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DEFINED CONTRIBUTION PLANS

Challenges and Opportunities for Plan Sponsors

JEFFERY V. BAILEY, CFA,
AND KURT D. WINKELMANN

CFA Institute Research Foundation

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Statement of Purpose

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Biographies

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Kurt D. Winkelmann has over 30 years of experience in investments and pension-related issues. He is a co-founder and the CEO of Navega Strategies, LLC, a quantitative investment research firm providing investment solutions. He has been a senior fellow at the Heller-Hurwicz Economics Institute (University of Minnesota), where he spearheaded the organization's pension policy initiative. Before founding Navega, Mr. Winkelmann was managing director and global head of research at MSCI. Prior to that, he was a managing director at Goldman Sachs, where he led the Global Investment Strategies group in the Investment Management Division. Mr. Winkelmann has written extensively on asset allocation and risk management themes. He has been an adviser to the Monetary Authority of Singapore, a board member of the Alberta Investment Management Company, an adviser to the British Coal Staff Superannuation Scheme, and a director of the University of Minnesota Foundation Investment Advisors. Mr. Winkelmann is chair of the Advisory Board for the Heller-Hurwicz Economics Institute. He received his PhD and MA in economics from the University of Minnesota and his BA in economics and mathematics from Macalester College.

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Dedication

To my lovely wife, Molly Grove.

JVB

To Janine Gleason, my wife.

KDW

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Foreword

Being in charge of a defined contribution (DC) plan is no small task, and as noted by the authors of *Defined Contribution Plans: Challenges and Opportunities for Plan Sponsors*, often the only instruction received by decision makers is on-the-job training.

With many shared years of experience in the trenches working with DC plans, the authors craft a comprehensive primer to help plan sponsors and their advisers navigate the regulatory, legal, and practical opportunities and challenges that they face in their highly technical, multifaceted, and supremely important roles. Focusing on best practices of DC plan management, the authors use a thoughtful and pragmatic tone that reflects real-life experiences in navigating complex DC plans, such as that of Target Corporation, and include a step-by-step guide to thinking through a plan's delivery, participants' needs, and the challenges of being a fiduciary.

The book spends a considerable amount of time discussing the hiring and retention of investment managers, with special attention paid to fees—an appropriate focus, given the widespread occurrence of fee lawsuits. This is where readers benefit from the authors' hands-on experience navigating the pitfalls of DC plan management. For example, the authors give practical advice about weighing the pros and cons of active versus passive investments, including alternative investments for DC plans, which they note "will require a significant amount of plan sponsor time to determine these funds' suitability for plan participants."

As president and CEO of the Employee Benefit Research Institute, I especially appreciate the book's initial sections, which address some basic myths about the US retirement system. These include the so-called golden age of US defined benefit (DB) pension plans—which might not have been so golden in reality—and how the shift from DB to DC plans might have actually created a more egalitarian retirement savings system that is better suited to the mobile nature of the private-sector workforce. The book then goes on to recognize ongoing issues with the current employer-sponsored DC system, which include access and eligibility, particularly by part-time workers. The authors do not shrink from proposing possible policy solutions, such as taking an incremental approach to improve a system that—while not perfect—has made considerable strides in the past few decades toward becoming "a retirement income security bulwark."

A key takeaway of the book is the need for a disciplined approach to managing a DC plan, including outlining the mission of the plan and identifying success measures. Based on my many years as a DC plan consultant, I am concerned that these are not yet universal best practices—but as the authors point out, "good intentions cannot substitute for well-articulated plan design objectives." Further, the authors aptly note that the effectiveness and efficiency of those managing the DC plan can be greatly enhanced if "decision-makers plainly recognize what they are being asked to accomplish."

The authors also consider the future of the DC system, which increasingly involves helping workers plan and save for a range of financial contingencies beyond just retirement. They also note how important it is to recognize that DC plan participants "are essentially cast adrift" when they retire and how plan sponsors might help.

Anyone involved in the DC system will benefit from the historical perspective, practical recommendations, and useful framework provided by this book.

Lori Lucas
President & CEO,
Employee Benefit Research Institute

Chapter 1. Introduction

Retirement Savings Crisis or Opportunity?

Retirement planning in the United States has changed dramatically over the last several decades. The fundamental structure of the US retirement system has shifted, with workers taking on more responsibility than ever for planning, saving, and investing for their post-employment years. Defined benefit pension plans have been crowded out by defined contribution plans, and the risk for securing future retirement assets, once borne mostly by employers, has shifted to workers themselves. But is the news all bad? Or do employees now have greater freedom to secure their financial futures?

The Glass Half Empty. If one takes the popular press at face value, the United States is confronting a full-blown retirement savings crisis. The stream of dispiriting data seems to continue unabated. Some examples:

- Financial stress in America abounds, as discussed in Manganaro (2018).
- According to Dixon (2019), roughly 20% of Americans have nothing saved for retirement or emergencies, and another 20% are saving less than 5% of their income for those purposes.
- As is widely reported, Smialek (2019) documented that roughly 60% of Americans could not come up with $400 to meet a sudden expenditure need and, as a result, they deprioritize longer-term savings needs, particularly retirement.
- Many Americans have no access to an employer-sponsored retirement plan.
    - According to the Bureau of Labor Statistics (2019), barely 50% of employees in companies with 100 workers or fewer can join a retirement plan, and part-time workers have considerably lower access rates than do full-time workers.
- Even for those who have retirement savings, the balances are, on average, woefully inadequate relative to the spending demands that will be placed on them.[1]

[1]Collinson, Rowey, and Cho (2020) reported a median retirement savings balance of $144,000 for baby boomer workers.

- What meager balances have been accumulated are frequently raided through loans available through the retirement plan to meet sudden financial emergencies or simply for general spending needs. Or, the accounts are spent when workers gain direct access to the funds following job changes.
- The adequacy of retirement accounts and access to retirement plans is highly correlated with race, income, and education, worsening the prevalence and magnitude of wealth and income inequality and straining social services.
  - Participants in account-based plans tend to have greater wealth and income than participants in traditional pension plans, according to Morrissey (2016), but account-based wealth is not evenly distributed—it is heavily skewed toward the top quartile.
- Participants in account-based investment programs have little knowledge of investment basics and make shockingly suboptimal decisions.
  - Most have no idea what amount of savings is required to sustain a comfortable lifestyle in retirement (see Fazzi 2020 for further detail).
- Access to actuarially fair annuities, provided by traditional pension plans, is generally not available in account-based retirement plans, heightening concerns about workers' ability to generate sustainable lifetime retirement income.
- Just at a time it is vitally needed, Social Security is becoming a less secure safety net.
- The long-term effects of the COVID-19 pandemic are uncertain at the time this book goes to press. It seems likely, however, that the resulting economic dislocations will lead to lower defined contribution plan participation, lower investment returns, reduced employer contributions, and greater leakage from accounts—all of which will damage the retirement savings of many workers.[2]

When asked "When do you plan to retire?" an increasing number of Americans respond, "Never." Beyond modest Social Security benefits, for

[2]Early in the pandemic, data were sparse and not necessarily reliable, but Singh (2020) reported that half of Americans with retirement savings had taken or planned to take money from their retirement accounts, including loans and hardship withdrawals. Around the same time, Block (2020) reported that almost half of employers had cut or were considering cutting their matching DC plan contributions.

many, part-time, low-wage, and insecure employment in their senior years has become the de facto source of income in "retirement." This scenario is particularly true for single women, minorities, and hourly workers.

To add to the system's dysfunction, retirement plans are horribly complex and heavily regulated, creating fixed cost barriers for small businesses. This situation motivates small employers to decline to offer plans. For those that do offer them, the high costs of small-employer plans are often passed on to plan participants, who pay burdensome fees that reduce their lifetime wealth accumulation. Many smaller employers do not contribute to their employees' retirement accounts. As a result, participation and savings in these plans lag those of larger plan sponsors.

The Glass Half Full. Despite this drumbeat of negative news about retirement savings, bright spots exist if one searches for them. Consider that the majority of US workers *do* have access to retirement accounts through their employers. The proportion of workers with such access has remained remarkably stable for the last four decades, even with (or perhaps because of) the decline in traditional pension plan enrollment.

By various measures, the retirement plan access landscape has actually improved. Despite a pining for the "good old days," there never was a period when traditional pensions supplied a sustainable retirement income for most Americans. Today, more workers than ever before are receiving some form of private or public retirement income beyond Social Security.

Private-sector retirement income as a percentage of total retirement income has grown since the 1970s, as documented by Purcell (2009). The shift from traditional pension plans to account-based plans created a more egalitarian retirement savings system—and one better suited to the mobile nature of the private-sector workforce, in which individuals change employers numerous times throughout their working lives. Millennials seem to have heard the message, because as a group, they are saving a higher proportion of their incomes in retirement plans than did their Generation X or baby boomer brethren at the same age, according to Bahney (2020). Retirement savings plans as a system has progressively become fairer and cheaper, as default settings and cost competition have improved funding levels and lowered fees. Employers are learning how to enhance the effectiveness of their plans. Default options in retirement plan design have increased participation and savings rates.

Reports of retirement savings deficits also may be exaggerated. Lower-income workers have always relied on Social Security to cover the bulk of their income replacement needs. Many of those workers do not have (and never had) other forms of retirement savings. Assuming an equitable system for replacing pre-retirement income in retirement, the need for high participation and savings rates in employer plans may be less pressing than a cursory analysis indicates.

The objective observer thus is left with the unsatisfying conclusion that the US employer-sponsored retirement system is a mixed bag, containing both discouraging negative features and prominent rays of hope. Although only a Pollyanna would argue that the current situation is anywhere near ideal, one can also realistically claim that the structure on which to build an enhanced retirement system is in place. What seems incontestable is that the employer-sponsored retirement system is not going away any time soon. Despite progressives' calls for a universal individual retirement account (IRA) program and conservative politicians' complaints of burdensome regulations, workers with access to a retirement plan generally prefer having the source of their paychecks also fund their retirement accounts in a tax-advantaged way. The government likewise takes a similar attitude, and politicians as a group show no apparent appetite for a major overhaul of US retirement benefits.

For several generations now, the US retirement system has relied on three components to produce retirement income for its citizens: Social Security, employer-sponsored retirement plans, and private savings. Together, these income sources constitute the vaunted "three-legged stool" of retirement planning. Concerns about the imbalance of funds flowing into the Social Security system versus promised future payments lead many analysts to question whether in the future this leg of the stool will be able to offer benefits at the same level that it does now. Similarly, compared with many countries, US personal savings rates remain low, emphasizing most Americans' inability to provide for themselves in retirement through private savings outside of retirement plans.

Therefore, now more than ever before, workers and, by extension, society need the employer-sponsored retirement system to function well. As a society, we count on this imperfect structure to serve as a retirement income security bulwark. So how can we make it as all-encompassing and efficient as possible? As former US secretary of defense Donald Rumsfeld famously said, "We go to war with the army we have, not the army we want." The current US employer-sponsored retirement system is the army we have. And so we must address the need for adequate retirement savings through that system, not through wishing for an idealized one. Although the system requires enhancement, any changes almost certainly will be evolutionary, not revolutionary, in nature. Employers, politicians, and regulators have a responsibility to identify and act on opportunities to bring about those incremental improvements.

The DB-to-DC Migration

Most US workers rely on their employers to offer a means to accumulate retirement income beyond what they earn through Social Security. A sizable but shrinking minority still accrue retirement benefits through traditional defined benefit (DB) pension plans. In these arrangements, the employer offers a lifetime annuity typically based on an employee's length of service and wage history. Many such plans are completely funded by the employer, but some (particularly those sponsored by public employers) also require the employees to contribute. For individuals fortunate enough to be enrolled in this type of retirement plan, while working they can simply watch their promised benefits grow. In retirement, they need only wait for the next monthly payment to arrive. Outside of issues related to adequate funding of liabilities, no uncertainty exists about the payment amount. The employer bears the risk of ensuring that the assets are available to pay benefits on time and in full. In the private sector, that promise is even backed by an employer-funded federal insurance program.[3]

Of those US workers who earn a workplace retirement benefit, the growing majority do so under account-based defined contribution (DC) plans. In most of these schemes, the employer sponsoring the plan offers an investment vehicle for employees to make tax-deferred deposits. Often the employer will match the employees' deposits up to a certain percentage of wages. In a less typical DC plan, the employer contributes an amount independent of its employees' savings decisions.

The outstanding feature of DC plans, as opposed to DB plans, is that the sponsoring employer makes no promises about the size of the participating employee's retirement benefit. That amount depends instead on the size and investment performance of the assets deposited by the participant and employer. Although the participants' retirement assets are required to be held safely in a trust account, effectively eliminating sponsor default risk and the need for federal insurance, the government offers no backstop to a participant who makes poor use of available investment options or who undersaves. Moreover, if overall market performance is bad, these retirement assets have no protection. Employees are on their own when it comes to accumulating sufficient assets to fund their retirement income needs. This transference of retirement funding risk and investment risk from employer to employee

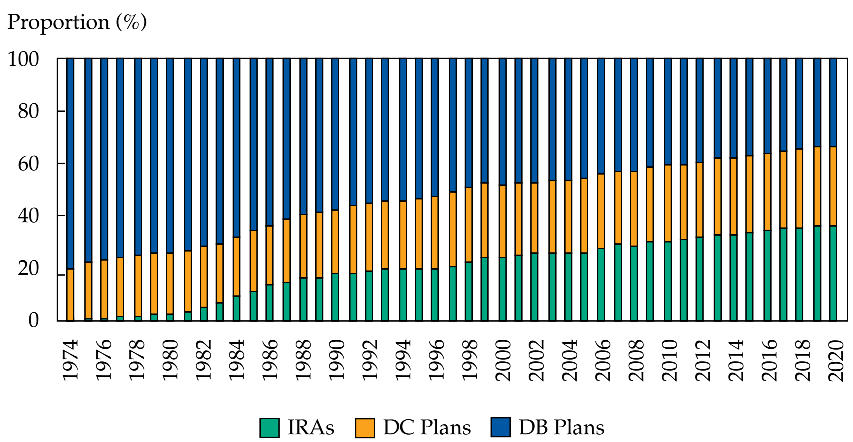
[3]The federal government's Pension Benefit Guaranty Corporation limits the amount of participant DB payments that it covers. The solvency of DB plans and the security of promised benefits, particularly in the public sector, is an important public policy issue but outside the scope of our present discussion.

arguably has been the critical force driving employers to select DC plans over DB plans.

The primary form of DC plan, the 401(k) plan, dates to 1978, when the tax code changed to allow well-heeled executives to defer taxable income. From this small seed sprang the now-dominant form of US private-sector retirement savings. Employers grew to appreciate the predictable nature of DC plan costs. Employees welcomed the transparency and portability of the benefit, as well as an account balance structure that benefited from the bull market of the 1980s and 1990s. The result of this confluence of employer and employee preferences led to a surprisingly rapid replacement of DB plans with DC plans. In the 1980s, approximately 60% of participants in employer-sponsored retirement plans were enrolled only in DB plans. By 2018, however, that ratio had dwindled to 4%, according to a 2019 report from the Bureau of Labor Statistics (BLS). During this time, many employers closed their DB plans to new entrants and some ceased accruing new benefits even for existing DB participants. New employees were covered only under a DC plan. Today the creation of a new DB plan is an almost unheard-of event. Private-sector employers with the remaining open DB plans continue to shutter them. Only the public sector retains a strong commitment to DB plans. **Figure 1** charts these trends over time.

The shift from DB to DC plans during the last three decades in the United States has profoundly affected how employers manage the retirement

Figure 1. Retirement Plan Assets in DC, IRA, and DB Plans



Source: Data are from Investment Company Institute (2020b).

plans that they sponsor. For sponsors that once had DB plans, gone are the asset–liability analyses, asset allocation decisions, and manager selection and evaluation sessions. The role of DC plan sponsors, however, is hardly hands-off. Instead, DC sponsors face an entirely different set of challenges relating to participation levels, contribution adequacy, fees, and investor education. Investment risk appears to have been replaced by liability risk, as plaintiffs' lawyers have found an increasing number of issues over which to sue sponsors. Although the nature of the issues has changed over time, the role of the retirement plan sponsor remains fraught with difficult decisions.

Partitioning the DB Promise

We can better convey what changed during the DB-to-DC migration by breaking the DB promise into its basic elements and considering how DC plans compare. We can partition the DB plan benefit into four components:

1. Savings
2. Investments
3. Protection from market risk
4. Retirement income

DB Plans. The four aspects of DB plans just mentioned provide participants with predictable and secure retirement income after they leave the workforce. We explore each of the elements in further detail.

- *Savings.* Once participants become eligible for a DB plan, they automatically begin to accrue benefits. The plan sponsor implicitly saves for them at a rate sufficient to fund the promised benefits. Responsible sponsors make regular cash contributions, actuarily determined and using estimates of investment returns on the contributed amounts. The employer sponsoring the DB plan in turn presumably offers lower wages today in exchange for promised future payments. The net result is an efficient means of accumulating tax-advantaged savings.

- *Investments.* The DB sponsor invests the contributions in a diversified portfolio of assets. Investment policies and risk tolerances differ among sponsors, but virtually all DB plans hold a rich variety of asset types that are professionally managed. The time horizons are long term, with the primary objective of fully funding promised benefits through the combination of the employer's contributions and investment returns.

- *Protection from market risk.* The DB sponsor guarantees the participants' benefits, separating the benefit promise from the investment performance of the supporting assets. Regardless of the invested assets' market performance, participants' benefits remain unaffected. The investment risk falls on the sponsor. Should a private-sector sponsor fail to honor its benefit obligations, then (within certain limits) the benefits will be paid by a federal government agency that insures them.

- *Retirement income.* A DB plan's benefits are delivered in the form of an annuity paid over the retirement life of the participant (and co-annuitant, if any is named). This annuity is "purchased" by the employer on an ongoing basis as participants accrue benefits. Participants pay no fee for this service. Although some plans include a lump sum payout option, all DB plans allow for a lifetime annuity payment.

DC Plans. So, how does a DC plan match up with the four DB components?

- *Savings.* For eligible participants in most DC plans, enrollment is voluntary. Although a sponsor may make matching contributions, if employees choose not to enroll in the plan, they accumulate neither their own savings nor those of the sponsor. They must choose whether and by how much to reduce their take-home pay to fund their desired retirement benefits.

- *Investments.* DC sponsors offer a menu of investment options from which participants may select. Many sponsors have made this menu increasingly low cost and diversified. The investments themselves are professionally managed, but the choice of investments and risk levels is left to participants. The advent of target date funds allows participants to hold inexpensive and well-diversified portfolios that rival the breadth of asset types and customized risk levels of DB plans.

- *Protection from market risk.* Unlike in DB plans, retirement income from DC plans cannot be separated from investment results. The retirement income of DC participants derives directly from the value of their account balances. Hence, their retirement income is exposed to the performance of their investments, for which no hedging vehicle is available.

- *Retirement income.* The typical DC plan offers lump sum or limited-duration installment payouts of account balances. As a result, participants are subject to longevity risk (that is, the possibility of living longer than the period over which the stream of their retirement benefits will be paid out). Although platforms exist to convert DC balances to lifetime annuities,

Exhibit 1. Savings, Investments, Risk, and Lifetime Income: DB vs. DC Plans

	DB Plans	DC Plans	Comments	Chapter
Savings	✓	✓	Requires DC participant action	2
Investments	✓	✓	TDFs provide diversification similar to that of DB plans	5
Market risk protection	✓		Not available to DC participants	5
Lifetime income	✓	✓	Rarely available to DC participants	6

few sponsors offer access to those platforms, and among those that do, few participants take up the offer. In addition, many annuities offered on these platforms contain high embedded fees and lack transparency.

Exhibit 1 illustrates the differences between DB and DC plans, and we note the chapter in which we discuss each component in more detail. The shadings in the DC column indicate the effectiveness of typical DC plans in replicating the features of DB plans.

A fundamental but often overlooked difference between DB and DC plans is that DC participants have no protection against market risk as they save for retirement. Even under ideal conditions—that is, when DC participants save adequately, use a low-cost target date fund to invest, and buy a low-cost life annuity to eliminate mortality risk—they still cannot replicate the guaranteed lifetime retirement income *from date of eligibility* offered by DB plans. At best, DC participants can generate guaranteed retirement lifetime income *from date of retirement*. Thus, a DB plan participant and a DC plan participant who effectively save the same amount, invest in similar assets, and have access to an annuity platform may experience quite different retirement benefits because of account balance value fluctuations for the DC participant. Ending retirement wealth in DC plans is inherently more volatile than it is in DB plans.

Our Target Audience

We have spent our careers working as plan sponsors or advising plan sponsors, and so we wrote this book from that perspective. This book offers advice to persons working on the plan sponsor side who want an overview of the key issues facing organizations that offer DC plans. Perhaps you are responsible for establishing a DC retirement plan or determining the plan's features. Or perhaps you are involved in the fiduciary oversight of the plan's investments. Maybe your role lies with administering the plan's benefits for participants.

Perhaps you serve on an investment committee that sets investment policy and oversees investment results for the plan. You might work on the treasury team, which is responsible for selecting and monitoring investment managers. You could be a member of the human resources (HR) team that owns the plan design decisions regarding eligibility, enrollment, and education. Or you might lead a small company that outsources some or all of its DC plan functions to a specialist organization. If so, you are part of our target audience.

We present the material conversationally from a high-level perspective. We have not sought to write an encyclopedia on DC plans. Rather, we aim to offer a perspective on some of the key challenges facing DC plans and provide associated design and policy recommendations for you to consider. Our intent is to spark further interest on your part, resulting in you doing additional research and ultimately making better decisions. We focus on the basic features of a well-run DC plan. Even if you consider yourself a DC plan expert, we hope and expect that items in this book will be of interest to you.

Chapter Overviews

We organize our discussion around five central subjects:

- the plan participant,
- the plan sponsor,
- plan design,
- investments and investment managers, and
- asset decumulation in retirement.

The Plan Participant. We begin by examining the demographics of DC plan participants and non-participants as well as their retirement savings behavior. We consider some basic statistics on the proportion of Americans who participate in retirement plans. How many have access to plans? To what extent do eligible workers participate in their plans? How do employee participation rates vary across demographic groups and employers? How successful have plan participants been in saving for retirement, and what have plan sponsors done to facilitate savings on the part of participants?

Participation is only part of the process of building retirement wealth. Contributions must be made and account balances adequately invested. What is the state of retirement readiness on the part of plan participants? Are there behavioral aspects of financial decision making (that is, cognitive biases) that prevent participants from adequately using their DC plans, even in the face of often generous provisions from plan sponsors? We also look at participants' responses to financial education efforts offered by sponsors and other entities. How effective have those efforts been? To the extent that standard efforts have been found wanting, what alternatives are being implemented? Finally, we take a broader view beyond employees' participation in retirement plans and consider programs focused on their overall financial well-being.

The Plan Sponsor. The plan sponsor has responsibility for providing an efficient and cost-effective vehicle for retirement wealth accumulation. We begin with an overview of plan governance, emphasizing the policy-setting and decision-making responsibilities of the plan sponsor. Central to plan governance are a mission statement and plan objectives, along with associated success measures. Many sponsors lack a set of well-articulated principles to guide design and implementation of their DC plans. Those principles ideally should focus on outcomes and define participants' success all the way through retirement.

We then discuss the fiduciary duties of the plan sponsor. Can the sponsor adequately handle its fiduciary obligations in-house? Some sponsors outsource large portions of that duty to third parties, although doing so does not absolve the sponsor of ultimate fiduciary accountability. How do plan sponsors work with other parties to provide oversight and administration of their DC plans? These parties include record keepers, asset custodians, and consultants. Scale matters, and the challenges faced by smaller employers compared with larger ones are much greater. Lastly, we consider the growing litigation risks encountered by plan sponsors and the impact that lawsuits have had on improving plan design and at times inhibiting innovation.

Plan Design. We then move on to discuss elements of DC plan design. Translating the broad plan governance principles into specific features of a retirement plan materially affects plan participants' potential for success. At the most basic level, employers offer DC plans with the expectation that their employees will participate and build "adequate" retirement account balances. The surest way to do that, of course, is for the employer-sponsor to put in the money directly, but that is an expensive route. So most employers design plans in order to motivate employees to join and invest their own money.

What are plan sponsor practices with respect to contributing alongside plan participants? How quickly do participants vest in the sponsors' contributions, if any are offered? We focus on plan provisions that lead participants toward decisions the sponsors believe are in participants' best interests—so-called default settings.

We also look at sources of leaks in the DC system. Many participants fail to build account balances because they find ways to take money out of the system prior to retirement. How pervasive and serious is the problem? Are there methods to plug these leaks short of outright prohibitions on withdrawals until retirement?

Investments and Investment Managers. Once plan participants put money in their accounts, they need an effective set of investments to build retirement wealth. Plan sponsors bear the responsibility for assembling a set of investment options for participants. The options selected should be consistent with the principles guiding plan design. Sponsors of DC plans face a wide range of choices in selecting an investment framework for their plan participants. Different types of investment vehicles are available, and a vast assortment of investment strategies can be offered through these vehicles. All these choices have serious implications for participants' success in building adequate retirement-ready account balances.

In confronting their obligation of providing low-cost investment alternatives to participants, plan sponsors need to offer simple and understandable options. Yet the sponsors face the marketing machinery of an investment management industry that is trying to maximize fee revenues. How do sponsors select among the many choices available? We consider the investment options that sponsors should make available to their participants. We also discuss how sponsors go about monitoring investment performance and making selection and retention decisions. In addition, we address the controversial passive versus active management issue that influences the choice of manager lineups in DC plans.

Asset Decumulation in Retirement. As vital as the task of building retirement-ready account balances is, the challenges of making those balances last throughout the plan participants' retirement years are equally important. Again, this element of a DC plan should reflect the plan's guiding design principles. The displacement of DB plans by DC plans severed the implicit link between asset accumulation and the distribution of retirement income. Through investment risk, it introduced volatility into the amount of retirement income that participants can generate.

Plan sponsors have a range of tools available to help participants keep their balances invested until retirement and then pay out those balances thereafter. Unfortunately, sponsors spend precious little time assisting participants in understanding and executing a decumulation strategy. We consider the importance of lifetime income and the crucial role of mortality pooling in generating lifetime income solutions that are superior to those that participants can likely generate on their own. Why, then, do so few plan sponsors offer guaranteed lifetime income options as part of their plan design? When they do, why is the take-up rate among participants so low? We make suggestions on how sponsors can better educate participants about the potential value of guaranteed lifetime income.

Chapter 2. The Plan Participant

Challenges Facing the Plan Sponsor

- Participants in DC plans are tasked with being their own chief investment officers.
  - They must make a series of complex decisions that will irrevocably affect their financial security, the results of which will remain unknown for decades.
- Except for those in the lower-income quintiles, workers rely on DC retirement plans to adequately replace pre-retirement income beyond what Social Security can provide.
- Participation in DC plans is a function of access, eligibility, and take-up.
  - All three factors are highly stratified, with full-time, higher-income workers in large companies almost universally faring better than part-time, lower-income workers in small companies.
- DB retirement plans, even in their heyday, did not deliver coverage and adequate income replacement to most Americans, but it is unclear whether DC plans have improved the situation.
- Most US workers approaching retirement have low savings, with up to a third having no workplace retirement assets.
- A lack of financial literacy poses a serious obstacle to financial security, and few US workers possess the knowledge to successfully manage their own retirement savings and investments.
  - Workplace financial education programs have not generally been successful at mitigating financial illiteracy.
- Beyond a lack of financial literacy, DC plan participants must overcome behavioral biases that hinder savings and investment decision making.
- Employees face significant financial stress in their lives that extends beyond the difficulties of building retirement wealth.

Opportunities for the Plan Sponsor

- Recognize that despite the structural advantages of DB plans, DC plans have the potential to produce a more egalitarian retirement savings system, better suited to a mobile workforce.
  - — A competitive retirement plan is a key benefit offering that can differentiate an employer from others.
- Earn reputational value and enhance standing with participants by offering a robust financial education program.
  - — Participants see sponsors as objective providers of financial information.
- Understand how participant behavioral biases can adversely affect saving and investment behavior.
  - — Help offset the negative impact of those biases with plan features that "design around" participants' tendencies.
- Make a comprehensive effort to provide plan participants with digestible retirement planning information.
- Assist in the relief of financial stress to enhance workplace productivity and create an environment that promotes a long-range perspective on retirement planning.
- Make universal access to workplace retirement plans a priority for workers.
  - — Employers that want to avoid the burden of sponsoring a separate plan should support alternatives, possibly state-sponsored plans or multiple-employer plans.
  - — Use trade groups to lobby legislators to remove impediments to retirement savings.

The DC Plan Participant as CIO

The DB-to-DC migration has placed the onus of adequate retirement funding squarely on the shoulders of US workers. They must make a host of decisions that are critical to their long-run financial success. Moreover, the outcomes of these decisions will remain unknown for decades, and course correction becomes increasingly difficult as time passes. Consider all the complex choices that confront the worker seeking to create a secure financial future for herself in retirement through a DC plan:

1. Select an employer that offers a retirement plan.
2. Choose to enroll in the plan.
3. Establish an appropriate retirement savings rate in conjunction with saving for other needs.
4. Determine a desired level of investment portfolio risk, which may change over time.
5. Select a set of investments, and keep those investments balanced at the desired risk level.
6. Ensure that retirement savings are managed and not depleted when moving from one employer to another.
7. As retirement approaches, create life expectancy projections and post-retirement spending plans.
8. Develop a sustainable post-retirement withdrawal strategy to fund this spending.
9. Modify that withdrawal strategy in a dynamic fashion as portfolio returns and spending patterns evolve over time.

In effect, US workers are tasked with being their own chief investment officers (CIOs). Creating a comfortable retirement using DC plans is predicated on workers making wise long-term financial decisions on these critical issues. Few, however, have the education, training, and time to carry out this heavy responsibility. Given the overwhelmingly complicated nature of the retirement planning assignment thrust upon workers today, is it any wonder that most are incapable of handling their own retirement finances?

Of course, some individuals thrive in this situation. Among the affluent population, those who lack the requisite skills are often willing to pay professionals tens of thousands of dollars to advise on these important financial decisions. Those who cannot afford financial planning services face a bleaker situation.

DC Plan Usage

Some US workers do not need DC plans to generate retirement income, because they rely almost exclusively on Social Security benefits. For those with relatively low lifetime incomes, Social Security payments will replace a high percentage of pre-retirement income. For middle- and higher-income workers, however, the structure of Social Security benefits will provide only modest income replacement.[4] As a result, many people count on employer-sponsored retirement plans and private savings to achieve adequate pre-retirement income replacement.[5] We begin our discussion of the plan participant by exploring how workers use the DC retirement system.

We examine three fundamental issues in the use of employer-sponsored retirement plans:

1. Access and eligibility
2. Take-up
3. Participation

Access refers to whether an employer offers a retirement plan to its workers, while *eligibility* denotes whether a worker meets the minimum criteria necessary to enroll in the employer's plan. *Take-up* indicates whether employees actually choose to enroll in a retirement plan available to them. Finally, *participation* reflects the combined impact of the first three factors.

In discussing data surrounding access, eligibility, take-up, and participation, we note that no single authoritative source exists for this information. Various primary sources based on surveys (many of which involve self-reporting by employees) and tax records are used to decipher the extent to which employees can and do participate in retirement plans. Moreover, how these factors apply to specific workers may vary over the workers' careers. As a result, ambiguity surrounds the conclusions derived from studies of workers' participation in employer-sponsored retirement plans. At best one can point to a range of numbers to summarize how US workers use those plans. We do not attempt to provide a comprehensive review of the research surrounding these studies.

Table 1 displays data compiled by the Bureau of Labor Statistics (2019), which provides a broad swath of reporting across both DB and DC plans, employer types, employer size, and full-time and part-time status. A 2015 Social Security Administration study indicates access, participation, and

[4]Social Security replaces 90% of eligible annual income up to $11,520. It then replaces 32% for incremental income up to $69,420, and for incremental income up to the income limit of $137,700, it replaces 15%. (All numbers are as of 2020.) Dushi, Iams, and Tamborini (2017) found that across the US population, Social Security replaces about 40% of pre-retirement earnings.

[5]It is axiomatic that older workers care about their employers' retirement plans. But even millennials care. Pentegra Retirement Services (2018) noted that virtually all respondents rated retirement benefits extremely important or important.

Table 1. Retirement Benefits: Access, Participation, and Take-Up Rates,[a] Civilian Workers,[b] March 2019 (all workers—100%)

Characteristics	All Retirement Benefits[c]			Defined Benefit			Defined Contribution		
	Access	Participation	Take-Up Rate	Access	Participation	Take-Up Rate	Access	Participation	Take-Up Rate
All workers	71%	56%	79%	26%	21%	82%	60%	43%	72%
Worker characteristics									
Management, professional, and related	86	75	87	40	33	83	71	55	79
Management, business, and financial	88	78	89	32	27	82	81	68	84
Professional and related	85	74	87	43	36	83	66	50	76
Teachers	87	77	89	74	64	88	41	20	50
Primary, secondary, and special education school teachers	95	85	90	88	79	90	35	13	37
Registered nurses	89	79	88	44	33	74	80	66	83
Service	48	32	66	16	14	89	38	20	54
Protective service	78	66	85	54	50	94	44	27	61
Sales and office	74	56	76	20	15	73	67	48	72
Sales and related	68	44	65	10	6	55	65	42	64
Office and administrative support	77	63	82	26	20	77	68	52	77

Natural resources, construction, and maintenance	64	50	78	23	21	92	55	39	71
Construction, extraction, farming, fishing, and forestry	60	48	79	25	24	95	49	35	71
Installation, maintenance, and repair	67	52	77	21	18	87	61	43	71
Production, transportation, and material moving	72	56	77	22	18	79	64	47	73
Production	74	58	79	19	14	78	71	54	76
Transportation and material moving	71	54	76	26	21	79	57	40	70
Full time	80	66	82	31	25	83	68	51	75
Part time	40	24	60	11	8	72	33	18	54
Union	94	85	90	79	70	88	47	33	69
Nonunion	67	50	77	17	13	77	62	45	72
Average wage within the following categories:[d]									
Lowest 25%	46	27	58	8	6	70	42	22	54
Lowest 10%	32	16	48	4	3	72	30	13	44
Second 25%	70	54	77	21	17	80	60	43	71
Third 25%	84	70	84	33	27	84	70	54	77
Highest 25%	90	80	90	47	39	84	73	59	81
Highest 10%	90	81	90	45	36	81	77	63	81

(continued)

Table 1. Retirement Benefits: Access, Participation, and Take-Up Rates,[a] Civilian Workers,[b] March 2019 (all workers—100%) *(continued)*

Characteristics	All Retirement Benefits[c]			Defined Benefit			Defined Contribution		
	Access	Participation	Take-Up Rate	Access	Participation	Take-Up Rate	Access	Participation	Take-Up Rate
Establishment characteristics									
Goods-producing industries	76	61	80	21	18	83	73	56	77
Service-providing industries	70	55	79	27	22	82	58	41	71
Education and health services	79	66	84	41	35	84	58	40	69
Educational services	88	78	89	73	65	88	42	22	52
Elementary and secondary schools	91	82	90	86	78	91	30	11	37
Junior colleges, colleges, and universities	91	79	87	59	47	79	69	45	66
Health care and social assistance	74	59	80	23	16	76	67	50	75
Hospitals	93	81	87	49	35	71	83	67	81
Public administration	91	85	94	87	79	91	36	21	57
1 to 99 workers	56	41	73	12	10	84	50	34	69
1 to 49 workers	51	38	74	10	8	83	47	33	70
50 to 99 workers	70	51	73	19	16	85	59	38	65
100 workers or more	86	71	83	40	32	81	70	52	74
100 to 499 workers	81	64	78	26	21	83	69	50	72
500 workers or more	90	79	88	56	45	80	70	54	77

Geographic areas									
Northeast	71	59	83	30	26	85	57	43	75
New England	72	60	83	29	24	84	59	47	80
Middle Atlantic	70	59	84	30	26	86	57	42	74
South	70	52	75	25	20	81	60	40	66
South Atlantic	70	53	75	26	20	76	63	41	65
East South Central	71	52	73	26	22	84	62	41	65
West South Central	68	52	77	23	20	88	54	38	70
Midwest	72	57	79	24	20	82	63	46	73
East North Central	71	57	80	25	20	81	64	47	74
West North Central	74	58	78	24	20	83	62	45	72
West	71	58	82	25	20	80	58	45	76
Mountain	75	63	84	25	19	79	62	49	80
Pacific	69	56	80	25	21	81	57	42	75

[a]The take-up rate estimates the percentage of workers with access to a plan who participate in the plan, rounded for presentation.
[b]Includes workers in private industry and state and local government.
[c]Includes DB pension plans and DC retirement plans. Workers are considered as having access or as participating if they have access to or are participating in at least one of these plan types.
[d]Surveyed occupations are classified into wage categories based on the average wage for the occupation, which may include workers with earnings both above and below the threshold. The categories were formed using percentile estimates generated using wage data for March 2019.
Note: For definitions of major plans, key provisions, and related terms, see the "Glossary of Employee Benefit Terms" at www.bls.gov/ncs/ebs/national-compensation-survey-glossary-of-employee-benefit-terms.htm.
Source: Bureau of Labor Statistics (2019).

take-up rates several percentage points higher than the BLS numbers. The Social Security Administration data are less granular in detail than the BLS data. We believe that the high-level conclusions we draw are valid regardless of the data source, and we encourage readers to review other studies that quote alternative figures.[6]

Access and Eligibility

All the good savings intentions in the world cannot help workers who are unable to enroll in their employers' retirement plans. For a surprisingly large proportion of Americans, retirement plan availability is nothing but a mirage. Many have no access to a retirement plan or, even if their employer offers one, they may not be eligible to participate.

