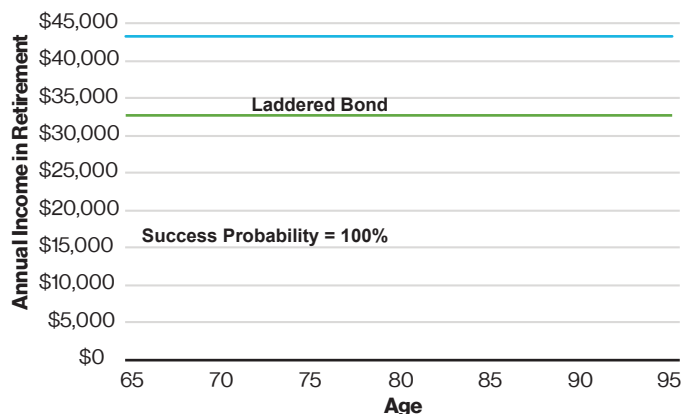
- The immediate annuity:
- **Provides stable income at a fairly high level**, providing \$42,620 throughout the participant’s retirement
 - **Requires assets to be transferred to insurer or third party**, reducing liquidity
 - **Still retains certain risks for investors**, such as inflation and interest rate risk, which may be mitigated through additional features, though these come with additional cost

Laddered Bond Approach

Unlike an immediate annuity, a laddered bond approach offers liquidity — the ability to convert the portfolio to cash — if required. If the concept of guaranteed income is highly valued but losing liquidity is not desirable, an investor can essentially create a risk-free stream of income through a laddered bond fund. The participant would invest in a number of fixed-income securities with weights where, in the aggregate, the coupon payments plus principal would create the desired income stream. To estimate a risk-free income stream most conservatively, this comparison uses U.S. Treasury yields.³³ Compared to the benchmark — the immediate annuity that provided \$42,620 per year — the laddered bond fund would provide **\$32,254** per year for 30 years, for a difference of \$10,366.

This is a material difference (withdrawal of 5.0% of the initial balance compared with 6.7% for the immediate annuity) driven partly by the decision to use a 100% treasury portfolio rather than an insurance company that accesses a broader fixed-income portfolio, as well as other asset classes such as equities and alternatives, which can bolster returns and subsequent payouts. A laddered bond portfolio also does not benefit from mortality pooling in the same way that an investor in an insurance product would. **Figure 5** shows the annual income differential between an immediate annuity and a laddered bond, while **Figure 6** shows the potential values of the treasury portfolio at 10 and 20 years into retirement, in the event the participant wanted or needed to liquidate and use the funds for other purposes.

Figure 5. Laddered bond income relative to immediate annuity income: Stable income, although lower than immediate annuity level for the same initial investment, highlighting liquidity trade-off



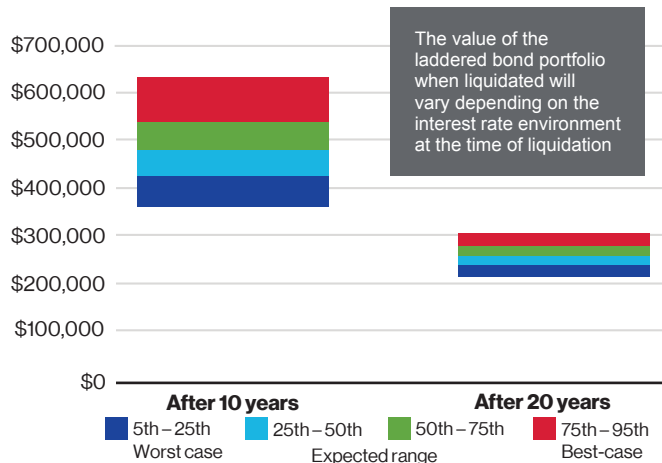
Laddered Bond Approach

A fixed-income security pays both coupons and principal. The coupons are the periodic interest payments and the principal is the repayment of the face value of the bond. By carefully combining bonds of different maturities, an investor can synthetically create a guaranteed stream of income, “laddering” bonds of varying maturities together so the principal and interest payments create a stable annual income stream in aggregate.

For example, imagine two bonds are both issued at par (no premiums or discounts). One matures in one year and pays 3% interest and one matures in two years and pays 6% interest.

If the investor has \$100 and puts approximately \$49 in bond 1, and \$51 in bond 2, this will create a two-year stream of income at \$53.78 in both years. This process can be repeated over longer time horizons to create a bond “ladder” that provides stable income.

Figure 6. Potential distribution of values of laddered bond portfolio in retirement if liquidated: Unlike immediate annuity, potential to convert back to a lump sum if cash is needed



The laddered bond portfolio:

- **Provides stable income at a lower level than the immediate annuity**, providing \$32,254 over a 30-year retirement horizon
- **Retains liquidity** given that the participant owns the treasury portfolio and can convert the portfolio to cash fairly easily
- **Has a value that, if converted to cash, varies** based on the prevailing interest rate environment at the time the bond portfolio is sold

As noted in the bullets above, another key difference between a laddered bond portfolio and an immediate annuity is that the participant owns the treasuries directly, rather than the life annuity contract that pays the investor for as long as that person is living.³⁴ If a participant passes away earlier than expected, the remaining treasury payments may be passed on to heirs or otherwise directed.

A laddered bond approach certainly has positive characteristics, including the ability to effectively create a guaranteed income stream. If, however, investors prefer solutions with the ability for higher returns that can potentially increase wealth while also providing liquidity, non-guaranteed withdrawal strategies may be preferred, including systematic withdrawals and managed payout funds.

Target Date Fund with a Systematic Withdrawal Plan

One flexible form of distribution from a DC plan is called a systematic withdrawal plan (SWP) in which the retiree can choose a specific dollar amount to be paid out at predetermined intervals. This periodic payment method allows participants to create an income stream in retirement until the account is depleted. An SWP can be implemented with any underlying investment options and, for purposes of this analysis, the participant is invested in a typical TDF.³⁵ The participant's assets are invested in and exposed to capital markets via the funds available through the plan.

TDFs offer a straightforward vehicle where a plan participant invests by choosing the intended retirement date and selects the corresponding fund. A professional fund manager will manage the participant's TDF assets over time, moving them from higher-risk assets focused on growth for younger participants into lower-risk assets focused on income and capital preservation as the participant moves into and through retirement. With this option, there is no guarantee of income and the exposure to the capital markets creates uncertainty about the level of sustainable income.

While immediate annuitization generates guaranteed income and forgoes liquidity, the opposite end of the lifetime income solutions spectrum would be to generate the same income stream directly from liquid investments, such as a TDF using an SWP. For illustrative purposes, a participant is assumed to withdraw the amount specified by the immediate annuity regardless of market performance. **Figure 7** shows that using this approach, the probability that a participant would be able to successfully match the immediate annuity income level throughout retirement begins to decrease around age 78 and continues to rapidly decrease to age 95. The participant would have the ability to adjust spending upward for positive market performance and downward for poor market performance, which is shown through the residual balance volatility in **Figure 8**.

