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The pros and cons of remaining in a 401(k) plan after retirement

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Abstract

This paper examines whether retirees would benefit from staying in their companies' 401(k) plans after retirement, versus rolling their savings over to Individual Retirement Accounts (IRAs). Our focus is on individuals having low or moderate levels of financial literacy. We conclude that many such retirees would likely find it financially rewarding to retain their assets in their 401(k) plans. While IRAs currently offer a wider range of advice or distribution options compared with 401(k) plans, we close by pointing to legislative and technological developments that may produce better outcomes, more retirement confidence, and greater security for retirees. © 2023 Academy of Financial Services. All rights reserved.

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1. Introduction

Many models of household financial behavior have traditionally analyzed decisions made by rational, well-informed individuals. In this paper, we focus instead on the vast majority of Americans who enter retirement with low or moderate levels of financial literacy (Lusardi & Mitchell, 2014; Lusardi et al., 2014). In particular, we evaluate the choices that these individuals confront at retirement when they have accumulated assets in a 401(k) plan and

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must either roll their funds over to Individual Retirement Accounts (IRAs), or leave their assets in their workplace 401(k) plans.² In what follows, we focus mainly on those two options, while noting in passing that a third option, generally the least desirable of the three, is to cash out the plan and pay taxes (and perhaps penalties) on the assets withdrawn.³

These choices are available to many older workers, depending on the group considered. For example, 64% of private sector employees (excluding agricultural workers, household workers, and the self-employed) have access to defined contribution plans (Bureau of Labor Statistics, 2021). For those participating in these plans, whether to roll over when they leave the labor force or transition from one job to another is a key financial choice they must make. As we show below, several factors can usefully be integrated into this decision, including the levels of expenses charged by different options, the types of funds available in which retirees can invest, the availability and cost of financial advice, and the retiree's need for various types of decumulation products.

In what follows, we first review the investment and administrative costs associated with IRAs and 401(k) plans. While these costs are likely to vary both between providers and different savers within each category, it is useful to highlight what is, and is not, included in these tallies. Next, we examine different ways that financial advice is provided to 401(k) and IRA participants, along with the various costs associated with these alternatives. Another important factor shaping the decision to remain in an employer plan or roll over to an IRA pertains to the size of the participant's account balance. We also touch on both employer and financial advisor perspectives concerning the rollover decision.

We find that, for people in employer plans with high fees, an IRA rollover could be a beneficial financial decision. However, most people with low or moderate levels of financial literacy could do better financially by remaining in their employer 401(k) plans, in part because they have better fiduciary protection in those plans than in IRAs. We close with a summary of the issues facing participants, along with a brief discussion of potential improvements in the decumulation process for 401(k) account balances.⁴

2. Understanding 401(k) and IRA fees, and the role of plan size

The Institutional Retirement Income Council (IRIC, 2021) quantified the additional retirement income participants can receive by retaining their assets in their employer-sponsored defined contribution plans throughout retirement, versus using IRAs that they access through advisors or brokers. The IRIC report proposed that employer-sponsored defined contribution plans can use their institutional bargaining power to provide their participants with better investment and decumulation options than those available from individually managed retirement accounts. In what follows, we investigate this proposition.

Three principal types of costs that IRA and 401(k) participants must pay for their accounts involve investment management, administrative, and advisory fees. We first discuss investment management and administrative fees, including the importance of plan size for plan costs. Advisory fees are discussed in Section 4.

2.1. Investment fees

According to the Investment Company Institute (Duvall, 2021), 401(k) investors typically pay lower investment fees than do IRA investors. That source noted that the asset-weighted expense ratio of 401(k) equity mutual funds was 39 basis points (bps) in 2020, compared with 57 bps for equity mutual funds in IRA accounts. Moreover, this comparison may understate the fee advantage of 401(k) plans, since the largest employer-sponsored retirement plans typically use collective investment trusts (CITs) rather than mutual funds.