The BLS data in Table 1 report that overall, 71% of US workers in the public and private sectors have access to retirement plans, both DB and DC. Of that group, 79% choose to enroll in (i.e., take up) their employers' plans, producing a participation rate of 56%. Those aggregate statistics hide some wide disparities in employee access to retirement plans. For example, only 56% of workers in organizations with fewer than 100 workers have access to retirement plans (that number falls to 51% in organizations with fewer than 50 workers), whereas in organizations with 100 or more workers, the access rate is 86%. Union representation (in part resulting from the strong public-sector presence of unions) brings access rates of more than 94%, whereas non-union workers have access rates of 67%.

It is particularly striking that part-time workers have access rates of only 40%; for full-time workers, 80% have access. This sizable gap points to a serious problem in the effort to promote workers' use of retirement plans. Transient and part-time employees often cannot join retirement plans, both because their employers do not offer those plans and because those workers may not be eligible for the plans. Employer plan provisions frequently specify that an employee must work a certain number of hours either cumulatively or during a particular year to be eligible to join the plans. Those eligibility features historically have been much more stringent in DB plans than in DC plans. The trend in DC plans is to allow employees to participate if not

[6]The Social Security Administration authors (Dushi, Iams, and Lichenstein 2015) married survey data with Form W-2 retirement plan contribution information to enhance data accuracy. Emphasizing the uncertainty in the data, an unpublished report from the US Census Bureau (Gideon and Mitchell 2016) indicated much lower worker participation rates.

immediately upon hire then soon thereafter.[7] Nevertheless, employees who change jobs frequently or work part time still may not qualify.[8] Industries that make extensive use of part-time workers and/or have considerable turnover (e.g., the retail and fast food industries), even if they offer retirement plans, may end up not making those plans available to a significant portion of their employee base.

Because part-time workers and those who experience relatively rapid turnover tend to earn below-average incomes, these eligibility requirements further exacerbate the inequality that certain demographic groups experience in earning retirement plan benefits. Table 1 shows that lower-income workers have considerably lower access rates to retirement plans than higher-income workers. Other studies, such as Dushi, Iams, and Tamborini (2017), substantiate this significant access gap for lower-income workers. Importantly, access to retirement plans correlates highly with successful saving for retirement, as Munnell and Bleckman found in a 2014 study. Of Americans in the lowest quintile of income, only 9% have retirement savings outside of Social Security, whereas that figure is 94% for the highest quintile (GAO [Government Accountability Office] 2015).

Access to US retirement plans historically has always been a tale of two cities, and it remains so today. Large companies, on the one hand, almost universally offer retirement plans—whether DB or DC plans—to employees who meet their eligibility criteria. Smaller employers, on the other hand, have a much more scattered approach to retirement plans. The cost and complexity of establishing and administering DC plans causes many employers to forgo offering retirement benefits to their employees. We discuss this issue further in Chapter 3.

As we have noted, beyond employer size, prominent differences in access to retirement plans arise in terms of industry, full-time versus part-time

[7]As we discuss in Chapter 4, even in those businesses that offer immediate eligibility upon hire, an employer contribution match is frequently unavailable until an employee has met certain minimum service requirements. Further, employers often impose vesting provisions that result in whole or partial forfeiture of employer contributions, which can seriously hinder growth in account balances. (The employee's own contributions vest immediately and cannot be clawed back by the employer.) The net impact is that, according to GAO (2016), even if transient workers save through DC plans, they potentially lose tens of thousands of dollars in retirement savings.

[8]Employers are permitted to set a maximum of 1,000 hours worked in a year as the threshold to attain eligibility to enroll in a plan. A 2016 GAO (p. 39) report stated, "Millions of part-time workers may never qualify for their employer's plan with a 1,000-hour requirement" and "some types of workers are likely to remain ineligible to participate in their workplace 401(k) plans indefinitely." The SECURE Act of 2019 added a more liberal threshold, whereby workers who have worked 500 hours in each of three consecutive years are also eligible.

status, and union versus nonunion workers. The unsettling conclusion is that employees' retirement readiness depends highly on factors out of their immediate control—that is, the nature of their work and the size and industry of their employers.[9]

Workers without access to retirement plans face an uphill fight to build retirement savings. Although IRAs and other tax-advantaged savings vehicles offer an alternative for diligent savers outside of an employer benefit, only the most dedicated workers start their retirement savings with an IRA.[10] So, gaining access to a retirement plan is typically the first hurdle that a US worker must clear in planning for retirement. If an employer fails to offer a retirement plan or tightly limits eligibility, its employees' likelihood of accumulating retirement savings diminishes significantly.

Take-Up and Participation

Participation is the joint effect of access to a retirement plan and the decision to enroll in the plan. Defined benefit plans almost always automatically enroll employees who meet their eligibility criteria. Participation in most DC plans in the United States, conversely, is voluntary.[11] Employees must choose to enroll. (As we will discuss in Chapter 4, many plan sponsors have moved to an automatic enrollment plan design, but the auto-enrolled participants nevertheless may decline to remain in the plan.) The voluntary nature of DC plans has significant ramifications for participation rates and retirement readiness.

The BLS data in Table 1 show that 72% of workers who have access to a DC plan take up the offer to join.[12] Thus, for those workers fortunate enough to have access to and eligibility for a DC retirement plan, a sizable majority make use of the plan. Like access, however, take-up varies according to a range of factors, including industry, participant age and income, and part-time versus full-time status. In some instances, DC plan take-up is relatively low because employees participate in a DB plan and thus choose not to also save for retirement through a DC plan. Lower-income employees tend to

[9]GAO (2017) provided an overview of various demographic and employment factors related to plan participation.

[10]Many retirement plan participants do later roll their DC account balances into IRAs as they change jobs or move into retirement—but only after they have accumulated retirement savings in an employer-sponsored plan.

[11]A small proportion of employers operate non-discretionary DC plans, wherein the employer contributes to the plan regardless of whether the employee decides to participate.

[12]This figure is consistent with research by Vanguard (2020) that shows a take-up rate of roughly 75%.

have lower take-up rates just as they do lower levels of access. These workers' budget constraints may make it more difficult to devote income to retirement savings, and the replacement rate of Social Security income in retirement is higher for these individuals. Interestingly, the size of an employer's workforce seems to have little effect on the take-up rate. Employees in small businesses are just as likely to enroll in a plan as those in large businesses.

Table 1 displays a 56% participation rate across all workers. Given the data on access and take-up rates, it is not surprising that participation in retirement plans, either DC or DB, is highest for higher-income, full-time workers at employers with large workforces. The joint effect of less access and lower take-up rates means that lower-income individuals are significantly less likely to participate in retirement plans (16% in the lowest-income decile versus 80% in the highest decile).

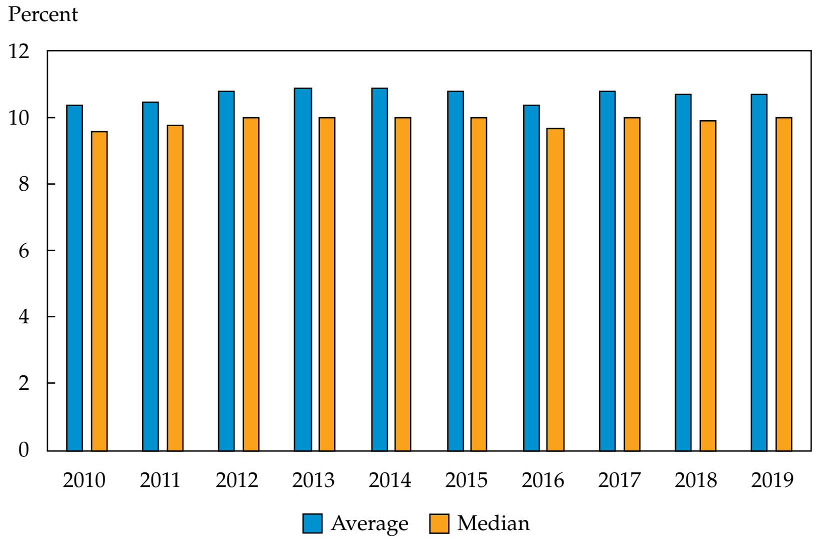
DC Plan Savings Rates

For workers who have found employment with a company that offers a DC plan, are eligible to participate, and have chosen to do so, what is their savings rate? A report by the Social Security Administration (Dushi, Iams, and Tamborini 2017) showed a median contribution rate among *full-time* working status DC plan participants of 5%, with a median annual dollar contribution of $2,700.[13] As with eligibility and participation, contribution rates and dollar amounts are highly associated with income. Those in the highest-income quintile had contribution rates more than double (6.7% versus 3.2%) those of the lowest-income quintile group, as reported in Dushi, Iams, and Tamborini (2017).

Employers that sponsor DC plans may match employees' contributions to their DC plans or make non-matching contributions. (We discuss employer contributions in Chapter 4.) Employer matching formulas vary. A report by Vanguard (2020) shows a median promised match of 4% of pay for the plans for which it provides recordkeeping services. That same report then showed a median contribution rate of 10.0% when both the participant and employer contributions to the plans were combined (**Figure 2**). As reported by Vanguard (2020), that level has been quite consistent since the Great Recession of 2007–2009.

[13]Vanguard (2020) reported a higher median contribution rate of 6%. The rates vary widely by age and income groups.

Figure 2. Participant and Employer Contribution Rates



Source: © The Vanguard Group, Inc., used with permission.

Has the DB-to-DC Migration Benefited Workers?

Standard financial planning advice recommends that investors in their late 20s and early 30s save at least 15%–20% of their pre-tax income if they are to accumulate sufficient assets to fund retirement and achieve a comfortable income replacement rate.[14] This very general rule is subject to many caveats, including the interaction with other retirement income sources, particularly DB plans and Social Security. Nevertheless, using this crude metric, the Vanguard savings rate data indicate that the median plan participants, although perhaps falling short of the standard savings rate recommendations, are nonetheless making substantial savings progress. For participants who make regular contributions throughout their working careers and avoid premature withdrawals, the DC system has the *potential* to work well for them and create adequate retirement wealth, as discussed in Holden and VanDerhei (2006).

[14]Financial planning model conclusions can differ significantly, but it is not unusual to find models that recommend that a worker anticipating a 35-year professional career set aside 15%–20% of pay in order to achieve an 80% pre-retirement income replacement rate. The Vanguard data do not show median numbers, but the average savings rate for participants in the 25- to 34-year-old age group was 6.0%. Combined with a 4% employer match, this rate produces a combined contribution rate of roughly 10%.

As DC plans continue to crowd out DB plans as the source of employer-based retirement savings, the question arises whether workers overall benefit from this shift. We are reluctant to delve into that complex and loaded question because the issue is essentially moot. Carrying out a rigorous counterfactual analysis is impossible. Private-sector employers will not go back to DB plans. The financial incentives for them to move to DC plans are too strong. Still, we offer a few observations on how employers sponsoring retirement plans might view the DB-to-DC migration in terms of their participants' financial welfare.

The data support the contention that the employer-based retirement system, DB or DC, fails to benefit certain vulnerable segments of the workforce. Munnell and Bleckman (2014, p. 5) noted the following:

> In the end, it is probably reasonable to say that about 50 percent of private sector workers participate in a retirement plan. Of course, a higher percentage will pick up coverage sometime over their worklife. But those workers who move in and out of coverage end up with inadequate retirement balances, and roughly one-third of households reach their sixties with no retirement plan at all.

Employer-based retirement systems have always had groups of "haves" and "have nots". But has the rise of DC plans mitigated or intensified the retirement savings problem? Unsurprisingly, the answer is highly ambiguous. In part it hinges on the benchmark used to evaluate the increasing role of DC plans in providing retirement security.

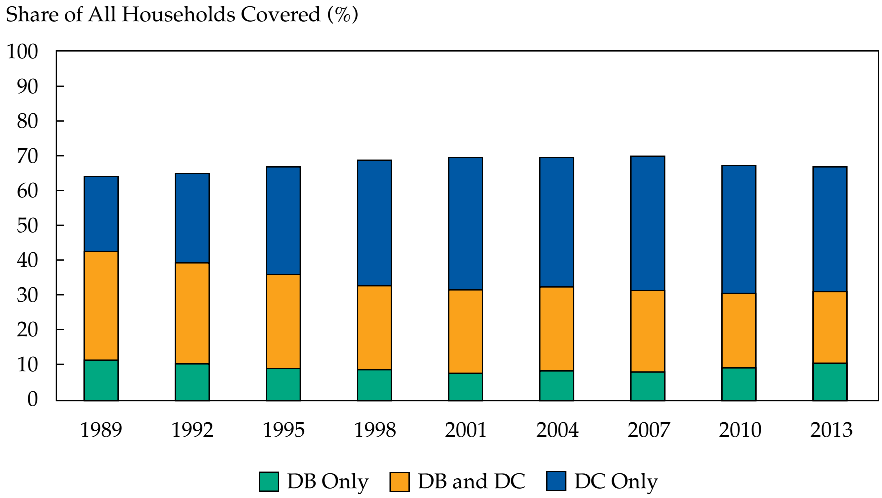
One possible standard is participation in the employer-based retirement system. In an absolute sense, the roughly 50% participation rate for private-sector workers (higher when public-sector workers are included) is cause for concern. Yet over time, as **Figure 3** shows, overall participation in retirement plans has been remarkably steady from the era of DB plans to that of DC plans. We believe that employers can do better, but at least on this measure, the DB-to-DC migration has, on balance, not done harm.

Yet, this may be a very low bar to clear, because for the typical US worker, DB plans proved to be ineffective vehicles to deliver retirement income. According to Biggs (2019), at DB plans' high-water mark in the 1970s, their coverage did not exceed 39% of the workforce. Participation rates under DC plans are higher.

Another possible comparison is whether DC plans help more workers accumulate more retirement wealth.[15] For employees who spend the bulk

[15]Munnell, Hou, Webb, and Li (2016) argued that from 1992 through 2010, median retirement wealth remained largely flat but the pension-income-to-wealth ratio declined in response to lower interest rates and less access to low-cost DB annuities.

Figure 3. Aggregate Retirement Plan Participation, All Households



Source: Data are from Devlin-Foltz, Henriques, and Sabelhaus (2015).

of their working years, particularly late in their careers, at one employer, DB plans can yield impressive benefits. Such extended employment at one employer has never been the norm, however, in the past or in the present.[16] Further, of the group of workers able to participate in DB plans, many could not earn more than a pittance of a benefit because of onerous vesting provisions and frequent job changes. Consequently, these traditional DB benefits were restricted to wealthier workers with more stable employment, while more transient, poorer workers were shut out almost entirely.

Investment Company Institute (2016) noted that compared with the DB era of the mid-1970s, more retirees today are receiving income from employer-based retirement plans than ever before, and the amounts that they receive are higher after adjusting for inflation. We can argue that the shift from DB plans to DC plans created a more egalitarian retirement savings system, better suited to the mobile nature of the private-sector workforce, in which individuals change employers multiple times over their working lives. The ratio of aggregate retirement wealth to aggregate personal income has grown dramatically since the ascent of DC plans began. Yet the higher-income groups still

[16]A 2016 GAO study noted that the average number of jobs held by men and women ages 18–48 was more than 11, with about half of those jobs held in the first six years. In five-year age bands from 25–40, the average number of jobs held is two to three. According to the GAO report, the average tenure of a private-sector worker is four years.

benefit more heavily. Munnell and Chen (2020) found that in the 55–64 age group, the median 401(k)/IRA balance in 2019 was $144,000. In the lowest quintile, however, the median balance was $32,000 (and only 21% had an account), while it was $805,500 in the highest quintile. Further, Devlin-Foltz et al. (2015) found that the wealth-to-income ratio has been quite sensitive to economic downturns. Younger and lower-income groups were particularly hard hit by the Great Recession of 2007–2009, which has implications now for the recession caused by the COVID-19 pandemic.

Another standard for evaluating a retirement system's adequacy is how well it can replace pre-retirement income. The Center for Retirement Research at Boston College calculates a National Retirement Risk Index based on estimates of that measure. Coinciding with the rise of DC plans, the proportion of the population at risk has increased materially since the early 1980s—from 31% in 1983 to 50% in 2016, as Munnell, Hou, and Sanzenbacher (2018) showed.

Of course, many demographic and economic forces are at play, beyond the shift to DC plans, that have increasingly put workers at risk for inadequate retirement income. Longer lives are one factor, and low interest rates another. Still, DC plans have not been able to keep pace with these forces. Despite the more flexible design of DC plans, their key features—such as voluntary participation and an ability to withdraw funds before retirement—have further concentrated retirement wealth in the hands of higher wage earners. Moreover, as we discuss in Chapter 1 and again in Chapter 6, DC participants are exposed to market risk in their wealth accumulation years, and volatility has not been kind to investors during the last two decades.

Despite the DB-to-DC migration, we see no signs of rising retiree distress.[17] That is perhaps the most pertinent benchmark. Retirees do not show evidence of decreasing satisfaction, as one might expect if their financial situations were significantly worsening. Evidence of growing poverty among retirees is not present. Perhaps that severe financial distress is out there but has not yet surfaced. Nevertheless, we believe that despite this modest accomplishment, the current DC system's flaws are too obvious to ignore, and government policymakers and employers should not be satisfied with it. They need to remain attuned to opportunities to increase retirement security for vulnerable segments of the workforce by increasing their participation and savings rates.

[17]That observation might support the "glass half-full" side of the retirement savings question. Scholz and Seshadri (2008) use a life-cycle model of wealth to argue that "Americans are, by and large, preparing sensibly for retirement, given the existing generosity of Social Security, Medicare, and pension arrangements" (p. 30).

The Move to "Universal" Retirement Plan Access

Responding to constant political gridlock in Washington, DC, states have begun to step in to fill the retirement savings gap. Several have developed programs requiring employers that do not offer retirement plans to connect their payroll systems to state-sponsored IRAs. Workers are "opted in" to these programs at a minimum contribution rate and without an employer matching contribution. Whether these nascent efforts are a harbinger of a broader national policy discussion about including all workers in the private-sector retirement savings system remains to be seen.[18]

We believe that universal access to workplace retirement plans should be a priority for all employers. As we discuss in Chapter 3, small employers struggle to offer DC plans on a cost-competitive basis with larger employers. Those employers that do not wish to bear the burden of maintaining a separate DC plan should consider supporting viable alternatives, such as state-sponsored plans or multiple-employer plans.

Financial Literacy

We now shift our attention to the subset of workers enrolled in DC retirement plans (that is, "plan participants"). We want to consider their abilities to make the complicated financial decisions that fall to them in their roles as the CIOs of their own retirement plans. Further, we discuss what DC plan sponsors are doing to assist their plan participants in making better savings and investment decisions.

Employers that sponsor DC retirement plans face three important and related issues in their efforts to help participants successfully use their plans:

- the level of participants' financial knowledge,
- the relationship between financial knowledge and successful retirement savings and investing outcomes, and
- the capacity for financial education to increase participants' financial knowledge.

[18]The most common state plan involves facilitating employee contributions to an IRA. Most states mandate employer participation in these arrangements through payroll deductions, but in some states, participation is voluntary. Other forms of state-sponsored retirement arrangements involve multiple-employer plans and marketplaces. As of 2021, more than 10 states sponsor some type of retirement savings vehicle for employees of employers that lack their own plans, and many other states and cities are considering doing so.

Prevalence of Financial Illiteracy. It is no exaggeration to claim that financial illiteracy in the United States (and most countries, for that matter) is endemic. Numerous studies have documented the lack of financial knowledge on the part of working-age adults, in terms of both understanding financial products and concepts and having the numerical skills needed to make correct financial decisions. These studies are usually based on either simple tests or self-assessments that commonly focus on three questions related to compound interest, inflation, and portfolio diversification.

These test questions have become so ubiquitous that they are often referred to as the Big Three.[19] One widely quoted study using these questions (Applied Research & Consulting LLC 2009) found that only 39% could answer all three correctly. Other studies (e.g., Moore 2003) have identified widespread misunderstandings about how various financial instruments work. Self-assessments of financial knowledge lead to similar conclusions: Most Americans are largely uninformed regarding the key topics in financial decision-making. Not surprisingly, retirement plan participants also suffer from this societal financial ill-preparedness. Although plan participants in general display a lack of financial literacy, Fisch, Hasler, Lusardi, and Mottola (2019) identified especially vulnerable groups based on income, education, gender, and ethnicity.

Financial Knowledge and Successful Outcomes. The issue of financial literacy would scarcely interest plan sponsors if a lack of knowledge bore no relation to successful decision-making on the part of DC participants. Yet adult financial literacy appears to influence successful actions involving a variety of financial decisions, such as appropriate use of credit cards, maintenance of adequate insurance coverage, and use of financial consulting (see Allgood and Walstad 2016). Hastings, Mitchell, and Chyn (2010) found that financially illiterate plan participants are more likely to carry excessive household debt but less likely to save adequately and build retirement wealth; to make appropriate investment decisions (particularly regarding sufficient portfolio diversification); and, ultimately, to manage the drawdown of their accumulated retirement plan balances in retirement.

We note that these conclusions are based on correlations and do not prove a causal link: Other forces that produce the observed relationships may be

[19]Lusardi and Mitchell (2007) originally developed the questions. Some tests have added two questions related to mortgage interest and bond prices, expanding the Big Three to the Big Five. The questions are multiple choice, so participants with no financial knowledge have a 33% chance of answering the compound interest and inflation questions correctly and a 50% chance of answering the diversification question correctly.

at work. Nevertheless, these findings are significant enough for sponsors to contemplate the need to fill their plan participants' financial knowledge gap.

Effectiveness of Financial Education. Finally, if it is true that participants lack basic financial knowledge—and that if they possessed such knowledge, they might make better use of their DC plans—then sponsors naturally would be interested in whether they can take steps to combat financial illiteracy through education programs. Unfortunately, the success record of employer-sponsored retirement savings education programs is mixed at best. Comprehensive data are scarce. It is difficult to point to programs that have driven previously unengaged non-participants to voluntarily join plans and contribute at the necessary levels or convinced existing participants to increase their contributions.[20] Studies vary widely in terms of their conclusions, but none have provided clear-cut evidence regarding the effectiveness of financial education efforts or the best means to deliver such education.[21]

These results put sponsors in a difficult position. They must decide to what extent to devote scarce resources to an effort with no clear payback. Most sponsors are not overly optimistic about how much impact their financial education efforts can have. All the education programs are by nature voluntary and require plan participants to invest their time. Grabbing their attention is difficult, given the technical aspects of the subject and the general frenzy of life. Moreover, employers have many messages they want to deliver to their employees, and so they are naturally reluctant to devote significant portions of that messaging bandwidth to matters not directly related to their business.

Plan Sponsor Financial Education Efforts

The concern that a lack of financial knowledge might lead participants to make poor use of their DC plans apparently has been enough to motivate many sponsors to try to educate their participants. Despite the uncertainty surrounding financial education's efficacy, employers demonstrate that they care about their employees in various ways—and one way is to assist

[20]For example, two meta-analyses of the impact of financial education produced divergent conclusions. On the one hand, Kaiser and Menkhoff (2017) reported, "We find that financial education significantly impacts financial behavior and, to an even larger extent, financial literacy" (p. 2). On the other hand, Fernandes, Lynch, and Netemeyer (2014) concluded, "Our meta-analysis revealed that financial education interventions studied explained only about 0.1% of the variance in the financial behaviors studied. Education effects on knowledge of material taught were also small compared to effects of education in other seemingly comparable domains" (p. 26).

[21]See Hastings, Madrian, and Skimmyhorn (2013) for an excellent review of the literature dealing with the effectiveness of financial education and resulting policy recommendations.

employees in navigating difficult life decisions, including retirement planning. We do not expect lay people to be their own doctors or lawyers, nor to fix their own cars or fly airplanes. Yet we expect them to effectively address long-term complex financial subjects with little or no background and without professional assistance.

The illogic of that attitude is not lost on plan sponsors. They understand that it is in their best interest to provide their participants with enough financial savvy or counseling to execute an adequate retirement savings program. The fact that their plan participants are making such complicated financial decisions with huge long-term impacts creates reputational risk for sponsors that fail to provide access to financial education. Moreover, plan participants themselves recognize that they have a financial literacy gap and they need help. Sponsors are correctly viewed by most participants as objective and reliable sources, with no serious conflicts of interest. Participants rely on sponsors to provide instruction on how to effectively use DC plans.[22] As a result, even though a clear return-on-investment justification for financial education programs is lacking, many sponsors, particularly larger ones, have pushed ahead with education programs.[23]

The International Foundation of Employee Benefits found that 63% of employers are providing financial education for their workforce, including financial education classes, personal consulting services, retirement income calculators, online links to informational sites, and projected account balance statements. The formats used are determined to a large extent by the nature of the employers' workforce and available budgetary resources. These formats range from printed materials to elaborate videos and online resources, even in-person seminars, often provided by the plans' recordkeepers. Some educational content is extremely high quality, and some is extremely rudimentary. As the target audience has shifted generationally from baby boomers to millennials, the need for online education and visual presentations has increased.

Although no guidebook exists that lists the "dos and don'ts" of financial education, a set of best practices is evolving that at a minimum encompasses the following:

- Customizing messages based on demographics
- Making use of existing communications that are widely read, such as quarterly account statements

[22]As reported by Peterson and Lester (2018), a J.P. Morgan survey found that 58% of employees believe their employers should provide a viewpoint on how much employees should contribute to the company retirement plan.

[23]Some employers are attempting to measure the return on investment in their financial education budget. See, for example, PLANSPONSOR (2018).

- Addressing behavioral biases that affect decision-making
- Translating account balances into lifetime income projections
- Integrating retirement savings with other financial goals
- Emphasizing sound behaviors (e.g., cautioning against frequent loans and withdrawals, earning the full employer matching contribution)
- Simplifying messages and producing education modules that can be consumed in 5- to 10-minute increments

Behavioral Biases

Even for plan sponsors making robust education efforts, the uncertain effectiveness of retirement savings education programs forces them to consider how much to rely on these programs. That is, should sponsors focus on education and then take a hands-off approach, letting participants succeed or fail on their own? Or should they avoid relying solely on education and instead adopt plan design features that guide or "nudge" participants toward sensible decisions? Sponsors have gradually come to adopt the latter approach, increasingly acknowledging that their participants not only lack sufficient financial knowledge but also face typical human limitations on their cognitive decision-making abilities.

For many years, prevailing wisdom held that the plan sponsor's responsibility ended with making a DC plan available that included adequate investment options and corresponding information. It was assumed that participants would make savings and investment decisions that served their best long-term interests. In recent decades, however, research in behavioral finance has documented mounting evidence that typical DC plan participants are shortsighted and fail to act productively, causing many of their decisions to turn out to be inefficient at best and destructively counterproductive at worst.

Behavioral finance has proven useful in better understanding how people make choices when facing decisions, particularly in situations where

1. the relationship between actions and outcomes is uncertain,
2. the consequences are long term and substantial,
3. the decisions are made infrequently, and
4. feedback regarding the impact of any given decision on the participant's well-being is limited or nonexistent.

These conditions, of course, describe the challenge of successfully planning for retirement. Behavioral finance provides insights as to how individuals use various rules of thumb ("heuristics" or mental shortcuts) to make decisions under uncertainty. In many aspects of life, these shortcuts allow us to process information efficiently and to react quickly to changing conditions in a safe and effective way. In other situations, however, including saving and investing, these same shortcuts can produce expensive mistakes.[24] Simply put, the average person is not mentally "wired" to naturally engage in the thoughtful reflections and analysis necessary to make the complex decisions involved in retirement planning.[25]

These cognitive shortcuts keep DC plan participants from making effective use of their plans, even when they have adequate financial information. Researchers and practitioners have documented and categorized how these cognitive shortcuts operate under a variety of "behavioral biases." Prominent examples of such behavioral biases that affect DC plan participants include the following:

- **Overconfidence bias.** Participants may overestimate their investment skills, selecting from among the plan's individual investment options even though a diversified collection of investments contained in a target date fund or through a managed account would be a superior choice (see Chapter 5).
- **Confirmation bias.** Participants may rationalize their decisions to hold large positions in, for example, employer stock, arguing that they know the employer's business well and will be able to assess the value of the stock better than the market will.
- **Loss aversion bias.** Participants may be sensitive to short-term losses in their accounts and hence hold excessive levels of low-risk investments that will fail to produce adequate returns in the long term.
- **Recency bias.** Participants may make asset allocation decisions based on recent performance of various investments, such as increasing an allocation to equities based on strong stock market performance during the past year.
- **Anchoring bias.** Participants may set their contribution rates to the level needed to receive the employer matching contribution, rather than a level appropriate to be on a path to retirement security.

[24]Kahneman (2011) provided a thorough discussion of the psychology behind these heuristics and their advantages and disadvantages.
[25]For an excellent discussion of the current state of behavioral finance research, see Statman (2019).

We will return to the topic of behavioral biases and how sponsors attempt to program around them in Chapter 4 when we discuss plan design.[26]

Financial Well-Being

Stagnant real wages, combined with rising costs for living essentials, including housing, medical insurance, and education, have led to increases in consumer debt and put tremendous financial pressure on US workers. Surveys indicate that the existence of financial stress in the workplace is real and that the stress created by financial problems for employees, across all ages, genders, and ethnicities, causes productivity issues for employers.[27] Employers for some time have recognized that their bottom lines benefit when their employees are physically healthy. As a result, they have devoted considerable resources to various programs designed to control chronic illnesses and increase employees' awareness of how to help maintain their physical health. More recently, that line of thinking has begun to extend to employees' financial health.

Employers have come to see that financial wellness lies beyond assisting employees in simply building retirement wealth. Although that goal remains the primary objective, employers have increasingly begun to incorporate a more holistic view of their employees' financial well-being. People who have saved insufficiently to protect against sudden large financial costs are unlikely to also be engaged participants in retirement plans. Similarly, young employees burdened with college debt are less likely to save for retirement.

Employees have different financial well-being needs at different times in their lives. Further, those needs differ among income levels, genders, and ethnicities. Employers have become increasingly willing to assist in meeting those varied financial needs instead of assuming that their workforce is thinking only about retirement planning. Although doing so complicates the goal of providing educational resources and planning tools, it also expands the opportunity to enhance employers' reputations and mitigate the productivity costs of financial stress by supporting employees' efforts across a range of programs.

[26]Interestingly, Moore (2019) indicated that different age groups were more prone than others to certain behavioral biases. If true, that scenario further complicates sponsor efforts to counter these cognitive patterns.

[27]For example, a Financial Health Network survey (Garon, Dunn, Celik, and Robb 2020) reported that only one-third of Americans could be classified as financially healthy. A 2017 PwC survey found that 53% of workers are stressed about their finances, including 65% of millennials. A survey by John Hancock Retirement Plan Services (2018) indicated that the primary reasons for employees not saving for retirement were poor spending habits and credit card debt.

In addition to retirement savings and investments, employers have considered providing assistance in the areas of budgeting, short-term cash management, debt management, student loan burdens, home purchases, tax planning, elder care, disability insurance, and life insurance. For example, as noted by Corbin (2019), some employers have permitted employees to divide their direct deposit paychecks into separate accounts, with one being designated as an emergency savings account. Employers of course cannot solve these problems for their employees. Issues involving access to sensitive employee financial information and the associated privacy concerns represent serious complications. Employers can, however, support their employees by identifying and supplying access to pertinent resources. They can provide a range of delivery options, from digital tools to live events to one-on-one financial coaching. Employers can also increase the flexibility of their benefit offerings, possibly by partnering with financial institutions to provide valuable services at a relatively low cost.[28]

[28]For example, Correia (2018) cited a decade-long Prudential study that found that employees who were offered financial wellness resources reported lower financial stress.

Chapter 3. The Plan Sponsor

Challenges Facing the Plan Sponsor

- Plan participants need help from plan sponsors to successfully save for retirement.
- Good governance is at the heart of any effective enterprise, and DC retirement plans are no exception.
- Sound DC plan governance involves
  - — stating a clear mission for the plan,
  - — developing strategic long-term objectives,
  - — determining appropriate success measures,
  - — performing periodic assessments of the plan's strengths and weaknesses, and
  - — modifying plan features, as necessary.
- Because typically no direct connection exists between DC plan design and retirement income outcomes, articulating a clear mission and long-term strategic objectives for DC plans is problematic.
- That lack of mission and plan objectives further hinders the development of success metrics and the evaluation of DC plan performance.
- Plan sponsor decision-makers controlling the investment and administration of plan assets have a fiduciary responsibility to act solely in the best interests of plan participants.
  - — That fiduciary duty exposes these decision-makers and the sponsoring organization to legal liability.
- Sponsors have faced numerous lawsuits in recent years related to three primary areas: plan expenses, investment options (particularly employer stock), and conflicts of interest.
- All plan sponsors struggle with limited resources to carry out good governance and meet fiduciary obligations, but smaller plans are especially challenged.

Opportunities for the Plan Sponsor

- Recognize that good DC plan governance begins with an unambiguous statement of the plan's mission.
- Write the mission statement to address the key objectives that the plan sponsor believes its plan is designed to achieve for the plan's participants.
- Share the plan's mission statement and objectives with all the plan's stakeholders.
- Develop plan success metrics and clearly connect them to plan objectives through periodic performance reviews.
- To make DC plans more "DB-like," use the plan's missions and plan objectives to explicitly address how best to set participants on a path to retirement income security.
- Maintain strict adherence to carefully documented policies and procedures to offer the best protection against fiduciary risk.
- Carefully weigh the costs and benefits of transferring investment and administrative fiduciary responsibilities to third parties.
    - There is a strong case to be made for transferring these responsibilities to outside advisers, especially for smaller plans.
    - Understand that complete fiduciary risk transfer is not possible and that maintaining close engagement with fiduciary advisers is essential.
- Proactively reduce litigation risk by addressing investment and administrative fees, employer stock, and potential conflicts of interest.
- The plan's fiduciaries should
    - develop investment and administrative policies and procedures and thoroughly document them,
    - create an investment policy statement and ensure that its provisions are followed, and
    - implement an explicit set of policy guidelines toward servicer fees, including regular benchmarking of fees, full transparency and reporting of fees, and elimination of potential conflicts in payment relationships to servicers.

- For small employers sponsoring DC plans, explore new regulatory flexibility to join multiple-employer plans and leverage those plans' resources to better serve plan participants.
- Do not allow concerns of litigation to prevent thoughtful plan design innovation meant to benefit participants.

The Importance of the Plan Sponsor

The customers in the DC retirement system are the plan participants, and thus it is the plan sponsors who deliver the goods. Unlike the world of private savings through IRAs, where investors are on their own, DC plan participants have an important ally in their plan sponsor, which will help them build their retirement plans. Formally, a plan sponsor is an organization that establishes, invests the assets of, and administers a retirement plan for the benefit of the organization's members. We most commonly think of a plan sponsor as an employer, but it could be a union or professional organization.

The DC plan sponsor has responsibility for providing an efficient and cost-effective vehicle for retirement savings accumulation. In essence, the sponsor designs the playing field on which the plan participants maneuver. The ultimate burden falls on participants to play the game well, saving and selecting investments wisely in order to build the necessary retirement wealth. Yet the astute sponsor acts with discerning purpose to make that playing field easy to navigate, tilted in a way that advantages participants. Alternatively, the indifferent sponsor makes the field difficult to negotiate and hinders even diligent participants' efforts. Forward-thinking sponsors, who focus on the financial well-being of their participants, can make a meaningful difference.

Plan Governance—Broadly Defined

We begin our discussion of the plan sponsor with the most basic of organizational issues: implementing a comprehensive governance process. Why start there? Because good governance forms the basis of competent systems management. Observers of good governance practices identify several common characteristics, including the following:

- Consensus oriented
- Accountable
- Transparent
- Responsive

- Equitable
- Effective and efficient
- Participatory
- Rules driven[29]

In our experience, sponsors who follow sound plan governance practices are more likely to create retirement savings and investment programs that better serve participants. Effective plan governance instills a culture of placing participants first and provides a productive environment in which policies and procedures can best be devised, executed, evaluated, and enhanced.

The laws governing US retirement plans and the responsibilities of the plan sponsor distinguish between settlor and fiduciary functions. We are not lawyers and offer no legal guidance. At a high level, however, with respect to retirement plans, a settlor, on the one hand, makes business-related decisions, mostly involving to whom the plan is offered and what features the plan has, such as an employer matching contribution. A fiduciary, on the other hand, acts on behalf of the participants, principally with respect to the administration and investment of their retirement assets. The fiduciary is held to a much higher standard of care than is the settlor. It is important that individuals charged with running a retirement plan understand and respect the differences between these two roles.[30]

That said, in our plan governance discussion, we focus primarily on the decision-making and policy setting that goes on inside a DC retirement plan. We recognize that both settlor and fiduciary roles are involved, and we want to avoid parsing the legal issues related to those roles (although at times we will). Instead, we try to approach plan governance from a more practical perspective. We view plan governance as encompassing the broad decision-making that makes a retirement plan work well for beneficiaries. Numerous important issues are involved, including (but not limited to) the following:

- Establishment of the plan
- Defining the plan's terms and features

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[29]This list is paraphrased from the United Nations Economic and Social Commission for Asia and the Pacific (2009).