Figure 7. Probability that systematic withdrawal strategies can match immediate annuity income throughout retirement: Income shortfall probability increases materially later in retirement

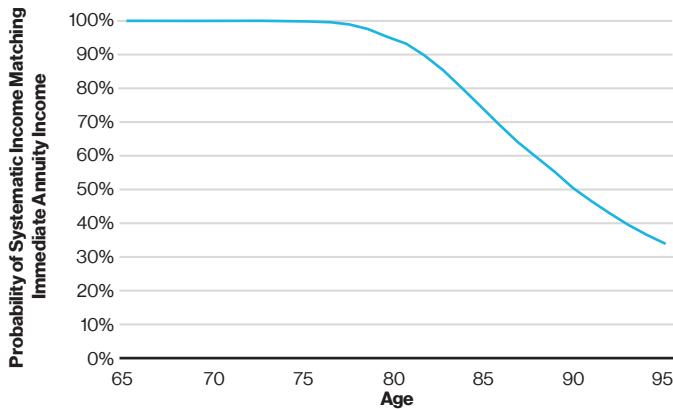
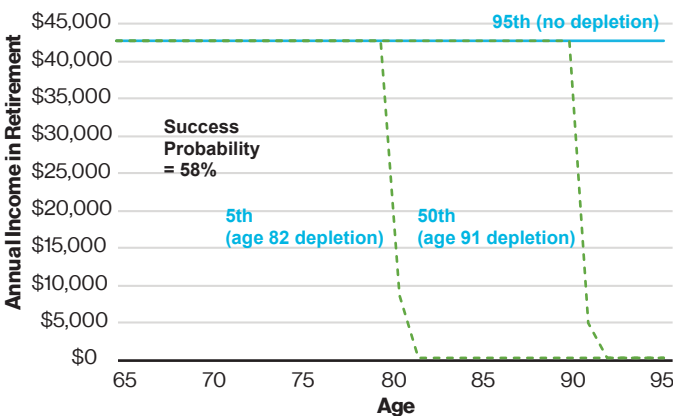


Figure 8. Systematic spending matching immediate annuity amount: Provides potential for growth in assets and liquidity but has significant asset depletion risk



Remaining Asset Balance (\$000)³⁶

Age	70	75	80	85	90	95
Best Case	\$767	\$795	\$820	\$891	\$971	\$1,099
Expected Case	\$565	\$464	\$337	\$191	\$5	\$0
Worst Case	\$377	\$209	\$9	\$0	\$0	\$0

The systematic withdrawal strategy:

- ♦ **Provides income through age 90 at the median but not to age 95**, leaving the participant exposed to longevity risk at advanced ages
- ♦ **May not provide income past age 81** in worst-case (5th percentile) scenario
- ♦ **May support withdrawals through age 95** in best-case scenarios (95th percentile) while balances continue to grow
- ♦ **Has a probability of success of 58%**, which is the mortality-weighted measure of the strategy's ability to generate income each year of retirement; shows the risk of asset depletion in a systematic spending scenario

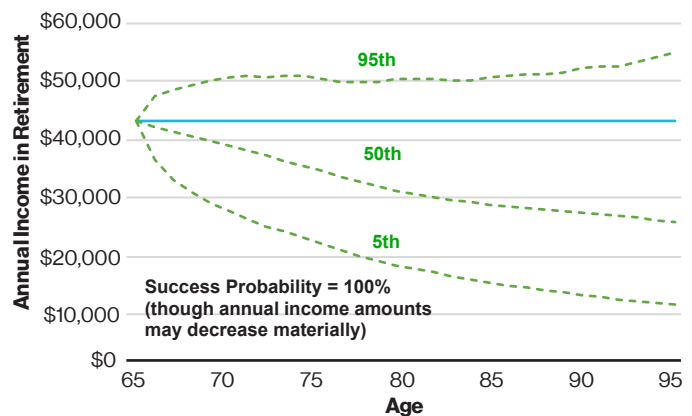
Both systematic withdrawals and guaranteed income components can be useful for investors, depending on their specific objectives. With systematic withdrawals, the ability to maintain liquidity, along with a reasonable likelihood of supporting long-term income and growth potential, is an attractive characteristic for investors. That said, over longer-term scenarios, the odds of running out of assets increase, calling into question whether longevity risk is properly addressed through systematic spending from a multi-asset class drawdown vehicle. As an alternate non-guaranteed approach, investors can consider using a fund designed to facilitate lifetime payment streams, such as a managed payout fund.

Managed Payout Funds

Managed payout funds are non-guaranteed lifetime income investments that combine both equity and fixed-income investments (and potentially other investments) in the underlying portfolio. The funds offer an investor the opportunity to retain exposure to capital markets, while balancing downside risk. They also provide guidance for monthly withdrawals at some stated percentage and typically facilitate the payment of those distributions.

Consider a managed payout structure with the goal of generating an annual income equal to the immediate annuity and assuming the participant is invested in an asset allocation consistent with the typical TDF. The participant can enjoy the benefits of market appreciation, which can serve to mitigate inflation risk, while also adhering to a fixed payout percentage. Theoretically, a managed payout fund can provide payouts for life with little risk of exhausting assets because adjustments can be made to payouts year to year, based on balances and capital markets. Poor market experience, however, can reduce payments from a managed payout fund enough that the funds do not provide sufficient income to meet participant-specific objectives, so there is still longevity risk in retirement. **Figure 9** illustrates the managed payout projections.

Figure 9. Managed payout matching immediate annuity amount: High probability of generating some level of lifetime income although amounts may vary significantly with market experience



Remaining Asset Balance (\$000)

Age	70	75	80	85	90	95
Best Case	\$751	\$745	\$747	\$754	\$779	\$812
Expected Case	\$576	\$513	\$456	\$425	\$403	\$382
Worst Case	\$412	\$330	\$266	\$225	\$195	\$170

The managed payout scenario:

- ♦ **Should not be expected to generate returns sufficient to support annual income** at the immediate annuity level
- ♦ **Has potential for annual income to vary greatly** and outpace the immediate annuity in best-case scenario (95th percentile) and decrease materially in worst-case scenario (5th percentile)
- ♦ **Median income decreases over time**, though this is consistent with recent behavioral finance research showing that median household spending decreases from age 65 through age 80, at which point spending remains relatively flat³⁷
- ♦ **Leaves residual assets** in all scenarios

The managed payout fund process has a high probability of providing some level of lifetime payouts. Participants would have to determine their comfort with a non-guaranteed payout and their ability to budget effectively.

If, however, participants prefer more robust guaranteed income sources while maintaining liquidity, two additional strategies may be considered: investment portfolios with either deferred annuities or a guaranteed income wrapper.

Target Date Fund with Guaranteed Income Components

The popularity of TDFs makes them a natural vehicle to consider for adding lifetime income components. This can be accomplished in a few ways: One is combining these multi-asset funds with a deferred annuity, and another is through a variable annuity with a guaranteed minimum withdrawal benefit.

Deferred Annuities

A natural addition to a TDF would be an annuity to support income in decumulation by hedging longevity risk. This solution contemplates the use of a deferred annuity, set to begin at age 80.³⁸

Qualified Longevity Annuity Contracts

In July 2014, the Internal Revenue Service and Department of the Treasury issued a framework for a deeply deferred annuity permitted within a qualified DC plan, known as a Qualified Longevity Annuity Contract (QLAC).³⁹ Typically, regulation requires that owners of qualified pre-tax accounts take required minimum distributions (RMDs) starting at age 70½, which are taxed as ordinary income. A QLAC allows for an account owner to defer receiving benefit payments up to age 85 without conflicting with RMD requirements as long as the premium was funded with assets from a qualified retirement plan, including but not limited to a 401(k), 403(b), or 457(b) plan. There are also limits to how much of that balance an account owner can use to purchase a QLAC, given the tax-qualified treatment.