One reason that 401(k) plans may have lower average fees than IRAs is that large 401(k) plans can often access low-cost institutional share classes or commingled investment trusts (CITs) that are not available to retail investors. For plans with more than \$500 million in assets, nearly 45% of their assets were in CITs in 2022, a percentage that has grown over time. Smaller plans have not shifted to CITs, partly because CIT minimums may be too high for smaller plans (Morningstar, 2022). The cost differential between institutional and retail share classes may be larger in actively managed funds versus index funds. This cost differential also appears to have diminished over time, reducing the cost advantage of CITs over mutual funds. For example, while one very large plan sponsor offers its 401(k) savers a passive target date fund (TDF) CIT at 6.5 bps, Vanguard recently lowered the cost of its retail target date mutual funds (available to IRA savers) to 8 bps (Szala, 2022).

Given these small differences, using a 401(k) rather than an IRA does not automatically lead to lower investment fees, and financially sophisticated savers could build very low-cost IRA portfolios for themselves. Nevertheless, most participants are likely to lack the skills to do a good job constructing their own portfolios without advice. For these participants, the ability to stay in an institutionally priced plan with a professionally designed default investment option is likely to lead to a lower-cost outcome.

2.2. Administrative fees

In addition to investment fees, 401(k) providers also charge fees for asset custody, record-keeping, and third-party administration. These are charged either on a per-participant basis, or as a percentage of assets under management. Additionally, plans may charge for specific services, such as participant loans or withdrawals.

While some IRA providers do charge participants a small annual administrative (account) fee, many do not, with their income instead generated from investment expense charges levied on assets under management (Folger, 2022). One large provider, for instance, has no setup, annual, or maintenance fee. A large recordkeeper offers an IRA with a \$20 annual fee plus a \$20 annual fee on mutual funds for balances less than \$10,000. Participants can waive both fees by signing up for electronic delivery of account documents (IRA Reviews, 2021). Robo-advisors are also available; these tend to be low-cost automated online platforms that manage participant assets based on employee preferences elicited via online surveys. One large robo-advisor charges the same fees (in basis points) for small and large accounts (Betterment, 2021).

Relatively less information is available on 401(k) plan administrative fees. In a recent pension fees lawsuit, one large company was reported to have charged 86 bps in administrative fees, much higher than the average 44 bps charged by comparable plans having a similar asset range (\$250 to \$500 million; Manganaro, 2019). A different pension fee lawsuit was filed against a company with annual recordkeeping fees of about \$80 per participant (Manganaro, 2021). Schimmer (2021) reported that the median annual recordkeeping fee was \$59 per participant in 2017.

Recordkeeping fees are charged either as per participant flat fees or as a percentage of assets across the whole plan; for low-balance participants, the latter approach is more advantageous. Sometimes employers will cover active employees' administrative fees, so these workers need not incur these costs out of pocket.

2.3. The impact of plan size on 401(k) fees

Fees for 401(k) plans vary considerably by plan size. The majority of 401(k) participants are in large plans, which usually charge lower fees than do small plans. For instance, 88% of private sector defined contribution participants were covered by plans with 100+ participants in 2018 (Employee Benefits Security Administration, 2021). BrightScope/Investment Company Institute (2020) found that 401(k) plans with under \$1 million in assets had average total costs of 144 bps, versus 48 bps for plans with \$100–\$250 million in assets, and 28 bps for plans with over \$1 billion in 2017.

One reason that large 401(k) plans charge lower fees than small plans is that the former tend to be more heavily invested in index funds; accordingly, the higher fees that characterize small plans are in part due to the investment choices selected by plan sponsors. Specifically, index funds comprised 23% of assets in plans with under \$1 million in plan assets, versus 40% of assets in plans with over \$1 billion (BrightScope/Investment Company Institute, 2020). Over 95% of 401(k) plans with \$10+ million in assets offered index funds in their investment options, while 79% of 401(k) plans with under \$1 million did so in 2017.