[30]Some readers may be unfamiliar with the legal term *settlor* in the context of our discussion. A settlor makes discretionary decisions relating to the formation, design, and termination of a retirement plan. Plan decision-makers should know that at times, they may be in both fiduciary and settlor roles. The key is understanding which role an individual is performing when making a decision regarding the plan. As we discuss later, ERISA fiduciary duties apply only to fiduciary behavior.

- — Eligibility
- — Matching contribution amounts and vesting
- — Distributions

- Offering investment options
- Selecting investment managers
- Recordkeeping and plan administration
- Insourcing or outsourcing various investment and administrative functions (and the associated oversight)
- Payments to service providers
- Participant education and communications

Plan Mission and Objectives

Effective governance of any enterprise requires that its stakeholders understand the enterprise's mission.[31] If dedicated and competent people will devote their time and energy to making the enterprise a success, then the enterprise should be able to succinctly articulate its purpose or reason for existence. As a saying attributed to Yogi Berra goes, "If you don't know where you are going, you'll end up someplace else." Decision-makers and stakeholders should certainly want to know what road their enterprise is traveling.

The mission defines the objectives that the enterprise seeks to achieve through its activities. Without an unequivocal mission definition, the decision-makers, the staff, the clients/beneficiaries, and external partners of the enterprise may become confused about their roles and the actions expected of them. The decision-makers and staff will lack focus. The enterprise's clients/beneficiaries are less likely to be satisfied with the services received. And the external partners will perform less productively.

A sound mission statement unambiguously defines the strategic outcomes that help convey to all enterprise stakeholders what success looks like. Sometimes the mission may be so established and understood that no official statement is required. More commonly, though, the enterprise benefits from formally expressing its mission and periodically revisiting that statement. Thoughtful businesses go to great lengths to develop mission statements and

[31]Amabile and Kramer (2012) argued persuasively for formally establishing an enterprise mission.

proudly present them to their stakeholders. Those expressions of purpose drive a host of strategic and tactical choices.

Retirement plans ought to be no exception to this sound business practice. The plan's decision-makers benefit when they receive clear direction as to how to best deploy the plan's resources and how to course-correct when the mission appears at risk. The plan's beneficiaries benefit when they better understand what they can (and cannot) expect from the plan. Outside stakeholders, such as regulators or service providers of the sponsoring organization, likewise benefit by dealing with a more transparent operation and one with the ability to assess performance relative to the stated objectives.

Throughout our discussion, we have noted the many ways in which DC plans differ from DB plans. From a plan governance perspective, one striking difference is the clarity of the missions between the two types of retirement plans. Of course, both are intended to ultimately provide a source of income in retirement for participants. By its construction, however, a DB plan has a very explicit mission: to generate specific levels of guaranteed lifetime income for participants, not subject to investment risk. Typically, this lifetime income is expressed as a proportion of pre-retirement income. With no direct involvement on the part of participants, contributions are made and invested, and ultimately, promised benefits are paid. Although the adequacy of the pension provisions can be debated, the primary objective of delivering unambiguous amounts of secure lifetime income, based on a participant's service time and employment earnings, is not open to debate. The sponsor is responsible for funding, investing, and administering the plan in a manner consistent with delivering those benefits.

A DB plan may have secondary objectives that often include references to keeping contributions low and minimizing the volatility of pension surplus. Those secondary objectives also provide guidance to financial managers in terms of the timing and size of contributions, as well as to plan fiduciaries and staff regarding setting investment policy and implementing investment strategies.

By comparison, the typical DC plan has a much more nebulous mission.[32] Employee participation is voluntary, and participants typically determine the amount of their contributions. If the plan involves matching contributions, the sponsor can adjust or eliminate the match with limited notice.

[32]Although relatively little has been written about the mission of DC plans within the United States, a 2013 Towers Watson paper from the United Kingdom does a credible job of discussing both the theory and practical steps a practitioner could use in setting a mission for its scheme. Additionally, Schaus and Gao (2017) effectively advocated for articulating a DC plan's mission.

The outcome of a participant's involvement in a DC plan is highly uncertain. It will depend on the amount of money invested by both the participant and the sponsor, as well as the performance of the investments offered by the sponsor and selected by the participant. A participant with strong savings behaviors and wise (and lucky) investment selection can replace large portions of his pre-retirement income. Other participants who, for whatever reasons, save too little, allow funds to leak out of their accounts, or invest poorly can find themselves with little to show in retirement savings after long working careers.

Because there is no direct connection between basic DC plan design and retirement income outcomes, the typical DC plan structurally lacks the clear mission of a DB plan. If stated at all, plan objectives are expressed vaguely and often in legalistic terms designed to avoid litigation. Without a solid understanding of a plan's objectives as presented in a mission statement, plan sponsor decision-makers have no focal point in setting plan design, investing and administering the plan, or providing education to participants. This ambiguity in mission can exacerbate conflicting motivations surrounding employer cost control and participant benefits.[33] We believe that plan participants are best served when sponsors offer a clear-cut statement of a DC plan's mission. That mission statement then becomes the foundation on which effective plan features and investment strategies can be constructed.

Like so many aspects of DC plan design and operation, the lack of clarity in mission stems from the origins of these plans in the late 1970s. When they were created, DC plans were intended to be supplemental savings vehicles. Sponsors did not intend for them to become a primary source of retirement income for participants, let alone the sole source beyond Social Security. Private-sector employers that sponsored DC plans originally tended to pair them with DB plans. Participants could increase their retirement savings or even save for more near-term obligations in a tax-advantaged way. Because these were supplemental plans, sponsors were willing to install features that later caused problems, such as an incentive match paid in employer stock;

[33]For example, DB plan sponsors might argue with the timing of how they fund the plan, but they would never argue that they are not responsible for ultimately ensuring that the plan has adequate funds to pay promised benefits. Because DC plans have no "promised" benefits, employers that sponsor them do not view themselves as obligated to make contributions that will put participants on a path to secure retirement income. Employer contributions are considered simply another employee benefit that competes within a broad benefits budget and is subject to regular management expense control efforts. Sponsors can and do lower or even eliminate employer contributions regardless of how those changes impact participants' retirement security. The 2020 economic downturn caused by COVID-19 has once again made sponsor contribution uncertainty readily apparent.

including the plans as part of an employee stock ownership plan (ESOP) structure; and selecting popular (but high-cost) retail mutual funds as investment options. Further, little thought was given to how participants in different age groups might want to use the plans' investments or whether they might need help in making savings and investment decisions. Later, as employers without DB plans began to adopt DC plans as full-fledged retirement plans for employees, the plan designs failed to adapt to participants' needs.

With the demise of DB plans, DC plans are now (outside of Social Security) the only vehicle that most US workers use to save for retirement, assuming that they are fortunate enough to be enrolled at all in a retirement plan.[34] As a result, we believe that it is imperative for the primary mission of DC plan design to be securely replacing an adequate portion of preretirement income. Yet DC plans typically do not address income adequacy and the provision of secure lifetime income for participants in any expression of plan objectives.

It has become accepted wisdom (for example, see Ilmanen, Kabiller, Siegel, and Sullivan 2017) that DC plans should be more "DB-like." We concur. Yet if the essential DNA of a DB plan is to create adequate lifetime income for plan participants, then should not the plan objectives of a DC plan reflect such a mission? It is often argued that such an approach is impractical—that retirement income adequacy cannot be defined, that DC sponsors cannot guarantee results for participants, that they know little about their participants' financial well-being and their sources of retirement income outside of the plan, that participants change jobs frequently and will not build retirement wealth with their current employer, and that retirement spending needs and desires differ among participants. The list of objections is long.

Although we acknowledge those challenges, we disagree with the conclusions. Yes, because of DB plan design, plan sponsors can commit to providing a specified lifetime payment, something that DC plans simply cannot do. However, nothing prevents DC sponsors from expressing their plans' missions in a DB-like manner: by identifying an income-replacement target for their "typical" (demographically speaking) employees, by making realistic assumptions about outside savings and Social Security benefits, by projecting the returns on a well-diversified default investment option, and by estimating the lifetime income that would be produced if a participant were to spend a career with the employer.

[34]Americans can also save for retirement through IRAs, but experience has shown that few do so. Munnell and Chen (2017) reported that the source of most IRA balances is rollovers from DC plans. Little direct retirement saving takes place in IRAs.

Essentially, this process would involve creating a "model" plan participant and designing the DC plan around the goal of generating a benefit that meets some established income replacement target. The appropriate replacement level can be debated, just as with DB plans. Regardless, such an approach would help drive efforts to ensure that a plan's design is consistent with the desired income replacement mission. It would help focus efforts to increase participant (and perhaps employer) contributions, reduce leakage, improve investment offerings, and more aggressively nudge participants to make wise savings and investing decisions. For example, if a DC plan's mission were defined in terms of providing secure and sustainable lifetime income for participants, there would be little room for debate about the wisdom of offering some form of annuitization option. The plan's features would flow directly from the plan's primary objective.

We believe that DC plan sponsors should develop mission statements and associated objectives specific to their plans that can be transparently shared with all of the plan's stakeholders. The plan objectives contained in the mission statement should be plainly stated and developed with the sponsor's explicit approval. Many design changes in recent years appear to have resulted from a belated recognition that DC plans have not served participants well. Yet beyond an amorphous set of evolving best practices, no coherent thread connects these changes. We are not saying that many of these plan design innovations, such as auto-enrollment and auto-escalation, are negative developments. They are definitely positive. But sponsors' good intentions cannot substitute for well-articulated plan design objectives. By specifying those objectives through a mission statement, sponsor decision-makers form a sharper and more permanent vision around which future plan design and investment policy changes can coalesce.

We believe that a DC plan's primary objective should be to place participants on a realistic path toward accumulating enough assets to produce secure and financially meaningful lifetime retirement income. Such a primary objective will generate a set of secondary plan objectives, which might include the following:

- plan participation,
- savings rates,
- understanding and appropriate use of investment options,
- use of financial advice services,
- evaluating investment options on their ability to help achieve that rate of return within a diversified portfolio,

- retention of account balances in a DC plan post-employment,
- projected income replacement over a lifetime in retirement, and
- the availability of cost-effective lifetime income plan features.

These secondary objectives derive naturally from a primary objective of providing for sustainable lifetime replacement income during retirement. For instance, various default settings designed to push participants toward adequate contribution levels or proactive steps to assist participants in account balance rollovers when changing employers will help produce the account balance levels necessary to generate adequate retirement income. This primary objective will influence investment option selection, the offering of investment education, and objective third-party investment advice, along with decumulation provisions. Again, we agree that sponsors likely already have these objectives at least implicitly in mind as they create and adjust plan features. But bringing consistency and staying power to these design elements starts with stating the DC plan objectives in the mission statement.[35]

Success Measures

Any standard business school program eventually discusses the importance of establishing enterprise performance metrics and evaluating results based on those metrics. The term KPI (key performance indicator) has become part of the corporate lexicon. An enterprise will establish KPIs based on its specific short- and long-term objectives. It will follow a regular review cycle in which the success of the enterprise is evaluated relative to these metrics.

By contrast, KPIs are rarely used in the standard DC plan governance structure, primarily because these plans typically lack clear objectives that would be used to develop success metrics. This gap hinders the evaluation of DC plan results and prevents sponsors from analyzing the strengths and weaknesses of their DC programs. No productive feedback loop exists between objectives and results. As a result, anecdotal observations take the place of more comprehensive reviews. Discussions of plan enhancements become more ad hoc.

It makes little sense to convincingly convey what a plan stands for without instituting measures to indicate whether the plan is accomplishing its

[35]Where a statement of the plan's mission should reside is open to discussion. The plan's mission and associated secondary objectives are not intended as promises to participants. We believe that setting the plan mission is a settlor function that goes alongside establishing a plan. Plan attorneys will likely have varying opinions, but we suggest that the charter documents of the various committees that deal with the plan (e.g., plan design committee, investment committee, administrative committee) could contain the plan's mission statement.

objectives. DB plans develop rather elaborate performance evaluation systems, largely on the investment side but also on the funding side. Investment policy statements establish asset allocation guidelines and investment performance expectations. Periodic performance reviews examine implementation success and identify where changes should be made. Certainly, DB plan sponsor decision-makers have proven themselves capable of ignoring investing and funding problems, but at least they have the infrastructure to make effective evaluations.

We seldom find serious introspection on the part of DC sponsors about whether their plans are succeeding. Sponsors certainly care how their plans are performing, but the plans rarely define for their decision-makers what success looks like. Sponsor decision-makers and participants cannot say whether the plan is exceeding expectations or failing to meet them because the plans lack the expectations, expressed as performance metrics, to identify winning and losing.

Some external organizations evaluate the quality of DC plans. Usually those ranking systems contain a relatively limited number of simple criteria, such as types of investment options or expense ratios. They are not an acceptable substitute for a plan's own internally established and consistently applied plan objectives along with associated success metrics.

Because DC plans are inherently intertwined with participants' behaviors, appropriate metrics involve a complicated combination of sponsor and participant actions. Generally, the few expressed objectives and associated metrics tend to focus on tactics (e.g., participation rates) instead of outcomes (e.g., progress toward retirement income adequacy). Preferably, they should combine both. Unfortunately, the lack of metrics provides a built-in reason to ignore the failure of many participants to make satisfactory progress toward retirement financial security.

Success metrics should follow plan objectives, not vice versa. Metrics should not be a haphazard collection of measures adopted simply because they represent an aspect of the plan to which numbers can be attached. Rather, they should be the output of strategic thinking exercises that translate the plan's mission and objectives into outcomes that indicate comprehensive success. A DC success metric is a benchmark, and the design of these benchmarks should follow accepted practices. As with any good benchmark, these success metrics should be

- unambiguous and measurable,
- specified in advance, and
- actionable and attainable.

A DC plan's benchmarks should be constructed so that decision-makers plainly recognize what they are being asked to accomplish. Further, they will need some way to quantitatively assess the results. Importantly too, these benchmarks should be established prior to an evaluation period so that decision-makers know the measures against which the plan will be assessed. Assessments against objectives established in hindsight are of little value. Finally, the benchmarks should not be aspirational in nature. Decision-makers must have some way to take steps that will achieve the desired result. If getting close to the benchmark is an acceptable outcome, then its targeted value ought to be lowered.

A plan sponsor should establish plan objectives and associated benchmarks only if a process is in place to periodically assess plan performance. Plan decision-makers should meet with plan implementers (staff, consultants, and other external partners) on a regular schedule to review results. The discussions and analysis should be unbiased and focus on results rather than goals. Objectives against which considerable success was achieved or significant underperformance occurred warrant additional scrutiny. The purpose is to highlight strengths and weaknesses with the intention of reinforcing the former and changing course in response to the latter.

The performance evaluation process is a feedback and control mechanism. Successes and failures relative to plan objectives, as measured by results versus benchmarks, should lead to modifications in plan design and implementation. The purpose is not to cast blame for missed targets but to investigate where plan performance can be improved and whether specific initiatives should be either abandoned or pursued further.

Interestingly, none of these recommendations regarding success measures would be considered unusual by DB plan decision-makers and their staff. At large DB plans, these performance evaluation procedures almost universally are in place on the investment management side. Yet it is the unusual DC plan where these practices are rigorously followed, if followed at all.[36]

Fiduciary Oversight

Good governance of DC plans and appropriate fiduciary oversight go hand in hand. Both are participant-centric. The roles of private-sector plan fiduciaries are laid out in federal law by the Employee Retirement Income Securities Act (ERISA). Under ERISA, any person involved in a DC plan who has discretionary authority over plan administration or investments is deemed a

[36]Bailey and Richards (2017) discussed the general topic of investment committee governance and the concept of a plan mission and objectives.

fiduciary.[37] In other DC plans, fiduciary responsibilities derive from common law definitions of fiduciary duty. Plan fiduciaries are held to strict standards of care and are obliged to act solely in the best interests of plan participants. Although again we are not attempting to offer a legal evaluation of DC plans, we do think it is important to acknowledge the fiduciary role that some sponsor decision-makers play in running the plans.

All private-sector DC plans must have a written document that lays out the benefits offered by the plan. That document will specify a named fiduciary, which can be a person or an entity. The named fiduciary that oversees the plan's investments is often an investment committee.

Investment Committees. If they wish to avoid fiduciary responsibility for participants' investment results, sponsors have an obligation to offer a diversified set of investment choices to participants. Sponsors have a further obligation to select professionally managed investment options and charge "reasonable" fees. Sponsors typically establish investment committees to oversee the selection and ongoing monitoring of the investment options list, including the Qualified Default Investment Alternative (QDIA), and the organizations that invest the participants' assets.

The committee members have the responsibility for setting broad investment policy and overseeing its implementation, including the hiring of investment managers. Particularly in larger plans, they may also appoint an investment staff to assist with overseeing the plan's investments. The investment committee should periodically review investment results and determine whether the investment options and managers are on course to achieve stated objectives as envisioned in the plan's investment policy.

The investment committees of DB plans are familiar with investment policy and the role that it plays in running an investment program. But from a DC plan perspective, given that the participant ultimately chooses which funds to invest in, what is the purpose of sponsor-level investment policy? Effectively, it reflects the approach that the investment committee takes when designing the set of investment options to be made available for plan participants. The following questions are among the important issues that typically need to be addressed:

- What types of fund structures (such as retail mutual funds or institutional collective investment trusts) should be offered to plan participants?

[37] The US Department of Labor (2017) concisely summarized plan sponsors' fiduciary obligations. Note that plans sponsored by churches and public-sector entities are not subject to federal law governing fiduciary duty.

- Should both active and passive funds be made available?
- Should only well-diversified investment options (such as funds that combine investments in various types of equity and fixed-income assets into one option) be offered so that participants will, effectively, be required to hold diversified investments?
- Or should only funds that have specific investment mandates (such as long-term fixed income or large-company equities) be offered, and should the participants be encouraged to build their own diversified portfolios by allocating among the single-mandate investment options?
- Should a combination of these two types of options be offered?
- How many investment options should be available? How many is too many?
- Should participants be allowed to select investments outside the standard plan options (that is, have a so-called brokerage window)?

The answers to these questions create the opportunity set for plan participants. Their resulting choices will ultimately determine the terminal values of their accounts—and hence their retirement income. A DC plan investment committee's decisions have meaningful consequences for participants.

Investment Policy Statements. Well-run investment committees develop thoughtful and comprehensive investment policy statements (IPSs). For DB plans, an IPS can be quite extensive because the sponsor is responsible for a wide range of investment decisions. Because participants are responsible for asset allocation decisions in a DC plan, the IPS is a less extensive version of a DB plan IPS. In addition to describing the approach that the trustees take toward selecting investment options, the IPS for a DC plan may include the policies that the investment committee has adopted for selecting and evaluating investment managers and assigning appropriate benchmarks. It may also delineate the roles and responsibilities of the various parties to the plan.

The IPS serves three primary functions:

- It facilitates internal and external communication of investment policy.
- It ensures continuity of policy during periods of turnover among the plan's trustees, staff, and outside advisers.
- It provides a baseline against which to evaluate proposed policy changes.

Regarding the first function, the IPS communicates a DC plan's mission and conveys investment policy to insiders (the sponsor's trustees and staff) and interested outsiders (for example, the plan's investment managers, service providers, or participants). Regulators, as part of a plan audit, will typically examine whether a sponsor has developed a comprehensive IPS. In litigation, plaintiff attorneys will look for the existence of an IPS and scrutinize whether it has been followed diligently. The IPS also helps prevent confusion among decision-makers in interpreting the plan's investment policy. A regular presentation of the IPS keeps investment policy fresh in the minds of the plan's decision-makers.

Regarding the second function, the IPS serves as a permanent record that enhances continuity in the investment program. Turnover among a plan's decision-makers is inevitable. For newcomers, the IPS provides a concise and accessible reference. In that capacity, the IPS serves as a training tool. Its existence also makes clear that the policy is a product of a thorough and deliberate process. Thus, an IPS can help new decision-makers avoid the urge to impulsively propose revisions to the DC plan's existing investment policy.

Finally, the IPS serves as a baseline against which to consider proposed changes to a DC plan's current investment policy. Any such potential changes can be directly compared with existing policy, making the merits of the changes easier to evaluate and limiting the chances that emotional appeals for change will sway decision-makers.

Administrative Committees. Plan administration lacks the same cachet as investment management, but it is just as crucial (and perhaps even more so) to the successful functioning of a DC plan. Sponsors may establish administrative committees (or assign responsibilities to a specific individual) to oversee the plan's administrative aspects, such as recordkeeping, custodial services, managed account services (if used), and participant communications and education. As is the case with their investment committee counterparts, these assignments carry a fiduciary obligation to act in the best interests of plan participants.

The administrative committee might not operate under the equivalent of an IPS. Still, maintaining policies consistent with the plan's mission by setting objectives, producing formal documentation, and conducting periodic reviews of plan performance are all part of sound governance. Documenting administrative policies serves to facilitate the communication and understanding of those policies, maintains their continuity when decision-makers and staff come and go, and creates a standard to appraise proposed changes. The administrative committee's mandate should dovetail with that of its investment committee counterpart: Facilitate the achievement of the plan's mission.

Limited Resources and Training for Plan Decision-Makers

The list of issues confronting DC plans has become increasingly long and complex, both at the plan design level and at the investment and administration levels. As sponsors become more aware of their participants' retirement savings difficulties, the need for creative and effective innovations in plan features and participant education has never been greater. Further, the legal environment has become more litigious, increasing the pressure on plan fiduciaries.

Despite the increased complexity and higher stakes involved, most DC plan decision-makers, whether settlors or fiduciaries, do not have backgrounds in investments, administration, or retirement plan design. As a result, they may be poorly equipped to deal the dynamic nature of modern DC plans. Moreover, DC plan decision-makers often have other prominent roles within the sponsoring organization and, as a result, have little time to attend plan meetings, let alone thoroughly understand the subject matter. Training opportunities are limited. It is difficult to set aside time to attend conferences with peers from other organizations or study sessions with experts. Frequent turnover in roles also means that typically, decision-makers do not hold the same position for more than a few years. The thread of institutional knowledge is frequently broken. In larger companies, staff members may provide the necessary expertise to fill the knowledge gap, and these companies may have access to fully resourced consulting firms. Smaller DC plans are much less likely to have dedicated staff resources.

Even with a proficient and knowledgeable staff, well-informed and engaged decision-makers contribute in important ways to improving plan performance. For those plans without experienced staff, the need for the informed involvement by these decision-makers is even greater. Unfortunately, often the only instruction that most sponsor decision-makers receive is of the on-the-job variety. It is the rare sponsor that devotes time and money to formally educating its investment and administrative decision-makers. We believe that sponsors and participants would benefit from broad orientation programs for new decision-makers and periodic refresher courses for all decision-makers on key topics.

Insourcing vs. Outsourcing Plan Investments and Plan Administration

Regardless of size, modern DC plans use a wide array of services (see **Exhibit 2**), which may involve numerous vendors. Plan sponsors are required

Exhibit 2. Services Provided to 401(k) Plans

Administrative services

- *Recordkeeping,* including maintaining plan records; processing employee enrollment; processing participants' investment elections, contributions, and distributions; and issuing account statements to participants
- *Transaction processing,* including purchases and sales of participants' assets
- *Plan creation/conversion/termination,* including associated administrative services
- *Trustee services,* providing the safe holding of the plan's assets in a trust, as required by ERISA

Participant-focused services

- *Participant communication,* including employee meetings, call centers, voice-response systems, online access, and preparation of summary plan description and other participant materials
- *Participant education and advice,* including online calculators and face-to-face investment advice
- *Investment management,* typically offered through a variety of professionally managed investment options
- *Brokerage window,* if offered, allowing direct purchase of individual securities by plan participants
- *Maintenance of an employer stock fund,* if offered, to facilitate the purchase of employer securities within the plan
- *Loan processing,* if a loan feature is offered
- *Distribution services,* if offered, facilitating installment payments or periodic withdrawals
- *Insurance and annuity services,* if offered, including offering annuities as distribution options

Regulatory and compliance services

- *Plan document services,* including off-the-rack "prototype" plans
- *Consulting,* including assistance in selecting the investments offered to participants
- *Accounting and audit services,* including preparation of an annual report (Form 5500)
- *Legal advice,* including advice regarding interpretation of plan terms, compliance with legal requirements, plan amendments, and resolution of benefit claims
- *Plan testing,* to comply with Internal Revenue Code non-discrimination rules
- *Processing of domestic relations orders,* ensuring that the split of accounts pursuant to divorce orders complies with ERISA

Source: Investment Company Institute (2020a), using data from the US Department of Labor and the Internal Revenue Service.

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to have a custodian (typically a financial institution) to hold plan assets and a recordkeeper to provide accounting and reporting of the plan's activities, including investment of employer and participant contributions. Plans require many other services as well, some participant focused and others intended to fulfill regulatory and compliance needs. Only the largest plans can supply even a small portion of those services internally. Most plan sponsors lack the necessary internal expertise or economies of scale and instead choose to outsource most or all these services.

Plans may also hire various consultants and advisers. Consultants offer advice to help the sponsor make decisions with respect to a range of important topics, including plan features, investment options, investment managers, and service providers. Consultants have subject matter expertise that even the best-staffed plan sponsors may not be able to duplicate.

The 3s—Outsourcing Fiduciary Liability: 3(38) and 3(21) Advisers and 3(16) Fiduciaries

All plan sponsors bear fiduciary responsibility for the investment and administration of the plan's assets and benefits. Most service providers, however, work at the direction of the plan sponsor, with no discretion as to how to deliver the services. Therefore, they have no fiduciary obligation to participants. That distinction is not a trivial one. It is the sponsor that hires the service providers and contractually describes the actions that the providers must follow, and therefore, it is the sponsor that retains the fiduciary duty to act in the best interest of participants in delivering those services.

A sponsor may, however, legally delegate some of its fiduciary responsibilities to various advisers. Given the weight of the duties facing plan sponsors, the complexity of the problems encountered, the expertise required to perform the responsibilities, and the growing legal liability, it comes as no surprise that sponsors have increasingly searched for ways to offload fiduciary responsibilities. This approach has always been prevalent among smaller DC plans. Interestingly, in recent years, larger and better resourced plans have likewise followed the fiduciary outsourcing route. We are generally supportive of these trends. As organizations sponsoring DC plans have downsized their finance and HR departments, retaining responsibility for investment and administrative decisions has become more challenging. The legal risk to sponsors increasingly outweighs the benefits of retaining control over plan investments and administration.

On the investment side, fiduciary service providers come in two forms named after portions of the ERISA legislation. Investment fiduciaries can be either 3(21) or 3(38) advisers. On the administrative side, the adviser is termed a 3(16) fiduciary.

3(21) Advisers. A 3(21) adviser serves as a co-fiduciary alongside the plan sponsor's other fiduciaries, such as the investment committee. The 3(21) adviser provides advice regarding the investment of the plan's funds (for example, the types of investment options or the investment management firms that will invest the assets directed to those investment options). The scope of the 3(21) adviser's role (and hence its assumption of liability) varies, depending on the relationship that it has entered with the sponsor. The 3(21) adviser provides knowledge and guidance when requested. The sponsor, however, retains the option to accept or reject the 3(21) adviser's advice. As a result, although the sponsor shares fiduciary responsibility with the 3(21) adviser, the sponsor is not shielded from all responsibility.

From the sponsor's standpoint, the primary advantage of this arrangement is retaining the ability to modify the plan's investments as the sponsor desires. For sponsors with strong opinions about the design of the plan's investments or the selection of particular investment managers, a 3(21) adviser ensures that those opinions can be acted on. The primary disadvantage is the rather limited transfer of fiduciary liability to the adviser.

3(38) Advisers. A 3(38) adviser is assigned discretion to make investment decisions on behalf of the plan. Generically, these advisers are referred to as outsourced chief investment officers (OCIOs). Depending on the specific delegation of responsibilities, the 3(38) adviser may design the plan's set of investment options and hire the organizations that will manage the plan's assets (and that organization could be the adviser firm itself). The primary advantage is that the 3(38) adviser can act quickly to affect decisions that it believes will benefit the plan, without having to consult the sponsor. Sponsors lacking investment expertise have little need to spend time and effort to be involved in investment decision-making. Importantly too, the 3(38) adviser takes fiduciary responsibility for its decisions. The primary disadvantage is that 3(38) advisers tend to charge higher fees in exchange for assuming most of the fiduciary liability. Moreover, as Prudential Global Investment Management (2020) found in a recent study, 3(38) advisers tend to prefer at least some actively managed investment options be offered to participants.

Advisers may take on both 3(21) and 3(38) roles with the same plan sponsor. For example, an adviser might act as a 3(21) adviser in assisting the sponsor to select participants' menu of investment options. The sponsor might also assign the adviser to act in a 3(38) capacity with respect to retaining investment management firms. Sponsors should always require 3(21) or 3(38) advisers to acknowledge the scope of their fiduciary obligations contractually and memorialize those responsibilities in the plan's IPS. No one should ever be confused about which investment decisions belong to either the plan sponsor or the 3(21) or 3(38) advisers.

We emphasize that in the case of both 3(21) and 3(38) advisers, the plan sponsor cannot transfer all fiduciary responsibility. The sponsor is always responsible for appropriate due diligence in selecting and monitoring the adviser. The risk exists that in hiring, especially for a 3(38) adviser, sponsors may tend to become disengaged from the functioning of the plan's investments and fail to effectively monitor the adviser. In the case of a serious error by the adviser, without evidence of effective oversight, the sponsor could face legal ramifications.

3(16) Fiduciaries. These fiduciaries take on responsibility for plan administrative services, including participant contributions, distributions and notices, eligibility and vesting calculations, and regulatory document filings. Some sponsors assign all administrative responsibilities to the 3(16) fiduciary, whereas others may delegate only a portion of the DC plan administrative functions. In a full scope assignment, the 3(16) fiduciary will work with both the sponsoring employer's payroll vendor and the plan recordkeeper. Depending on the scope of the relationship, hiring a 3(16) fiduciary potentially insulates a sponsor from some or all responsibility for plan administration mistakes. Again, this protection assumes the sponsor monitors the 3(16) fiduciary appropriately.

Although plan sponsors of all sizes may use 3(21) and 3(38) advisers, generally only smaller DC plans use 3(16) fiduciaries. If multiple-employer plans become more widespread, 3(16) fiduciaries may take a greater role in handling administrative services for those plans. Larger plans generally retain fiduciary responsibility for plan administration and direct the various administrative vendors that service their plans. Just as larger plans have slowly come to make greater use of 3(38) advisers, however, it is not hard to imagine larger plans also beginning to avail themselves of 3(16) fiduciary services.

The Resource Struggles of Smaller Plans

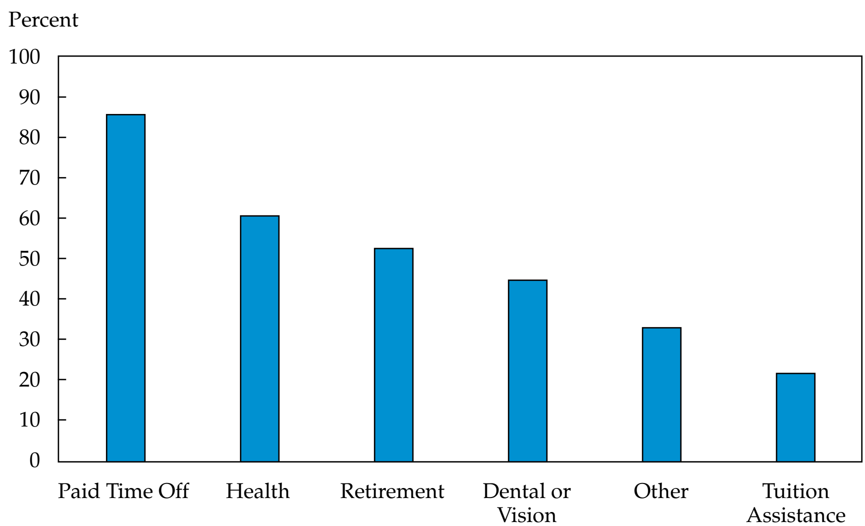
The Small Business Administration (US Small Business Administration Office of Advocacy 2018) defines a small employer as a company with fewer than 500 employees and reports that more than 47% of the workforce is employed by such businesses. In turn, the vast majority of DC plans are small, with fewer than 100 participants.[38] In offering retirement plans, small employers face many challenges that larger ones do not. Their revenue sources are usually less diversified and predictable, making benefit expenses a serious

[38]The US Department of Labor (2019a) reported that of 401(k) plans, 87% have fewer than 100 participants.

potential drag on company profits during poor economic times. Smaller companies must prioritize the benefits that they do choose to offer. As a result, such companies are more likely to provide paid time off and medical benefits before they offer retirement benefits, because those benefits are in higher demand from employees. Smaller employers with a predominantly part-time and younger workforce are significantly less likely to offer a retirement plan, because they typically have lower-income, higher-turnover employees who may not value a plan as much as older, full-time workers (see **Figure 4**).

Small businesses are also less likely to offer DC plans because the associated costs of operating those plans—administration, regulatory compliance, legal fees, and fiduciary liability insurance—tend to be higher per employee than is the case for larger businesses that can spread these costs across a larger base of employees. Smaller businesses may also be operating on a more financially precarious basis, and their owners may believe that they cannot afford the costs of running a DC plan and possibly making a matching contribution to the plan. The complexity of the regulations surrounding DC plans—combined with a lack of in-house benefits and legal departments to handle the collection of regulatory issues and the marketplace for recordkeepers, technology providers, and advisers—makes retirement plans a heavy burden for smaller employers. In addition to direct expenses, small plans face concerns about fiduciary liability. Lacking the expertise, people, and time to

Figure 4. Benefits Offered by Small and Mid-Sized Businesses

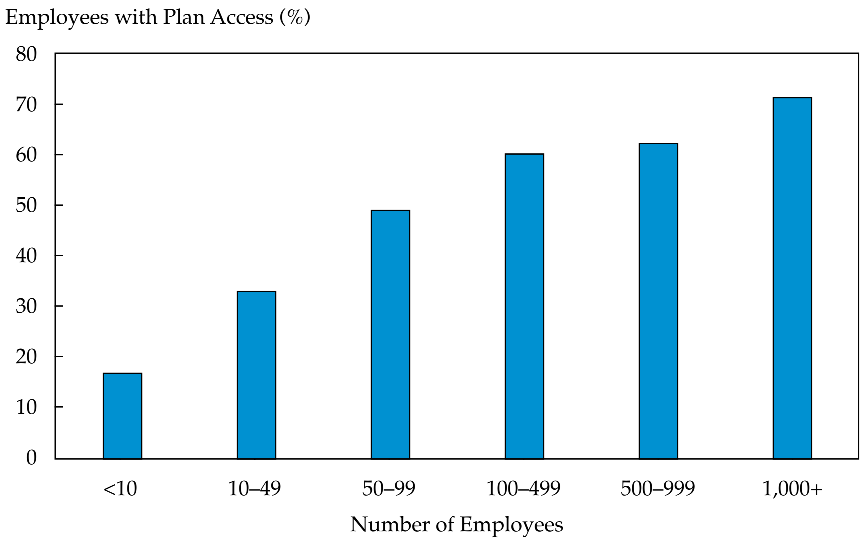


Source: Pew Charitable Trusts (2017).

concentrate on these issues, small plans are more exposed to serious fiduciary errors that can lead to sanctions by regulators.

Because of the costs to set up and maintain plans, some employers choose not to offer DC plans at all, despite the competitive disadvantages that creates in trying to attract and retain talented employees.[39] Employee access to a retirement plan varies directly with firm size, as **Figure 5** illustrates. Pew Charitable Trusts (2017) reported the two most widely cited reasons for not offering a retirement plan are expense and limited administrative capacity. Investment management and administrative fees for small plans are literally a multiple of those faced by large ones, as detailed in **Table 2**. Small employers that choose to offer plans generally pass along the higher expenses to plan participants, as documented by Carlson (2017), which affects their

Figure 5. Access to Retirement Plans by Employer Size, Private Sector Workers Age 21–64



Source: Brady and Bogdan (2014).

[39]This book is about employer-sponsored retirement plans. Small private employers may offer arrangements that are not 401(k) plans but still help employees accumulate retirement wealth, such as SEP-IRAs or SIMPLE IRAs. SEP-IRAs are funded by the employer, whereas SIMPLE IRAs allow employee and employer matching contributions. Under both types, an IRA is established in the employee's name. Both arrangements have disadvantages, but the low cost and ease of administering a SEP or SIMPLE IRA are attractive to very small companies.

Table 2. Retirement Plan Expenses by Size

Plan Size ($ millions)	Fee (%)
<$1	1.42%
$1–$5	0.88
$5–$10	0.80
$10–$25	0.74
$25–$50	0.68
$50–$100	0.63
$100–$250	0.58
$250–$500	0.52
$500–$1,000	0.47
>$1,000	0.37

Source: Rekenthaler, Spiegel, and Szapiro (2017).

employees' ability to save for retirement. Smaller employers rarely have the HR and finance expertise to set up and monitor their DC plans. The result can be plans with features and cost structures far inferior to what larger plans can offer, to the detriment of participants. As noted by the Bureau of Labor Statistics (2019), the challenges faced by small employers constitute a serious retirement savings problem.