It is important to consider the utility of deferring a larger amount of income for such an advanced stage of life. The probability of living to an advanced age is lower, and therefore a number of account owners will not receive the benefit from their QLAC purchase (absent premium refund ability or similar features); however, the level of income a QLAC can buy with a given premium is much higher than an immediate annuity for this very reason. The QLAC could aim to provide a high level of income replacement or set a marginally higher income level over Social Security benefits to help meet anticipated basic income needs in the event an account owner lives longer than expected.

In October 2014, the U.S. Department of Labor (DOL) and the U.S. Treasury released guidance supporting the use of QLACs within target date funds.⁴⁰ These TDF-annuity combinations can be elected as the QDIA if they retain certain characteristics in accumulation, including that they remain fully liquid. While a QLAC is a lifetime income solution, it is not directly analyzed in this report. The decision to use a more broadly defined deferred annuity was to acknowledge that sponsors have many options when considering lifetime income solutions. QLAC limits, for example, would prohibit the participant in the modeling to match the immediate annuity income level, but this objective may be achieved with a more broadly defined deferred annuity.

While an immediate annuity can eliminate longevity risk, participants would have to consider paying the entire asset balance up-front to purchase this type of annuity contract and losing control of those assets in return for guaranteed income. Deferred annuities can address this potential concern by targeting longevity risk while still providing the participants flexibility to manage a portion of their remaining assets.

As an example, to compare this approach to the immediate annuity benchmark, consider purchasing a deferred annuity to provide the immediate annuity income level from age 80 onward.⁴¹ This would cost approximately \$174,000, or 27% of the participant's starting balance. The remaining \$466,000 of the participant's \$640,000 asset balance is used to match the annuity income for the 15-year period before the deferred annuity would begin.

Figure 10 summarizes the results of this solution.

The deferred annuity scenario:

- ♦ **Should not be expected to generate lifetime income at the immediate annuity level in all scenarios** because of the need to bridge the income gap until the deferred annuity begins
- ♦ **Has a success probability of 67%**, which is the mortality-weighted probability that the strategy generates stable retirement income, driven directly by the inability to provide income between retirement and when the deferred annuity begins in downside scenarios
- ♦ **Eliminates longevity risk** by the design of the deferred annuity
- ♦ **Leaves the participant with a shortfall, in the worst-case scenario (at the 5th percentile), at age 76 and assets are completely depleted at age 77**
- ♦ **Leads to remaining residual assets** in more than half the projections

Assets are shown to grow after age 80 in **Figure 10**, since the deferred annuity provides target income from that point forward and the remaining liquid assets are assumed to be invested in a TDF.

Figure 10. Maintaining retirement income at the immediate annuity income level while also purchasing a deferred annuity at age 80 to match the immediate annuity amount: Longevity risk fully hedged, although it creates potential risk for income shortfall before deferred annuity begins

Annual Income in Retirement

Age	Initial	70	75	76	77	78	79	80	85	90	95
Best Case	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43
Expected Case	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43
Worst Case	\$43	\$43	\$43	\$23	\$0	\$0	\$0	\$43	\$43	\$43	\$43
Immediate	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43	\$43

Remaining Asset Balance (\$000)

Age	70	75	80	85	90	95
Best Case	\$483	\$405	\$334	\$453	\$622	\$872
Expected Case	\$345	\$192	\$41	\$54	\$70	\$92
Worst Case	\$217	\$23	\$0	\$0	\$0	\$0

When evaluating a deferred annuity solution, another consideration is that income needs later in retirement may be lower than earlier in retirement, that is, the deferred annuity may not need to replicate an immediate annuity dollar for dollar because of change in income needs. As an example, consider a scenario where the deferred annuity provides only \$30,000 per year instead of the \$42,640 illustrated above. Purchasing a deferred annuity paying \$30,000 per year commencing at age 80 costs \$51,000 less than purchasing an annuity to provide \$42,620 in income. These additional funds can be helpful to meet income needs, especially in a downside scenario, prior to the beginning of the deferred annuity.⁴²

The key point here is that an integrated process may be developed to determine an appropriate deferred annuity level and income level for remaining liquid assets. This process may seek, among other objectives, to ensure that there will be no income shortfall even in fairly poor market scenarios.

Guaranteed Minimum Withdrawal Benefit

Often the most complicated solutions and instruments to explain and understand provide the most comprehensive benefits. Such is the case for the guaranteed minimum withdrawal benefit (GMWB), a type of contract that can be placed on a variable annuity so the level of income in retirement is determined by the performance of a portfolio of investments underlying that annuity, which is often a balanced fund or TDF. The function of the GMWB contract is simple; it:

- **Allows for account growth** in accordance with the underlying investment portfolio
- **Prevents the income basis of the account from declining** with capital market downturns (though market value can decline)
- **Guarantees the participant a steady stream of retirement income**, regardless of prevailing interest rates or market conditions

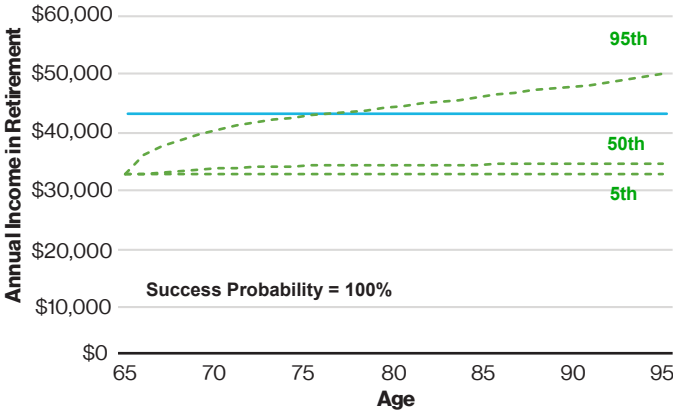
Another unique feature of this instrument is that it retains liquidity, so a participant may draw down as much as needed from the account balance, although any distributions above the guaranteed income amount will reduce future distributions. With this type of benefit and

guarantee, fees can be high relative to other solutions, and the complexity in how the solution actually works can give some potential users pause, but there are clear advantages as well.

The insurance fee is assumed to be 100 basis points (bps)⁴³ in this analysis. There is some flexibility in underlying asset allocation with these products, depending on the provider. The modeling uses a portfolio of 50% equity and 50% fixed income,⁴⁴ which is in line with asset allocations offered in the marketplace for these products.

While many of the scenarios analyzed allowed for calibrating initial income to the immediate annuity level, the withdrawal rate for a GMWB is determined by the provider. For age 65 retirees who lock in the guarantee and begin spending at retirement, a 5% withdrawal rate is typical in today’s environment and is the level used in this analysis. **Figure 11** summarizes these results.