In addition to being more likely to offer index funds, participants in larger plans often also have access to lower-cost institutional share classes. For instance, 401(k) plans with assets below \$1 million charged an average of 76 bps for target date mutual funds and 18 bps for index mutual funds in 2018; this compares with 37 bps for target date mutual funds and 6 bps points on index mutual funds in plans with assets over \$1 billion (BrightScope/Investment Company Institute, 2020).

Another reason that larger plans have lower costs is that they may benefit from economies of scale in performing their administrative tasks. For instance, many administrative functions such as nondiscrimination testing or regulatory reporting can cost the same, regardless of the size of the plan. As a result, administrative fees as a percentage of assets tend to be higher for small plans than for large plans; this is one important reason for why small plans tend to be more expensive than large plans.

The 401(k) average fees have also fallen over time. In addition to fee compression for both investments and administrative pricing, an additional explanation for this is the increase in the proportion of participants in low cost, large plans. According to Morningstar (2022),

plans with more than \$500 million in assets covered 34% of participants in 2011, but by 2019, they had added almost 13.5 million more participants and covered 43% of plan participants. Around 15% of plans covered 90% of participants. These large plans have also pushed for lower fees by switching to index funds and investing in collective investment trusts.

3. How participant balances and financial literacy influence rollover decisions

Participant levels of financial literacy will also influence the choice between remaining in an employer plan or moving to an IRA. Financially literate participants who wish to manage their own assets will be able to use the wide range of competitively priced IRA investment options to construct very low-cost portfolios for themselves. Nevertheless, the less financially literate are more likely to need IRA advice, as they will no longer have a default option selected by a plan sponsor on which to fall back.

For participants who need advice, their level of accumulated assets will shape the type of advice they can access. Table 1 provides background information on the distribution of 401(k) account balances for people in their 60s as they move into retirement. The median account balance was \$90,385 in 2018 for people with 20–30 years tenure, making it a reasonable approximation of this group's 401(k) accruals. At the 25th percentile, the account balance was \$28,398, and at the 90th percentile, it was \$557,589. We use this information to evaluate the availability of advice for individuals having high (\$550,000), median (\$100,000), and low (\$30,000) plan balances at retirement. Interestingly, the evidence shows that relatively few—only about one-fifth of low-balance retirees—knew that they pay investment fees on their accrued assets, versus 53% of retirees having balances over \$100,000 (General Accountability Office, 2021). We hypothesize that the lower the accumulated balance, the more likely it is that the individual has low or moderate financial literacy and will need advice to construct a low-cost retirement portfolio.

In Table 2, we evaluate the cost differential to participants in employer plans of different sizes, comparing remaining in their employer plans versus rolling into IRAs. We assume that the cost of the 401(k) plan includes investment and administrative fees, whereas the cost of the IRA contains only the cost of the investments. These calculations do not include the cost of financial advice. When participants are unsophisticated, we assume that they invest in "average cost" IRA mutual fund portfolios; conversely, for financially sophisticated participants, we assume that they invest in low-cost passive target date funds. This may understate the cost of the IRA option to unsophisticated participants, because, in addition to

Table 1 Percentile distribution of 401(k) account balances for people in their 60s by tenure in the plan, 2018

Job tenure (years)	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
All	7,039	28,398	90,385	257,752	557,589
5–10	7,144	19,983	51,654	140,907	307,093
10-20	4,138	19,229	54,683	152,088	355,609
20-30	8,286	34,638	106,617	283,509	590,145
>30	15,892	64,987	203,793	487,292	911,783

Source: EBRI database; we thank Jack Van Derhei for providing these calculations.