As we discussed in Chapter 2, participants in DC plans sponsored by small employers face a difficult outlook in terms of important measures related to achieving a financially secure retirement. Access, eligibility, participation rates, savings rates, plan expense ratios, and the quality and costs of investment offerings all tend to work against participants in smaller DC plans compared with those in larger plans. Smaller plans on average make less use of plan design features that help drive participation and savings. For example, Vanguard (2019) found that smaller plans are much less likely to incorporate auto-enrollment, auto-escalation, and immediate eligibility in their plan provisions compared with larger plans. The reasons for these poorer results are not hard to identify: Larger plans on average bring much greater resources to offering DC plans than do smaller plans.

Smaller plans often hire investment advisers, such as broker/dealers, banks, registered investment advisers, and insurance companies, to serve as plan fiduciaries in order to manage assets and facilitate the plan design process around both the needs of participants and the budgets of sponsors. These organizations may offer investment platforms from which plans can select from a list of investment options. The platform offerings may be proprietary to the adviser, or they may be "open architecture," whereby the plan has access to a variety of investment managers. Financial services companies offering funds have DCIO (defined contribution investment only) wholesalers whose job is to distribute their firm's funds into the small plan marketplace.

To gain improved economies of scale, some employers have banded together to offer multiple-employer plans (MEPs). Until recently, participating employers had to be engaged in a common business, usually by industry or occupation. Importantly, the tax status of all employers in an MEP could be tainted by non-compliance from a single employer. The SECURE Act of 2019 has provisions meant to encourage the use of MEPs by opening those plans to any set of employers and removing the "one bad apple" provision. Making greater use of MEPs (or restructured as pooled employer plans, or PEPs, a recent variation on MEPs) could allow smaller plans to aggregate and concentrate their buying power, lower unit costs, reduce regulatory burdens, and increase investment policy expertise and oversight. It remains to be seen whether this legislation will spur smaller employers to offer DC plans to employees and whether costs of running plans decline as a result.

We believe that MEPs can significantly leverage the resources of small-employer plans and enhance the cost effectiveness of those plans for participants. Small employers, regardless of whether they currently offer an individual DC plan, should closely monitor the development of this market. These multiple-employer plans have the potential to

- increase worker access, because expenses and administrative logistical burdens become less of a factor for small employers setting up DC plans,
- reduce leakage from DC plans if participants move from one employer to another that is part of the same MEP, and
- reduce sponsor fiduciary liability risks, because MEPs can afford more extensive and higher-quality service providers.

Plan Sponsor Legal Liability Risks

In the last 20 years, private-sector employers that sponsor retirement plans generally have been eager to replace DB plans with DC plans. The environment of low interest rates and three major economic recessions highlighted the financial risks that sponsors with large DB obligations faced. Yet it is becoming increasingly evident that sponsors have traded investment risk for legal liability risk as they moved from DB to DC plans. Mellman and Sanzenbacher (2018) noted that although DC plan lawsuits surged following the Great Recession of 2007–2009, they dwindled in number for a time but have risen once again in recent years.

The suits have centered on three main areas:

- expenses,
- investment options (particularly employer stock), and
- conflicts of interest.

Unreasonable Expenses. The foremost source of DC plan litigation in recent years involves expenses paid to service providers. DC plans incur two primary types of expenses: investment fees and administrative fees.[40] As explained by the US Department of Labor (2011), sponsors—or the delegated 3(38) advisers—have a fiduciary duty to ensure that any expenses paid with plan assets are "reasonable." Generally, lawsuits related to expenses have involved one of two main elements: (1) bundled service arrangements in which cross-subsidies result in the plan paying fees that were greater than otherwise would have been paid if the services were unbundled and (2) expenses that are simply more than other plans are paying for similar services.

The first expense issue is perhaps the most complex and pernicious. Sponsors differ in terms of how they apportion fees between participants and the sponsor. Some plans call for participants paying 100% of the expenses associated with plan operations. In other cases, the sponsor may pay for some administrative services and (much less commonly) investment management services. Many of the expense issues can be traced to the conflicting motivations of sponsors who ostensibly pay for various services but perhaps inadvertently offload the full cost of those services onto plan assets in ways that actually boost the cost of those services.

Administrative costs can be either paid directly or embedded in the expense charge assessed by the plan recordkeeper for plan assets. In the latter case, the expense ratios of the plans' funds are higher than in the former case. If the sponsor has a policy of paying for all or a portion of the plan's administrative costs but also allows the plan to pay a higher expense ratio, then the true cost of administration becomes more opaque and open to question. Moreover, service providers may have arrangements with investment managers to share revenues, creating the possibility again that the plan participants overpay for services. Overpayments can be handled through various forms of rebates, but that approach requires greater due diligence on the sponsor's

[40]A third category is fees charged to specific plan participants (e.g., fees on in-service withdrawals, such as loans).

part, and the transparency problem remains. These bundling arrangements, described in Tergesen (2016), are rapidly falling into disfavor among large and medium-sized funds.

The second expense issue is more straightforward. Examples abound of plans using services that have equivalent but cheaper alternatives. The classic example is using a higher-cost mutual fund share class when a lower-cost version is available. Another example is failing to consider a collective investment trust fund and instead using a more expensive mutual fund with the same underlying investments. In 2012, the Department of Labor instituted regulations requiring that sponsors provide participants with an annual reporting of the administrative and investment management fees charged to the plan. As a result, comparing costs between sponsors has become much easier. Participants may not have paid much notice to these reports, but plaintiffs' lawyers certainly have. The data from the filings have provided evidence supporting litigation.

Iacurci (2019) noted that the spate of lawsuits related to fee issues have captured plan sponsors' attention. Although most cases are either dismissed or settled before they go to trial, sponsors want to avoid both the negative publicity and the possibility of large financial awards. In response, many have tightened up their expense oversight and become more aggressive about making periodic checks on the types and levels of fees paid to servicers. Sponsors are not required to offer the lowest-cost services. A sponsor should have a clear rationale for selecting a service with a higher fee than similar offerings, however, and the sponsor should thoroughly document those reasons. An entire form of consulting has evolved to provide "benchmarking" analyses to sponsors, offering suggestions for alternative services and eliminating inefficient bundling arrangements. The goal is to identify "reasonableness expense ranges" for similar investment and administrative services in order to ensure that what the plan pays for its services falls within these ranges—and if not, to either negotiate new fees or move to alternative services.

Investment Options. Sponsors have faced legal challenges over the types of investments offered to plan participants. In some cases, sponsors have faced suits for not offering certain investments, whereas in other situations they have been sued *because* they offered a particular investment. One type of investment that has attracted numerous lawsuits involves employer stock. For large plan sponsors with publicly traded stock, it was once common practice to match participants' contributions with employer stock. The dangers associated with the resulting lack of diversification were obvious from the start. As we have constantly emphasized, however, the fact that early DC plans were not considered central to retirement savings allowed sponsors to overlook the concentration risk created by stock matching. Companies unfortunate enough to experience significant stock price drops while matching in employer stock have been the targets of lawsuits. As a result of this litigation, sponsors have moved rapidly to reduce the amount of company stock held by participants. We discuss this topic further in Chapter 5.

Conflicts of Interest. Plan fiduciaries have the obligation to work solely in the interests of plan participants. Making decisions that benefit the sponsoring firm at participants' expense has created problems for sponsors. These "self-dealing" charges can take many forms. For example, financial services firms sponsoring DC plans have been challenged for offering investment funds run by the sponsoring employer. In other cases, arrangements involving the bundling of service fees, in a way that reduces a sponsor's expenses but increases the charges to participants, have been at the center of lawsuits. Without clear policies created to protect against conflicts of interest, sponsors can easily find themselves on the wrong side of the issue.

Avoiding Litigation, Maintaining Innovation. Sponsors can enact certain plan design changes that reduce liability risk, and many sponsors have taken such steps. Some of these modifications make obvious sense, such as driving out wasteful expenses, unbundling services to create greater cost transparency, or switching to the lowest-cost version of a particular investment product. These changes clearly work in the best interests of participants. If there is a silver lining in the flurry of retirement plan lawsuits, it is that they have focused sponsors' attention on creating more cost-effective and participant-friendly plans. In fact, lawsuits and regulatory investigations often cause sponsors to "get religion" and eliminate or mitigate the offending practices. The implication, of course, is that sponsors should not have been following those practices in the first place.

In other cases, however, sponsors' responses to litigation, although expedient in the short run, may stifle innovation in the long run. Sponsors tend to gravitate toward common plan designs under the reasonable belief that such designs reduce the legal exposure of being an outlier.[41] But these cautious approaches that attempt to deflect litigation may prevent the introduction of strategies and techniques that improve risk control and wealth accumulation opportunities for participants. Further, making decisions based solely on fees

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[41]As highlighted in McCarthy (2018, p. 1), "Recent lawsuits over fees and other fiduciary issues certainly have caught plan sponsors' attention, says Robert Melia, executive director of the Institutional Retirement Income Council. . . . Consequently, many plans revert to what he describes as the 'vanilla' approach to plan design."

without considering the value of the services offered is not necessarily in the best interests of participants.

The US Department of Labor (DOL) often has been unhelpful in providing sponsors with the legal cover to implement innovative plan design. Sponsors naturally fear implementing plan design changes that may later be directly or indirectly criticized by the DOL.[42] For example, providing participants with information about the income from an annuity they could purchase with their account balance at age 65 has been held up for years while sponsors have fretted about their legal exposure in the absence of a DOL safe harbor.[43] It took legislation to create a safe harbor for sponsors, and it may still be years before specific regulatory guidance is offered.[44] Yet not long ago, some of the biggest successes in plan design were considered legally risky by sponsors, including automatic enrollment and target date funds. In some cases, sponsors began pushing the envelope without direct regulatory approval. In other cases, changes had to await legislation and/or regulatory action, the most notable being the Pension Protection Act of 2006. Unfortunately, without the willingness to test boundaries, sponsors run the risk of forgoing the next opportunity that could be as meaningful as the introduction of the target date fund.

No one knows what plan changes will be successful. Before target date funds, sponsors offered targeted risk portfolios. Participants were asked to select among balanced portfolios with conservative, moderate, or aggressive risk exposures. The approach never caught on. Target date funds, with their time-dependent risk profiles, proved to be superior vehicles in the eyes of participants. Yet the process of experimenting with targeted risk portfolios and then switching to target date funds taught sponsors the benefits of more automated approaches to asset allocation.

[42]Munnell (2018, p. 1) argued, "Instead of issuing specific guidance on how plan fiduciaries should act—such as providing concrete factors to consider in determining whether fees are reasonable—it has tended to 'regulate by enforcement after the fact.'"

[43]The SECURE Act has now mandated such a disclosure.

[44]Plan sponsors should consider going further than the SECURE Act requirements and provide participants with the age-65 annuity equivalent of the balance they have now, as well as the age-65 equivalent of the balance they can expect to have if they continue contributing at rates based on their past contribution rates, inflated by an assumed investment return.

Chapter 4. Plan Design

Challenges Facing the Plan Sponsor

- Defined contribution plan design affects the ability of plan participants to effectively serve as their own chief investment officers.
  - Without assistance from sponsors in the form of plan design enhancements, few participants possess enough financial knowledge to succeed in their CIO roles.
- Financial education alone will not overcome the behavioral biases that hinder participants from making savings and investing decisions in their long-run best interests.
- For sponsors who match participant contributions, adopting plan design features that drive up participation and savings rates adds to benefit costs.
- Holding employer stock in DC plans creates an undiversified source of risk for participants
  - When a plan matches participant contributions with employer stock, participants are much more likely to hold large concentrations in that stock.
- Leakage from DC accounts is endemic and detrimental to the mission of DC plans.
  - Cash outs upon change in employment, hardship withdrawals, and plan loan defaults prevent many participants from adequately building their retirement assets.
- A clear, simple, and standard process to transfer assets from a previous employer's DC plan to either a new employer's plan or to an IRA does not exist.
  - Few plan sponsors *actively* promote rollovers into their DC plans from incoming plan participants, and virtually no plan sponsors have a policy of *actively* assisting former plan participants in moving their account balances to tax-advantaged accounts.
- Although auto features in DC plans have proven effective, across the DC plan system they will display diminishing marginal returns as more plans add them.

Opportunities for the Plan Sponsor

- Incorporate default settings prominently into plan design to help participants overcome their lack of financial acumen and problematic behavioral biases.
  - Auto-enrollment, auto-escalation, auto-investment, auto-rebalancing, and auto-portability offer means to nudge participants' savings and investment decisions toward more-successful outcomes.
- Consider managed accounts as a complement to auto features in order to appeal to participants who want more control over their retirement investments.
- Eliminate or tightly restrict participants' holdings of employer stock, in a well-communicated and possibly gradual process.
  - Matching participants' contributions in employer stock should be ended.
  - For those plans that still offer employer stock as an investment option, restrict new contributions to the option, perhaps setting a limit on the allocation.
  - Ultimately eliminate employer stock as an investment option entirely.
- Retain the option to take out plan loans and hardship withdrawals, but
  - communicate with hardship withdrawal and loan applicants about the opportunity costs of taking funds out of their accounts,
  - review permitted hardship withdrawal reasons and limit them only to true and verifiable emergencies,
  - connect information about hardship withdrawals and plan loans to other financial well-being initiatives that may be offered to employees, and
  - permit participants who have left a sponsor's employment to continue to pay off outstanding loans for the original term of the loan rather than requiring an immediate repayment.
- Encourage participants to avoid spending account balances when changing employment.

- On the departing employer's end:
  - Allow participants to keep their account balances invested in the plan.
  - Engage in a program to inform participants about their options and the financial advantage of keeping their retirement savings invested in tax-advantaged accounts.
- On the incoming employer's end:
  - Accept rollover balances from previous employer plans and qualified IRAs.
  - Actively assist participants in rolling over their account balances to an IRA or a future employer.

Types of DC Plans

DC plans in the United States come in a variety of classifications, all based on the Internal Revenue Service's tax code. The alphanumeric soup includes 401(k), 401(a), 403(b), and 457 plans.[45] For our purposes, they have similar elements, and what distinguishes them is not important for our discussion. As we noted earlier, the key aspect of any type of DC plan is that participants' investment results determine the benefits that they will derive from the plan. Participants bear all the investment risk of the plan.

The key to each of these plans is that participants and sponsors make contributions on a tax-favored basis. That favorability can take the form of deferring taxes on the contributions to accounts and their investment returns until the participants make withdrawals. This tax arrangement is the traditional form of tax favorability for DC plans. Alternatively, the favorability can be achieved through initially taxing the contributions but never taxing the withdrawals, including the earnings on those contributions. This is the Roth approach.

On the one hand, if the participants experience the same income tax rates throughout their lives (both during their working years and during retirement), the two approaches produce the same economic result. On the other hand, as Horan (2005) described in detail, if participants' tax rates differ materially in retirement relative to their working years, then one form or the other may be more advantageous. In recent years, sponsors have widely

[45]US Department of Labor (2019a) data showed 662,829 private-sector DC plans, of which 86% were 401(k) plans. The number of participants and plan assets had a similar ratio. Thus, although other types of DC plans may have some specific elements of interest, we focus on 401(k) plans because of their dominance in the DC marketplace.

added Roth features in addition to the traditional format as part of their plan design. These features give participants the option to choose between these two forms of tax favorability. Because participants have little way of knowing what their future tax rates will be, the tax treatment issue becomes just one more level of complexity that makes DC plan participation so intimidating for the average employee.

Considerable debate surrounds the importance of retirement plan tax advantages with respect to retirement income accumulation. This book is not the place to discuss the public policy issues involved. Clearly, however, tax favorability is most important to individuals who pay significant taxes. Given the progressive nature of the US tax system, DC plan participants with higher tax rates (and presumably higher income) obviously stand to benefit more from tax favorability of DC plans than do those participants with lower tax rates (and presumably lower income).

Relationship to Individual Retirement Accounts

IRAs represent a sort of funding sink into which DC plans pass retirement assets. The assets flow from employers to participants and then to the IRAs. Originally, IRAs were devised as retirement vehicles to which workers, whether employed by a company sponsoring a retirement plan or self-employed, could contribute to enhance retirement security. Tax law changes over time and the reality of US workers' saving habits led to the current situation in which DC plans essentially work as feeder vehicles for IRAs. Almost two-thirds of IRA-owning households originally sourced their assets from their employers' DC plans. Many of the rest are self-employed or belong to spouses eligible for IRAs although not engaged in market work. The Investment Company Institute (2020a) estimated that as of 2017, about half of IRA assets came from DC plans. Mutual fund managers aggressively (and quite successfully) seek to gather the DC assets of participants leaving their employers, regardless of whether it is in participants' best interests.

The relationship between IRAs and DC plans calls to mind the question about whether the design of DC plans makes it advisable for sponsors to encourage participants to leave their assets in a DC plan—either a previous employer's plan or that of a new employer.

Auto (Default) Settings

In Chapter 2, we discussed the headwinds that plan participants face in trying to build retirement wealth through DC plans. Lack of financial literacy, combined with behavioral biases, leads a large percentage of participants to undersave and make poor investment choices.

Although most plan sponsors offer various forms of participant education programs, an increasing number have also sought to use behavioral features of plan design to counteract the negative effects of poor participant decision-making. Sponsors use default settings to direct their participants toward choices that the sponsors believe will work in the participants' best interest. Participants retain the ability to opt out of these choices, but the evidence indicates that only a small minority do so. Defaulting participants into savings and investment decisions comes with some controversy. Sponsor decision-makers with a more libertarian streak chafe at the thought that participants are encouraged to accept the sponsor's savings and investment advice without being required to investigate the options for themselves. Some observers, such as Dholakia (2017), contend that this passivity makes participants disengaged and less willing to take charge of their financial futures.

Despite those concerns, the use of various default settings in plan design has seen widespread acceptance among large sponsors and to an increasing extent among even smaller sponsors.[46] We categorize those default settings into two groups: savings decisions and investment decisions.

Savings Decisions: Auto-Enrollment. The most impactful use of default savings features deals with the primary participant decision: whether to enroll in the plan itself. Auto-enrollment, once unheard of, has now been overwhelmingly adopted by large plans and increasingly so by mid-sized and smaller plans. Participants in plans using auto-enrollment are signed up for the plan once they become eligible. Paycheck deductions and company matches are placed in their DC accounts. Participants can negate the enrollment choice and usually, if this is done immediately, can have the payroll deductions refunded. Most auto-enrollment features apply only to new hires. A smaller group of sponsors have also used a one-time or periodic "sweep" to enroll existing employees not currently participating in the plans. Sponsors typically accompany these sweeps with considerable advance notice and a means to opt out prior to auto-enrollment.

Savings Decisions: Auto-Escalation. Auto-enrollment requires that an initial contribution rate be set by sponsors on behalf of participants. Although slowly changing, the practice has been to start participants at relatively low contribution rates, possibly out of concern that too high a rate might cause

[46]The Pension Protection Act of 2006 was instrumental in encouraging plan sponsor adoption of DC plan default settings, including auto-enrollment, auto-escalation, and auto-investment, by defining "safe harbor" procedures that protected sponsors from state laws and anti-discrimination regulations.

participants to opt out.[47] To boost contribution rates, sponsors have increasingly adopted annual increases in those rates. Up to a preset level, all participants' contribution rates are increased annually by (say) 1 percentage point, typically around the time of year when pay raises are given. Participants, of course, can choose any contribution rate and can undo the increase, but as with auto-enrollment, a large proportion do not reverse the change. The logic of auto-escalation is that small increments, especially if a paycheck has risen, will not be viewed negatively and over the long run will add substantially to participants' account balances.[48] Sponsors often pair auto-escalation with auto-enrollment. Perhaps because auto-escalation appears less intrusive, more plans have adopted it than auto-enrollment.

Investment Decisions: Auto-Investment (QDIA). Participants who are auto-enrolled in a plan must have an investment option in which to place their contributions. They can choose from among a plan's investment lineup, but often participants do not take that proactive step. Sponsors can select Qualified Default Investment Alternatives for their plans, designating where participants' contributions will be placed unless they select otherwise.[49] Sponsors can choose target date funds (TDFs), balanced funds, or managed accounts as the QDIA for their plans. Nearly all sponsors choose TDFs as the default investment option.[50] Combined with the growth in auto-enrollment, this plan feature has led to a surge in TDF investments. As a result, compared with a decade ago, TDFs have grown from a small niche product to the largest or second largest (depending on the survey) category of DC plan investments.

Investment Decisions: Auto-Rebalancing. As market values change, participants' allocations to their selected investment options also change. If participants have chosen a target allocation to a particular set of investments, an auto-rebalancing feature periodically sells those investments that are above the target and purchases investments below the target. Target date

[47]PLANSPONSOR (2020) showed that the most common default contribution rate remains 3%, but more than half of plans now set default rates greater than 5%.

[48]The auto-escalation concept was first proposed by Shlomo Benartzi, and Benartzi (2012) discussed its behavioral underpinnings. Auto-escalation is also consistent with the life-cycle approach to investing and saving that we explore in Chapter 5.

[49]Designating a QDIA relieves sponsors of liability for any losses that participants might incur when their accounts are invested. As a result, virtually all plans designate a QDIA. McAllister, Ungerman, and Wisdom (2020) found that more than 87% of plans selected a TDF as the QDIA.

[50]We discuss TDFs and balanced funds in Chapter 5. We consider managed accounts later in this chapter.

funds do this for participants without their intervention. To the extent that participants hold investment options besides TDFs, auto-rebalancing provides a means to maintain the selected asset allocation and the associated risk level. Many sponsors require participants to opt into auto-rebalancing, but once it is set, the feature continues until the participant elects to end the arrangement.

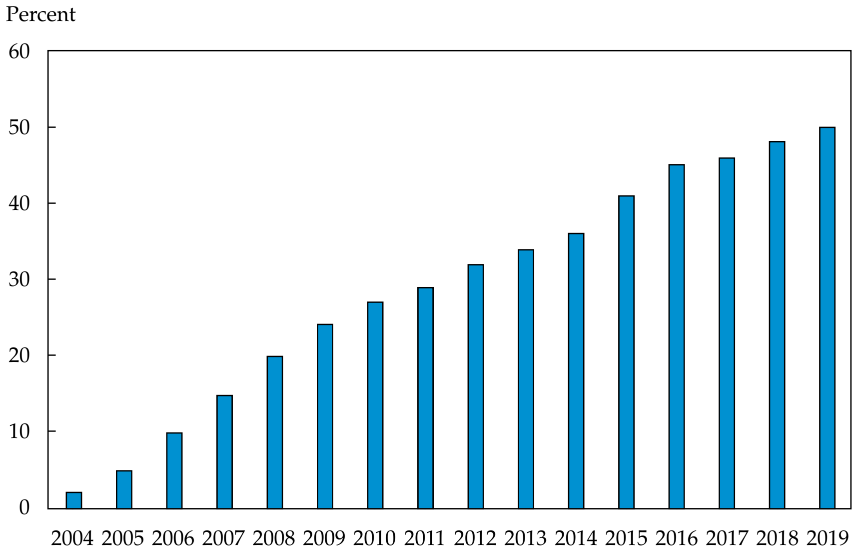
Savings Decisions: Auto-Portability. We will address the serious problem of leakage from DC plans later in this chapter, but a valuable auto feature would involve default processes among recordkeepers and DC plans to move participants' account balances to new employers' plans when they change jobs. No such arrangements currently exist. Yet the need is clear. Workers who move from one employer to another can leave behind small but financially important account balances. Consolidating those accounts is time consuming and, for the uninitiated, complicated and confusing. Yet carrying out that consolidation can help prevent participants from spending the balances and instead allow them to better manage those amounts. Currently, the task of account rollovers is a fragmented set of processes, dependent on plan sponsors and their recordkeepers. A more standardized and centralized approach that takes place without direct involvement from participants (although they could opt out) would be a boon to those participants who change employers.[51]

We are strong proponents of incorporating default features into plan design. Certainly, such features increase employer costs as more participants join the plan and increase their savings, thereby increasing employer matching contributions. Further, they can produce unintended consequences, such as many small, orphaned account balances. Nevertheless, given the responsibilities placed on participants to make critical retirement planning decisions for themselves, these features provide an effective safety net for participants who cannot or do not actively save and invest for retirement. We believe that the benefits of automatic plan features are so substantial that they deserve universal adoption in one form or another. Most sponsors certainly agree, as illustrated in **Figure 6**, which shows the rapid adoption of auto-enrollment.

Sponsors have gravitated to default settings in their plan designs for the simple reason that such an approach increases participation and savings in DC plans. For example, one survey from T. Rowe Price (2020) reported that

[51]Miller (2019) noted that in mid-2019, the DOL issued an exemption that for the first time allowed participating employers and recordkeepers to automatically roll over participants' account balances from one employer to another. Although limited in scope, this alternative may provide a scalable vehicle for further progress in auto-portability.

Figure 6. Growth in Auto-Enrollment



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plans with auto-enrollment have participation rates roughly 40 percentage points higher than those plans in which employees must choose to participate. The positive influence of auto-enrollment on participation is particularly striking for younger and lower-income workers.[52]

Managed Accounts

Our constant refrain is that the typical DC plan participant lacks the necessary investment knowledge and needs assistance in developing and implementing a retirement savings and investment strategy. As we have discussed, DC plans force participants to serve as their own CIOs, a task for which few are qualified. Sponsors traditionally have attempted to support participants through education efforts. Plan default settings involve a much more prescriptive attitude on the sponsor's part to help participants make productive savings and investment decisions. As we noted, however, this approach can be criticized for turning participants into passive observers of their retirement wealth fates.

[52]Vanguard (2020) reported that for workers earning between $15,000 and $30,000, the participation rate is 83% under auto-enrollment and only 39% under voluntary enrollment. Similarly, for workers between ages 25 and 34, the participation rate rises to 92% under auto-enrollment; it is only 55% with voluntary enrollment.

Alight Solutions (2018) reported that roughly half of sponsors have taken the position that what participants need is access to someone or some organization providing them with direct retirement savings and investment advice. That advice might be as simple as selecting desired risk levels and investment options. It could be expanded to include appropriate savings rates. Additional advice may involve coordinating DC plan investments and savings with other sources of retirement income, such as Social Security. Or it might include advice regarding decumulation strategies. Traditional financial planning services cost too much for most participants, and sponsors generally are unwilling to foot the bill. The advent of computer-based investment advice has presented sponsors with a means of delivering low-cost retirement planning financial advice to plan participants.

In the context of a DC plan, managed accounts are services offered by registered investment advisers that are selected by DC plan sponsors to give savings and investment recommendations directly to participants, on a non-discretionary and discretionary basis.[53] At the basic level, a managed account adviser typically will offer non-discretionary guidance regarding which of the sponsor's lineup of funds should be selected by participants, as well as the target allocation to those funds. Plan investment account data are collected by the adviser, and based primarily on the ages of participants, a computer algorithm generates asset allocation recommendations. It is up to participants to decide whether to follow the recommendations and change their DC account investments. Participants pay nothing for access to this guidance, regardless of whether they implement it. These services may include a help line that participants can call if they have questions regarding the recommendations.

Participants can elect to have the managed account adviser assume responsibility (and fiduciary liability) for investing their DC plan accounts. In this arrangement, the adviser has full discretion to invest the participants' account dollars among the plan's investment options. In setting those allocations, the adviser considers not only the participants' ages but also responses about their risk tolerances. Participants may provide additional financial information about other savings outside the DC plan and other sources of retirement income, such as pension benefits. Although the investment advice is computer generated, participants typically have the opportunity to speak to an adviser representative about retirement planning.

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[53]We place both the non-discretionary and discretionary recommendations of the managed account adviser under the heading of "managed accounts." Many practitioners refer to non-discretionary advice as simply "online" or "robo" advice and then refer to the discretionary authority that the adviser may be given to implement the recommendations as "managed accounts."

Plan sponsors commonly hire managed account advisers to provide non-discretionary advice to all plan participants, but then the participants must select (and typically pay) the adviser if they wish their accounts' assets to be managed on a discretionary basis. Although it is rare, some sponsors will default their participants into the discretionary service, giving participants the ability to opt out.

The combination of competition among managed account providers and more widespread adoption by plan sponsors has significantly lowered managed account fees in recent years. Many participants in large plans can access managed account services for as little as 0.10% of managed assets, a small fraction of what traditional financial planning services would charge. Granted, fewer ancillary services are offered to managed account clients (including less in-person consultation), but particularly for DC plan participants with account balances under six figures, the opportunity to obtain professional investment advice with no minimum account size is valuable. Younger participants have grown up receiving information electronically, so the delivery method of managed account services is neither intimidating nor off-putting to them.

Researchers have found evidence that the use of managed accounts increases savings rates and results in participants holding more efficient risk–reward portfolios. In particular, Blanchett (2019) indicated that participants who direct their own investments (and do not use TDFs) more frequently fail to hold well-diversified portfolios than do participants who use TDFs. These do-it-yourselfers often had risk positions inconsistent with their age (e.g., young participants holding large cash investments or older participants holding all-equity portfolios). Managed accounts can help those investors feel as if they are retaining control over their portfolios while at the same time increasing the efficiency of their portfolios. Moreover, managed accounts seem to help those participants who are not on a path to adequate retirement savings achieve higher savings rates. In both cases, the benefits of managed accounts were significant. The study reported the impact of managed accounts to be especially valuable for young plan participants.

We believe that managed accounts have a useful role to play in helping participants make better retirement savings and investing decisions. They work in a complementary fashion with plan default settings, such as auto-investment in the QDIA and auto-escalation. The two approaches ensure participants' access to low-cost diversified investment portfolios and help in boosting retirement savings rates.

Employer Matching Contributions

Virtually all large DC plans make contributions on behalf of plan participants, although smaller plans are less likely to include these contributions.

The typical plan design requires participants to make contributions that are then matched by the employer up to a stated percentage of pay (the "employer match"). Some plan designs (profit sharing and employee stock ownership plans) make non-matching contributions on behalf of all employees. Others offer a combination of matching and non-matching contributions.[54]

The employer match represents by far the largest cost of providing a DC plan retirement benefit to workers. These contributions are part of a total compensation package that businesses use to attract workers. The employer match is a critical piece in helping participants build retirement wealth. As we discussed in Chapter 2, median participant contribution rates are in the mid-single digits. With the employer match, median contributions to DC plans rise to roughly 10%—generally not enough to achieve adequate income replacement in retirement but much better than what would be achieved without the employer match. Without an employer match, many participants would stand virtually no chance of achieving that target. Just as importantly, by making contributions to the plans, the employer creates a strong incentive for its workers to join and contribute at levels that will help put them on a path toward retirement security. The employee is effectively giving herself a raise by contributing, up to the maximum amount that the company will match.

The employer match formula varies widely across DC plans. Some may match dollar for dollar up to a specified percentage of pay. Others may match only a fraction of a dollar up to the limit. According to Vanguard (2020), the most widely used design is 50 cents on the dollar for the first 6% of pay. Still others may combine a dollar-for-dollar match up to a designated limit, with a fraction-of-a-dollar match on additional amounts up to another designated limit. Assuming participants take full advantage of the employer match, Vanguard has calculated that the median value of the match, across plans, is 4.0% of pay.

Although the trend has been increasingly to allow workers to enroll in DC plans upon hire, employers often require participants to work for a certain period before gaining eligibility for the matching contributions. In roughly half of DC plans, participants are eligible for the employer match when they join the plans. The others require service time of up to a year before receiving the match.

[54]Vanguard (2020) reported that half of its plans use only a matching feature, but one-third offer a matching and a non-matching feature and 10% offer only a non-matching feature. A tiny fraction offers no employer contributions at all. The inclusion of the non-matching contribution is valuable for participants, boosting the potential employer contribution from a median of 4% of pay in matching-only plans to 8% of pay in matching and non-matching plans.

Similarly, about half of the plans vest participants in the employer match immediately upon receiving it. The other plans use various forms of cliff vesting (100% after a service time threshold is reached with a maximum of three years) or graded vesting schedules (up to six years of service time) to determine how quickly participants gain ownership of the employer matching contributions.[55] Smaller plans are likely to apply longer vesting periods.

Match in Employer Stock. For private-sector DC plan sponsors whose common stock is publicly traded (typically large employers), it was once common practice to make the employer matching contribution in the form of that stock. Employers enjoyed the ability to make cashless contributions to their DC plans. They also believed that letting employees own a piece of the company was sound public relations and kept a portion of the company's stock in "friendly" hands. Plan rules often prevented participants from selling their employer match stock until they left the organization or approached retirement age. Many participants built up large concentrations of employer stock in their account balances.

From a diversification perspective, matching in employer stock has never made sense. Workers bear financial risk simply by being employed at a company. An economic downturn, whether specific to that company or economy-wide, can endanger their professional livelihoods. Participants do hold equity exposure in their DC accounts through various diversified common stock funds. The risk of those equity investments, however, lies not with any individual stock but with the entire economy. The broad equity market is expected to pay (and historically has paid) a risk premium to investors over the long run for this macroeconomic exposure. Holding shares of an individual company, however, adds additional volatility on top of the macroeconomic risk. But because that individual company risk is easily eliminated by holding a portfolio of stocks, the market offers no additional risk premium. As a result, participants receiving employer matching contributions in employer stock take on uncompensated risk that is highly correlated with their own professional business risk. This scenario is textbook bad investing behavior. Employer bankruptcy offers an extreme example of a worst-case scenario: On the same day, you receive both a pink slip and a statement that your stock is worthless.

Plan sponsors often compound the problem by making employer stock available as an investment option. Participants view that offering as a sponsor's tacit endorsement of the investment safety of employer stock. Consequently, participants often doubled down on the company-stock employer match by

[55]The prevalence data cited in this section on the employer match appear in Vanguard (2020).

investing their *own contributions* in the employer stock, further exacerbating the risk to their retirement wealth.

As long as DC plans served only as supplemental components of participants' retirement income, little attention was paid to the investment risk posed by employer stock. As DC plans grew in importance, however, the risk of large concentrations of employer stock became too material to ignore. The Pension Protection Act of 2006 required employers to permit participants to sell portions of their employer match stock over time. An important Supreme Court decision in 2014 reduced employers' legal liability protection in offering their own stock to participants. Since then, the prevalence of matching contributions in employer stock has declined considerably. Further, an increasing number of sponsors no longer offer employer stock as an investment option.

We highly endorse both trends. Much of the employer stock that exists in DC plans today consists of legacy holdings that will dwindle over time.[56] Nevertheless, elimination of company stock as the employer matching contribution and as an investment option is far from complete.[57]

Stretch Matches. Like most people, DC plan participants tend to display an anchoring bias when making decisions, which can hinder building retirement wealth. Anchoring bias can manifest itself in several ways among participants. For example, the contribution rate at which participants initially enroll in the plan often becomes the rate they stay with. The purpose of auto-escalation is to overcome that inertia and move participants' contribution rates upward without them having to take positive action.

Another way that anchoring bias plays out is by participants contributing at only the minimum rate required to earn the employer matching contribution. Because that rate is not necessarily set by employers with the intent of generating sufficient retirement savings, this bias can cause participants to undersave when they otherwise might be willing to contribute more. Again, auto-escalation can help counteract the bias. Other sponsors have adopted "stretch matches" intended to motivate participants to contribute at higher

[56]Even plans that eliminate new investments in employer stock are reluctant to eliminate existing holdings. Kitces (2017) explained that through an odd tax law provision, participants who invest in employer stock can take that stock in kind when they leave the plan. Participants doing so are taxed on the cost basis of the distributed stock. When they later sell the stock, they receive capital gains treatment on any appreciation.

[57]Vanguard (2020) reported that only 8% of the plans in its survey offered employer stock as an active investment option. In those plans, 14% of the participants had a greater than 20% allocation to that stock. Although only 1% of plans in the Vanguard survey made the employer match in employer stock, in those plans the average allocation to employer stock was 27%. When the employer match was made in cash but employer stock was offered as an investment option, the average allocation to employer stock was 9%.

rates without increasing employer expense. For example, an employer might offer a 100% match on participant contributions up to 6% of pay (for a total of 12%). If the match percentage changed to 75% on the first 8% of pay, the cost to the sponsor would be the same but the participant would be adding another 2% to his plan savings (for a total of 14%).

The stretch match idea is not without controversy. Some observers contend that it can be counterproductive, because participants might not adjust their contribution rates higher in response and thereby could miss out on some of the employer matching contributions. Young and Young (2018) indicated that stretch matches were associated with lower participation and contribution rates. Certainly the stretch match concept tests the limits of how much sponsors can (and should) nudge participants to make better savings and investing decisions.

Leakage

Plan design hinders retirement wealth formation if a participant's hard-earned savings are dissipated prior to that individual leaving the workforce. We find that one of the more distressing aspects of standard DC plan design is the ease with which participant retirement assets leave the system before they can ever be used for their intended purpose. A widely cited study by Argento, Bryant, and Sabelhaus (2013) reported that DC participants under the age of 55 on average eventually withdrew anywhere from 30 cents to 45 cents of every dollar contributed to their plans. Assets leak out through three primary conduits:

- Cash outs following a change in employment
- Hardship withdrawals
- Plan loan defaults

Employment Change Cash Outs. In part because DC plans were originally viewed as supplemental savings plans, the governing regulations allow participants to withdraw the entire account balance when they leave the employment of the organization sponsoring the plan. Of all the weak links in the US account-based retirement system, this feature might be the most detrimental. Participants departing an employer have one of four options:

1. Leave the entire balance with the current plan (if the balance is more than $5,000).
2. Roll the balance over to a new employer's plan.
3. Roll the balance over to an IRA.
4. Take the account balance in cash.