Figure 11. Guaranteed minimum withdrawal benefit: Guaranteed lifetime income with liquidity and the potential for income to increase above immediate annuity levels in very strong markets



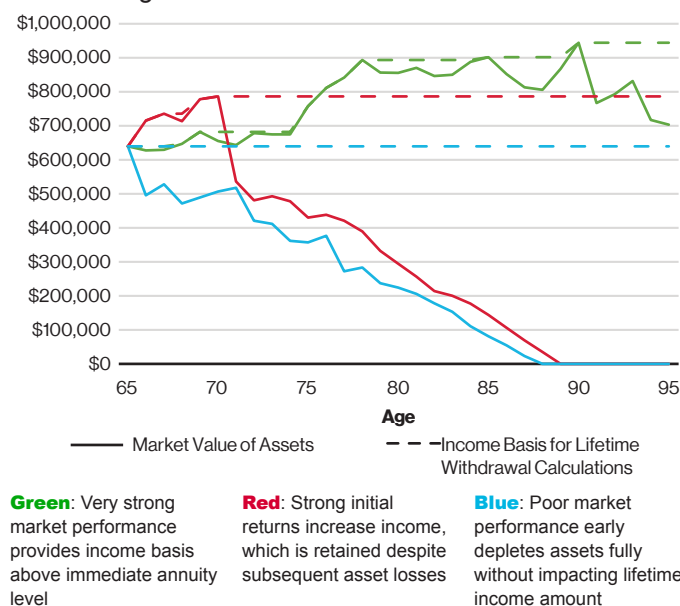
Remaining Asset Balance (\$000)						
Age	70	75	80	85	90	95
Best Case	\$815	\$871	\$935	\$997	\$1,099	\$1,193
Expected Case	\$591	\$522	\$437	\$355	\$232	\$125
Worst Case	\$377	\$238	\$94	\$0	\$0	\$0

The GMWB scenario:

- **Provides income substantially lower** than the immediate annuity at the median
- **Requires very strong market performance (95th percentile results) for income to outpace the immediate annuity**, which would occur approximately seven years into retirement
- **Risks full depletion of the market value of assets**, but the insurer will continue to pay the promised income even in poor markets
- **Delivers access to the market value of assets at any point**, and participants may withdraw all or some of those assets with appropriate adjustments made to the guaranteed amount

Examples of participant experience with a GMWB are shown in **Figure 12**.

Figure 12. Representative GMWB paths in retirement: Product structure has the potential for upside adjustments while aiming to eliminate downside risk



The three scenarios depicted in **Figure 12** show varying market movements and the value of a GMWB. Two terms are introduced: market value and income basis. The market value is simply the marked-to-market value of the participant's portfolio at any given time, which fluctuates with market movements, expenses, and cash flows. The

income basis is the GMWB contract value — the value used to determine an investor's benefit payment. Note that the income basis does not decrease when markets fall, although periodically the income basis has the ability to increase if market performance is strong.

The **green** paths represent positive market experience for the participant. Modest positive performance over the first 10 years of retirement leads to slight increases in the income basis with very positive subsequent performance increasing market and the income basis to around \$900,000. Market value begins to fall later in retirement, but the income basis is locked at the high point.

The **red** paths show early positive market performance, providing a step-up in market value and locking in the income basis around \$800,000. Negative market experience coupled with continued withdrawals begins to deplete the assets shortly thereafter, eventually reaching zero around 24 years into retirement, although lifetime income is locked in at around \$40,000 per year.

The **blue** paths show the insurance value of the GMWB. In this scenario, markets are not supportive enough to keep up with withdrawals, and fees and assets trend downward to \$0, depleting fully 23 years after retirement. Income is fixed at \$32,200 for the participant's lifetime.

An important characteristic of this type of solution is that it endeavors to balance the most prevalent risks discussed in decumulation. Including an income guarantee mitigates longevity risk, ensuring that a participant does not outlive the assets. The sequence of returns risk is mitigated by the insurer absorbing declines in the market value of the account. Assets retain potential inflation-hedging qualities because the account's value can increase with improvements in the market. Liquidity is not an issue (to the extent accumulated assets are not depleted), so there is no fear that assets are locked up and inflexible.

This type of solution, however, is not particularly easy to understand because the income guarantee and the instruments used to create it are complex. The fees for this type of solution also can seem high because no solutions are available for comparison that may serve as an appropriate benchmark.

Why Lifetime Income Solutions Are Important

Even after reviewing all the modeling, it might still not be clear why lifetime income solutions are so important. Is it really necessary to explicitly hedge longevity risk? The answer is yes. As discussed previously, workers are often inexperienced at both predicting how much they will need in retirement and putting plans in place to successfully drawdown their savings when they retire. Studies of the spending behavior of retirees vary in results; some show

participants take lump sums and spend too quickly⁴⁵ while others suggest people feel paralyzed by the magnitude of the decision and defer spending their savings for fear they will deplete their assets before they die.⁴⁶ The commonality between these studies is that participants need help. There is a wealth of strategy and design work supporting lifetime income solutions, although the biggest hurdle to adoption may be successful implementation.

Why Isn't There More Love for Annuities?

Often referred to as the “annuity puzzle,” the fact that so few people seeking longevity insurance purchase annuities is a phenomenon plaguing insurers and other providers of these solutions. After all, having an annuity in retirement should allow a retiree the freedom to spend more, knowing they are insured against outliving their assets. Behavioral finance provides the most common explanation for this annuity paradox. The American Council of Life Insurance found that some participants equated lifetime annuity payments with gambling on their lives, meaning they perceive annuities as increasing risk rather than decreasing it.⁴⁷ The individual sees the annuity as a bet, and if they receive the full cost of the annuity payouts before they die, the annuity was a worthwhile investment, but if they die beforehand, it was a bad investment. Less consideration is given to the utility of peace of mind, or the benefits of mortality pooling. This suggests that many participants hold deep beliefs and convictions regarding the loss of principle, control of retirement balance, and a desire to maintain an ability to draw on accumulated savings, which potentially stops participants from making beneficial long-term decisions.

The prospect for greater adoption of annuities in the future, and the willingness to invest a larger share of one's assets in such products, will depend on the ability to design them in a way that recognizes behavioral realities and offers investors flexibility in accessing those assets due to circumstances they see as potentially beyond their control, such as unanticipated expenses or other changes in a financial situation.

Today's retail annuity market is evolving to meet these needs for greater flexibility and control, but there is still much that can and should be done to simplify and explain the myriad types of annuities — including fixed, variable, deferred, and immediate — as well as the variations within each type for the average investor. Much more needs to be done to provide information and education, and improve the transparency of the different types of products available today and the value of creating a stream of lifetime income.

III. Implementation Considerations

A few important implementation considerations need to be addressed to help facilitate greater adoption of lifetime income solutions.

Plan Asset Retention

One of the first considerations for plan sponsors is whether they want to retain the assets of terminated and retired participants in a plan. This is important in the context of offering a lifetime income solution in a plan because for many of the products and services in the market to work effectively, plans have to choose to retain assets and offer flexible distribution options (see

Figure 13).