Type of account plan size and fees	Average IRA fees (57 bps)	Benchmark IRA TDF fee (10 bps) ^a
Small 401(k) (<\$10M) (104 bps)	47	94
Medium 401(k) (<\$250M) (48 bps)	-9	38
Large 401(k) (>\$1bn) (22 bps)	-35	12
Mega ^b (8 bps)	-49	-2

Table 2 Gain or loss (in basis points) from rolling out of the employer plan into an IRA: Excludes explicit advice cost

Source: Authors' calculations.

Notes: Small, medium, and large 401(k) fee data from BrightScope/Investment Company Institute (2020). 401(k) fees include investment and administration fees for plans using mutual funds. IRA investment fees from Table 1.

^aBenchmark IRA TDF fee based on average of Vanguard retail TDF fee (8 bps) and Fidelity Freedom Index TDF fee (12 bps).

^bVery large "mega" plans using passive CITs may have significantly lower costs: for example, one large plan with \$4.5 bn in total assets offers TDFs for 6.5 bps + approx. \$50 p.a. admin costs, which on our median balance of \$200,000 would be the equivalent of 8 bps of total cost.

the cost of the investment funds, they may also need to pay separately for advice to build their investment portfolios.

Results show that some participants in small, high-cost 401(k) plans might find less costly options, even if they are not financially sophisticated, by rolling into IRAs. In most cases, however, financially unsophisticated participants are likely to encounter lower costs by remaining in their employer plans rather than withdrawing their assets and moving them to IRAs.

Participants with low account balances are likely to do better by leaving their money in their employer plans instead of rolling over to IRAs. As this group is likely to be the least financially literate, it is more likely to need financial advice. Nevertheless, due to low balances, these participants will have the least access to affordable advice outside employer plans. While robo-advice is available to participants with very low balances, such participants may be unaware of robo-options or lack the confidence to engage with them.

For financially sophisticated participants, or those with larger balances, the situation is less clearcut. Participants with large balances will be able to choose whatever form of advice they find most helpful. An attractive option for large balance participants who are in competitively priced employer plans is to leave assets that they do not need to finance current retirement spending in their employer plans. Nevertheless, high-balance participants may have more sophisticated investment and advice needs, for which IRAs can provide a wider range of options.

4. Financial advice

In addition to the investment and account fees that retirement savers incur, plan participants also face costs if they need financial advice relating to their retirement portfolios. In this section, we discuss costs of financial advice provided by traditional human advisors, robo-advisors, and hybrid advisors, for 401(k) versus IRA participants. In general, the

evidence shows that participants with higher account balances are most likely to use professional financial advisors: 49% of retirement savers with investable assets over \$500,000 use advisors, compared with only 16% of those having under \$50,000 (Cerulli Associates, 2021a).

4.1. Financial advice options for 401(k) participants

While 401(k) sponsors do not generally provide actual investment advice, in practice, participants in 401(k) plans often receive implicit financial advice from their plan providers at no additional cost beyond the investment and administrative charges they pay on their retirement savings. One way in which this occurs is that plan sponsors select the investment menus for the offered plans. These are often interpreted by employees as firm-provided advice (Mitchell & Utkus, 2022). Additionally, most 401(k) plans have a default investment option, typically a target date fund suite, for participants who do not make active investment choices. According to a large retirement plan provider, target date funds are offered by nearly 90% of employer-sponsored defined contribution plans, such as 401(k) plans (FINRA, 2022).

Under U.S. law, plan providers have a fiduciary duty to provide investment options in participants' best interests, in terms of diversification, risk, expected return, fees, and the choice of investment options. This fiduciary oversight provides 401(k) plan participants a level of protection that does not exist in the typical IRA setting. Sponsor fiduciary duty has been vigorously enforced through a series of recent lawsuits arising when 401(k) participants have questioned the level of fees and the quality of investment options available (Turner, 2021). Such lawsuits are likely to have been a factor in 401(k) fees declining more rapidly over time, compared with average fees for mutual funds, as is evident in Table 3.