The first three choices produce no tax consequences, and retirement assets are preserved to support post-retirement spending. The fourth choice, however, results in an income tax bill, and participants younger than 59.5 years old also pay a 10% penalty on the amount withdrawn. More distressing for most participants, this choice also permanently reduces retirement savings. Unfortunately, many participants take advantage of this "hole" in the retirement savings system to access their retirement wealth.

In a mobile workforce, workers commonly experience employer changes over their careers. Each change provides an opportunity to withdraw assets from a DC retirement plan. Of the almost one-quarter of the DC participant workforce that changes their jobs each year, one source estimated that 32% will withdraw the assets from their plans immediately and another 9% will do so later.[58] Other studies report less dire but still significant cash out ramifications. Regardless, employment change cash outs are the largest source of leakage in the DC retirement system.

Participants often do not actually desire to spend their accumulated retirement assets, although some may be motivated to do so. Rather, the heart of the problem is the lack of a simple-to-understand, easy-to-execute portability process. Once participants leave their employers, few sponsors at those organizations feel any obligation to ensure that the departing participants' assets move to other tax-advantaged accounts. As we discuss in Chapter 6, some employers require these participants to take their entire account balances with them if the departing participants wish to withdraw any funds. Some departing participants move to employers that do not sponsor plans and must determine for themselves how to handle their accounts at their previous employers.

Even if departing participants move to new employers that sponsor DC plans, no standardized method exists to transition assets over to the new plans from the old ones. Participants must take the initiative and deal with recordkeepers and paperwork at both ends of the operation. Instructions include technical jargon. Mandatory waiting periods may be imposed. Many recordkeepers issue physical checks. The decisions have an irrevocable feel to them. It is not hard to imagine why procrastination takes hold and rollovers are never carried out. A plan participant's new employer has little incentive to coordinate to ensure that any account balances at previous employers come over to the new employers' plans. Without a clear hand-off of account balances to the new sponsors (if the participants are fortunate enough to be now

[58]Hawkins (2017), in conjunction with research by the Employee Benefits Research Institute, cited evidence of widespread cash outs. Munnell and Webb (2015) reported data from Vanguard that indicate lower participant job turnover and cash out rates.

employed by one), is it any wonder that participants so often take the seemingly easy route and move the account balances to their checking accounts, pay the taxes, and spend the assets?[59]

The relationship between account balance size and the willingness to transfer that balance to another retirement vehicle is highly negative. That is, on the one hand, participants who have accumulated relatively large account balances are more likely to move their assets to a new plan or an IRA if they change employers. On the other hand, participants with small balances frequently spend some or all of them when moving to a new job.[60] The resulting vicious circle prevents frequent job changers from accumulating large balances and taking advantage of the compound growth of established investments. When the account balance is small, participants tend to view the benefit as not worth the effort, and the procrastination/immediate gratification reflex takes over. Ironically, the increased use of auto-enrollment may contribute to cash out leakage, because many transient participants who otherwise would not have enrolled are brought into plans. During their brief tenures at employers, they build up small balances, and upon departure, they have a higher propensity to spend those account balances than longer-tenured participants do.

Younger and less well-paid participants with lower account balances are most active in cashing out accounts. Fidelity (2014) reported that 44% of plan participants in their 20s had cashed out some or all of their account balances at least once. That number fell, albeit only slightly, to 38% and 33% for participants in their 30s and 40s, respectively. Lower-paid participants cashed out a greater percentage of their accounts than did higher-paid participants.

Hardship Withdrawals. Federal regulations allow, and many DC plan sponsors permit, participants to withdraw funds from their accounts if they can demonstrate an immediate and severe financial hardship. The government publishes a list of approved reasons for such withdrawals, ranging from

[59]Anecdotal stories are poor data sources, but one of the authors recently assisted his adult child in consolidating two DC retirement accounts from previous employers into one at a new employer. Despite the author's experience in retirement plan administration, the combination of a lack of clear instructions from recordkeepers, the delays in responses, the mailing of physical checks, and the one-off nature of the process made it quite evident to the author why workers unfamiliar with the system and with little administrative support would throw up their hands and cash out small balances.

[60]For an account balance below $5,000, a sponsor can force a departing participant to leave the plan. If the participant takes no action, the account assets go into a safe harbor IRA, which is invested in a low-yielding, low-risk investment. Many participants holding small balances access their accounts at this time. Hawkins (2019) estimated that 55% of these small balances are spent, not reinvested.

avoiding eviction from a primary residence to post-secondary tuition needs to uninsured medical expenses. As with cash outs, hardship withdrawal recipients pay income taxes on the proceeds and a 10% penalty if they are under age 59.5. Plan sponsors generally discourage such withdrawals through fees, and sponsors are required to collect and review paperwork demonstrating proof of hardship. Despite the hurdles, hardship withdrawals still account for a significant amount of plan leakage.[61]

The retirement savings impact of hardship withdrawals is disproportionately felt by lower-income participants, who are more likely to find themselves in troubled financial situations. Once the hardship funds leave retirement accounts, individuals have no way to return them to the accounts (as is the case with plan loans) except by increasing their savings rates, which lower-income participants are less able to do.

Plan Loan Defaults. Most DC plans offer participants the opportunity to access their retirement investments for immediate financial needs by borrowing from the balances in their accounts, with loan access increasing for plans that have a greater number of participants.[62] Some plans may specify the allowed uses (e.g., educational expenses, financing a primary residence), but most permit general purpose loans for virtually any use. Some plans allow multiple loans at one time (which tends to increase loan usage). Federal rules limit the dollar amount and percentage of the total account out on loan to a participant. Plan sponsors may add tighter restrictions of their own, including not offering loans at all.

Plan sponsors generally put few hurdles in the way of participants seeking DC plan loans, and many participants do not hesitate to tap this liquidity source. VanDerhei, Holden, Alonso, and Bass (2018) reported that at any given time, 19% of participants in plans that allow loans have a loan outstanding, and the amount of those loans averaged 11% of account balances. And Lu, Mitchell, Utkus, and Young (2015) found that the proportion of participants accessing a loan rises to almost 40% over a five-year period.

The existence of DC plan loans does not by itself present a leakage problem. Participants, especially lower-income participants, appear to appreciate the possibility of accessing their retirement accounts in an emergency

[61]Federal legislation in 2018 further eased restrictions on hardship withdrawals. Participants no longer need exhaust their loan options first, and they are no longer prevented from making contributions for six months. These changes led to a rise in hardship withdrawals and a drop in plan loans (Manganaro 2019b). With the onset of the COVID-19 crisis, Congress at least temporarily made it even easier for participants to take hardship withdrawals.

[62]VanDerhei, Holden, Alonso, and Bass (2018) reported that 54% of all 401(k) plans offer loans, whereas 90% of plans with more than 1,000 participants offer loans.

and, as a result, seem willing to contribute more to their plans than they otherwise would. DC plan loans have the advantage of not being underwritten by a financial institution, so defaults do not hurt credit ratings. Most participants with plan loans do eventually repay those loans, assuming that they continue employment with the sponsor.

Participants taking out plan loans are required to pay interest (into their own account) on the outstanding loan balance, usually at a high-grade credit interest rate plus a modest markup (for example, the prime interest rate plus 1%). Even though participants are paying interest to themselves (effectively forced savings), those interest payments not only are made in after-tax dollars but also will eventually be taxed when withdrawn from the account. DC plan loan interest is inherently tax inefficient. Moreover, although the borrowed funds may have met pressing liquidity needs, if kept in the plan, the assets would have earned income on a tax-advantaged basis. On their face, then, plan loans generally are a poor investment strategy. Nevertheless, these loans may make financial sense if the participants use them to pay off other debt with a perniciously high interest rate, such as credit card debt, or if the liquidity need could be satisfied in no other way.

If participants repay most DC plan loans and they are a means to manage high-interest debt and liquidity needs, why then do these loans pose a leakage problem? The answer lies with defaults on outstanding loans when participants separate from their employers. Lu et al. (2015) reported a stunning 86% default rate. Although the underlying reasons remain unclear, we suspect the high default rate stems from the difficulty of making a sudden lump sum repayment, particularly if the separation from the employer is involuntary, combined with the administrative work involved that occurs at a time when energy is focused on a new job.

When a default occurs, the IRS deems the loan balance to have been distributed and thus subject to the same taxation as cash outs and hardship withdrawals. At that point, the combination of loan fees, previously paid after-tax interest, income tax, and penalties make the plan loan an economic burden, almost regardless of the alternative uses to which the funds were put. More importantly, however, the dollars that have leaked out of the retirement system through defaults are unlikely to ever find their way back in. As is the case with hardship withdrawals, participants would have to increase their future savings rates to make up for the defaults, something few will do. As a result, participants who default almost assuredly have lowered their lifetime retirement income. Given the large proportion of plan participants who have loans outstanding, and given the inevitable turnover that takes place in the workforce, DC plan loan defaults are a serious problem, draining billions of dollars in retirement savings annually.

The Combined Impact. The three sources of plan leakage result in a cumulative corrosive impact on retirement savings. One study placed annual leakage from cash outs and hardship withdrawals at almost $74 billion and $9 billion, respectively, and another estimated $6 billion lost per year from loan defaults.[63] Combined, the leakage is substantial in any one year. Munnell and Webb (2015) estimated it to be about 1.5% of total assets. Although that amount might appear small, the lost earnings compounded over participants' working lives represent a large financial penalty, leading to an estimated 25% reduction in retirement wealth of those affected. Participants making short-term decisions that may seem of little immediate consequence are significantly diminishing their retirement income in ways that they will not grasp for decades (and may never recognize fully).

As a last comment, it is not even clear how highly participants value the ability to withdraw assets so easily from their retirement accounts. Sponsors tend to believe that the ability of plan participants to access their funds makes them more willing to join the plan in the first place and put more savings into the plans. Surveys indicate that participants who do liquidate their accounts regret the action later. This observation has led some to suggest that clamping down on leakage would not only produce better financial outcomes for participants but might even be viewed as a positive change. Exactly how much the withdrawal restrictions could be tightened without harming participation is unclear. Beshears, Choi, Harris, Laibson, Madrian, and Sakong (2015) found, however, that installing tougher "commitment devices" might not represent the HR nightmare that plan sponsors seem to fear.

The Future of Plan Design

Where does plan design go from here? We do not have a crystal ball, but four trends seem likely to continue.

Continued, but Slowing, Adoption of Auto Features. Established auto features, such as auto-enrollment, auto-escalation, and auto-investment, will continue to make inroads among sponsors, particularly smaller sponsors. Still, the push to adopt auto features is likely to slow in the absence of regulatory mandates. The larger plans willing to adopt them have already done so, and those not making the move have considered and rejected it (many for

[63]The data on cash out and hardship withdrawal leakage come from GAO (2009) study. The data on loan default leakage come from Lu et al. (2014), who took a more detailed look at loan default leakage than did the GAO study.

cost considerations). These auto features could become more nuanced, perhaps adjusting contribution rates based on age and progress toward retirement security or moving older participants from TDFs to managed accounts. However, such changes would be controversial. As we noted with the idea of the stretch match, sponsors are bumping up against the limits of how prescriptive they can and should be in directing saving and investing on behalf of their participants.

Connecting Retirement Planning Needs to Overall Financial Well-Being. As we commented in Chapter 2, sponsors are becoming increasingly sensitive to the fact that when it comes to financial security, employees need assistance beyond just retirement plans. The associated administrative logistics and tax issues are daunting, but a growing number of employers are trying to help workers plan and save for a range of financial contingencies that they encounter. These efforts include student loan repayments, sidecar emergency savings accounts, and health care savings accounts. The ability to adjust to the financial planning needs of a diverse workforce will grow in importance.

Efforts to Keep Accumulated Retirement Wealth in the System. The one auto feature that has room for considerable growth is auto-portability. Employers and society have a stake in keeping retirement wealth from dissipating during job transitions. Reducing frictions in the rollover process for retirement accounts from one employer to another would help immensely. Achieving this aim will likely require regulatory action and an unprecedented level of cooperation among sponsors and recordkeepers. Companies are already adopting less ambitious steps, such as permitting participants a longer grace period to repay plan loans when changing jobs. Sponsors seem less willing to limit hardship withdrawals and the size and number of loans outstanding.

Evolving Decumulation Strategies. We address the topic of decumulating retirement wealth in Chapter 6. Sponsors traditionally have focused on building retirement account balances. Sponsors are becoming increasingly involved with their participants in applying sustainable methods to spend down their accumulated account balances in retirement.

Chapter 5. Investments and Investment Managers

Challenges Facing the Plan Sponsor

- Sponsors have the responsibility to select investment options and associated investment managers on behalf of plan participants who rely on them to make sound decisions on their behalf.
- The universe of possible investment options in a DC plan is large and varied.
- The growth of indexes, which are designed to represent asset categories and fund investment strategies, has exploded.
- Fees associated with investment funds have become a prominent source of litigation.
    - — The same investment strategy may be implemented by investment vehicles with widely differing fees.
- Plan participants have disparate investment objectives depending on their age and financial circumstances.
    - — The investment option lineup must address those objectives without overly complicating the choice problem for participants.
- Investment management is a business, and that fact directly influences the products offered to investors.
- Active and passive management approaches reflect different emphases that managers place on elements of their perceived investment skill.
    - — Evaluating the existence and persistence of investment skill, especially that related to active management, is difficult.
- The fiduciary obligation of sponsors to monitor their investment managers is complicated with the addition of active managers.

Opportunities for the Plan Sponsor

- Thoughtfully organize the universe of DC investments into broad asset categories and subcategories.

- Select market indexes to represent those categories with the same level of care.

- Select investment options from the asset categories using a life-cycle investing framework.
    - Use TDFs, carefully selected on the basis of their risk profiles and other characteristics, as the primary investment option for participants.
    - Add individual asset category investment options that further allow participants to adjust their investments to their unique financial circumstances and risk preferences.
- Choose the most cost-effective investment vehicles to implement investment options.
- Recognize that investment managers market active management products based on assertions of investment skill that are difficult to verify.
- View passive management as the preferred investment option within an asset category, and add active management products only when highly confident in the manager's skill.
- In developing the investment option lineup:
    - Choose passively managed TDFs as the default investment option.
    - Provide employees with a tightly limited number of funds across the risk spectrum, in addition to TDFs.
    - Use the investment committee's management time to develop suitable investment and decumulation options for employees during their retirement years.
    - Use the investment committee's management time to investigate whether custom TDFs can provide value for their employees.

Implementing a DC Plan Investment Program

Among their most important and visible responsibilities, DC plan sponsors determine the set of investment options and make them available to plan participants. They also hire and periodically monitor a roster of firms to manage those investment options. Retirement plan participants have few resources to evaluate the breadth and quality of the investment options and managers. So, they rely heavily on sponsors to make thoughtful decisions on their behalf.

Many sponsors assign responsibility for investment options and managers to an investment committee. Although the committees in turn may use consultants and 3(21) advisers to assist them in carrying out their responsibilities, in these situations the ultimate fiduciary duty resides with the investment committee.

As we discussed in Chapter 3, some sponsors use 3(38) advisers to make various decisions regarding investment options and managers. In those situations, some of the fiduciary duty shifts to third parties. Our discussion proceeds from the perspective of a sponsor's investment committee that has retained the fiduciary duty across the entire set of investment decisions. Nevertheless, our comments also apply to sponsor decision-makers wishing to better understand the selections made by their delegated 3(38) fiduciaries. We want to provide these decision-makers with a framework that they can use to carry out their oversight responsibilities of their 3(38) advisers.

Few investment committee members have significant investment expertise. That fact hardly prevents them from performing their jobs well. But with dozens of different investment categories and many thousands of different investment funds to choose from,[64] an investment committee typically relies heavily on its consultants to collect and present information about specific funds that might be suitable for their plan participants. Committee members need to take a disciplined approach to implementing a DC plan investment program. They should reach consensus on an overarching philosophy to guide the selection of asset categories and the specific funds that participants will use to invest in those categories. Scattershot approaches to investment program decision-making do a huge disservice to participants.

In evaluating investment options, we believe that committee members should have an appreciation for how

- investable assets can be organized into categories and translated into investment options for participants,
- investment managers build and manage funds that invest in these asset categories,
- manager business imperatives may affect participants' investment experience, and
- the selected investment options fit with participants' investment objectives and abilities to make informed choices for their accounts.

[64]For example, according to Statista (www.statista.com), almost 8,000 registered mutual funds were available to US investors as of 2019—a substantially greater amount than the number of stocks in the United States. Financial institutions also offer thousands of unregistered funds to DC plan sponsors.

We stress that, despite the investment-specific terminology, most of the concepts related to creating an effective lineup of investment options involve common-sense ideas of diversification. Investment committees should follow a basic principle: Participants must be provided with and encouraged to hold investment options that will not all simultaneously fail in adverse environments but that are also suitable for their stage in life and risk tolerance.

Except for the investment principle of diversification, we also emphasize that issues in manager selection are, at their core, basic business ideas. In other words, understanding what makes practical business sense in other contexts also helps make sense when evaluating, selecting, and retaining investment managers. Thus, the framework that we propose is meant to help committee members form business-like questions about the funds and managers that they are considering hiring or retaining.

The Universe of DC Investments

We begin by reviewing the types of investments that plan sponsors might make available to their participants. To effectively deal with the vast number of individual funds from which an investment committee could select, the committee and its consultants typically organize the universe of investments into a manageable number of asset categories. Sponsors want to (and are required to) offer their participants a diversified lineup of investment choices. Ideally, sponsors will provide access to funds from across a broad range of asset types, sufficiently distinct from one another. Having first identified the desired set of asset categories, sponsors can then focus on selecting within those categories the investment vehicles, the investment management companies (which we will refer to as "managers" for brevity), and the specific investment funds of those managers that will best serve plan participants.

There is no standard approach to the taxonomy of asset categories. The categories should be distinct in the sense that they generate different levels of risk (defined here as volatility of returns)[65] or that their returns are not highly correlated (that is, their returns do not tend to move together)—or, even better, both. We have grouped potential DC plan investments into six general asset categories. Each can be viewed as global, because they are available in each country. Although the categories are global, that does not mean that DC participants should necessarily have exposure to international assets in every category.

[65]Practitioners frequently debate the appropriate measure of investment risk. Risk is certainly a complex concept, subject to different interpretations that depend on the context of the investor. For our discussion, we use the conventional definition: fluctuation of asset values as measured, typically, by standard deviation of returns.

1. Equities
2. Bonds
3. Money market (also referred to as "cash")
4. Real estate
5. Multi-asset
6. Alternative investments

Within each of the categories are subcategories representing different approaches to investing in the broad asset category. Moreover, each grouping has passive alternatives in addition to actively managed products, a topic we will return to later in this chapter. Further, excluding alternative investments, all the funds in these asset categories that might be included in a DC plan's investment lineup hold publicly traded securities. In simple terms, that means the securities contained in the funds are traded on major exchanges or over-the-counter markets. The fund managers can quickly liquidate the securities if desired, and pricing for those securities is available on a daily basis.

Equity Funds. The first asset category is equity funds. The largest fund category in the DC investment universe, equity funds invest primarily in common stocks representing ownership of companies. The range of equity investment approaches offered by managers can boggle the imagination. As a result, an investment committee and its consultants will usually break down the equity investment universe into more detailed subcategories.

Equity funds include those that hold both US and non-US stocks. Some equity funds focus only on US or non-US stocks, whereas other global funds may hold both. Some equity funds focus on large-company stocks or small-company stocks. Others may pursue different investment styles, such as value and growth funds. Some equity funds are dedicated to specific industry sectors (e.g., only financial stocks or only technology stocks).

Outside the United States, there are regional equity funds (for example, Europe and Asia) and funds that differentiate between developed equity markets and emerging markets. Each subcategory adds more layers of granularity and complexity to the choice of funds within the equity asset category. If they choose to include equity subcategories in their lineup of investment options, investment committees should develop a clear rationale about why they are doing so.

Bond Funds. Turning to bond funds, we find many of the same distinctions between domestic and international funds, as well as between developed and emerging market funds. Within US bond funds, there are investment approaches that focus only on US Treasury bonds, US government bonds (Treasury plus federal agency bonds), bonds issued by companies with high (investment-grade) credit quality, so-called high-yield bonds (issued by non-investment-grade credit-quality companies), and mortgage-backed securities. Bond funds may also differ in terms of the average maturities and interest rate sensitivities of their underlying bond holdings. Finally, bond funds may differ in terms of their inflation protection. Although most bond funds have exposure to inflation (because they are repaid in nominal terms), some specifically hedge inflation risk. These "real" bond funds invest in inflation-indexed US Treasury securities.

Participants usually know very little about the differences among these wide-ranging types of bond funds and will need guidance. For example, they may gravitate toward the funds with the highest apparent yields, typically high-yield bond funds, and then be dismayed when the fund value falls sharply in a recession.

Money Market Funds. This category consists of investments in debt securities that generally mature in 12 months or less. Examples include obligations from the US Treasury and corporate short-term debt, such as commercial paper from high-credit-quality corporations and bank certificates of deposit.

Most 401(k) plans also offer a unique form of money market fund called a stable value fund. This type of fund invests in high-quality debt securities with longer maturities than typical money market funds. Stable value funds involve an insurance company guarantee that fund participants can withdraw their investments at a "book value" determined by applying a crediting rate to the funds' assets, regardless of the near-term returns on the underlying investments. This crediting rate is based on market interest rates, adjusted by changes in the market value of the fund's holdings relative to the guaranteed book value.[66]

Real Estate Funds. This category is usually limited to funds that invest in real estate investment trusts (REITs). These publicly traded companies own, operate, or finance properties that produce income from commercial

[66]Some practitioners contend that stable value funds are more akin to bond funds than cash options. Most plan sponsors offer them as money market fund alternatives, although these funds' long-term performance is more reflective of their returns on a short-to-intermediate (one-year to three-year) high-quality bond portfolio. The insurance company guarantee has been controversial in the past. Insurers charge a fee for the service. Moreover, during the Great Recession of 2007–2009, that guarantee came under considerable strain, although no defaults occurred.

real estate (such as office buildings, malls, hotels, apartment buildings, and warehouses). REIT funds may hold either the debt securities issued by the trusts or equity positions in those trusts. Some real estate funds hold real estate–related securities, such as stocks of developers or mall operators, as well as REITs.

Multi-Asset Funds. This category includes funds that invest in a combination of equity, bond, and money market funds. It may include funds that also invest in commodities and real estate. Multi-asset funds do not directly hold individual stocks or bonds but rather invest in other funds. The two most widely known types of products are balanced funds and TDFs.

Alternative Investments. This category encompasses a broad group of investments, such as private equity funds, private real estate funds, infrastructure funds, hedge funds, and discretionary multi-asset funds. These types of investments are widely used by pension and endowment funds along with high-net-worth investors. They are characterized by the absence of a passively managed alternative, infrequent valuations, and relatively (sometimes extremely) high management fees and other fund expenses.

Except for some discretionary multi-asset funds, alternative investments are not available for DC plans at this point, primarily because they do not satisfy the regulations regarding daily valuations and liquidity. Moreover, the minimum investment requirements are too high for most, if not all, DC plans. Managers are working aggressively, however, to design products that will satisfy the requirements for daily liquidity and low initial investment. We are not advocating that DC plans offer these investments. With the growing interest in this area, however, we would be remiss in not addressing them. We will return to alternative investments and the possibility of their inclusion in DC plans at the conclusion of this chapter.

Market Indexes

Investors need a means of describing asset categories and measuring their performance in terms of returns and risks. Market indexes provide such a tool. For a DC plan sponsor, all useful market indexes exhibit these features:

- represent the returns of a specific asset category (e.g., equities or bonds) or subcategory (e.g., large-cap stocks),
- are composed of a broad set of publicly traded securities within that asset category, and
- are priced frequently (preferably at least daily).

Besides the choice of an asset category, market indexes may differ from one another in one of three fundamental aspects:

- security selection for the index used to represent the asset category,
- the importance (weights) applied to the securities in the index, and
- the use of something other than market prices to determine the value of the index securities (prominently, many bond prices are estimated using a technique known as matrix pricing).

Investors have literally thousands of indexes to choose from, a small sample of which appear in **Exhibit 3**. We chose this set of six indexes to illustrate some of the features listed earlier.

The first four indexes—the Dow Jones Industrial Average (DJIA), the S&P 500 Index, the Russell 2000 Index, and the FTSE All-World ex US Index—are equity indexes. The Bloomberg Barclays US Aggregate Bond Index and Bloomberg Barclays US Treasury Index are bond indexes. Daily returns are available for each of these indexes. All the securities in these indexes are publicly traded. Finally, all the indexes are meant to represent the performance of a broad asset category or subcategory rather than the individual securities.

That said, differences among these indexes exist within each asset category. The S&P 500, the Russell 2000, and the FTSE All-World ex US are each calculated using the entire universe of publicly traded securities and held according to their total market value (referred to as a capitalization-weighted index). Most market indexes are capitalization weighted. By contrast, the DJIA is a portfolio of 30 stocks, chosen by a committee, whose index weights are proportional to their market prices (referred to as a price-weighted index). The DJIA, S&P 500, and Russell 2000 are indexes of US stock market

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Exhibit 3. Illustrative Asset Class Indexes

Asset Class	Index	Description
US equity	S&P 500	Large-cap stocks
	Russell 2000	Small-cap stocks
Non-US equity	FTSE All-World ex US	Non-US stocks
	FTSE Emerging	Emerging market stocks
US bonds	Bloomberg Barclays US Aggregate	US investment-grade bonds
	Bloomberg Barclays US Treasury	US Treasury bonds
Non-US bonds	JPMorgan Government Bond Ex US	Non-US government bonds
Real estate	FTSE Composite NAREIT	US REITS

performance, and the FTSE All-World ex US is an index of the performance of non-US stocks. Finally, the S&P 500 indicates the performance of principally large companies, and the Russell 2000 represents the performance of small companies.

Turning to the two bond indexes, the Bloomberg Barclays US Treasury Index shows the performance of all US Treasury bonds, and the Bloomberg Barclays US Aggregate Bond Index represents the performance of all investment-grade bonds in the United States. The aggregate index contains bonds issued by the US Treasury, US agencies, US corporations, and mortgage-backed securities. So, the Treasury index is part of the aggregate index. In both cases, the indexes are weighted by the market value of each of the outstanding bonds, not just a simple average.

The final index in our sample is the FTSE NAREIT Composite Index, a capitalization-weighted index. This index represents the returns on a sampling of real estate investment trusts. Because REITs are publicly traded on organized securities exchanges, this index has a daily return.

During the past decade, the number of published indexes has exploded. Many of these new indexes deviate in some form from the standard approach of capitalization weighting. More specifically, index providers are now often constructing so-called strategy indexes that serve as an index for specific investment strategies. Often these indexes are associated with an exchange-traded fund (ETF).

For example, an index provider may produce an index in which the selection of securities and their weights are designed to produce a "minimum-volatility portfolio." A minimum-volatility portfolio can presumably add excess returns relative to a capitalization-weighted portfolio. The minimum-volatility index is meant to provide either a passive alternative for those who wish to invest in this strategy or a benchmark for active managers who pursue this strategy.

From the investment committee's perspective, these strategy indexes add additional complexity to the decision-making process. If the committee chooses to include a fund based on a strategy index, it will need to evaluate (a) the actual investment strategy represented by the index, (b) the way in which the index provider calculates the index, and (c) any performance claims by the fund. Each of these steps is time consuming for the committee, with uncertain benefits to plan participants.

Investment Vehicles—Mutual Funds, Retail and Institutional, Collective Investment Trusts, and ETFs

The traditional investment vehicle through which DC plans offer investment options to their participants has been and remains the open-end investment company, more commonly known as a mutual fund. By law, mutual funds are registered with the Securities and Exchange Commission and are governed by various regulations on disclosures, fees, pricing, and individual security holdings.

At the birth of DC plans, mutual funds were already ubiquitous investment vehicles for individual investors in the "retail" investment market. Mutual funds supplied daily prices of the fund shares and daily liquidity, making them ideal for DC plans that must permit participants to move into and out of the funds at their discretion. The visibility and popularity of various mutual fund families, their widely recognized investment products, and even the fame of some of their portfolio managers gave DC plan participants a sense of familiarity and comfort with the funds.

For plan participants, the relative disadvantage of mutual funds has always been the funds' expenses. Even excluding the host of one-time fees that can be charged to retail investors, such as load fees, redemption fees, distribution fees, and the like, the ongoing management and administrative expenses (the "expense ratio") of retail mutual funds can place a significant burden on DC plan participants. The administrative portion of the expense ratio reflects the small holdings of most individual investors and the associated costs of servicing those investors. Over time, larger plan sponsors have been able to negotiate considerably lower "institutional" fees for their participants based on the size of those participants' aggregate holdings. Many smaller DC plans, however, still pay the "retail" expense ratio.[67]

Significant cost reductions were achieved when financial institutions created collective investment trusts (CITs). These investment vehicles provide access to the same investment categories as mutual funds but are specifically designed for employee retirement plans. Individuals outside of these plans cannot invest in CITs. Because they are directed at plan sponsors, without the associated costs of retail investors and various reporting regulations, the fees charged can be lower than even institutionally priced mutual funds and are much less than those of retail mutual funds. Although CITs were initially targeted to large plan sponsors, Muse (2020) reported that CITs now are increasingly accessible by even smaller DC plans. Furthermore, CIT managers are offering more customization in their products.

As with mutual funds, the assets of investors in CITs are held in a standalone entity, protected from bankruptcy and fraud. Compared with mutual funds, CITs provide an added layer of protection to plan participants because the fund managers are required to act in a fiduciary capacity. Because CITs do

[67]The Investment Company Institute (2020b) reported that of 401(k) assets held in mutual funds, 52% were held in no-load institutional mutual funds.

not have the same visibility and familiarity as mutual funds, however, some sponsors have been reluctant to adopt them or make exclusive use of them.[68]

The advent of ETFs has indirectly brought even greater cost savings to DC plans and their participants. An ETF is a security that represents a portfolio of underlying securities designed to replicate the performance of an index. As the name implies, ETF shares are traded on organized security exchanges. A large variety of ETF strategies are available across nearly all publicly traded asset categories. Because ETFs compete directly with mutual funds for investor capital, this competition has helped drive down fees. Although they are not ideal vehicles for DC plans,[69] nevertheless, DC plans and their participants have benefited from the competition in fees between ETFs and mutual funds.

As we noted in Chapter 3, litigation against sponsors has increased in recent years, often focusing on a failure by sponsors to offer the lowest-cost investment options to participants. We believe that all plan sponsors should regularly review the cost structure of their investment options. That review should include investigating whether CITs might provide a more cost-effective approach for their participants.

Using the Life-Cycle Model to Select Funds

In setting the lineup of funds to present to plan participants, investment committees must address three main issues:

1. Determine the range of asset categories from which to select individual funds.
2. Decide whether to offer funds from subcategories within each asset class.
3. Choose the mix of actively and passively managed products.

In this section, we address the first of these issues. (We move on to the other two issues in subsequent sections.)

Along with many other practitioners, we believe that the appropriate way to address the potential composition of a sponsor's menu of investment

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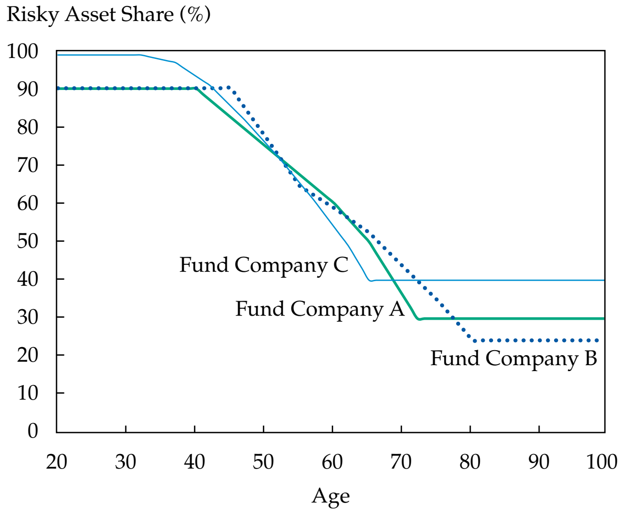
[68]Barney (2018) estimated that roughly 25% of 401(k) assets were held in CITs. McAllister et al. showed that 75% of generally large plan sponsors used CITs. Growth in CIT usage has been driven by the increasing popularity of TDFs, which can be offered through CITs.

[69]Because ETFs trade as individual securities, a sponsor offering an ETF investment option would have to also hold cash to manage daily liquidity. Standard commingled funds are already well designed to manage cash flows in and out. Moreover, the primary advantages of ETFs—their lack of capital gains distributions and intra-day liquidity—are not valuable in DC plans.

Figure 7. Sample Glidepaths



Notes: Based on information gleaned from three major fund management companies, the glidepaths are estimated using data from TDF prospectuses and other sources.

options is by adopting a life-cycle perspective.[70] This is a formal term for a simple concept. That is, the types of investment options offered should be broad enough to manage plan participants' investment needs across their working and retirement lives.

The consensus among academics and financial planners is that investors should take more risk in their portfolios when they are young and less risk as they age. Behind this observation is the idea that people accumulate wealth throughout their working years by deferring consumption and investing the unspent income. In retirement, they spend down that accumulated wealth to sustain their lifestyles, with the desire to smooth consumption over their entire lifetimes. Their objective is to build sufficient wealth by saving and taking investment risk before retirement while considerably reducing risk around their accumulated wealth upon retirement.

This idea can be captured in terms of a dynamic, or varying, allocation between risky assets (such as equity funds) and lower-risk assets (such as bond and money market funds). The proportions adjust as a plan participant grows older. **Figure 7** illustrates this changing asset allocation. Underlying this approach is the idea that risky assets, such as equities, have relatively high

[70]The concept of life-cycle savings and investing is much broader than what we discuss here. See, for example, Bodie, Treussard, and Willen (2007).

long-term expected returns but may generate disappointing returns over short periods. Because younger plan participants have more time to recover from interim periods of poor investment performance, they have an incentive to hold most of their account balances in risky assets and thereby potentially reap the benefits of these higher long-term expected returns. In contrast, participants approaching retirement or already retired have less capacity to withstand extended periods of poor investment performance. Their incentive is to reduce investment risk and hold lower-risk assets with more predictable returns.

Translating this concept into a lifelong strategy for portfolio allocation, Figure 7 displays the dynamic allocation models used by several large investment managers who service DC plans. In each model, the managers recommend that young workers should be invested almost fully or fully in risky assets. Consistent across all the managers' recommendations is that as participants grow older, the amount invested in risky assets should steadily decrease, starting at around age 45 in the figure. By age 55, they should have only 60%–70% in risky assets. At retirement, they should have around 40% or less in risky assets.

This gradual decline in recommended equity allocation as participants grow older has become known as the "glidepath." We emphasize that there is nothing about the glidepaths of the managers shown in Figure 7 that makes them preferred over others. Some practitioners may endorse higher or lower equity allocations near retirement. The appropriate glidepath will likely differ among individuals of the same age who have different financial situations. But these glidepaths reflect the life-cycle model in which participants should reduce their investment risk as they approach retirement, and that reduced risk is reflected in lower equity allocations.

In applying the life-cycle model to fund selection, sponsors should ensure that they provide a broad enough range of investment options across the risk spectrum. They should offer higher-risk asset categories for younger plan participants, intermediate-risk asset categories for mid-career participants, and very low-risk asset categories for investors approaching retirement.

Exhibit 4 takes the list of asset categories shown in Exhibit 3 and sorts them by risk. Equity-related products are classified as higher risk; bond-like products are classified as low- to intermediate-risk investments. Finally, short-term money market products are classified as low risk. If sponsors offer funds in each of these categories, then plan participants can use this type of classification to adjust their investments as they age.

In addition to helping sponsors identify the specific asset categories they choose to make available to plan participants, the life-cycle framework

Exhibit 4. Fund Categories Sorted by Risk

Asset Category	Risk Category
Equities	High
Real estate (REITs)	High
Bonds	Moderate to High
Multi-asset (balanced/target date funds)	Moderate to High
Money market investments	Low

can also assist in determining default investment options for participants who, for various reasons, may allow the sponsor to make that decision for them.

Setting Default Options: Target Date Funds and Balanced Funds

In Chapters 2 and 4, we discussed the growing recognition among sponsors that participants not only have limited investment knowledge but also confront behavioral biases when acting as their own chief investment officers. Both factors lead many participants to make suboptimal decisions when choosing a savings rate and a dynamic lifetime asset allocation. One approach that sponsors are using with increasing frequency is to set various plan design defaults for participants. Some of those defaults relate to the investment menu offered.

Participants may enroll in a plan but not elect specific investment options. Instead of forcing those participants to make a choice, sponsors can designate default options to invest the assets of these undecided participants. The motivation for default options results from the challenging nature of managing a DC plan account balance over a working career and into retirement. As we have noted, many participants have neither the training nor the time to do it well. Hence, default options are tools for participants to put their retirement savings to work without having to confront the planning choices that so often paralyze decision-making. The onus is on the sponsor to select a default option that presents some hope of solving the life-cycle investment problem.