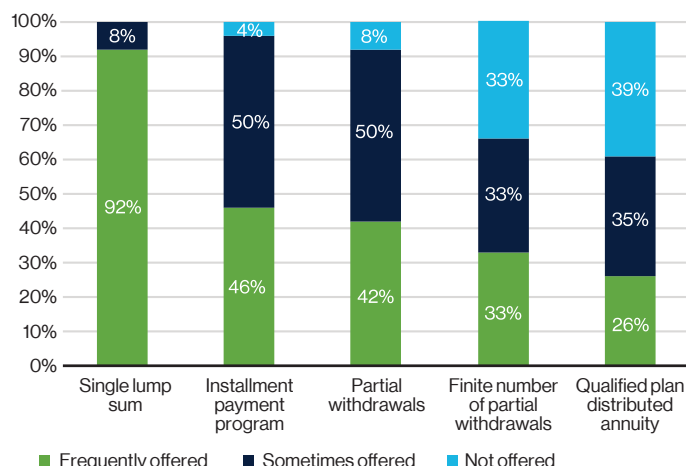
Many plan sponsors may not realize that most DC plan documents do not provide for retaining assets in the plan. Plan sponsors' decisions about their plans' distribution policies can play a critical role in participant retirement outcomes. Plan sponsors, consultants, and advisors are beginning to reconsider whether guiding participants toward lump-sum distributions, intentionally or unintentionally, through plan designs that encourage such distributions, is the most appropriate approach.

Plan sponsors may be contributing to the challenge of helping participants become comfortable with annuities by making lump-sum distributions too easy. According to a 2018 paper by the Defined Contribution Institutional Investment Association, single lump-sum options were the most prevalent distribution option in DC plans, with more flexible options like systematic installments and partial withdrawals a distant second and third.⁴⁸ To support adoption of lifetime income solutions, plan sponsors will have to be more willing to retain plan assets for longer periods of time.

Portability

Portability is another consideration for many plan sponsors, participants, and recordkeepers. Portability is the transferability of a participant's guaranteed lifetime income benefit if (1) a plan sponsor changes recordkeepers or (2) a participant leaves the company.

Figure 13. Distribution options offered to retired/separated participants, 2017



Single lump sum: One-time lump sum, paid in cash

Installment payment program: Systematic nonguaranteed withdrawals (e.g., monthly or quarterly remittance)

Partial withdrawals: Ad hoc withdrawals (i.e., take withdrawals as needed, without limitation)

Qualified plan distributed annuity: One-time lump sum converted to guaranteed monthly or quarterly payments

Sources: Cerulli Associates, in partnership with The SPARK Institute

Analyst note: Survey participation included 26 recordkeepers representing \$4.5 trillion in DC plan AUA, nearly 452,000 plans, and greater than 69 million participants

The Cerulli Report: U.S. Defined Contribution Plan Distribution 2017 — Re-Evaluating the Use of CITs in DC Plans

Portability applies to any in-plan option, but typically the focus is on the ability to keep the value of the guarantee associated with the lifetime income solutions intact due to either of the changes noted above. As a result, portability is typically discussed in the context of solutions with insurer guarantees.

The benefit that has to be “ported” or transferred is the specific guaranteed lifetime income amount for the individual. Put another way, without portability a participant would lose the guaranteed benefit under his or her current contract: It would be liquidated (surrendered) as a result of the transfer to a new recordkeeping platform. Portability is critically important, at both the plan and participant levels.

Plan sponsors should not feel beholden to one recordkeeper for fear that the value of lifetime income solution they have adopted will be lost if they change providers for service-, fee-, or business-related reasons. Without a purely open-architecture approach to DC plan administration, portability continues to be an issue that hinders the broader adoption of guaranteed income solutions.

One potential way to address this challenge is to incorporate a “middleware” provider — a separate entity that serves as an intermediary between the solutions provider and the plan recordkeeper — into the process, which would ensure that the participant data associated with any guarantee are accurately accounted for. A few firms offer this service; according to a 2018 survey by Willis Towers Watson, 23% of the 13 largest recordkeepers already work with middleware providers, while 15% are considering partnering with them in the future.⁴⁹

Recordkeeper Constraints

In 2016, Congress asked the U.S. Government Accountability Office (GAO) to examine retirement income options available to DC plan participants.⁵⁰ The GAO surveyed 54 plan sponsors and 11 recordkeepers, and conducted interviews with industry stakeholders, researchers, and government officials. Key findings related to recordkeeper involvement in adopting lifetime income solutions include:

- ♦ Most plans do not offer withdrawal options or annuity options.
- ♦ Many plans do not allow partial annuitization.
- ♦ Recordkeeper limitations constrain options available to plan sponsors.
- ♦ Participants may lose lifetime income when plan sponsors change recordkeepers.

While the GAO made several recommendations to the DOL, the study resulted in little action from recordkeepers. There are a myriad of reasons why some of the major recordkeepers have not broadly supported the adoption of lifetime income solutions, but the primary reason appears to be the cost of developing the back-end technology, systems capabilities, and associated support necessary to administer the guaranteed components of these solutions. Recordkeepers note they have not seen high demand from large corporate plan sponsors to administer new lifetime income options, so they have been hesitant to make the sizable required investment.

While this is a challenge worth noting, it does appear that many recordkeepers would be willing to make the necessary investments once clients are truly ready to implement solutions.

IV. Legislative and Regulatory Considerations

Policymakers can help pave the way for the next generation of DC plans. Workers increasingly expect their retirement savings plans to be a source of income that can last through retirement. Action by regulators and policymakers would make it easier for DC plan sponsors to offer participants solutions that provide greater retirement security.

The Limited Impact of the Existing Annuity Safe Harbor

The term “safe harbor” is pervasive in the DC system, often in reference to the QDIA. Essentially, the safe harbor rules say that if a plan sponsor follows a particular set of guidelines, it will be shielded from fiduciary liability should the investment lose money. Only certain types of investments can be labeled as a QDIA for this reason. The most popular QDIA is the TDF, which gained huge traction after the Pension Protection Act was enacted and benefitted from the plan design enhancements discussed in this paper (auto-enrollment, auto-escalation) and subsequent participant inertia.

A comparable safe harbor exists for guaranteed solutions in DC plans. In 2008, the DOL adopted a fiduciary safe harbor regulation under ERISA that provides a framework for selecting annuity providers.⁵¹ The criteria are:

- ♦ A fiduciary must engage in an “objective, thorough, and analytical search for the purpose of identifying and selecting providers from which to purchase annuities.”
- ♦ A fiduciary must “appropriately consider information to assess the ability of the annuity provider to make all future payments under the annuity contract.”
- ♦ A fiduciary must conclude that “*at the time of the selection* [emphasis added], the annuity provider is financially able to make all future payments under the annuity contract and the cost of the annuity contract is reasonable in relation to the benefits and services to be provided under the contract.”

- ♦ If necessary, the fiduciary should seek assistance from a knowledgeable advisor in connection with the decision.

The third bullet is often a challenge for plan sponsors in terms of evaluating a guaranteed solution. While some may say the process used for selecting an insurer as a vendor in a DC plan is no different from the process used to select an investment manager, others would argue that the long-term characteristics of the instrument and the relationship between participants and the insurer increases the plan sponsor’s liability and fiduciary requirements.