The 401(k) participants who wish for more customized portfolios than those provided by plan sponsor default options may decide to pay for additional advice regarding their retirement plan investments. One increasingly widespread option is a managed account, where the plan's available investment options are combined with employee attributes such as risk tolerance, salary, or outside assets, to construct and manage a personalized investment portfolio. Fees for managed accounts vary but are often in the range of 25–35 bps, in addition to the cost of the underlying investments (Cerulli Associates, 2021b). Alternatively, participants can hire their own external advisors—either human or robo—to help them choose from the investment options in their 401(k) plans. External advisors can also give advice on participants' non-401(k) assets. Nevertheless, participants within a 401(k) plan who use

Table 3 Asset-weighted equity mutual fund expense ratios: 2010 and 2020

Equity mutual fund market segment	2010 expense ratio (bps)	2020 expense ratio (bps)	Ratio of 2020 to 2010 (percent)
Overall	83	50	60.2
401(k) plans	70	39	55.7
IRA	85	57	67.0

Source: ICI (2021a, 2021b) and authors' calculations.

external advisors will need to implement these recommendations themselves, and advisors can only help them select from the investment options available on the plan menu (or through a plan brokerage window, if available).

4.2. Financial advice options for IRA participants

If participants wish to roll their assets out of employer plans into IRAs, they must first select an IRA custodian in the form of a bank, brokerage firm, or insurance company; alternatively, participants can go directly to a mutual fund company (LaPonsie, 2022). Because IRA managers offer a wide range of investments from which participants can select, with diverse fees and charges, the choice of investment products is an important decision, requiring a level of knowledge not typically demanded of 401(k) participants.

IRA participants can also avail themselves of other advice strategies to help them make their investment choices. For instance, they can choose a do-it-yourself (DIY) approach, going completely on their own when selecting an IRA provider, and then selecting from among the investment funds available. To construct a very low-cost portfolio, a financially sophisticated participant could take advantage of the quite inexpensive index funds available on many IRA platforms: for instance, S&P 500 index funds have fees starting below 2 bps, and passive target date funds are available starting at 8 bps (deHaan et al., 2021; Vanguard, 2022). Nonetheless, financially illiterate participants could be less likely to find these products and hence be prone to making suboptimal decisions. IRA investors can also choose to pay separately for advice, for instance by hiring an independent financial advisor; nevertheless, for people with low account balances, this option is unlikely to be available. An alternative would be to access a robo-advisor, a relatively inexpensive advice option that is also available to individuals with low account balances. Still another option is that IRA holders can choose a hybrid approach, where a robo-advisor also offers some contact with a human advisor. Such hybrid services tend to be intermediate in cost between pure robo- and human advisors.⁵ If retirement savers roll assets over from 401(k) plans where they did not need advice or were able to access advice through managed account services, to IRAs, where they do require advice concerning choice of provider and/or investments, the cost difference can be substantial, particularly if the starting point is a low-cost, large employer plan (see Table 4).

Robo-advisors in the United States generally charge an annual advice fee of around 25 bps, in addition to the cost of the underlying investment options. These often require no or very low minimum account balances (Fisch et al., 2019). Accordingly, robo-advisors can suit clients who otherwise might not have access to affordable financial advice. Some robo-advisors provided by mutual fund companies may not even charge separately for advice, though, in turn, they limit investment choices to the fund options offered by the parent companies.

In addition to pure robo-advisors, many companies have launched hybrid advice options. These combine digital advice and algorithmic portfolio construction with some access to a human advisor, often in the form of financial planning services offered via a certified financial planner (CFP). Hybrid advisors usually require higher minimum account balances of

Table 4 Cost comparisons for different types of advice

	401(k): Managed account ^a	IRA: Robo-advisor ^b	IRA: Hybrid advisor ^c	IRA: Human advisor
Advice fee Asset minimum Investment fee	20–25 bps \$5,000–\$25,000 Same cost as employer	15–25 bps \$0–\$3,000 Typically uses passive	30–40 bps \$50,000–\$100,000 Typically uses passive	~100 bps Usually at least \$100,000 Investments selected by
	plan investment options	investments as building blocks, around 10 bps	investments, around 10 bps	advisor, may also contain active funds
Access to human advisor	Some access	No	Some access	Yes