Historically, the default option for participant contributions or employer matching contributions was either a money market fund or company stock. Legally, sponsors cannot offer investment advice to participants. Both of these investment options were defensible on the grounds that they satisfied that requirement. From the participant's perspective, however, these were (and are) terrible choices.[71] The discussion of life-cycle investing emphasizes that participants should take more risk with their investments at a younger age and gradually decrease risk over time. Although defaulting to the least risky investment choice minimizes return volatility across the life cycle, it also reduces the potential for wealth accumulation. Investing in company stock increases risk (and presumably expected returns) but exposes the plan participant to excessive amounts of undiversified risk.[72] As we discussed in Chapter 4, this undiversified risk results from the investment being not only in a single company stock also but from that stock belonging to the participant's employer.

The Pension Protection Act of 2006 (PPA) mandated that sponsors offer diversified portfolios as default options. The PPA clarified that offering portfolios of asset categories, such as bonds and equities, does not constitute advice if the allocations across asset categories follow transparent rules. As a result, sponsors began to deploy two types of portfolio default options: balanced funds and target date funds. The success of these diversified portfolio default offerings, particularly TDFs, exceeded the most optimistic predictions. Vanguard (2020) reported that today, TDFs are offered as the default investment option by 97% of plan sponsors.

Balanced Funds. As their name suggests, balanced funds hold allocations across various asset categories, primarily bonds and equities. The manager defines the percentage allocations to each asset category and then regularly returns (rebalances) the investment holdings to those allocations. For example, if the manager states that the fund will always have 60% invested in equities and 40% invested in bonds, then the fund will regularly rebalance back to those percentages, selling the asset category that performed relatively well and buying the asset category that performed relatively poorly.

The balanced fund manager also defines which subcategories will be used within each asset category. For example, the manager might determine that 50% of the equity allocation will be allocated to US large-cap stocks, 10% to

[71]Money market funds and company stock are no longer permitted as default options. As we discussed in Chapter 4, based on the Pension Protection Act of 2006, the DOL currently allows three types of default options: TDFs, balanced funds, and professionally managed accounts. Capital preservation funds can house new participant contributions by default but only for a brief period (120 days).

[72]The risk of any company's stock can be explained partly by the risk of the broader stock market and primarily by company-specific effects. As the number of companies in a portfolio increases, the risk attributable to company-specific effects decreases. Broad market index funds have little or no company-specific risk, because they hold many or all investable securities within the asset category.

US small-cap stocks, and 40% to developed non-US equity markets. Again, the manager will regularly rebalance back to these allocations.

Table 3 shows two examples of balanced funds. Both have target allocations of 60% invested in equity and 40% invested in bonds. The table shows the allocations within each asset category and the funds chosen to implement the balanced strategy. In the case of Fidelity's fund, actively managed funds are used for implementation. We note three important points about these two funds:

- Neither can deviate significantly from the 60/40 equity/bond split. The implication is that neither fund demands any major active asset allocation decisions.
- The Vanguard balanced fund uses only passively managed equity and bond funds in its implementation.
- The Fidelity balanced fund is implemented with actively managed Fidelity asset category, sector, and specialty funds. Thus, the active decisions in this fund come from those embedded in the underlying funds as well as the decision about which funds to include in the balanced fund.

Target Date Funds. Intentionally, the asset allocation of a balanced fund and hence its investment risk remain constant over time. The implication is that participants invested in a balanced fund should likewise maintain constant investment risk across their working lives. Clearly this strategy is at odds with life-cycle investing, which holds that participants should take more risk during the early stages of their working life and less risk at later stages. Fortunately, TDFs are designed to offer plan participants an effective means to implement the life-cycle approach to investing.

Table 3. Balanced Fund Allocation Examples

	Target Allocation	Vanguard	Fidelity
Equity	60%	• CRSP US Total Market • Cover all cap weights	• Multiple sectors • Multiple styles • Use Fidelity funds
Bonds	40%	• Track Bloomberg Barclays US Aggregate	• 25% senior securities • Wide credit spectrum • Use Fidelity funds
Expenses		• 0.07%–0.18%	• 0.53%

Virtually all TDFs define a target retirement date, usually age 65. Managers offer an array (or family) of TDFs, often arranged in five-year increments. All TDFs in a family have the same assumed retirement age, but each fund in the TDF family is designed for a participant with a certain number of remaining working years. For example, as of 2020, with 40 years until reaching age 65, a 25-year-old participant would invest in a 2060 TDF, while a 60-year-old participant, with 5 years until reaching age 65, would invest in a 2025 TDF. In some TDF families, the last fund (the "retirement fund") is designed for all participants age 65 or older. Other TDF families may have post-retirement funds that continue to lower investment risk past age 65.

To capture the idea of reducing investment risk throughout the life cycle, the TDF manager specifies a glidepath, similar to those illustrated in Figure 7. The glidepath shows the evolution of the split between equities and bonds as the participant ages. As noted, to satisfy the requirement of the PPA, the glidepath must be model-driven and transparent.

Like balanced funds, TDFs follow regular rebalancing rules. Rather than rebalance back to a fixed allocation between equities and bonds, however, the TDF rebalances back to the allocations in the glidepath. Thus, the TDF automatically implements the main feature of the life-cycle model by reducing investment risk as the participant ages. As with balanced funds, the TDF manager has limited discretion to vary from the rebalancing rule. A differentiator across managers offering TDFs is the structure of the glidepaths, although all preserve the main idea of decreasing exposure to equities as the participant ages.

The underlying investments in TDFs also resemble those of balanced funds. The manager will identify the specific types of equity and bond strategies held in its family of TDFs. And the manager will implement the TDF with its asset category–specific funds. **Table 4** gives an example of two 2045 TDFs, again one from Vanguard and the other from Fidelity.

Table 4. 2045 TDF Sample Implementation (Vanguard and Fidelity)

	Vanguard (%)	Vanguard Funds	Fidelity (%)	Fidelity Funds
US equity	53.9	1	51.7	13
Non-US equity	35.9	1	39.0	7
US bonds	7.2	1	5.9	7
Non-US bonds	3.0	1	0.0	0
Money market	0.0	0	3.4	1
Expenses		0.12%		0.75%

How should a sponsor select a specific TDF, given that it has chosen to make TDFs the default option? Fundamentally, the only issues to consider are whether the TDF has active or passive management and the specific glidepath. Of these, the most important is the first, because it directly affects the fees paid by participants. Although manager glidepaths differ, over the course of a working life these differences turn out to have only small effects on total wealth accumulation and the volatility of wealth at retirement.[73]

A potential drawback of TDFs is that they are fundamentally a one-size-fits-all product. The only differentiating feature is the plan participant's age. Recently, however, consultants and investment managers have begun offering custom TDFs that incorporate participant characteristics that are specific to the plan sponsor's participants. Two examples of such characteristics are the type of industry (which represents the income source for plan participants while employed) and the average level of plan participants' wages during their working years.

For example, it is well understood that wages in the tech and finance sectors are more highly correlated with equity market returns than wages in the utility sector. Thus, employees in the tech and finance sectors are already taking above-average equity risk in their wealth accumulation. Consequently, a custom TDF for tech or finance plan participants would have less equity exposure or less exposure in those specific sectors than one for participants in the utility sector. Similarly, for a sponsor whose workforce has physically difficult jobs, the retirement age might be lower than the national average. In that case, a glidepath that moved to lower equity allocations earlier might make sense. Developing TDFs that incorporate these differences can potentially provide benefits to plan participants beyond the benefits of simply using off-the-shelf TDFs.[74]

Managing a Participant-Directed TDF

Target date funds effectively address several participant-related issues:

- When using TDFs as a default investment option, participants are not forced to make the initial complicated decisions that can paralyze even informed investors.

[73]Winkelmann and Pandolfo (2018) compared a model-driven glidepath with the glidepaths of three managers. Despite some quantitative differences among the glidepaths, they were qualitatively all the same. The authors showed that the quantitative differences are, in fact, of limited importance to beneficiary outcomes.

[74]One could imagine a model-driven and transparent custom TDF based on a set of demographic factors that was unique to the specific circumstances of a participant and combined fund investment options along the lines of a managed account.

- TDFs require no active involvement on the part of participants in managing their investments. Particularly for participants with limited time, interest, and knowledge to carry out their own investing decisions, TDFs allow them to hold a well-diversified, professionally managed portfolio.
- A TDF maintains a risk level consistent with a life-cycle approach to investing, slowly and incrementally adjusting the portfolio risk downward as a participant ages.
- A TDF can overcome many of the behavioral biases afflicting participants in their investment decision-making.

Some observers view certain of these features as drawbacks, arguing that TDFs disengage participants from their investments, leading to less understanding and involvement in savings and investing decisions. Nevertheless, overwhelming evidence shows that most participants make serious investing mistakes when left to their own devices. The use of TDFs provides a valuable service, and the potential for disengagement is a cost worth bearing in the pursuit of better long-term investment results. Sponsors can and should still message and work to educate their participants on savings and investing issues, even while encouraging the use of TDFs. The two efforts are fully compatible.

It might seem appealing for a sponsor to offer only TDFs to participants. After all, the level of diversification, risk control, and professional management that TDFs provide is difficult for participants to create by themselves. However, there are regulatory concerns associated with a lack of additional investment options.[75] Just as importantly, not all participants will want to use TDFs, or they may want to use them in combination with other investments (for example, a spouse's DC assets or retirement assets held at a previous employer). As a result, beyond TDFs, sponsors must concern themselves with what other types of funds to make available to participants. From the perspective of life-cycle investing, the challenge is to provide a diverse enough set of funds so that participants can implement their own versions of a life-cycle investing strategy.

As DC plans became popular and more widely adopted, sponsors tended to offer large numbers, sometimes dozens, of funds to participants. Equity funds of various types were by far overrepresented. Actively managed, high-fee funds were common. Sponsors have come to realize, however, that many

[75]If a DC sponsor of a plan covered by ERISA wishes to avoid fiduciary responsibility for participants' investment choices, the sponsor must provide a broad range of investment alternatives and not direct participants' choices. Whether a lineup of only TDFs would meet those requirements presents an interesting question that we do not attempt to answer here.

participants are not terribly discerning in selecting from the sponsor's fund lineup. The large number of options actually made participant choices more difficult. Benartzi and Thaler (2007) noted that when confronted with N funds, participants are prone to allocating $1/N$ of their accounts to each fund. If equity funds predominate the fund lineup, participants would thus be likely to allocate most of their account to equities, regardless of life-cycle considerations. In addition to potentially confusing participants, presenting them with a large number of funds could wind up producing a "closet index fund" with high fees.

Although equity funds still make up most of the individual funds available to participants, sponsors have become more careful about which investment options they offer. Some sponsors have decided to offer TDFs and a tightly curated selection of individual funds. Beyond an equity index fund and a money market fund—or 401(k) stable value fund—participant usage of individual funds in most plans is trivial. For the tiny minority of participants who insist on choosing from many options, some sponsors offer a "mutual fund window" that offers access to hundreds if not thousands of mutual funds.

So far we have focused on developing a process that a sponsor can follow in setting up a fund lineup for participants. In particular, we used the life-cycle model as a reference point for determining where funds are necessary. We now shift to discussing how sponsors go about selecting investment management organizations to manage the investment funds offered to participants. It makes sense to first consider the business of investment management.

The Business of Investment Management

Despite the industry's best efforts to convince people otherwise, the business of investment management is no different from any other enterprise. There are products to sell, marketing costs to bear, operations to manage, and profits to earn. Ultimately, all these business issues are important to DC plan participants' investment results, and therefore, retirement plan sponsors and their investment committees should take care to understand them. Importantly, as with so many important business decisions, there are trade-offs. One trade-off of consequence to sponsors is whether scale (size of assets under management) works to the advantage of the investment manager or the investor in the manager's fund.

A good place to begin discussing the business of investment management is with the benefits of the product being sold and the price being charged. Consider an investment fund to which an investor allocates capital. The product of the investment management company is the investment fund.

The benefits of this product are a series of investment returns. Note that a critical difference exists between investment products and physical products, as well as most services. For example, a car delivers primarily transportation benefits. Although satisfaction is rarely completely guaranteed, the car buyer has reasonable certainty about the transportation benefits he is acquiring. If the car does not work properly, the buyer has recourse (usually just a repair). In contrast, depending on the type of investment fund, the product's benefits may carry a wide range of uncertainty. Equity investments, in particular, supply little certainty about the sequence of returns that an investor will experience, and the *ex post* benefits could conceivably be negative—an outcome that almost never happens in other types of consumer purchases.

A second important difference between investment products and physical products is the associated fees. Sellers of physical products (e.g., hammers) charge a one-time price. Some services (e.g., legal services) charge for services rendered. For other services, such as an apartment, the price is a recurring rent over a fixed period. In all these cases, the prices charged for the products and services are stable and predictable.

Fees for investment management products, however, are set differently. Investors pay a regular fee to the manager based on the value of the assets that they invest in the manager's fund. The contract is, in principle, open-ended. In exchange for the fee, the manager delivers a stream of unpredictable (and possibly highly volatile) investment returns. In this arrangement, as the value of the assets increases, the dollar value paid to the manager increases.

Because the fee compounds with the return on the assets, if the manager simply maintains a steady cost base, its net income also increases and at a compounded rate. The apparent economies of scale (at least from the manager's perspective) are an important consideration in the discussion about active versus passive management, which we will turn to shortly.

What costs does a manager incur to deliver its risky stream of investment returns? In general, there are six:

- *Investment research*—principally focused on economic and market themes that can affect the value of specific stocks and/or bonds or asset categories.
- *Portfolio construction and risk management*—builds portfolios that are consistent with (a) the research results, (b) underlying investment objectives, and (c) investment risk targets. The main output is a list of either securities to be bought or sold or asset category weightings.
- *Trading*—the actual purchase and sale of securities. The main objective is to minimize trading cost, which is paid by the fund (that is, the participants).

- *Legal and compliance*—ensures that both the fund's investments and its marketing materials (e.g., fund prospectuses and presentation decks) comply with all statutory requirements.
- *Finance and accounting*—standard business accounting for the manager's operations.
- *Sales/marketing*—selling funds to investors.

Broadly speaking, investment research, portfolio construction/risk management, and trading constitute the investment function of an investment management company. Legal/compliance and finance/accounting are operations functions, and sales/marketing is a distribution function. This list provokes two important questions. First, is it obvious where skill manifests itself in each of these activities? Second, how should a manager's success be measured?

Investment Skill

If DC plan sponsors expect to hire and retain successful managers, they must be able to evaluate manager skill. Plan participants rarely concern themselves with managers' abilities, because they rely on the sponsor to select adequately skilled managers. But even defining skill can be controversial, and identifying it can be even more challenging.

From the sponsor's perspective, evidence of skill is most important in the manager's investment function. That is, of the manager's five cost centers, three directly relate to the ability to effectively invest client assets in the securities markets: investment research, portfolio construction and risk management, and trading. Investment skill can most easily be demonstrated over a short time in only two of those areas, however: (1) portfolio construction and risk management and (2) trading. There is an actual science to portfolio construction, risk management, and the trading of securities. At well-run investment management companies, each fund will have a clear investment process that applies that science. Thus, the manager will be able to regularly demonstrate that risks are managed (which does *not* mean eliminating risk) and that trading costs are minimized.

For solid statistical reasons, it is significantly harder to demonstrate skill in the investment research component of the investment function. The clearest indication of this issue's relevance, however, appears in the footnote accompanying every presentation deck and every mutual fund prospectus: "Past results are no guarantee of future performance." The following discussion of active versus passive management will explore the reasons for the challenge in evaluating skill in investment research in more detail. For the DC plan sponsor, however, the important point is the following: In evaluating which funds to include in the lineup for participants, sponsors should be clear about where the manager can defensibly demonstrate skill.

The second question related to the business of investment management is how to evaluate success. The manager firm has a clear objective: its own profitability. The challenge for the manager is to design and implement a profitable business model. There are two primary business models followed by investment management organizations that represent quite different choices for the investment function. These models are evident in the two principal investment management approaches: active and passive management.

Suppose the business model is to reduce costs for client investors by offering low-cost funds. From a business management perspective, in this model, significant attention is paid to those areas where skill in investment science can be demonstrated over short time horizons—namely, portfolio construction, risk management, and trading. At the firm level, profitability is driven by volume: It pays to have a large dollar amount of assets under management. In this model, investment research receives significantly less emphasis.

An alternative business model emphasizes the returns to skilled investment research. In this model, the firm believes that it has a demonstrated advantage (relative to other firms and to a passive benchmark) in security valuation, sector allocations, and market timing. Its business objectives are to charge fees for access to this skill and to avoid diluting the potential of the manager to continue to exploit this skill. The opportunity to show skill is hindered when the fund grows too large. In this example, volume could be a disadvantage to the manager.

The investment management business model is important for plan sponsors because it provides a basis for understanding the differences in fees across the variety of fund options that they are likely to consider. Further, it leads directly to the question of whether to offer passively or actively managed funds to plan participants.

Active vs. Passive Management

Passive management, on the one hand, involves holding a portfolio of securities designed to match or at least closely track the performance of a designated benchmark, which we will assume is a market index (such as the S&P 500 Index). Active management, on the other hand, seeks to generate returns, adjusted for the risk taken, that exceed those of the target index.

We can measure active management on a spectrum. Think of passive management as an extreme case: the complete absence of active management. Once a manager begins to deviate from the index holdings, so too will the manager's performance deviate from the index. The volatility of that differential performance is called active risk. Some managers hold portfolios that differ considerably from the market index, and they take on high levels of active risk in their attempt to outperform the benchmark. Other managers may seek to outperform the market index only modestly by taking limited amounts of active risk.

The issue of whether active or passive management is a superior approach has been debated in the investment community for half a century. Passive management proponents argue that effective active managers are rare and that the costs associated with active management usually overwhelm any skill that might exist. Active management proponents contend that skillful managers exist who can add value to the returns on a designated market index and that it is worth the effort to seek them out.

Retirement plan sponsors should care about this issue because their attitudes toward it will heavily influence both the types of investment options that they offer plan participants and the investment managers that they hire. The trend in recent years has been toward sponsors offering more passively managed funds to participants.

A widely held point of view states that investing has three important components: cost, risk, and returns. The corollary is that costs are controllable, risks are manageable, and returns are neither controllable nor manageable. We agree with this point of view and regard it as especially important for any discussion of active versus passive management.

Passive Management. Because passively managed funds hold portfolios of securities intended to track an index, the only measure of these funds' success is how closely their performance matches the index they are tracking. Stated plainly, if the return on a passively managed fund systematically falls below (or even exceeds) the index it is tracking, then the passive fund manager has failed.[76]

How do passive managers achieve their objective? They accomplish it by being effective in portfolio construction, risk management, and trading. At their roots, these are operational issues (similar to those in any other business)

[76]There are frictional costs to managing all investment programs, including passive management. The reported index return contains no fees or other investor costs, such as trading costs. So, there is inherently some systemic underperformance built into passive management. The sponsor's responsibility is to monitor those expenses to ensure they are reasonable. Some types of passive funds are more expensive than others. For example, the costs of running an emerging markets index fund are greater than running an S&P 500 Index fund, because custody fees and trading costs are much higher for the emerging markets fund. Similarly, managing bond index funds is more expensive than managing large-company stock index funds.

that lend themselves to well-designed processes. In this sense, passive fund management is no different from any other manufacturing process.

Viewing passive management as a manufacturing process shows the benefits of scale. The fixed costs associated with running a trading desk and implementing portfolio construction and risk management are more cost-effectively spread over larger investment amounts. The marginal cost to a passive manager investing an additional dollar is virtually zero.

Importantly, with respect to passive management, the objectives of the client investors and the fund management company are aligned. Both gain when the manager builds scale in a passively managed fund. Moreover, the natural way for the manager to build scale is to lower the barriers to entry for investors by lowering fees. Thus, the low fees and high levels of assets under management for passive managers are a result of the economic incentives for both client investors and fund management companies.

To summarize:

1. The objective of passive fund managers is to track a market index.
2. Passive managers achieve their objective by focusing on process issues, such as portfolio construction and trading costs.
3. Building scale lowers the cost of fund management and allows passive managers to lower fees.
4. It is in the best interests of client investors and managers to build scale.

Active Management. The goal of active investment management is to generate returns in excess of index returns, adjusted for risk, over a suitably long period. Active managers attempt to achieve this goal by holding securities in different weightings from the index. They fail when their returns are either persistently below the index or if they merely replicate the index. Retirement plan sponsors should insist that active managers clearly spell out how they intend to outperform relative to an appropriate index.

The central proposition for actively managed funds is that their unique research and execution put them in a position to add value for their investors. This research may focus on developing views on, say, sectors or company size and then implementing those ideas through portfolios of specific securities. Another type of research focuses directly on the relative merits of specific securities. Because managers update their views regularly, they will also periodically update their portfolios. Thus, portfolio weights likely will change over time.

Managers use a wide variety of approaches in conducting investment research, constructing portfolios, and controlling trading costs—far too many to describe here. One of the challenges in selecting active managers is understanding those approaches. Sponsor investment committees rarely have the investment knowledge to distinguish among managers. Larger sponsors may have knowledgeable staff and access to consultant advice. Smaller sponsors have fewer if any of those resources, an important reason to use 3(38) advisers.

Regardless of which approach a manager follows, the key value proposition is the same: The manager has superior research that will produce results that are better than those of an index and the competition. Of course, every active manager claims that its products are backed by great research. This point has important business implications for the manager and the fund's investors.

There is a simple arithmetic truism (almost a tautology) that the sum of all managers' returns (weighted by the capital under management) equals the market, or index, return less fees.[77] So if every investor put capital to work in the same actively managed fund, that fund would generate only the market return less fees—that is, the same return as a passively managed fund minus any difference in fees. Hence, for an active manager to generate positive active returns (sometimes called "alpha") for their investors, at some point they need to close the fund to new investors. In technical terms, this limit is called a capacity constraint. In contrast to passive managers, the built-in incentive for active managers is to increase scale only to a point (and that point will vary by asset category and by strategy within asset categories). All active managers face a capacity constraint, whether or not they know it or admit it.

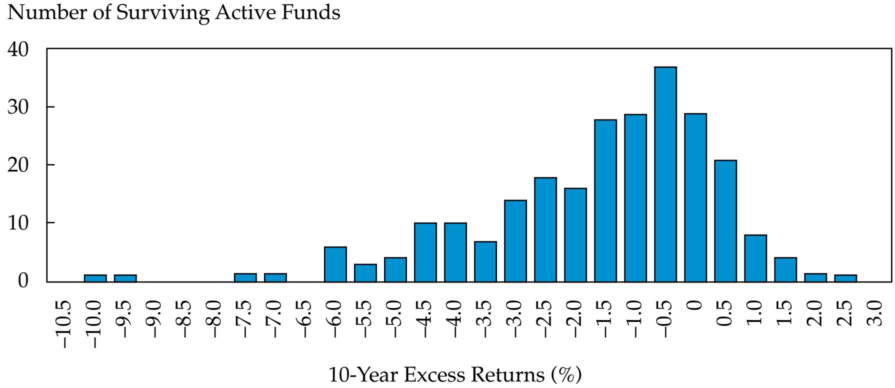
In economic terms, the capacity constraint provides a rationale for charging fees that are higher than passive management fees. The fee charged to client investors is for access to the manager's scarce capacity (and, assuming they have it, skill in investment research). In exchange for paying the higher fee, the client investor expects to receive a risk-adjusted return higher than that of the lower-fee passive product, which is not capacity constrained.

So, how have active managers done? First, have an asset class's active managers outperformed the passive alternative? And second, have specific active managers been able to persistently add value relative to an index? In both cases, the answer is decidedly mixed (to be charitable).

Figure 8 illustrates the results from one of many studies of active manager performance. This study focuses on US large-cap blend managers. The figure shows the distribution of active returns (i.e., returns after subtracting the similar-risk passive alternative) over a 10-year period. Although some managers were able to add value, the average realized active performance was

[77]Sharpe (1991) provided a famous exposition of this point.

Figure 8. 10-Year Active vs. Passive Performance (large-cap US managers), 31 December 2019



Source: Morningstar data and calculations as of 31 December 2019.

negative. Similar types of studies have been done for other asset categories (e.g., bonds, small-cap stocks), and it is important to point out that the results will vary by asset class. The lesson for sponsors is that finding skilled active managers is challenging and likely to be very time consuming.

We might also ask whether those active managers who do beat a market index in one period will continue to do so in future periods. This trait is referred to as persistence. The message is not comforting to proponents of active management, as illustrated by **Figure 9**. The figure shows the percentage of active US equity managers who had top-quartile performance over three-year rolling windows during the period 2003–2016. Few managers sustained top-quartile performance for prolonged periods. The main lesson for sponsors here is that they will need to constantly monitor and update their roster of active managers, should they choose to use active managers.

To summarize:

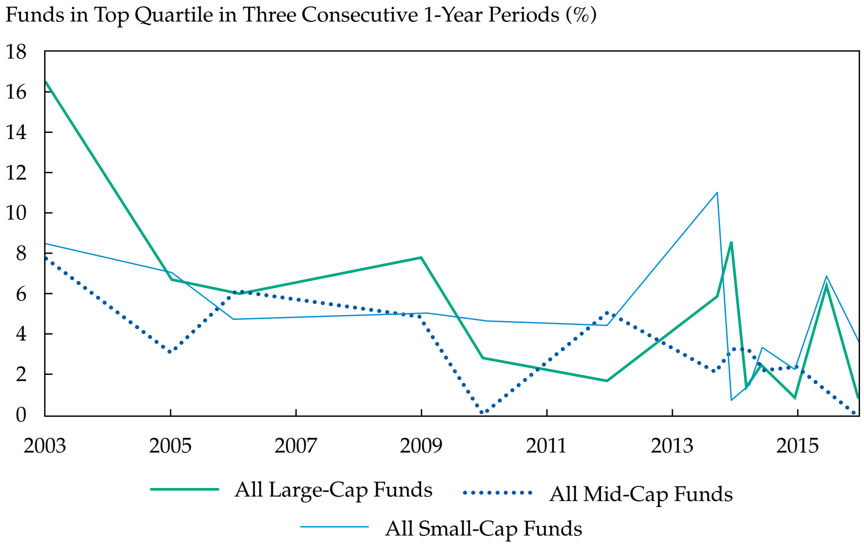
1. The objective of active managers is to outperform appropriate indexes over long periods.

2. Active management fees are higher than passive fees because active managers are capacity constrained and have higher research costs and other costs.

3. It is challenging to identify active managers who persistently outperform their indexes.

4. Managing a roster of active funds is time consuming for sponsors.

Figure 9. Performance Persistence of Large-Cap, Mid-Cap, and Small-Cap Funds, March 2003–March 2016



Source: S&P Dow Jones Indices, LLC.

Managing the Style Box: Evaluating and Retaining Investment Managers

When choosing fund options, sponsor investment committees must consider both the complexity of the decision and the opportunity cost of time spent in dealing with that decision. The more complex the fund lineup becomes, the more management time must be spent on reviewing funds. Once an investment committee decides to provide both active and passive options for participants, then it must spend time on reviewing the investment performance of the actively managed options.

Deciding which actively managed funds to offer participants is a difficult issue. The committee can use participant interest to help guide it regarding whether to include actively managed funds as part of the program. (We do not endorse this approach; typically, it is supported by a tiny set of participants who have strong opinions about particular funds.) Should the committee choose to pursue a fund lineup that has active funds, its members will need to devote resources to educating themselves on a much wider range of fund options than if it adopted a passive approach. Moreover, should the committee decide to switch fund options in a particular category, the members will need to educate themselves on the potential new funds. Although the investment committee will use consultants for analysis and recommendations, the committee nevertheless has the fiduciary responsibility for the fund choices. As we discussed in Chapter 3, good governance dictates that sponsors exercise oversight on their consultant's work, particularly when the consultants are acting in a 3(21) capacity.

There are four main areas in which sponsors can exercise prudent oversight of their investment managers through their consultants: benchmark selection, risk levels, historical returns, and fees. Each of these can be observed and monitored by sponsors, typically working with their consultants.

Benchmark Selection. As discussed earlier, benchmarks provide a yardstick for evaluating manager performance. The simplest benchmark is a market index for the specific asset class—which will also be the index used for the passive fund option. For example, an investment committee and its consultant might evaluate an actively managed small-cap value fund against a small-cap value index (e.g., the Russell 2000 Small-Cap Value Index). Indexes differ in complex and subtle ways, and choosing an index, beyond the very simplest indexes such as the S&P 500, is usually best left to professionals, such as consultants and 3(21) and 3(38) advisers. The manager should supply a coherent rationale for the index being used in its management process. Regardless of whether the manager actually considers an index in that investment process, the investment committee and consultant can still evaluate the active fund against its passive counterpart.

A second role for a benchmark is to create the investment universe for the manager. The investment universe is the set of securities from which the manager will choose. Using the same example, in principle an active small-cap value manager will invest only in small-cap value stocks. We will revisit this point shortly.

Risk Monitoring. As we noted previously, risk is usually measured in terms of the standard deviation of returns. An investment committee does not need to be fully conversant in risk statistics to ask meaningful risk-related questions. Nevertheless, the committee and its consultants should address the following:

- How do the risks of the active and passive options compare?
- How does the risk relative to the benchmark for a specific active fund compare with the same measure across all funds in the same category?
- How have these comparisons changed over time?

Consultants can easily translate their quantitative analyses into qualitative interpretation and answer these questions. If they cannot (or will not) do so, it might be time to hire a new consultant.

Historical Fund Performance. Consultants can provide performance analysis for all the plan's fund options, as well as alternative funds. Usually, these analyses include performance from the most recent quarter, year to date, and the past 3, 5, and 10 years. It can be tempting to focus only on the fund performance numbers, because they are the most easily observed. The committee must make decisions, however, about whether to retain or replace managers based on more than just historical returns. An investment committee and its consultants should be prepared to answer the following questions:

- How did each fund perform relative to its benchmark over the same periods?
- What were the drivers of the returns relative to the benchmark?
- Is the fund delivering on the investment style in the prospectus?

The root of the last two questions is the manager's investment process. The second question deals with the underlying drivers of the manager's process. That is, how does the manager claim to be able to generate returns? The third question follows from the second and is a quality control issue: Is the manager doing what it claimed that it would do when initially hired by the investment committee? Both are reasonable questions for an investment committee to ask its consultants about the current and recommended funds.[78]

Other relevant questions include whether the manager's staff has recently had significant turnover, whether the manager has experienced changes in ownership, and whether the manager has complied with all applicable laws and regulations.

Manager Fees. An investment committee has few tangible means of controlling investment results, but one of the most important is manager fees. Consultants are well placed to provide information on the fees for specific funds and then compare them with fees for other funds in that asset category. The main questions for the committee are as follows:

- How do the fees for a specific fund compare with the universe of funds in that category?

[78]One little-appreciated aspect of fund management is that active managers may choose to hold securities that are outside the benchmark. Managers like the additional flexibility afforded them by this option. A purist would suggest that a manager that follows this approach is gaming the outcome.

- How does performance, adjusted for fees for a specific fund, compare with other funds in that category?

Is Active Management Worth It?

We began this chapter by noting that DC plan participants rely on sponsors to make wise choices for them in setting an investment lineup. An investment committee's first responsibility is to do no harm. So, in considering whether to offer actively managed funds, we advise a committee to consider the following:

- Fees are lower for passively managed funds.
- Actively managed funds struggle to persistently outperform their benchmarks.
- Committees that offer actively managed funds will need to continually monitor and change the fund lineup.
- Hiring and firing actively managed funds imposes a significant management cost (the opportunity cost of time) on the committee.

With these points in mind, we believe that sponsors should adopt passively managed funds as the default choice for their plans. Absent a strong belief that actively managed investment options are of value to plan participants, sponsors should make available only passively managed options. Many sponsors have already made that decision, as passive options are becoming ubiquitous offerings in DC plans and in some cases constitute the only offering.

We recommend that investment committees conduct the following thought exercise. Active investment options should be selected only if the committee can answer yes to the four following belief statements:

1. Active managers who can add value exist (after fees) in the asset category.
2. The committee can identify and hire those managers.
3. The committee can adequately monitor and, when necessary, replace poorly performing managers.
4. The committee can educate participants as to how to appropriately use those actively managed investment options in their accounts.

An investment committee must make its own determinations, and answers may differ by asset category. Nevertheless, a committee should recognize that the hurdle to justify the use of active investment options is a high one. Participants are well served by choosing from low-cost, transparent, and easily explained investment options.

Alternatives, Illiquid and Otherwise

During the past 10 years, some investment management companies have designed products that are meant to provide DC plan participants with access to the same strategies used by institutional and high-net-worth investors. Although many such products exist, this section will focus on two investment types: hedge funds and private equity funds.

Hedge Funds. Hedge funds have a long history in the investment community. Until the late 1990s, these funds were sold principally to high-net-worth investors. Thereafter, however, endowments and foundations began allocating capital to hedge funds. Other institutions (e.g., pension funds) shortly followed suit.

At their most fundamental level, hedge funds have four key attributes. They

- do not have a benchmark,
- are unconstrained,
- typically use leverage, and
- typically have no daily mark-to-market requirements.

Unconstrained simply means that the funds can take long and short positions in the investments in their portfolios, and they do not have to choose from the list of securities in a benchmark. Leverage means that they borrow and then invest the proceeds in the portfolio, expecting to generate higher returns than the unlevered portfolio. The absence of a benchmark also means that there is no easy reference portfolio against which to compare risk and performance. Finally, the absence of a daily mark to market means that it is difficult for investors to regularly assess performance and risk.

Hedge funds market themselves as being a pure form of active management. In other words, because they can (in principle) take both long and short positions in virtually any asset, assuming they have skilled investment research, their odds of generating superior returns go up. Because of those higher odds, hedge fund managers demand higher fees. Hedge fund managers also justify their higher fees by appealing to the capacity constraint that we discussed earlier.

Only so-called qualified investors can invest in hedge funds.[79] Moreover, every hedge fund has a cap on the number of investors in the fund. In addition, the minimum investment requirements for hedge funds can be prohibitively high. Practically speaking, then, DC plan participants find it nearly impossible to invest directly in hedge funds. However, some managers have introduced funds that attempt to replicate hedge fund performance using a basket of publicly available financial factors (e.g., small-cap stocks or value stocks). Replication funds invest directly in the basket of factors. Usually these baskets trade daily, which means that the replicating fund can offer a product that is priced daily, making it a possible investment for DC plans.

Another type of fund that seeks to capture some of the properties of hedge funds is the so-called multi-asset fund. Like replication funds, these funds hold publicly traded securities. Like some hedge funds (specifically macro hedge funds), they claim to add value by actively trading across asset categories. These funds also resemble the balanced funds that we discussed previously, in that they invest a variety of asset categories, such as equities, bonds, and currencies. The big differences between multi-asset funds and balanced funds are the absence of an explicit rebalancing rule and the lack of a benchmark. As discussed earlier, balanced funds explicitly state an asset allocation (i.e., a split between equities and bonds) against which their performance can be measured. Also, balanced funds promise to regularly rebalance back to this benchmark. Multi-asset-class funds make no such claims, and their portfolio holdings and risk levels can vary greatly. Moreover, as an actively managed product, they are not a low-cost option.

Private Equity Funds. The alternative asset class that gets frequent attention is private equity. This investment approach also has a long history. Private equity, as the name suggests, involves equity investments in privately held companies. Generally, these funds are created as limited partnerships. The general partner raises capital from limited partners and manages the fund (invested in portfolio companies) on the behalf of the limited partners. As of the date of writing this monograph, private equity is available only to qualified investors. Some fund management companies, however, are working to provide private equity vehicles to retail investors, including DC participants.

The managers promoting private equity in DC plans argue that participants should be offered access to the same "superior" investment performance available to institutions. The business reason, of course, is that these managers

[79]The SEC has historically defined qualified investors as exceeding either an income ($200,000) or a net worth ($1 million) threshold. In 2020, it added "knowledge and expertise" as another criterion.

see retail investors, especially in DC plans and IRAs, as an untapped revenue source.

Private equity investments pursue three main strategies: venture capital (e.g., startup companies), buyouts (e.g., taking a public company private and restructuring it), and distressed debt (e.g., the bonds of companies in bankruptcy). All of these (even distressed debt) are equity holdings and are subject to the same risks as publicly traded companies, plus other risks caused by illiquidity and the inability to mark asset values to market.

Sponsors should recognize that in some way, shape, or form, private equity funds use leverage. There is nothing inherently wrong with leverage. It is a common aspect of many forms of investments. A pedestrian investment such as owning a home with a mortgage uses leverage. However, leverage complicates the evaluation of manager skill. It makes it difficult to assess how much of the fund's superior performance relative to public equity markets results from leverage and how much results from the skill of the general partner. Leverage also adds risk, because a decline in the underlying asset's value produces a larger decline in the value of the leveraged investment.

Also complicating the analysis of manager skill is the fact that most private equity funds are valued at best on a quarterly basis. Moreover, because the equity investments are not publicly traded, these valuations are usually calculated by the managers themselves. Hence, there is little transparency in pricing for private equity.