Even though the DOL has issued a safe harbor that allows annuities to be included as a QDIA in DC plans, plan sponsors have been hesitant to adopt such options because of litigation risks and uncertainty about the requirements for meeting ERISA’s⁵² fiduciary standards. While a number of plan sponsors have been able to adopt lifetime income solutions in their DC plans, others have generally not been willing to follow suit. In a survey of plan sponsors by Willis Towers Watson in 2016, the top barriers cited to implementing lifetime income options include fiduciary risk, cost, and unsatisfactory or untested market options.

It appears that the regulatory environment does not make plan sponsors feel they can safely adopt an in-plan annuity without bearing some undesirable amount of fiduciary risk. This may partly be due to the perceived ambiguity of the annuity safe harbor.

Current Legal and Regulatory Considerations

In 2018, the ERISA Advisory Council⁵³ held hearings to examine lifetime income solutions and the opportunities and challenges associated with incorporating them into DC plans and QDIAs. The Council’s report to the Secretary of the DOL included recommendations such as:

1. Amending the QDIA regulations to address using lifetime income solutions

2. Issuing guidance confirming the ability to appoint an investment manager to select and monitor an annuity provider
3. Encouraging plan sponsors to adopt plan design features that facilitate lifetime income⁵⁴

Congress is also considering several proposals to provide greater flexibility and allow for innovation in the design of lifetime income solutions, many of which have strong bipartisan support.⁵⁵ These proposals include providing better information and tools so plan participants can determine their income needs in retirement, facilitating portability, and establishing regulatory safe harbors to encourage the adoption of new solutions. The easier policymakers make it for plan sponsors to offer lifetime income solutions, the greater the likelihood that more employers will adopt them.

V. Conclusion

If strengthening retirement security is the goal, then success can only be measured through improving long-term outcomes. Industry leaders, policymakers, and other stakeholders working together can and must rise to meet the challenges and shortcomings of today's retirement system and implement innovative new solutions that measurably enhance long-term outcomes focused on improving the financial stability and quality of life for retirees.

While portfolio construction techniques and asset classes used in DC plans today have the ability to shift the distribution of participant outcomes, lifetime income solutions can significantly alter the shape of the outcome distribution. Most importantly, as summarized in **Figure 14**, lifetime income solutions can narrow the distribution of outcomes by directly limiting downside risk for retirees — a critical need in DC plans today.

Policymakers will play a critical role in empowering plan sponsors and providers to offer innovative new options

that can continue to evolve to meet the needs of retirees. This can be done by supporting implementation, creating ways to administer portability, and considering whether a more flexible annuity safe harbor could reduce the litigation risk perceived by many of today's plan sponsors.

Sponsors can help move DC plans in the right direction by examining the solutions in the marketplace and implementing them as appropriate, with an understanding that documenting the benefits and considerations of a solution, including the value for fee proposition, is paramount.

It cannot be emphasized enough that the easier regulators and policymakers make it for plan sponsors to offer lifetime income solutions, the greater the likelihood that more employers will adopt them. This will allow for the next generation of DC plans to evolve from **accumulating retirement savings to generating retirement income** and help to strengthen retirement security for millions of Americans.

Figure 14. Outcome distribution for various lifetime income solutions: Improvements relative to basic withdrawal rules that could not otherwise be achieved in a DC structure

Solution (Results in \$000)	Immediate Annuity	Laddered Bond	Systematic Spending	Managed Payout	TDF with Deferred Annuity	GMWB
Balance at age 65 after any guaranteed income purchases ⁵⁶	\$0	\$640	\$640	\$640	\$466	\$640
Initial annual income generated beginning at age 65 ⁵⁷	\$43	\$32	\$43	\$43	\$43	\$32
Annual income generated at age 85 from worst- to best-case scenario (5th / 50th / 95th)	\$43 / \$43 / \$43	\$32 / \$32 / \$32	\$0 / \$43 / \$43	\$15 / \$29 / \$50	\$43 / \$43 / \$43	\$32 / \$35 / \$54
Account balance at age 85 from worst- to best-case scenario (5th / 50th / 95th)	\$0	\$217 / \$260 / \$305	\$0 / \$191 / \$891	\$225 / \$425 / \$754	\$0 / \$54 / \$453	\$0 / \$355 / \$997
Potential of running out of income at any point — from age 65 to 95	No	No	Yes	No	Yes	No

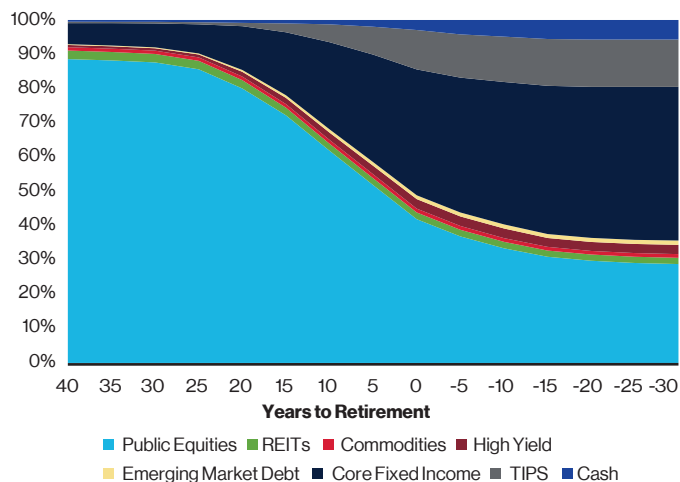
Appendix: Key Inputs and Assumptions

The baseline demographic assumptions for this analysis allowed for modeling of a “typical” retiree. The modeled participant retires at age 65 with a salary of approximately \$80,000⁵⁸ and has a defined contribution (DC) balance of \$640,000, or 8x final pre-tax salary. U.S. Census data for 2017 showed peak salaries just above \$80,000, which then proceeded to decrease, lowering to approximately \$41,000 for ages 65 and older. This analysis used \$80,000 because the Census data would not include any workers who retired before age 65, so the data may be skewed toward a specific segment of the population and not fully representative. Empirically, real wages flatten out later in workers’ careers, which supports the use of \$80,000 for this analysis.

Typical DC savers today save about 5.0% when entering the plan, trending to 7.0% at mid-career and 8.0% at late career. The participant enters the plan earning just above \$50,000 and salary increases by inflation +2.0% per year through mid-career and inflation thereafter.⁵⁹ The assumed employer match is 50% of the first 6% contributed to the plan.⁶⁰ A projected return of approximately 6.2%, which is conservative by historical standards⁶¹ but fairly consistent with forward-looking projections, is required to achieve an at-retirement balance of 8x ending salary.

Additionally, certain retirement income alternatives require assets to be invested in capital markets. These investments are assumed to be passively implemented in a target date glide path, with a typical risk level and de-risking path often seen in off-the-shelf implementations, unless otherwise stated.⁶² The glide path describes how the component investments that make up a target date product change their asset allocations over time, moving from riskier assets focused on growth into lower risk assets. The target date allocations used for this analysis are summarized in **Figure A-1**.

Figure A-1. Typical target date fund⁶³



Allocations to return-seeking assets at retirement for the typical target date fund (TDF) are 49%, with the majority (42%) allocated to public equities. The remaining return-seeking assets are invested in real estate investment trusts (REITs), commodities, high-yield, and emerging market debt. The risk-reducing assets are allocated mostly to core fixed income (37%), with the remainder in treasury inflation-protected securities (TIPS) (12%) and cash (3%). By 10 years after retirement, total return-seeking assets have reduced to 40%, and by 30 years after retirement, they have further decreased to 36%.