^bRobo advisor based on average of Vanguard (2022) digital advisor (estimated 15 bps net advisory fee) and Betterment (25 bps advisory fee) plus 10 bps Notes: ^aManaged account based on Fidelity managed account at 25 bps for assets under \$200,000 and 20 bps for assets exceeding \$200,000. assumed cost of investment funds.

^cHybrid IRA based on average of Vanguard Personal Advisor Services (2022) (30 bps) and Betterment premium (40 bps) plus 10 bps assumed for investments (Betterment, 2022). \$50,000–\$100,000 and charge an annual 30–40 bps for advice, in addition to the cost of the underlying investments. Most robo assets are invested with hybrid advisors (Ponte, 2022).

Human financial advisors typically charge around 100 bps per year for advice on assets under management, in addition to the cost of the underlying investments (AdvisoryHQ, 2021). These financial advisors may require clients to have minimum investable assets of \$100,000 or more (Ludwig, 2017). Some advisors have started to offer one-time advice sessions to savers for a flat fee, rather than charging a percentage of assets under management. In such cases, the advisor can help savers create financial plans, but savers will typically need to implement them on their own.

5. Employer and financial advisor perspectives

For various reasons, some plan sponsors could prefer that retirees remain in their employer-sponsored plans. One is that retaining assets increases the pool of investable funds, which may allow sponsors to negotiate lower fees from retirement plan service providers. To this point, some employers have already expressed increased interest in participant retention postretirement. A recent survey documented that 69% of all plan sponsors and 84% of those with assets over \$500 million stated that they favored retaining participant assets in the company's 401(k) plan after retirement (Cerulli Associates, 2021a). Additionally, asset managers are starting to develop target date suites that convert participants' accumulated balances into income streams after retirement, and some include embedded annuity products (BlackRock, 2021; State Street Global Advisors, 2021). In addition to the advantages of retaining scale, plan sponsors can offer these integrated products to give participants greater confidence that their money will not run out in retirement.

Nevertheless, employers do continue to bear fiduciary liability for retirees who remain in 401(k) plans. This concern can now be alleviated from 2021, if employers join a Pooled Employer Plan (PEP), as the PEP can assume most of the fiduciary responsibility for the plans. So far, however, there has been limited uptake of these plans (Morningstar, 2022). Another potential retention cost relates to firms' requirement to continue communicating with retirees as plan participants. In most cases, however, communicating with participants is delegated to recordkeepers (ERISA Advisory Council, 2020), so such communication is unlikely to be very costly.

Financial advisors also have views as to whether 401(k) participants should roll over to IRAs, depending on whom they work for. If a participant's advisor is also the plan's advisor, either directly or through a managed account, the advisor is compensated for managing the account within the 401(k) plan and can allocate the participant's assets across the plan's investment options. Independent advisors unaffiliated with employers' plans will not usually receive asset-based fees on assets retained within the 401(k) plans, nor will they be able to manage the assets directly. Additionally, advisors may wish to use investment options unavailable on the retiree's plan menu, or they may wish for more flexible distribution options than the 401(k) platform offers. For these reasons, advisors often prefer that participants roll their assets to IRAs after retirement. Nevertheless, as managed account solutions

become more sophisticated, and more employer plans add investment products and other functionality specifically designed for the retirement phase, advisors may find it increasingly feasible and attractive to manage retirement assets within employer plans.

6. Evaluating participants' decisions to roll over

Next, we outline key features of IRAs and 401(k) plans that may encourage or discourage employees from rolling over their assets from their 401(k) plans at retirement.