There is no passive alternative to private equity. As a result, there is no easily available reference portfolio against which a specific private equity fund can be compared. One important implication of this point is that there is no natural barrier to fees. For institutional investors, the usual fee structure charged to the investor is 2% of the value of the initial investment, charged each year, plus 20% of the gross return.

Fund management companies are now actively working to provide private equity options to their non-institutional clients. Whatever vehicles are introduced for DC investors, they will still need to address the issues of lack of daily liquidity, leverage-related risks, and high fees.

Caveat Emptor. All the alternative investments discussed in this section are actively managed strategies. As with every other actively managed product, fees are higher (in some cases substantially higher) than for passively managed products. Further, as with every other actively managed product, selecting superior performing managers is critical. Put another way, it does no good to talk about "hedge fund returns" or "private equity returns" in the same way we talk about equity index returns. The central value proposition for both hedge funds and private equity funds is that the managers are unusually skilled at selecting and managing whatever investments they make. Hence, which manager an investment committee selects will be the driving force in participants' results.

We caution plan sponsors against quickly adopting these types of alternative investments for their DC plans. Just as with other types of actively managed funds, alternative investments will require a significant amount of plan sponsor time to determine these funds' suitability for plan participants. Their benefits to plan participants are uncertain, at best.[80]

To Sum It All Up

This chapter uses the life-cycle model to develop a framework that sponsors can use for two purposes: first, to make fund selections on behalf of their participants and, second, to focus investment committee time. Although all sponsors want to provide the best outcomes for their participants, they all also recognize that their time has opportunity costs. Thus, the central challenge for a sponsor's investment committee is to allocate its management time most effectively on behalf of participants.

In our opinion, a sound starting point for a committee has the following elements:

Choose passively managed target date funds as the default option. These funds have the benefit of being low cost and are supported by research from both practitioners and academics. They have the added advantage of being easy to explain to plan participants.

Provide employees a tightly limited number of funds across the risk spectrum, in addition to TDFs. In the low-risk category, a committee should offer either a money market fund or a stable value fund. In the intermediate-risk category, it should offer a passively managed bond index fund and a passively managed inflation-protected bond fund. Finally, in the high-risk category, the committee should offer a passively managed US equity fund and a passively managed non-US equity fund. These choices cover the major investment risks, help participants manage costs, and free up valuable management time.

Use the committee's management time to develop suitable options for employees during their retirement years. These options could include annuities or targeted financial planning advice. We believe that time devoted to this activity can

[80]In June 2020, the US Department of Labor (2020) informed a private equity manager that a sponsor would not violate its fiduciary duties by offering an investment option such as a TDF with a private equity component. Although this notice was not an endorsement of private equity in DC plans, it represents an important first step by managers seeking to bring private equity to DC plans.

provide much more long-term benefit to employees than managing a roster of actively managed funds.

Use the committee's management time to investigate whether custom target date funds can provide value for their employees. Although TDFs are cost-effective vehicles for delivering a life-cycle investment lineup to participants, the one-size-fits-all nature of TDFs is their weakness. A committee should consider the suitability of off-the-shelf TDF design for its participants and, where appropriate, consider modifications.

Chapter 6. Asset Decumulation in Retirement

Challenges Facing the Plan Sponsor

- The advent of DC plans severed the link between retirement plan asset accumulation and decumulation.
- Basic DC plan design has no exit strategy, and participants are left to fend for themselves in drawing down their accumulated assets during their retirement years, which may include years when their mental capacity is diminished.
- The odds of at least one member of a 65-year-old couple today living well into their 90s are almost 50%.
- Managing asset decumulation is a daunting task for retired plan participants, requiring a complex set of forward-looking decisions that most are ill-prepared to make.
- Standard decumulation options in DC plans are of little help to participants seeking to budget spending from their account balances throughout their retirement lifetimes.
- Most participants (and many sponsors) lack an understanding of how life annuities function and, specifically, the benefits of mortality pooling.
- The demand among participants for guaranteed lifetime income options is low.
- The Annuity Puzzle leads participants to reject fairly priced annuities, even when they recognize the value of guaranteed lifetime income.
- The causes of the Annuity Puzzle vary but have deep emotional roots that hinder the success of educational efforts.

Opportunities for the Plan Sponsor

- Incorporate into the plan's objectives the goal of assisting participants in accessing sustainable approaches to asset decumulation in retirement.
- Periodically provide participants with estimates of the annuity income equivalent of their current account balances.

- Similarly, periodically provide estimates of how much their accounts would need to grow and what contributions would be required to achieve certain income replacement targets.
- Provide alternatives to forced lump sum payouts at the time a participant leaves employment, including installment payments.
- Offer participants nearing retirement access to objective financial advice, including
  - — budgeting for retirement expenses,
  - — asset allocation recommendations, and
  - — sustainable withdrawal rates from retirement accounts.
- Understand the Annuity Puzzle and why participants are reluctant to take advantage of guaranteed lifetime income options.
- Offer participants, especially those over the age of 50, access to education concerning the advantages of lifetime payout annuities (usually shortened to "life annuities"), including the topics of
  - — mortality pooling
  - — life annuities viewed primarily as insurance, not investments,
  - — partial annuitization,
  - — deferred annuities, including longevity annuities designed to begin payout late in life when other assets are exhausted or substantially drawn down, and
  - — protection against cognitive decline.
- If the sponsor offers a DB plan, add the ability to exchange DC account balances for DB plan annuity benefits.
- Explore in-plan and out-of-plan annuity options with insurance providers, investment managers, and platforms that offer institutional pricing of lifetime income options.
  - — Make the transition from asset balances to lifetime income options less operationally daunting.
- Use the liberalized regulations and safe harbor provisions of the SECURE Act of 2019 to innovate in the design and implementation of guaranteed lifetime income solutions.

Severing the Connection between Asset Accumulation and Decumulation

The DB-to-DC migration has produced many unintended consequences. Arguably the most significant has been the elimination of the direct in-plan relationship between accumulating assets during working years and distributing those assets during retirement years. As we discussed earlier, in a traditional DB plan, sponsors (and sometimes participants) make contributions to the plan, the funds are invested, and ultimately plan participants receive a payout in the form of a monthly annuity (pension) for life.[81]

In a DB plan, the accumulation–decumulation connection is clear. The sponsor bears responsibility on both ends of the process. Sponsors and participants alike can judge for themselves whether sufficient assets have been set aside to support promised payouts and whether those payouts meet the objectives of retirement income adequacy. Regardless of whether the average DB plan participant *earns* an adequate (or any) benefit, the DB plan design inherently *focuses* on deferring consumption now with the intent of providing secure lifetime income later. Moreover, sponsors often express that lifetime income as a proportion of participants' current income (the replacement rate), a valuable communication tool for helping participants plan for retirement.

The advent of DC plans broke that explicit accumulation–decumulation link. DC plans offer the potential to accumulate enough participant wealth to fund a lifetime stream of income that sustains a comfortable retirement—but not by intentional design. Unfortunately, the basic DC plan contains a serious structural flaw: It was created without an explicit "exit" strategy in mind. Assets enter and grow, but the plan contains no mechanism to ensure that the payout of those accumulated assets translates into income for participants guaranteed or even likely to last for the rest of their lives.

Even if an enlightened DC sponsor articulates a clear plan objective of helping participants to smooth lifetime consumption, with no accumulation–decumulation linkage, sponsors leave participants to fend for themselves. Participants must dynamically manage payouts from their accounts in a manner that sustains their desired spending throughout retirement, all the while exposed to the vagaries of the capital markets. Even financial professionals cannot agree on the best account balance decumulation strategies. So why should we expect participants to arrive at workable solutions of their own?

[81]Annuities are defined generically as a fixed sum of money paid to a recipient on a periodic basis for a stated number of periods. For brevity, unless we specify otherwise, when using the word "annuity," we will be referring to a fixed per-period payment over the recipient's lifetime.

As DC plans have become the dominant source of workplace retirement income, sponsors and participants, along with outside stakeholders, such as government policymakers, have belatedly begun to realize that the lack of a sustainable decumulation structure makes participants more vulnerable to unexpected retirement income shortfalls. Yet for reasons that we will discuss shortly, very few sponsors offer their participants account balance payout features designed to last well into retirement, and even fewer offer guaranteed lifetime income options.[82]

The Importance of Lifetime Income

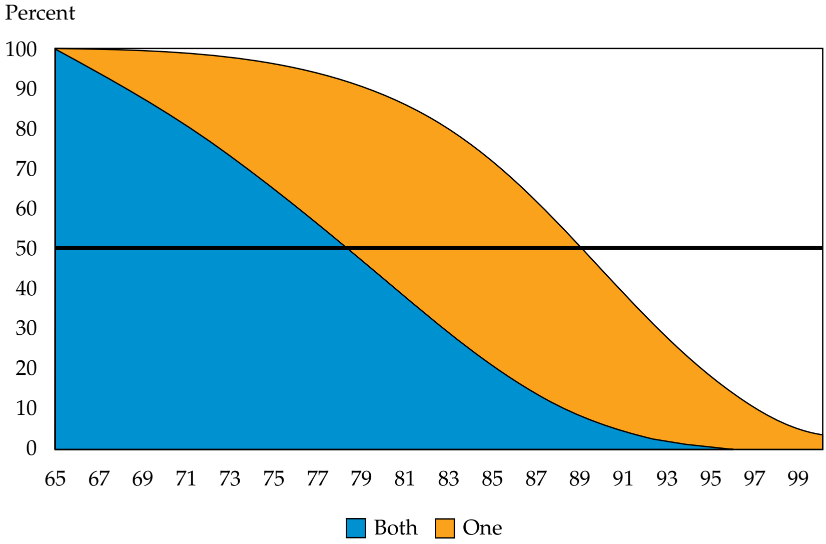
Retirement is a good news/bad news story. The good news is that people reaching the age of 65 have a strong probability of being physically able to enjoy life well into their 80s, if not their 90s. The bad news is that they may have insufficient financial resources to fund a lifestyle in retirement resembling what they enjoyed while working. Surveys show that most middle-aged Americans underestimate their life expectancies.[83] The median remaining life span of 65-year-olds is 19 years for males and 21 years for women, according to the Social Security Administration (2019). By definition, however, half of these populations will live longer than the median age, a critical fact ignored by many future retirees. In fact, the odds of a 65-year-old male and female reaching age 90 are 20% and 32%, respectively. And the chances of at least one member of a male–female couple, both age 65, living into their 90s is more than 40% (**Figure 10**). As a result, many Americans can expect to spend more than a third of their adult lives in retirement. How will they pay for it?

As we noted in Chapter 2, Social Security provides the answer for many lower-income Americans. For them, the guaranteed inflation-adjusted lifetime income of Social Security replaces most pre-retirement income. By design, Social Security has a highly progressive replacement rate that works to the advantage of lower-income recipients. AARP (2015) estimated that 23% of Americans rely on Social Security for virtually all of their retirement income. Nevertheless, for those individuals with higher pre-retirement incomes who are fortunate enough to have accumulated sufficient DC plan

[82]One consultant's survey of plan sponsors (Steyer 2019) showed that less than 10% of sponsors provided such an option. Another consultant's survey showed that the most popular form of retirement income support was various online modeling tools. Also popular were installment payments and managed account drawdown options, both of which we will discuss shortly.

[83]For example, the Stanford Center on Longevity (2012) showed that two out of three men approaching retirement underestimated male life expectancy, with 42% underestimating it by more than five years.

Figure 10. Joint Life Expectancy of a Couple, Both Age 65



Source: Kitces (2014).

assets, the need to ensure that their DC income supports their desired retirement spending and lasts a lifetime presents a challenging task—one for which most participants are ill-prepared and unequipped to handle.

Because financial planners naturally gravitate to high-net-worth customers, most DC plan participants attempt to solve these difficult questions without the aid of experienced professional advice. To expect them to act decisively and effectively defies common sense. When they retire, DC plan participants are essentially cast adrift to make do, for a lifetime, with an account balance often larger than any financial sum than they have dealt with before. That few participants possess the financial sophistication to understand how their account balances translate into sustainable lifetime income only compounds the problem. Sponsors have been reluctant to provide such estimates on participants' account statements. As a result, many participants suffer from the illusion that $50,000 might somehow provide for a comfortable retirement when more likely the necessary amount is 10 times that figure (or more).

With their answers in hand (or not, as the case may be), DC participants enter retirement and must take a stab at determining how much and how often they should withdraw (that is, decumulate) assets from their DC accounts. Spend too much early on, and DC participants face the frightful risk of running out of money and being forced to sharply cut back on their standards of living later in life. Spend too little, and they will not be able to enjoy retirement to the fullest. Investment returns also add a complicating "path dependency" to these decumulation decisions—what the financial planning world calls "sequence risk."[84] That is, if participants have invested aggressively in stocks in an attempt to grow their accounts over the entire retirement horizon, a sharp market downturn just prior to or early in their retirements can devastate their account balances and force spending cuts. Conversely, investing too conservatively can expose participants to the possibility that their account balances will not support the income projections that they developed prior to entering retirement. There are no do-overs in this world of create-your-own lifetime income. All choices are final and have serious and potentially life-altering ramifications.

Retirees seemingly have a fallback position in response to insufficient starting assets or poor spending decisions. They can choose to work part time during "retirement." Although this option is potentially viable and may even provide certain psychic benefits, older individuals can find it difficult, once they have left the workforce, to return in a financially meaningful capacity. They will be competing with younger persons for available jobs. Manual labor may not be physically possible. Intellectual skills may have not kept up with technology advances. The data reported in Woolley (2019) indicate that many retirees *do* work to support themselves after leaving their full-time career employment, often taking part-time jobs at much lower pay than they had earned previously. Although such employment can be a valuable supplement, it does not qualify as secure income because it depends on a retiree's ability to physically perform a job as well as the availability of such work.[85]

With all the uncertainty surrounding the amount of available retirement income, what DC participants desperately need is a reliable and clearly defined source of lifetime income from their employer-sponsored retirement plans. This income source should take the difficult decision-making out of their hands and allow them to budget and make spending plans with confidence. The monthly annuity payouts from DB plans provide that valuable service. Unfortunately, what DC plans typically offer their participants falls far short of such a guaranteed steady income for life.

[84]See, for example, Cotton (2013) for more on sequence risk.

[85]The sharp downturn in employment caused by the COVID-19 pandemic, especially among part-time workers, highlights the fragility of relying on post-retirement job opportunities to supplement income.

Guaranteed Lifetime Income—Contribution Date vs. Retirement Date

In Chapter 1, we noted that a fundamental difference between DB and DC plans is the protection from market risk that DB plans offer participants. The definition of the term "guaranteed lifetime income" hinges on this important feature.

Participants in DB plans slowly build their retirement wealth. The typical DB plan bases the benefit on service time and average pay. Even for a participant with constant pay, the benefit rises as the participant accumulates service time. In simplistic terms, the sponsor makes contributions to the plan at a rate designed to build a hypothetical account balance that at retirement will support the stream of benefit payments to the participant. The sponsor effectively "saves" for the participant and invests the savings in the DB plan's asset portfolio. With some simplifying assumptions,[86] for the participant whose pay and service time are known, we can precisely calculate the amount that needs to be in the account at the date of the participant's retirement.

The sponsor guarantees the benefit payment and thus the implied amount needed in the asset portfolio. That amount may or may not be there when it is needed, but the sponsor will have to make the benefit payment anyway out of its other assets. In this way, the sponsor is said to guarantee a DB plan's benefits "with its balance sheet."

As a result, it is the sponsor who bears the market risk of fluctuating asset values and interest rates as it works to accumulate the required amount. The participant's benefit is insulated from market risk, both the risk of fluctuation in asset values and, very importantly, the risk that annuity prices will have risen because interest rates have declined (or life expectancies risen) since the benefit was earned. Therefore, we can think of the DB plan participant's lifetime income as being guaranteed from the point that the benefit is earned (or somewhat simplistically, the date that the contribution supporting the benefit is made).

Participants in DC plans face a very different environment. Again, as we discussed in Chapter 1, in a well-designed plan, the participant can save the necessary amount to build the same retirement balance as the DB plan, can use similar investments, and can purchase low-cost annuity income. The DC participant's lifetime income benefit, however, is certain only when the

[86]As already suggested, we need to make assumptions about both the participant's lifespan and the interest rate in order to value future benefit payments. Furthermore, we need to make these calculations for a group of participants, some of whom will live longer than expected while others will die sooner. Of course, that analysis is what plan actuaries do for a living.

participant converts the account balance into the annuity; again, for simplicity, let us say that this conversion occurs at retirement. Therefore, we can think of the DC plan participant's lifetime income as being guaranteed only from the point of retirement, not when contributions are made. Until that time, the benefit is subject to market fluctuations, which may increase or decrease the benefit amount relative to its DB equivalent.[87]

Participants have no practical means to hedge this market risk over their working years. So, when we speak of "guaranteed lifetime income," there is an important and often overlooked difference between the DB version and the DC version. From this point forward, when we refer to guaranteed lifetime income, we are speaking of the DC version, or the ability to acquire a secure stream of income for life *at retirement*. But we should bear in mind what the participant has given up in moving from the DB version of guaranteed lifetime income to the DC version.

Standard DC Plan Decumulation Options

DC plans make available at least one of three primary forms of account balance distributions to plan participants:

(1) Lump sum payouts: The entire account balance is paid out to the participant.

(2) Irregular payments: Portions of the participant's account balance are paid out at times and in amounts of the participant's choosing.

(3) Installment payments: A set amount or proportion of the participant's account balance is paid out each period (month, quarter, or year) until the account is exhausted.

Lump Sum Payouts. Some DC plans, particularly smaller ones, offer only a lump sum payout. If the account is above $5,000, sponsors cannot require participants to take their money out of a plan. If a departing participant wants to withdraw any funds at all, however, the sponsor can force a lump sum payout. Often these sponsors desire to avoid the administrative costs of maintaining departed-employee DC accounts. We can imagine no worse way to aid participants in productively managing their retirement

[87]If we assume that DC plan participants are risk averse, then we might expect them to demand compensation for bearing the market risk to their retirement benefits. That is, the sponsor should either boost its contribution or increase wages to make participants indifferent between the DC and DB systems. In reality, no such additional compensation is offered. In fact, the myth persists among sponsors and participants that having control over their account investments is a positive for DC participants.

income. As we discussed in Chapter 4 and as shown in MetLife (2017), a high percentage of lump sum payouts will be spent immediately, at least in part. Particularly if the lump sum amounts are relatively small, participants may treat the distributions as lottery winnings and spend them rapidly rather than preserving and investing them to cover future expenses.

More optimistically, participants may reinvest the lump sum proceeds in a tax-advantaged account. But even if these payouts find their way into an IRA, this approach forces participants to identify another investment alternative in which to place the transferred funds until they decide to make withdrawals for retirement spending purposes. Many participants lack sufficient financial knowledge to make these decisions and no longer have the investment options of their DC plan from which to select nor access to the unbiased educational support provided by the sponsor. Most lump sum recipients, particularly those in larger DC plans, would be better off leaving their funds in the plan and, at a minimum, setting up a regular withdrawal schedule. Many DC plans offer low-cost institutionally priced funds; participants, particularly those in larger plans, are unlikely to obtain such favorable pricing in an IRA. Moreover, when participants move to an IRA, they may lose the objective investment information that sponsors are legally required to provide.

Irregular Payments. This decumulation approach is truly "do it yourself." Retired participants use the DC plan to invest their funds while they set their own withdrawal rates that may be enough to last for the rest of their lives. But they must manage those withdrawals, potentially for decades. Financial planners incessantly debate the level of "safe" withdrawal rates without coming to clear conclusions. Sponsors cannot directly provide advice on suitable withdrawal rates. Unless plan participants receive professional advice, their chances of successfully taking appropriately sized payouts and investing the remaining balances for decades are low.[88] Meanwhile they are exposed to the risk of taking devastatingly large or penuriously small distributions.

Installment Payments. This approach divides up the account balance and pays out those portions, typically annually. The portions could be fixed dollar amounts or fixed percentages. (For example, 10% of the account's value

[88]Most financial planners start with some variation of the well-known 4% rule, originally presented by Bengen (1994). The rule sets spending *in dollars* equal to 4% of the peak or at-retirement asset balance and then increases the spending amount by inflation each year. Implementing that approach under "real-world" conditions, however, may force do-it-yourself retirement planners to adjust their sustainable spending levels—hardly an easy undertaking. Moreover, the 4% rule has been widely criticized as being too rigid (see Waring and Siegel 2015), resulting in overspending when markets are down and underspending when markets are up.

is paid out in Year 1, 11% [1/9th] of the remaining value in Year 2, 12.5% [1/8th] in Year 3, and so on, until the remaining account value is paid out in Year 10.) Sponsors typically set upper limits on the number of years over which participants can withdraw funds. This payout option has the important advantage of predictability and can be incorporated into a budgeting process. When the final year of payments arrives, however, participants must find a way to make up for the terminated income.

At least among larger sponsors, as BlackRock (2019) noted, attitudes have shifted strongly toward supporting sustainable retirement spending by participants. Yet none of these three standard decumulation options is designed to provide for lifetime income. As we note, even the installment payment approach is usually limited in terms of duration, typically well short of participants' life expectancies. To ensure that the distributions of accumulated account balances last a lifetime, particularly in the lump sum and installment payment approaches, participants must avoid spending all the distributions and reinvest a portion of the paid-out account balances somewhere else. The standard DC plan decumulation options leave the burden of not running out of money on retirees' shoulders.

Decumulation through Managed Accounts

A recent innovative approach to DC plan decumulation involves the use of a managed account adviser to develop a program that "almost" guarantees lifetime income to plan participants. We discussed managed accounts in Chapter 4. Investing their DC account balances with the advice of a managed account adviser offers considerable advantages to retirement plan participants. Low-cost access to professional advice can be extremely valuable to DC participants who otherwise might have insufficient assets to work with traditional financial planners. Managed account services have focused largely on the accumulation and investment of DC assets. But that professional advice potentially can also be useful in terms of wisely spending down DC account balances.

The managed account adviser offering decumulation advice creates an asset allocation for the participant around age 55 that is heavily invested in fixed-income securities and designed to produce a steady stream of interest income during retirement. Combined with an orderly liquidation of the portfolio, the managed account decumulation process produces a set of payments predictable in terms of amount and duration with a high degree of confidence.

The primary downside of this approach is that if a participant lives long enough, eventually the account must run out of money, no matter how thoughtfully and conservatively the managed account adviser has designed the series of payments. To handle this problem, some variations call for reserving a certain amount of money in the account to purchase an annuity that begins its payout at a distant age, such as 85. This deferred annuity typically provides a truly guaranteed modest income stream in participants' later years that might help offset medical expenses or other financial contingencies or simply pay for consumption beyond what Social Security offers. Another drawback of the managed account approach to decumulation is that it cannot entirely avoid sequence risk. If, despite its conservative asset allocation, the portfolio performs poorly in the years around the individual's retirement, that outcome will negatively affect the size of the future payments.

Mortality Pooling

Even novice investors understand the importance of asset diversification. Investment returns are inherently uncertain. Putting all your eggs in one investment basket increases portfolio volatility and considerably raises the risk of ruin. Diversification provides a cheap and simple solution to this asset return uncertainty. Individuals can diversify their investment positions by owning portfolios of stocks, bonds, and other types of assets. Various investment vehicles, such as mutual funds and ETFs, permit investors to diversify even more cheaply and efficiently.

However, few DC participants (and perhaps only a minority of plan sponsors) fully understand or appreciate the importance of diversifying *mortality experience* in the process of creating lifetime income. Each of us has only one life, and its span is uncertain, creating longevity risk: the possibility that we run out of money before we die. Longevity risk greatly complicates the retirement financing question. Nevertheless, the solution is the same as it is for asset return uncertainty: diversification. Although an investor can implement asset diversification by choosing to own a broad portfolio of assets, however, a retiree cannot directly diversify mortality risk by entering into a risk-sharing pool (in which those who die young help pay for those who live a long time) with other people. Retirees seeking to manage longevity risk must use a third party—an insurance company—to help them join with others in an insurance pool and contractually transfer the longevity risk to the insurer.

Traditional life insurance is one such form of mortality pooling. Individuals jointly contribute premiums to a pool. As individuals die, the pool pays out benefits to the deceased's beneficiaries and the living continue to pay premiums. Actuaries cannot know when any one individual will die, but with enough lives insured in the pool (with a well-diversified pool), they can be quite certain what portion of the group will be alive at any point in time. Insurers establish premiums based on factors such as age, gender, lapse rate (the likelihood that a life insurance buyer will stop making payments before she dies, to the benefit of the rest of the pool), expected investment returns, and sufficient reserves set aside to ensure that the beneficiaries of all covered individuals are paid upon the insured's deaths.

Annuities are the reverse of life insurance. With life insurance, you are betting you will die young, and the insurance company, hoping to delay making the payout, is hoping you will not. With an annuity, you are betting on living a long time, whereas the insurance company is betting on you dying young. In the simplest form of a life annuity, individuals are aggregated into a pool and pay upfront a one-time premium based on factors similar to those determining annual life insurance premiums. Each year, pool members who are living receive their promised benefits, and each year, some members of the pool die, so their benefits stop. Eventually all pool members will die, but during the time the pool is in existence, as with life insurance, the mortality experience of a well-diversified pool of annuitants is quite predictable and the insurer pays the promised annuity benefits with certainty to all the living participants. Longevity risk is diversified away by mortality pooling.[89]

Mortality pooling affords participants compelling financial advantages compared with what any of the participants alone could do for themselves. An insurance company offering annuities will invest the participants' premiums in a conservative portfolio of fixed-income securities. Any individual could do the same. But because the insurance company has virtual certainty regarding the life expectancies of the annuitant pool, the rate at which it can pay out the accumulated premiums is much higher than the rate at which individuals can sustainably withdraw funds from their portfolios over their uncertain lifetimes. Thoughtful retirees, operating on their own, will decumulate at a lower rate because of uncertainty about how long they will live. The insurance company can make payments without having to reserve anywhere near the amount that an individual would have to hold back in order to protect against longevity "surprises."

Effectively, surviving members of the annuity pool in any year receive a benefit from those pool members who have died, unartfully referred to as a "mortality credit." It accrues to everyone in the pool while they are alive.

[89]Both life insurance and annuity policies issued by private insurers are regulated by states that require the issuing companies to be adequately funded and to pay into a state annuity guarantee pool that, in the case of an issuer's bankruptcy, pays the full benefit for lower-income annuitants and a partial benefit for higher-income annuitants. These regulations and guarantee pools, which vary by state, offer an extra layer of certainty that promised benefits will be paid. Some planners suggest diversifying among annuity issuers, by buying an annuity from at least two different insurance companies.

On their own, retirees earn no such credit. As a result, annuities can make considerably higher payments to members of the pool than the members could make to themselves if they invested the same amount in the same conservative portfolio that the insurance company would hold.[90]

Guaranteed Lifetime Income

Retirees can best obtain the advantages of mortality pooling and the guarantee of lifetime income by purchasing a life annuity. A standard single-payment immediate (life) annuity (SPIA) offers simplicity itself. It involves paying a lump sum amount now in exchange for a stream of future payments, beginning immediately, that will last for the life of the purchaser and, if specified, the life of a co-annuitant. Numerous variations on this basic SPIA structure are possible, including a deferred starting date, joint and survivor payments, and return of principal or continued payouts in case of early death. Nevertheless, the underlying concept of the life annuity is twofold: (1) The payments continue for the life of the participant (and the joint annuitant), and (2) the payment amount remains unaffected by investment portfolio returns. Both features improve income security for the participant and allow for more-thoughtful retirement planning.

In the past, financial planners contended that the costs of annuities underwritten by insurance companies for individual consumers made SPIAs unattractive. This concern is valid. With so-called retail annuities, purchasers may be charged a large portion of the annuitized account balance in the form of upfront loads and commissions. In addition, the insurance industry has also made annuity pricing opaque and conflated SPIAs with other annuity products (such as variable and indexed annuities) that are more investments than insurance. Although these more complex annuity products may have a role in financial planning for retirees, the confusion that they have created in the minds of potential life annuity users has damaged retirees' understanding of the value that SPIAs can provide.

DC plan sponsors have the unique capacity to objectively assist their participants in better understanding the valuable role that standard life annuities could play in participants' retirement planning. Sponsors can also take the lead in accessing annuity contracts at much more reasonable "institutional" prices. Moreover, although rare, some DC plans now offer guaranteed lifetime

[90]The precise amount depends on various factors, including the investment return on the portfolio and how willing participants are to adjust their spending if their DC assets decline in value. For example, Pfau (2017) estimated that under reasonable conditions, someone purchasing an annuity could spend 30% more than a DC participant using her account balance to fund retirement spending, assuming both persons started with the same retirement wealth.

income payments to participants. These payments can occur inside the DC plan itself or outside the plan.

In-Plan Annuity Options. A small number of DC plan sponsors offer participants the opportunity to acquire annuities within the retirement plan. For a sponsor that also offers a DB plan, the simplest approach allows DC plan participants to use their account balances to purchase a DB benefit, effectively a life annuity. Given the amount of annuity income desired by the participant, the plan actuaries calculate the “fair” (lump sum) value of that lifetime stream, and that amount is withdrawn from the participant’s DC account and contributed to the DB plan. The participant receives a monthly DB annuity payment alongside any other DB payments to which the participant is entitled. Because the purchased annuity is “fully funded” (that is, the actuarial cost of the benefit is entirely paid by the lump sum transfer from the DC plan to the DB plan), this form of in-plan DC annuity creates no serious financial cost or risk to the sponsor. The DB plan already maintains the administrative structure to pay the lifetime benefits. This approach to in-plan annuities is simple, easy to explain, low cost, and of potentially great benefit to DC plan participants, but it relies on the sponsor already having a DB plan in place, an increasingly rare occurrence.

Other plan sponsors are exploring ways to allow DC plan participants to acquire “pieces” of annuities through their regular contributions to the DC plan.[91] This approach has numerous variations, but in general for plan participants in their 50s or older, a portion of their DC plan contributions are set aside in a designated fixed-income investment (usually contained in a TDF). With each of these contributions, the plan credits the participant with owning a small portion of an annuity. When the participant reaches retirement age, he can choose to convert the accumulated pieces into an actual annuity payment or take the market value of the fixed-income position in the form of a cash distribution.

With this approach, the in-plan annuity purchase can be set as the default investment option. The contributions to buy the annuity pieces occur gradually, without the participant needing to make a positive decision. Up until the time that the annuity payout begins, the purchase is reversible. As with the DB annuity purchase, however, participants must still ultimately decide to trigger the annuity sometime after they retire—a difficult decision for many. For participants who leave the plan before retirement, such as through a change in employment, currently no portability features exist that allow the participant to take the accumulated annuity to another DC plan.

[91]Munnell (2019) cited one such example.

The participant must choose to either leave the accumulated annuity in the old plan or take a cash withdrawal and lose the annuity benefit.

Incorporating annuities into TDF design appears to be a natural means of nudging participants toward creating lifetime income for themselves. Because so many plans and participants have embraced TDFs and sponsors have used them as a default investment option, they have become ubiquitous investment vehicles. Participants have grown comfortable with the notion that the risk profile of TDFs changes over time, gradually adding more fixed income to the fund. After participants reach a certain age, including an annuity purchase option as part of a TDF's fixed-income sleeve should not be viewed as a significant change to the structure of the TDF. So long as the annuity piece is carried at market value and participants can choose to liquidate the TDF at their discretion, they are unlikely to be concerned with the annuity component. In fact, we believe that participants—particularly millennials, who have known TDFs as their primary investment choice so far—may actually expect the funds to contain an annuity option. After all, TDFs are advertised as one-stop shopping for DC participants. To the extent that participants recognize decumulation in retirement as an issue, they may come to expect TDFs to be part of the solution.

Out-of-Plan Annuity Options. Some DC plan sponsors are providing participants with access to insurance company annuity contracts outside the plan. The sponsors do not take on fiduciary responsibility for the purchase but instead work with platforms that source low-cost annuities from various insurance carriers. These services effectively allow participants to receive competitive insurance company bids on their annuity purchases, which helps greatly to mitigate the commissions and fee issues, as well as the transparency problems, found in retail annuity contracts.

Participants specify the lump sums to be invested or the annuity income desired, along with other terms, such as registering co-annuitants, period certain guarantees, annuity start dates, and inflation adjustments to annuity payments. The insurance companies operating on the plan sponsor's platform submit real-time bids, and participants can choose among the offers or decline and possibly return at another date to entertain additional bids. Some of the large mutual fund organizations, which can be accessed through IRAs, also offer these competitive annuity platforms. Sponsors are increasingly looking to these platforms to provide a valuable service to participants while retaining some control over messaging to them.

The Annuity Puzzle

For many years, observers have pondered the strange fact that even when people seeking lifetime income are offered a life annuity with actuarially fair pricing, very few of them accept it. This fact is so widely recognized and counterintuitive (at least to economists) that it has acquired its own name: the Annuity Puzzle.[92] What factors underlie this seemingly counterproductive behavior?

- **The "inequity" of dying early.** Mortality pooling means that some will die early to the benefit of others who live longer, and people dislike the idea that they might be the "losers" in the mortality pooling process. The notion of "subsidizing" the winners in the mortality lottery strikes many people as unfair.[93]
- **Unwillingness to give up control of account balances.** People who have saved all their lives and built up meaningful account balances are reluctant to surrender control of their investments. They may value the sense of spending flexibility that they perceive their account balances offer. Further, they may feel that by investing the money themselves, they can achieve better results than they could from turning their assets over to an insurance company.
- **Irrevocable decision.** People in general shy away from major decisions that cannot be reversed. The fear of buyer's remorse can be intense. Once an annuity is purchased, there is no turning back without incurring punitive surrender charges. Even if they understand the long-term benefits, few participants relish the thought of unconditionally exchanging an account balance for a future income stream.
- **Confusion and suspicion of annuities.** Like many financial products, annuities are not well understood. The insurance industry is largely to blame, because the terminology in annuity contracts is daunting and the history of conflicts of interest among financial advisers and insurance agents taints the product. Even the term "annuity" is off-putting because it hides the product's true purpose, which is to generate secure lifetime income for beneficiaries. (If they were called a "pension plan in a box," more people might buy them.) Finally, there is concern about counterparty risk—the possibility that years from now, the insurance company might not stand behind its promises.

[92]This term was first referred to by Modigliani (1986) as the *annuitization puzzle*.
[93]Benartzi and Shu (2019) cited perceived unfairness of annuities as being the key variable in determining whether an individual is open to the idea of purchasing an annuity.

- **Misunderstanding of longevity probabilities and the advantages of mortality pooling.** As noted, many people fail to appreciate how long they and their spouses might live. They tend to anchor on median ages of death, ignoring the probabilities that they will exceed that age, particularly for one member of a couple. Moreover, participants possess virtually no knowledge of how much mortality pooling can enhance retirement income.

- **Account balance illusion and low interest rates.** Few participants can grasp the lump sum value that they would need today to sustain a lifetime stream of income. As a result, when they learn the amount of the annuity payouts into which their accumulated account balances will translate, they express disappointment and reject the annuity solution. This reaction is exacerbated by the protracted low interest rate environment that has made annuities appear unattractive, particularly in times of soaring stock prices.

- **Inflation concerns.** Most annuities (including most private-sector DB plans) do not adjust their payments for inflation, and hence their purchasing power declines over time. Participants do not understand that the equivalent nominal fixed-income position held in an account will likewise suffer from inflation. This issue is one of asset allocation rather than an annuity-versus-account-balance issue. Participants seeking inflation protection otherwise need to hold imperfect and risky inflation hedges, such as equities or commodities, or difficult-to-manage baskets of Treasury Inflation-Protected Securities (TIPS).[94]

- **Bequest motive.** A life annuity generally has no residual value, and hence after the annuitant (and co-annuitant, if any) dies, nothing is left for his or her heirs. The notion that the annuity's value will disappear upon the death of the annuitant—much like the thought of dying "early" and being unable to pass along the "unused" portion of the annuity—makes most

[94]The big exception to this lack of annuitized inflation protection of course is Social Security, which is one reason why it remains a critical foundation of most retirement plans. Outside of Social Security, protecting against inflation is expensive. Sexauer et al. (2012) and Sexauer and Siegel (2013) offered an interesting use of a laddered portfolio of TIPS and flexible withdrawal strategies to generate a stream of lifetime income from the TIPS portfolio until age 85, followed by payouts from a deferred annuity purchased at age 65 that begins payout at age 85. Totten and Siegel (2019) described a similar plan that involves equities in the accumulation phase. The cost of the deferred annuity is generally about 12%–15% of the total asset balance at retirement.

participants uncomfortable, even if they comprehend that the sole purpose of annuities is to pay benefits while the annuitants are alive.

- **Opposition by financial advisers.** A high percentage of financial advisers are compensated based on assets under management or commissions related to investments purchased by their clients. Because annuities lower assets under management, advisers have a natural incentive against recommending annuitization, which they sometimes cynically refer to as *annuicide*, because their fee payments decline when assets are annuitized.

Decumulation Education

Despite the innovations surrounding both in-plan and out-of-plan annuity options, sponsors have been extremely slow to add guaranteed lifetime income features to their DC plans. Perplexingly, surveys indicate that not only do sponsors recognize that the fundamental concept of lifetime income in their DC plans is potentially valuable, but so do participants.[95] Yet the take-up rate—both in terms of sponsors offering lifetime income options and then, when it is available, by participants choosing these options—remains abysmal.