The figures above show that while TDFs tend to de-risk materially by the time retirement is reached and thereafter, substantial allocations to return-seeking assets still remain. This recognizes the need for growth to address longevity risk, which is a key risk that lifetime income solutions aim to address. The level of return-seeking assets is large enough that in many scenarios, participants may be able to sustain lifetime income by withdrawing assets while invested in the TDF. These growth assets, however, also come with risk on the downside, particularly for participants using the funds for basic needs who may be locking in losses along the way. Given these risks and the broad, evolving objectives of DC plans, the paper examined the trade-offs of various guaranteed and non-guaranteed strategies and discussed the benefits and considerations of each.

Capital Market Assumptions

- Asset classes are described by their returns, volatility, and correlation with other asset classes.
- Expectations for individual asset classes were developed by the Willis Towers Watson Investment Model, as of January 2019.
- Return assumptions are net of fees assuming passive management (or minimum risk).
- Return distributions are non-normal, including higher probabilities of downside results compared with a normal distribution.
- Correlations between return-seeking asset classes increase when downside events occur.
- Simulated government yield curves and simulated corporate spreads are used in developing liabilities and returns on fixed income.

Figure A-2. Summary assumptions for January 1, 2019, Towers Watson Investment Services

	1st Year Returns Arithmetic Mean	10th Year Returns Arithmetic Mean	10 Year Returns Geometric Mean	Annual Risk Standard Deviation
Return-Seeking				
Global Equity (unhedged)	7.2%	7.2%	5.5%	18.3%
Global Equity (hedged)	7.0%	7.0%	5.5%	17.4%
US Equity	6.8%	6.8%	5.2%	18.0%
US Large Cap Equity	6.8%	6.8%	5.1%	18.0%
US Small Cap Equity	7.5%	7.5%	5.0%	22.7%
International Equity (unhedged)	7.7%	7.7%	5.5%	20.5%
International Equity (hedged)	7.2%	7.2%	5.5%	18.2%
International Developed Equity (unhedged)	7.4%	7.4%	5.3%	20.4%
International Developed Equity (hedged)	6.8%	6.8%	5.2%	17.5%
Emerging Market Equity	8.6%	8.6%	5.4%	24.8%
Median-skilled Private Equity Fund-of-Funds	6.8%	6.8%	3.8%	23.4%
REITs	6.5%	6.5%	5.2%	15.8%
Real Estate	5.2%	5.2%	4.7%	9.8%
Infrastructure Listed	6.2%	6.2%	5.1%	15.0%
Infrastructure Direct	6.6%	6.6%	5.2%	17.0%
Median-skilled Hedge Fund-of-Funds	4.6%	4.8%	4.4%	8.4%
Reinsurance	4.3%	4.6%	4.1%	8.1%
High Yield	3.6%	5.4%	4.6%	9.9%
Emerging Market Debt Sovereign	2.4%	5.1%	4.3%	9.4%
Emerging Market Debt Corporate	3.0%	4.6%	4.0%	8.5%
Bank Loans	4.4%	4.6%	4.3%	7.9%
Securitized Credit	3.8%	4.4%	4.0%	6.3%
Structured Credit	4.8%	5.8%	4.9%	12.0%
Emerging Market Currency	4.4%	4.6%	4.2%	7.9%
Volatility Premium	5.3%	5.5%	4.6%	12.1%
Commodities	4.6%	4.8%	3.6%	14.9%
Liability Hedging				
US Aggregate Investment Grade Bonds	1.5%	3.3%	2.9%	4.1%
US Intermediate Government Bonds	1.6%	3.2%	2.9%	2.9%
US Intermediate Credit Bonds	1.6%	3.2%	2.8%	3.6%
US Intermediate Gov/Credit Bonds	1.6%	3.2%	2.9%	2.9%
US Long Government Bonds	1.7%	3.5%	2.5%	11.4%
US Long Credit Bonds	1.4%	3.6%	2.6%	10.7%
US Long Government/Credit	1.5%	3.6%	2.7%	9.7%
STRIPS	1.6%	4.0%	2.3%	15.8%
US TIPS	2.0%	3.2%	3.1%	5.7%
Cash	2.7%	3.0%	2.8%	2.4%
Inflation	2.0%	2.0%	2.0%	2.3%

Sources

¹ 2018 Willis Towers Watson Global Pension Assets Study

² Auto-enrolling involves automatically deducting a portion of an employee's income for contribution into a DC plan unless he or she takes action to opt out. The Pension Protection Act of 2006 provides safe harbor protection to employers that automatically enroll employees into DC plans. Auto-escalating refers to increasing the employee's contribution rate over time.

³ Ivy Deng, Laura Kim and Angela Antonelli, "How Much Is Enough? The Challenge of Helping Workers Determine Their Retirement Income Needs," Georgetown University Center for Retirement Initiatives Policy Blog (April 2019)

⁴ Financial planners and others will often recommend a goal of eight times (8x) the ending pre-tax salary by the time of retirement. In this example, that is approximately \$640,000, which will be used as part of the baseline assumptions for modeling different lifetime income solutions.

⁵ See Appendix for details about derivation of starting account balance and other key inputs.

⁶ For the systematic spending, managed payout, and target date with deferred annuity examples, income was set to match the immediate annuity by design for comparative purposes. Participants have flexibility in determining their initial withdrawal rates in each of these scenarios.

⁷ In the 116th Congress, such proposals include S. 972, the Retirement Enhancement and Savings Act (RESA) and H.R. 1994, the Setting Every Community Up for Retirement Enhancement (SECURE) Act.

⁸ Jennifer Erin Brown, Joelle Saad-Lessler, and Diane Oakley, "Retirement in America: Out of Reach for Working Americans?" National Institute on Retirement Security, Washington, DC (2018): 7–8.

⁹ Ibid., 10

¹⁰ Federal Reserve Board, Report on the Economic Well-Being of U.S. Households in 2017 (May 2018): 11

¹¹ Investment Company Institute Quarterly Retirement Market Data, Fourth Quarter 2018 (March 2019)

¹² EBRI's 2018 Retirement Confidence Survey

¹³ The list of solutions is illustrative, not exhaustive.

¹⁴ 29 CFR 2550.404c-5. If these solutions are part of target date funds, they are eligible as a qualified default investment alternative.

¹⁵ 2018 Willis Towers Watson Global Pension Assets Study

¹⁶ Social Security Administration, Fact Sheet

¹⁷ Ibid.

¹⁸ Blended male/female mortality

¹⁹ Congressional Budget Office, *Measuring the Adequacy of Retirement Income: A Primer* (October 2017): 6

²⁰ Kayla Fontenot, Jessica Semega, and Melissa Kollar, *Income and Poverty in the United States: 2017*, United States Census Bureau Report (September 2018). Based on average salary for age 35 – 54 range. Salary for older workers decreased, though rationale for utilizing \$80,000 for analysis is explained fully in the Appendix.

²¹ The replacement ratio is the percentage of pre-retirement income that a participant aims to generate from his or her accumulated retirement savings.