The issue has a chicken-and-egg aspect that deters sponsors from offering annuities to participants. The primary reason for this lack of annuity adoption is that sponsors have not witnessed a groundswell of demand from participants for guaranteed lifetime income. But participants will demand lifetime income only to the extent that they are helped to understand the value of it. Without that education, participants are more likely to roll their assets out of DC plans and into what may be more expensive IRAs, without finding the help they need to create anything resembling adequate lifetime income.

The Annuity Puzzle hinders plan participants from choosing guaranteed lifetime income solutions, even from those plan sponsors that offer a life annuity decumulation option. Certain aspects of the puzzle likely will never be resolved sufficiently to convince a large portion of plan participants. The behavioral issues are deeply rooted and work against any education efforts that a sponsor could offer. Nevertheless, education surely holds part of the answer to encourage participants to at least seriously consider purchasing guaranteed lifetime income with their DC plan balances. Further, even if a lifetime income option is not offered, the conversation with participants about how

[95]Manganaro (2019a) cited a BlackRock survey as reporting that 8 in 10 plan sponsors believe participants would benefit from a TDF that generates guaranteed retirement income, while a similar percentage of participants agreed that it would be valuable if their employers provide "secure income-generating options" in their plans.

they can best decumulate their account balances may lead to more-thoughtful long-term planning and better outcomes.

Education first must happen among plan sponsors. Just as participants hold serious misconceptions about the value of annuities, many sponsors likewise suffer from a lack of appreciation of the benefits of guaranteed lifetime income—specifically, the financial value of mortality pooling. Even sponsors that understand the issue well have been reluctant to offer in-plan solutions encompassing annuities, for fear of being held fiduciarily responsible for their selections and because of concerns about recordkeeping issues. Nevertheless, recent US regulatory advice opened the door to in-plan and out-of-plan annuities, and the SECURE Act of 2019 stripped away most of these fiduciary concerns. (We will discuss those changes shortly.)

Given the evolution of out-of-plan annuity products, sponsors should take the time to familiarize themselves with the products and evaluate whether they could successfully offer them to their plan participants. Larger sponsors in particular have been willing to incorporate plan features that encourage asset accumulation—including automatic enrollment, auto-escalation, and TDFs. Few have been willing to add elements to their DC plans that encourage decumulation strategies designed to generate secure lifetime income. Yet participants rely heavily on their plan sponsors for financial decision-making resources; they rarely have another source of non-conflicted information. The dam preventing sponsors from endorsing guaranteed lifetime income must break before participants can be expected to show an interest.

Recordkeepers must also be educated in this area. Not all recordkeepers have the necessary systems in place to handle in-plan annuity offerings. The costs of implementing solutions, particularly when they involve insurance companies and investment managers not on the recordkeepers' platforms, can make it cost prohibitive for smaller plan sponsors to initiate annuity solutions. Of course, recordkeepers, large or small, are driven by business demand. Without an interest on the part of sponsors, recordkeepers have little incentive to develop the connections with insurance companies and managers required to offer lifetime income.

Finally, there is the education of participants. For many, their DC account balances are the largest sum of money that they will ever control, and their retirement fortunes depend on managing it well. Most have little financial sophistication or access to outside advice, particularly when it comes to post-retirement planning. Few DC participants are presented with information related to life expectancies, the risk of outliving savings, or coordinating their DC account decumulation with other sources of retirement income. Yet there is evidence (MetLife 2017) that when offered illustrations about how much their DC account balances might provide in retirement, a significantly higher percentage of plan participants took an annuity if one was available as an alternative to a lump sum.

Perhaps just as important, MetLife (2017) found that among those who take lump sums, roughly 20% depleted those amounts rapidly—in five and a half years, on average. Whether they ran out of money or not, many retirees spent considerable portions of their lump sums on major luxury purchases, such as vacations, cars, home improvements, or new homes. Among those who opted for annuities, almost all were convinced that they had made the right choice and that the predictability of the income helped them budget more confidently and feel financially secure.

With their reputation for objectivity, sponsors are well positioned to provide the education that participants need to begin to appreciate the value of sustainable lifetime income, whether it will involve an annuity purchase or a disciplined approach to spending down account balances. Sponsors should not endorse one approach over another, but they should make information available. To date, virtually all sponsor education efforts have focused on accumulating assets. When participants reach their 50s, sponsors should consider developing education programs that highlight the need for a thoughtful approach to decumulating DC assets. Participants need assistance in thinking about how to set budgets for retirement spending as well as how to fund those budgets with their available resources in their non-working years. At a minimum, sponsors must help their participants understand that preparing to decumulate DC accounts over a lifetime in retirement should be given the same care and planning that goes into accumulating those accounts.

Sponsors should begin decumulation education for participants years before they retire and need to decide how to convert assets to income. The choice of whether to exchange account balance assets for an annuity is fraught with uncertainty. It is far too much to expect participants to digest all the relevant information in the space of a few weeks or months prior to retirement, much less the few hours that an employee is likely to spend with a retirement counselor. Convincing participants to seriously explore their options requires frequent and long-term reinforcement, with references to the value provided by other annuity benefits, specifically Social Security and, if offered by a sponsor, a DB pension.

We believe retirement plan sponsors should address a set of fundamental topics in their efforts to better inform participants about lifetime income. Those topics include the following:

- **Mortality pooling.** Educating plan participants begins with helping them understand the value of mortality pooling. Sponsors have done an excellent job of driving home the advantages of reducing investment risk by holding diversified portfolios of assets. They need to take as strong a position in promoting the reduction of longevity risk by entering a diversified pool of insured lives. Sponsors should emphasize that participants are not in a contest with an insurance company whereby the insurance company profits if they die early. Rather, they are joining with other participants to protect themselves against the possibility of running out of money late in life.
- **Converting account balances to retirement income.** Sponsors need to explain basic retirement income concepts and demonstrate how much income a participant's account value could purchase if annuitized. Such discussions will be a significant wakeup call for many participants as they come to realize that their current account balances may not actually cover sizable amounts of their retirement income. Many participants suffer from the illusion that their account balances will support greater spending in retirement than is truly the case. Sponsors should not hide behind that misunderstanding. For participants with inadequate account balances, illustrating potential annuity income at a minimum may stimulate additional saving by participants. It may also help participants begin to view retirement financing from the perspective of securing annuity income as opposed to spending down account balances.
- **Life annuities are insurance, not investments.** Annuities provide insurance against outliving retirement assets and offer a way to stabilize retirement spending. Purchasers of annuities are not trying to grow their assets; their accumulation days are over. Confusion is rife regarding life annuities (insurance) versus variable annuities (investments). Participants who enter retirement with balances inadequate to sustain future spending plans need to be disabused of the notion that they can somehow grow their way out of that dilemma. Participants who are nearing retirement or who have retired face largely fixed (in nominal terms) liabilities in the form of future expenses. They should be encouraged to seek retirement income strategies to help them meet those liabilities in a low-risk manner.

- **Partial annuitization as a viable option.** Participants vary with respect to how annuities might work for them. Wealthier participants have different income replacement needs than less wealthy individuals; more risk-averse participants have different views on longevity risk than less risk-averse people. Most participants, however, would benefit from being able to create guaranteed lifetime income at some point in their retirement. Many financial advisers recommend annuitizing first the essential spending needs—food, housing, transportation, basic medical, and so on. Discretionary expenditures, such as travel or entertainment, may be better funded through an account balance that allows for flexibility in planning. Further, by anchoring essential spending with annuitized income, a participant may be able to more aggressively invest the residual assets. By explaining partial annuitization of account balances, sponsors can help make the annuitization decision seem less monumental and irrevocable.
- **Role of deferred (longevity) annuities.** Immediate life annuities, triggered at retirement, are not the only valuable form of guaranteed lifetime income. Plan participants may find considerable value in purchasing annuities that do not start to make payments for decades (deferred annuities). The cost of these annuities is extremely low, partly because many people die before receiving the benefits. As a result, only a small part of an account balance need be spent to purchase a relatively large set of future payments. But for those who do live for decades following retirement, longevity annuities can provide a valuable source of financial assistance after other account balances reach zero. In a sense, these longevity annuities are truly life insurance—financial protection against living a very long life. The government has encouraged longevity annuities through specific regulations (qualified longevity annuity contracts, or QLACs) that preserve the tax deferral of DC plan account balances until the annuities begin.[96]
- **Liquidity is an illusion.** Many participants mistakenly believe that holding account balances creates liquidity and hence flexibility in terms of future spending plans, especially in the case of dire emergencies. Frequently, this perceived liquidity is an illusion. For participants who

[96]The optimal age to add annuity income and the use of deferred life annuities are interesting topics beyond the scope of our discussion. Milevsky (2013) found evidence to indicate that annuities are most valuable to persons in their 70s and that deferred annuities play an important role in providing cost-effective longevity protection. The amount that can be put into a QLAC, preserving tax deferral on the portion of the tax-deferred retirement account that is used to purchase it, is quite limited—currently the lesser of $135,000 or 25% of total tax-deferred retirement assets. Still, every little tax break helps.

require the bulk of their account balances to meet essential spending, little flexibility is truly available. The accounts must be drawn down to meet those expenditures, without the opportunity to make major discretionary purchases. Moreover, because annuities offer mortality credits, they bolster available spending power beyond what account balances can offer. Holding account balances in reserve for emergencies is an expensive insurance policy that is perhaps better addressed by appropriate true insurance (such as long-term care policies). Only if participants own excess assets well above what is needed to sustain necessary spending does the flexibility of account balances offer the option to significantly alter spending plans.

- **Demographic factors and financial situations differ among participants.** Individuals in poor health may view annuity benefits differently than will those in good health. Individuals with limited financial resources relative to their desired retirement spending needs may view annuities differently from those with more adequate resources or even a considerable surplus of resources.
- **Acknowledging that behavioral biases affect decisions.** How the decision is framed affects how participants respond to the option to annuitize. For example, Brown, Kling, Mullainathan, and Wrobel (2008) showed that when the choice between annuities and account balances is framed as a consumption question—with the annuity providing a higher payment for life but without a bequest—most people choose the annuity. When framed as an investment question—and people are told they cannot access the annuity funds and the benefit ends at death, as opposed to an account that earns income, can be accessed at any time, and offers a bequest if any funds are left over—most choose the account.
- **Hedge against cognitive decline.** As we age, our abilities to make complex choices decline—an underappreciated reason to prefer annuities over account balances. Belbase and Sanzenbacher (2017) noted that more than half of people over age 85 experience some sort of cognitive impairment. Asset allocation and budgeting decisions are difficult enough at a young age. The young retirees who feel confident managing their financial affairs today may encounter serious problems doing so 25 years later. Retirees become increasingly susceptible to financial fraud as they age. Annuities provide a steady stream of income that does not rely on retirees making decisions. Once established, the income continues for the annuitant's lifetime and cannot be tampered with.

Impact of the SECURE Act of 2019 on Lifetime Income in DC Plans

In the past, regulation has deterred the implementation of guaranteed lifetime income solutions in DC plans, frustrating sponsors, investment managers, and annuity providers alike. Several key provisions of the SECURE Act of 2019 directly affect the incentive for and the ability of DC plan sponsors to offer lifetime income to DC plan participants. We highlight three important features of the legislation.

Fiduciary Protection. The SECURE Act offers a safe harbor for ERISA fiduciaries selecting an annuity provider. One reason that DC sponsors often cite for not implementing guaranteed lifetime income options more aggressively involves the regulatory ambiguity of annuity provider vetting and the resultant risk of being sued over the provider choice. The act effectively removes this worry by requiring that the sponsor need only obtain several largely perfunctory written representations, attesting that the insurer meets minimal regulatory criteria and will continue to communicate any status changes in the future. Further, the sponsor must verify that the costs (including fees and commissions) of the guaranteed lifetime income product are "reasonable" (although not necessarily the lowest cost) for the benefits offered.

Portability. The inability to transfer an annuity option from one sponsor's plan to another has been a plan design sticking point. The SECURE Act provides a partial solution to the problem. If a sponsor drops an annuity option, the standard remedy in the past was to liquidate the annuity—an unappealing step. The SECURE Act allows participants the right to request a distribution of the plan annuity into an IRA, in-kind and without penalty, if the sponsor eliminates the plan option. The beneficiary must, of course, select an IRA provider for which an annuity is a permitted investment.

Lifetime Income Disclosures. We have discussed the idea that participants rarely understand how much lifetime income their account balances can purchase. Few sponsors have been willing to display such estimates for fear of being sued over a figure that might be construed as a promise. The SECURE Act now not only allows but *mandates* that sponsors include a standardized projection of the monthly annuity payments that current account values could produce.

We are under no illusions that the SECURE Act provisions will somehow bring about an immediate and widespread movement toward annuities on the part of plan sponsors. Specific guidance must still be written by regulators and implemented by sponsors. Nevertheless, the act is an important step. The legislation represents strong evidence of a shift in regulatory attitudes toward encouraging the inclusion of guaranteed lifetime income as a component of DC plans.

The chicken-and-egg problem still exists, but sponsors will have far fewer legal issues to grapple with and can focus instead on the challenge of designing appealing lifetime income options and educating (and nudging) participants to examine them. Recall that the Pension Protection Act of 2006 relieved sponsors of the state wage law and discrimination testing burdens associated with automatic enrollment. Only the most prescient observers would have predicted that, 10 years later, that feature would be ubiquitous among large DC plans and become the shining example of how to use behavioral plan design to move participants toward better retirement outcomes.

Bibliography

AARP Public Policy Institute. 2015. "People Aged 65 and Older Who Rely on Social Security for 90% of Family Income (in 2013) and Average Monthly Benefit (December 2014) by State." AARP (15 November). www.aarp.org/ppi/info-2015/people-aged-65-and-older-who-rely-on-social-security-for-90-percent-of-family-income-and-average-monthly-benefit-by-state.html.

Alight Solutions. 2018. "The Impact of Managed Accounts and Target Date Funds in Defined Contribution Plans: 2007–2016." https://alight.com/getmedia/e6617f8c-bbb0-4351-b337-c74784a2632e/professional-investment-assistance-report.pdf.

Allgood, Sam, and William Walstad. 2016. "The Effects of Perceived and Actual Financial Literacy on Financial Behaviors." *Economic Inquiry* 54 (1): 675–697.

Amabile, Teresa, and Steve Kramer. 2012. "To Give Your Employees Meaning, Start with Mission." *Harvard Business Review* (19 December). https://hbr.org/2012/12/to-give-your-employees-meaning.html.

Applied Research & Consulting LLC. 2009. "Financial Capability in the United States: Initial Report of Research Findings from the 2009 National Survey." Report prepared for the FINRA Investor Education Foundation (1 December). www.usfinancialcapability.org/downloads/NFCS_2009_Natl_Full_Report.pdf.

Argento, Robert, Victoria L. Bryant, and John Sabelhaus. 2013. "Early Withdrawals from Retirement Accounts during the Great Recession." Working Paper 2013-22, Federal Reserve Board Finance and Economics Discussion Series (March).

Austin, Rob. 2017. "Target Date Funds: Who Is Using Them and How Are They Being Used?" Research report, Alight Solutions. https://alight.com/getmedia/295e0bf5-b1ad-434e-bbca-612115ce3daa/target-date-funds-white-paper.pdf.

Bahney, Anna. 2020. "A Quarter of Millennials Who Save Have Amassed $100,000. Here's How They Plan to Spend It." *CNN Business* (30 January). www.cnn.com/2020/01/30/success/millennial-saving/index.html.

Bailey, Jeffery V., and Thomas M. Richards. 2017. *A Primer for Investment Trustees: Understanding Investment Committee Responsibilities*. Charlottesville, VA: CFA Institute Research Foundation.

Barney, Lee. 2018. "More Than One-Quarter of 401(k) Assets Are in CITs." *PLANADVISER* (10 September). www.planadviser.com/one-quarter-401k-assets-cits/.

Belbase, Anek, and Geoffrey T. Sanzenbacher. 2017. "Cognitive Aging and the Capacity to Manage Money." Center for Retirement Research at Boston College Brief 17-1 (January). https://crr.bc.edu/wp-content/uploads/2017/01/IB_17-1.pdf.

Benartzi, Shlomo, and Richard H. Thaler. 2007. "Heuristics and Biases in Retirement Savings Behavior." *Journal of Economic Perspectives* 21 (3): 81–104.

Benartzi, Shlomo. 2012. *Save More Tomorrow: Practical Behavioral Finance Solutions to Improve 401(k) Plans*. New York: Penguin Group.

Benartzi, Shlomo, and Suzanne Shu. 2019. "Why Retirees Are Wary of Annuities." *Wall Street Journal* (10 February). www.wsj.com/articles/why-retirees-are-wary-of-annuities-11549854540.

Bengen, William P. 1994. "Determining Withdrawal Rates Using Historical Data." *Journal of Financial Planning* 7 (4): 171–180.

Beshears, John, James J. Choi, Christopher Harris, David Laibson, Brigitte C. Madrian, and Jung Sakong. 2015. "Self Control and Commitment: Can Decreasing the Liquidity of a Savings Account Increase Deposits?" National Bureau of Economic Research Working Paper 21474 (August).

Biggs, Andrew. 2019. "The Phony Retirement Crisis." *Wall Street Journal* (28 February).

BlackRock. 2019. "2019 BlackRock DC Pulse Survey."

Blanchett, David. 2019. "The Impact of Managed Accounts on Participant Savings and Investment Decisions." Morningstar Research report (22 January).

Block, Sandra. 2020. "Employers Cutting 401(k) Matching Contributions." *Kiplinger's Personal Finance* (5 June).

Bodie, Zvi, Jonathan Treussard, and Paul Willen. 2007. "The Theory of Life Cycle Savings and Investing." Federal Reserve Bank of Boston Public Policy Discussion Paper 07-03 (May).

Brady, Peter, and Michael Bogdan. 2014. "Who Gets Retirement Plans and Why, 2013." *ICI Research Perspective* 20 (6): 1–16.

Brown, Jeffrey R., Jeffrey R. Kling, Sendhil Mullainathan, and Marian V. Wrobel. 2008. "Why Don't People Insure Late Life Consumption? A Framing Explanation of the Under-Annuitization Puzzle." *American Economic Review* 98 (2): 304–309.

Bureau of Labor Statistics. 2019. "Retirement Benefits: Access, Participation, and Take-Up Rates." Employee Benefits Survey (September).

———. 2020. "Distribution of Private Sector Employment by Firm Class Size." www.bls.gov/web/cewbd/table_f.txt.

Carlson, Ben. 2017. "The Increasing Importance of the 401k." *A Wealth of Common Sense* (31 October). https://awealthofcommonsense.com/2017/10/the-increasing-importance-of-the-401k/.

Collinson, Catherine, Patti Rowey, and Heidi Cho. 2020. "Retirement Security amid COVID-19: The Outlook of Three Generations." Transamerica Center for Retirement Studies (May).

Corbin, Kenneth. 2019. "What Would a Workplace Emergency Savings Benefit Look Like?" *Bloomberg News* (11 October).

Correia, Margarida. 2018. "Workplace Financial Education Helps Lower Employee Stress, Prudential Says." *Employee Benefit News* (7 September). www.benefitnews.com/advisers/news/financial-wellness-programs-helps-lower-employee-stress-prudential-says.

———. 2019. "Fee Disparity Linked to Size of Defined Contribution Plans." *Pensions & Investments* (15 April). www.pionline.com/article/20190415/PRINT/190419910/fee-disparity-linked-to-size-of-defined-contribution-plans.

Cotton, Dirk. 2013. "Sequence of Returns Risk and Payouts." *Retirement Café* (24 September). www.theretirementcafe.com/2013/09/sequence-of-returns-risk-and-payouts.html.

Devlin-Foltz, Sebastian, Alice M. Henriques, and John Sabelhaus. 2015. "The Evolution of Retirement Wealth." Working Paper 2015-009, Federal Reserve Board Finance and Economics Discussion Series (February).

Dholakia, Utpal. 2017. "Why Automating Retirement Savings May Not Be Enough." *Psychology Today* (6 November).

Dixon, Amanda. 2019. "Survey: 21% of Working Americans Aren't Saving Anything at All." *Bankrate* (14 March). www.bankrate.com/banking/savings/financial-security-march-2019/.

Dushi, Irena, Howard M. Iams, and Jules Lichenstein. 2015. "Retirement Plan Coverage by Firm Size: An Update." *Social Security Bulletin* 75 (2): 41–55.

Dushi, Irena, Howard M. Iams, and Christopher R. Tamborini. 2017. "Contributory Retirement Savings Plans: Differences across Earnings Groups and Implications for Retirement Security." *Social Security Bulletin* 77 (2): 13–24.

Fazzi, Raymond. 2020. "U.S. Workers Heading Blindly into Retirement, Survey Says." *Financial Advisor* (14 October). www.fa-mag.com/news/u-s--workers-heading-blindly-into-retirement--survey-says-58425.html.

Fernandes, Daniel, John Lynch, and Richard Netemeyer. 2014. "Financial Literacy, Financial Education, and Downstream Financial Behaviors." *Management Science* 60 (8): 1861–2109.

Fidelity. 2014. "Cashing Out Can Derail Retirement." "Points of View—Benefits and Policy Insights."

Fisch, Jill, Andrea Hasler, Annamaria Lusardi, and Gary Mottola. 2019. "New Evidence on the Financial Knowledge and Characteristics of Investors." Global Financial Literacy Excellence Center, George Washington University (9 October).

GAO. 2009. "401(k) Plans: Policy Changes Could Reduce the Long-Term Effects of Leakage on Workers' Retirement Savings." Report to the chairman, Special Committee on Aging, US Senate (August).

———. 2015. "Retirement Security: Most Households Approaching Retirement Have Low Savings." Report to the ranking member, Subcommittee on Primary Health and Retirement Security, Committee on Health, Education, Labor, and Pensions, US Senate (May).

———. 2016. "401(k) Plans: Effects of Eligibility and Vesting Policies on Workers' Retirement Savings." Report to the ranking member, Subcommittee on Tax Policy, Committee on Ways and Means, House of Representatives (October).

———. 2017. "The Nation's Retirement System: A Comprehensive Re-Evaluation Is Needed to Better Promote Future Retirement Security." Report to Congress (October).

Garon, Thea, Andrew Dunn, Necati Celik, and Helen Robb. 2020. "U.S. Financial Health Pulse: 2020 Trends Report." Financial Health Network.

Gerstley, Ashley. 2017. "What Employees' Financial Unwellness Is Costing Their Companies." *Forbes* (7 September).

Gideon, Michael, and Joshua Mitchell. 2016. "Which Employers Sponsor Retirement Plans? Evidence from Linked Employer-Employee Administrative Records." Working paper (7 November).

Hastings, Justine, Olivia S. Mitchell, and Eric Chyn. 2010. "Fees, Framing, and Financial Literacy in the Choice of Pension Managers." Pension Research Council Working Paper 2010-09. Wharton School, University of Pennsylvania (July).

Hastings, Justine, Brigitte Madrian, and William L. Skimmyhorn. 2013. "Financial Literacy, Financial Education, and Economic Outcomes." *Annual Review of Economics* 5 (August): 347–373.

Hawkins. 2017. "Plug the Leaks before Expanding Access to Defined Contribution Plans." *Retirement Clearinghouse* (29 June). https://blog.rch1.com/blog/plug-the-leaks-before-expanding-access-to-defined-contribution-plans.

Hawkins, Thomas. 2019. "Spotlight on Cashout Leakage: The Fundamentals." *Retirement Clearinghouse* (28 June). https://blog.rch1.com/blog/spotlight-on-cashout-leakage-the-fundamentals.

Holden, Sarah, and Jack VanDerhei. 2006. "The Role of 401(k) Accumulations in Providing Future Retirement Income." In *Restructuring Retirement Risks*, edited by David Blitzstein, Olivia S. Mitchell, and Stephen P. Utkus, 37–51. New York: Oxford University Press.

Horan, Stephen M. 2005. *Tax-Advantaged Savings Accounts and Tax-Efficient Wealth Accumulation*. Charlottesville, VA: CFA Institute Research Foundation.

Iacurci, Greg. 2019. "401(k) Plan Sponsors Laser-Focused on Fees." *Investment News* (18 January).

Ilmanen, Antti, David G. Kabiller, Laurence Siegel, and Rodney Sullivan. 2017. "Defined Contribution Retirement Plans Should Look and Feel More Like Defined Benefit Plans." *Journal of Portfolio Management* 43 (2): 61–76.

Investment Company Institute. 2016. "A Look at Private-Sector Retirement Plan Income after ERISA, 2015." *ICI Research Perspective* (December).

———. 2020a. "The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2019." *ICI Research Perspective* (June).

———. 2020b. "ICI Resources on 401(k) Plans."

John Hancock Retirement Plan Services. 2018. "The Financial Wellness Imperative: Five Reasons Why Financial Wellness Is Becoming an Essential Benefit." https://supplements.pionline.com/uploads/supplements/The_Financial_Wellness_Imperative_JHRPS.pdf.

Kaiser, Tim, and Lukas Menkhoff. 2017. "Does Financial Education Impact Financial Behavior and If So, When?" *World Bank Economic Review* 31 (3): 611–630.

Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.

Kitces, Michael. 2014. "Life Expectancy Assumptions in Retirement Plans: Singles, Couples, and Survivors." *Nerd's Eye View* (19 March). www.kitces.com/blog/life-expectancy-assumptions-in-retirement-plans-singles-couples-and-survivors/.

———. 2017. "Why the Net Unrealized Appreciation (NUA) Rules Aren't Always a Great Deal." *Nerd's Eye View* (12 July). www.kitces.com/blog/net-unrealized-appreciation-irs-rules-nua-from-401k-and-esop-plans/.

Lu, Timothy (Jun), Olivia S. Mitchell, Stephen P. Utkus, and Jean A. Young. 2015. "Borrowing from the Future: 401(k) Plan Loans and Loan Defaults." NBER Working Paper 21102 (April).

Lusardi, Annamaria, and Olivia S. Mitchell. 2007. "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education." *Business Economics* 42 (January): 35–44.

———. 2011. "Financial Literacy around the World: An Overview." *Journal of Pension Economics & Finance* 10 (4): 497–508.

Manganaro, John. 2018. "Examining the Root Causes of Financial Stress." *PLANSPONSOR* (13 September). www.plansponsor.com/examining-root-causes-financial-stress/.

———. 2019a. "Plan Sponsors Actively Evaluating, Changing TDFs." *PLANSPONSOR* (1 April). www.plansponsor.com/plan-sponsors-actively-evaluating-changing-tdfs/.

———. 2019b. "Lessening the Impact on Retirement Savings of Taking a Hardship Withdrawal." *PLANSPONSOR* (29 July). www.plansponsor.com/lessening-impact-retirement-savings-taking-hardship-withdrawal/.

McAllister, Jamie, Greg Ungerman, and Patrick Wisdom. 2020. "2020 Defined Contribution Trends Survey." Callan Associates (January).

McCarthy, Edward. 2018. "Cautious Optimism for Retirement Income Legislation." *WealthManagement.com* (21 August). www.wealthmanagement.com/retirement-planning/cautious-optimism-retirement-income-legislation/.

Mellman, George S., and Geoffrey T. Sanzenbacher. 2018. "401(k) Lawsuits: What Are the Causes and Consequences?" Center for Retirement Research at Boston College Brief 18-8 (May). https://crr.bc.edu/wp-content/uploads/2018/04/IB_18-8.pdf.

MetLife. 2017. "Paycheck or Pot of Gold Study: Making Workplace Retirement Savings Last" (April). www.metlife.com/content/dam/metlifecom/us/homepage/institutionalRetirement/insights/retirementincomesolutionsinsights/2017-Paycheck-or-Pot-of-Gold-Study.pdf.

Milevsky, Moshe A. 2013. *Life Annuities: An Optimal Product for Retirement Income*. Charlottesville, VA: CFA Institute Research Foundation.

Miller, Stephen. 2019. "DOL Eases Automatic Transfer of Left-Behind 401(k) Dollars to New Plans." *Society for Human Resources Management* (7 August). www.shrm.org/resourcesandtools/hr-topics/benefits/pages/dol-eases-auto-portability-of-left-behind-401k-dollars-to-new-plans.aspx.

Modigliani, Franco. 1986. "Life Cycle, Individual Thrift, and the Wealth of Nations." *American Economic Review* 76 (3): 297–313.

Moore, Danna. 2003. "Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences." SESRC Technical Report 03-39. Social and Economic Sciences Research Center, Washington State University (December).

Moore, Rebecca. 2019. "Understanding Behavioral Biases Can Help Plan Sponsors with Investing Communications." *PLANSPONSOR* (23 September).

Morrissey, Monique. 2016. "The State of American Retirement: How 401(k)s Have Failed Most American Workers." Economic Policy Institute (3 March). www.epi.org/publication/retirement-in-america/.

Munnell, Alicia H. 2018. "401(k) Lawsuits Are Surging. Here's What It Means for You," *MarketWatch* (12 May). www.marketwatch.com/story/401k-lawsuits-are-surging-heres-what-it-means-for-you-2018-05-09.

———. 2019. "Annuities Need to Be a 401(k) Default." *MarketWatch* (31 July). www.marketwatch.com/story/annuities-need-to-be-401k-default-2019-07-31.

Munnell, Alicia H., and Dina Bleckman. 2014. "Is Pension Coverage a Problem in the Private Sector?" Center for Retirement Research at Boston College Brief 14-7 (April). http://crr.bc.edu/wp-content/uploads/2014/04/IB_14-7-508.pdf.

Munnell, Alicia H., and Anqi Chen. 2017. "Who Contributes to Individual Retirement Accounts?" Center for Retirement Research at Boston College Brief 17-8 (April). http://crr.bc.edu/wp-content/uploads/2017/04/IB_17-8.pdf.

———. 2020. "401(k)/IRA Holdings in 2019: An Update from the SCF." Center for Retirement Research at Boston College Brief 20-14 (October). https://crr.bc.edu/wp-content/uploads/2020/10/IB_20-14.pdf.

Munnell, Alicia H., Wenliang Hou, and Geoffrey T. Sanzenbacher. 2018. "National Retirement Risk Index Shows Modest Improvement in 2016." Center for Retirement Research at Boston College Brief 18-1 (January). https://crr.bc.edu/wp-content/uploads/2018/01/IB_18-1.pdf.

Munnell, Alicia, Weliang Hou, Anthony Webb, and Yinji Li. 2016. "Pension Participation, Wealth and Income: 1992–2010." Center for Retirement Research at Boston College Working Paper 16-3 (July). https://crr.bc.edu/wp-content/uploads/2016/07/wp_2016-3-1.pdf.

Munnell, Alicia, and Anthony Webb. 2015. "The Impact of Leakages from 401(k)s and IRAs." Center for Retirement Research at Boston College Working Paper 15-2 (February). https://crr.bc.edu/wp-content/uploads/2015/02/wp_2015-2.pdf.

Muse, Robb. 2020. "Future Trends in CIT Product Development." *PLANADVISER* (27 August). www.planadviser.com/future-trends-cit-product-development/.

Pentegra Retirement Services. 2018. "2018 Millennial Benefit Trends Report." https://pentegra.com/uploads/2018%20Millennial%20Benefit%20Trends%20Report%20.pdf.

Peterson, Catherine, and Anne Lester. 2018. "2018 DC Plan Sponsor Participant Survey Findings—Part 2: Motivate Participants to Save." J.P. Morgan Asset Management (7 August). https://am.jpmorgan.com/us/en/asset-management/adv/insights/retirement-insights/defined-contribution/plan-participant-survey/motivate-participants-to-save/.

Pew Charitable Trusts. 2017. "Employer Barriers to and Motivations for Offering Retirement Benefits" (21 June). www.pewtrusts.org/en/research-and-analysis/issue-briefs/2017/06/employer-barriers-to-and-motivations-for-offering-retirement-benefits.

Pfau, Wade. 2017. "Retirement Income Showdown: Risk Pooling versus Risk Premium." *Journal of Financial Planning* (February) 40–51.

PLANSPONSOR. 2018. "Employees Want Financial Education and Employers Are Stepping Up." *PLANSPONSOR* (18 July). www.plansponsor.com/employees-want-financial-education-employers-stepping/.

———. 2020. "2020 DC Survey: Plan Benchmarking." *PLANSPONSOR* (October–November). www.plansponsor.com/research/2020-dc-survey-plan-benchmarking/.

Prudential Global Investment Management. 2020. "The Evolving Defined Contribution Landscape: The Expanding Role of OCIOs" (October). www.pgim.com/dc-ocio.

Purcell, Patrick. 2009. "Income of Americans Aged 65 and Older, 1968 to 2008." Cornell University ILR School (November).

PwC. 2017. "Special Report: Financial Stress and the Bottom Line" (September). https://resources.salaryfinance.com/hubfs/PwC%20Financial%20Education%20Report:%20Financial%20stress%20and%20the%20bottom%20line.pdf.

Rekenthaler, John, Jake Spiegel, and Aron Szapiro. 2017. "Small Employers, Big Responsibilities." *Morningstar* (November).

Schaus, Stacy, and Ying Gao. 2017. *Successful Defined Contribution Investment Design*. Hoboken, NJ: Wiley.

Scholz, John K., and Ananth Seshadri. 2008. "Are All Americans Saving 'Optimally' for Retirement?" Paper presented at the 10th Annual Joint Conference of the Retirement Research Consortium (August).

Sexauer, Stephen C., Michael W. Peskin, and Daniel Cassidy. 2012. "Making Retirement Income Last a Lifetime." *Financial Analysts Journal* 71 (1): 78–89.

Sexauer, Stephen C., and Laurence B. Siegel. 2013. "A Pension Promise to Oneself." *Financial Analysts Journal* 69 (6): 13–32.

Sharpe, William F. 1991. "The Arithmetic of Active Management." *Financial Analysts Journal* 47 (1): 7–9.

Singh, Dhara. 2020. "Half of Americans Took from Retirement Savings or Plan to amid Pandemic, Survey Finds." *Yahoo! Money* (15 May). https://money.yahoo.com/half-of-americans-took-from-retirement-savings-or-plan-to-amid-pandemic-190220591.html.

Smialek, Jeanna. 2019. "Many Adults Would Struggle to Find $400, the Fed Says." *New York Times* (23 May).

Social Security Administration. 2019. "Benefits Planner/Life Expectancy."

Stanford Center on Longevity. 2012. "Underestimating Years in Retirement" (12 September).

Statman, Meir. 2019. *Behavioral Finance: The Second Generation*. Charlottesville, VA: CFA Institute Research Foundation.

Steyer, Robert. 2019. "Sponsors See Proposals as Low-Priority Item." *Pensions & Investments* (4 March). www.pionline.com/article/20190304/PRINT/190309995/sponsors-see-proposals-as-low-priority-item.

T. Rowe Price. 2020. "Reference Point."

Tergesen, Anne. 2016. "401(k)s Tweak How They Charge for Expenses." *Wall Street Journal* (20 May). www.wsj.com/articles/401-k-s-tweak-how-they-charge-for-expenses-1463736600.

Totten, Thomas L., and Laurence B. Siegel. 2019. "Combining Conventional Investing with a Lifetime Income Guarantee: A Blueprint for Retirement Security." *Journal of Retirement* 8 (4): 45–59.

Towers Watson. 2013. "DC Mission: Vision and Action."

United Nations Economic and Social Commission for Asia and the Pacific. 2009. "What Is Good Governance?" (10 July).

US Department of Labor. 2011. “Understanding Retirement Plan Fees and Expenses.” Employee Benefits Security Administration (December).

———. 2017. “Meeting Your Fiduciary Responsibilities.” Employee Benefits Security Administration (September).

———. 2019a. “Private Pension Plan Bulletin: Abstract of 2017 Form 5500 Annual Reports.” Employee Benefits Security Administration (September).

———. 2019b. “Retirement Benefits: Access, Participation and Take-Up Rates.” Employee Benefits Security Administration (September).

———. 2020. “Information Letter 06-03-2020.” Employee Benefits Security Administration (3 June).

US Small Business Administration Office of Advocacy. 2018. “United States Small Business Profile.”

VanDerhei, Jack, Sarah Holden, Luis Alonso, and Steven Bass. 2018. “401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016.” Employee Benefits Research Institute Issue Brief 458 (10 September).

Vanguard. 2019. “How America Saves: Small Business Edition.” (June).

———. 2020. “How America Saves 2020” (June).

Waring, M. Barton, and Laurence B. Siegel. 2015. “The Only Spending Rule Article You Will Ever Need.” *Financial Analysts Journal* 71 (1): 91–107.

Winkelmann, Kurt, and Joseph Pandolfo. 2018. “Understanding Retirement Income Risk.” Heller-Hurwicz Economics Institute (30 July). https://cla.umn.edu/heller-hurwicz/news-events/news/policy-brief-understanding-retirement-income-risk.

Woolley, Suzanne. 2019. “America’s Elderly Are Twice as Likely to Work Now Than in 1985.” *Bloomberg News* (22 April). www.bloomberg.com/news/articles/2019-04-22/america-s-elderly-are-twice-as-likely-to-work-now-than-in-1985.

Young, Galina, and Jean A. Young. 2018. “Stretching the Match: Unintended Effects on Plan Contributions.” Vanguard Center for Investor Research (December). https://institutional.vanguard.com/iam/pdf/CIRSTM.pdf.

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