²² See the Appendix for explanation of key inputs and assumptions. Utilizing an 8x salary assumption provides an attainable goal for participants to potentially achieve their income replacement needs. This also highlights the importance of participants growing their wealth to a meaningful level by retirement.

²³ A QDIA is an investment fund or service deemed as an acceptable default investment by the U. S. Department of Labor to be used by plan fiduciaries for enrolled participants who have not made an investment selection themselves.

²⁴ A cost-of-living adjustment, or COLA, is a feature that can be embedded or incorporated into an annuity to increase future payments.

²⁵ Includes public equities, commodities, and real estate investment trusts

²⁶ Modeled as 45% Morgan Stanley Capital International All Country World Index (global equities), 55% Bloomberg Barclays US Aggregate Index (fixed income or bonds)

²⁷ MetLife, *Paycheck or Pot of Gold Study: Making workplace retirement savings last* (2017)

²⁸ EBRI's 2019 Retirement Confidence Survey

²⁹ See Appendix for source details.

³⁰ Annuity factor assumes a blend of male and female mortality tables with life expectancies based on the most recent mortality tables issued by the Society of Actuaries for white collar employees; interest rate basis is a blend of U.S. Treasury Bond and high-quality corporate bond yields, with no special features such as death benefits or refund of premium.

³¹ If a strategy successfully generates income through age 100 in a given simulation, the strategy receives mortality credit for the remaining life expectancy from age 100 on.

³² Remaining asset balance refers to assets retained in the participant's defined contribution account that may be used for other objectives. In the case of immediate annuitization, assets are transferred to an insurance company or other provider leaving no assets in the participant's account versus alternatives where assets may remain.

³³ As of January 1, 2019

³⁴ The immediate annuity benchmark is structured to provide lifetime income payments, though annuities may be structured in other ways such as including refundability, spousal benefits, inflation adjustments, and so on, though there are trade-offs when considering additional structures and features.

³⁵ For solutions where a portion of assets are invested in capital markets, modeling assumes the "typical target date fund" throughout (unless otherwise stated) given the pervasiveness of target date funds in defined contribution plans today. These solutions may also be implemented with other investment options as well, such as other target date funds, asset allocation services, or balanced funds.

³⁶ The withdrawal rate needed to match the immediate annuity income leads to depletion of assets over time in both expected and downside scenarios. In very strong markets, the portfolio can support immediate annuity income levels and continue to grow remaining balances, which is why remaining assets at age 95 show such a stark contrast.

³⁷ J.P. Morgan Asset Management, "Three retirement spending surprises" (January 2019)

³⁸ Age 80 was chosen as opposed to other, later, ages as the probability of participants receiving a payment from the annuity increases and the ability to bridge the gap with liquid investments to annuity commencement is improved.

³⁹ Internal Revenue Bulletin: 2014-30

⁴⁰ IRS Notice 2014-66

⁴¹ Deferred income single life annuity purchased at age 65 to commence at age 80. Annuity does not include any other benefits such as death benefits or refund of premium.

⁴² While recent research (e.g., J.P. Morgan Asset Management, "Three retirement spending surprises" [January 2019]) suggests that spending decreases in the early years of retirement and then flattens out, some may desire annual income that increases over time if the view is that expenses will increase over time. This can be accomplished in a number of ways, including through specific annuity purchase levels and features, though higher income levels and additional features come at a cost.

⁴³ 100 basis points = 1% (1 basis point = 1/100 of 1%)

⁴⁴ Modeled as 25% U.S. Equity, 25% Non-U.S. Equity and 50% U.S. Aggregate Bonds

⁴⁵ MetLife, *Paycheck or Pot of Gold Study: Making workplace retirement savings last* (2017)

⁴⁶ EBRI 2018 Retirement Confidence Survey, Figure 9

⁴⁷ Wei-Yin Hu and Jason S. Scott, "Behavioral Obstacles to the Annuity Market", Pension Research Council, The Wharton School, University of Pennsylvania, 2007.

⁴⁸ Defined Contribution Institutional Investment Association, *Design Matters: Plan Distribution Options* (2018)

⁴⁹ Willis Towers Watson 2018 Survey of DC Plan Recordkeepers – Lifetime Income Solutions

⁵⁰ United States Government Accountability Office (GAO), *DOL Could Take Steps to Improve Retirement Income Options for Plan Participants* (2016)

⁵¹ United States Department of Labor, Employee Benefits Security Administration, *Field Assistance Bulletin No. 2015-02*

⁵² The Employee Retirement Income Security Act of 1974 (ERISA) is a federal law that sets minimum standards for most retirement plans to protect plan participants.

⁵³ The Advisory Council on Employee Welfare and Pension Benefit Plans, usually referred to as the ERISA Advisory Council ("the Council"), produced this report. The Council was established under section 512 of ERISA to advise the Secretary of Labor on matters related to welfare and pension benefit plans.

⁵⁴ Advisory Council on Employee Welfare and Pension Benefit Plans, *Lifetime Income Solutions as a Qualified Default Investment Alternative (QDIA) – Focus on Decumulation and Rollovers* (2018).

⁵⁵ In the 116th Congress, such proposals include S. 972, the Retirement Enhancement and Savings Act (RESA) and H.R. 1994, the Setting Every Community Up for Retirement Enhancement (SECURE) Act.

⁵⁶ See Appendix for details about derivation of starting account balance and other key inputs.

⁵⁷ For the systematic spending, managed payout, and target date with deferred annuity examples, income was set to match the immediate annuity by design for comparative purposes. Participants have flexibility in determining their initial withdrawal rates in each of these scenarios.

⁵⁸ United States Census Bureau Report, *Income and Poverty in the United States: 2017* based on average salary for age 35 – 54 range.

⁵⁹ Based on data from Vanguard's *How America Saves 2018* report.

⁶⁰ Based on data from Vanguard's *How America Saves 2018* report as well as the 59th Annual PSCA Survey of Profit Sharing and 401(k) Plans.

⁶¹ Calculated using a portfolio of 60% global equity and 40% core fixed income from January 1976 through December 31, 2018, using the MSCI World through December 1998 and the MSCI ACWI thereafter for equities and the Bloomberg Barclays US Aggregate for fixed income.

⁶² Off-the-shelf products are those that are designed and pre-packaged by asset managers for broad usage by many plan sponsors as opposed to a custom implementation where the glide path and portfolios are built to the objectives of one sponsor.

⁶³ Sourced from Willis Towers Watson's target date research glide path survey, updated annually, which is constructed using information from asset managers. The target date fund families include Alliance Bernstein, American Century, American Funds, BlackRock, Charles Schwab, DFA, Fidelity, JPMorgan, John Hancock, Mellon Capital, MFS, Morningstar, Northern Trust, PIMCO, Principal, Prudential, SSgA, T. Rowe Price, TIAA, Vanguard, Voya, Wellington, and Wells Fargo.



GEORGETOWN UNIVERSITY
McCourt School *of* Public Policy
Center for Retirement Initiatives

cri.georgetown.edu

3300 Whitehaven Street NW, 5th Floor
Washington, DC 20007



WTW-NA-2019-WTW264733
willistowerswatson.com

WillisTowersWatson 