7. Why roll over to an IRA?

Several features of IRAs may help explain why retirees may move their retirement assets out of their 401(k) plans. These include:

7.1. Greater awareness of IRAs as a postretirement solution

Traditionally, participants have rolled their assets out of their employer plans into IRAs upon retirement. Although surveys show that increasing numbers of employers are expressing an interest in retaining participant assets post-retirement, some employers may not be actively promoting this option. By contrast, IRA providers do actively market their services through multiple channels. In some cases, participants may be unaware that they could use their employer plans to pay them a stream of income in retirement. And in other cases, retirees might not wish to have their retirement assets tied to former employers and, therefore, they would prefer to roll the money into their personal IRAs after leaving their firms.

7.2. Additional investment choices

Some see the chance to access a wider range of investment choices as an advantage of IRAs, compared with 401(k) plans. In 2017, the average large 401(k) plan offered 28 investment options, of which 13 were equity funds, three were bond funds, and eight were target date funds. Moreover, more than four-fifths of plans offered target date funds (BrightScope/Investment Company Institute, 2020). By contrast, IRAs can provide access to thousands of different investment funds, and they may also offer access to individual stock and bond purchases (Porter, 2021).

Offsetting that argument, substantial research has shown that offering fewer choices may be better for people with low financial literacy, due to mental overload associated with many choices (Carosa, 2011; Iyengar & Lepper, 2000). Specifically, offering too many investment options in 401(k) plans can reduce participation rates (Iyengar et al., 2004). Moreover, Shen and Turner (2018) found that participants do not need very many investment options to be adequately diversified. This was specifically the case in the Thrift Savings Plan (2021) that offered only five diversified funds to federal employees, the military, and members of

Congress.⁶ Furthermore, offering a wide range of investment options can increase the chances that participants will make risky investment choices that could endanger their retirement security. Nowadays, some IRAs allow participants to invest in stock options (Parker, 2022), cryptocurrency (BitcoinIRA, 2022), and gold (Best, 2022). It is unlikely that most 401(k) participants would benefit from such highly risky assets that require substantial financial sophistication to manage effectively.

Offsetting the appeal of more funds available in IRAs versus 401(k) plans, 401(k)s can also offer investments frequently unavailable in IRAs. Specifically, 401(k) plans can offer less expensive institutionally priced mutual funds and collective investment trusts, and they may also include stable value funds and guaranteed investment contracts not usually available outside employer-provided plans. Many large 401(k) plans also offer brokerage windows through which participants can access most of the investment options available on providers' IRA platforms.⁷

7.3. Account consolidation

Another rationale for rolling assets into IRAs after retirement may be participants' desire for simplification. Although it is usually possible to transfer assets from one 401(k) plan to another if the saver continues to work, the process can be laborious. By contrast, rolling assets from a 401(k) to an IRA is relatively easy at retirement. As an example, when a retiree has accumulated assets in several 401(k) plans over a long career, consolidating them all into a single IRA could be an attractive option. Unsurprisingly, participants who have existing IRAs are more than twice as likely (41%) to roll their assets into IRAs when leaving their employers, compared with participants who did not previously have IRAs (19.5%; The Pew Charitable Trusts, 2021).

7.4. More flexible access to savings

While almost all 401(k) plans allow participants to stay in their employer plans after retirement, many still place limitations on how often participants can access their savings. According to one large recordkeeper (Vanguard, 2021b), 80% of the participants on its platform are in plans that offer installment payments other than required minimum distributions (RMDs), yet only14% are in plans that offer annuities. Additionally, 71% of all participants have access to some level of ad hoc partial distributions, although this feature is most prevalent in the very largest plans. Plans can also limit the number of partial distributions available to participants, and recordkeepers may charge separately for each distribution. For these reasons, participants who need to use their savings to fund spending needs in early retirement, rather than preserving them as a contingency fund, may find the distribution options offered by 401(k) plans overly restrictive. This is most likely to be the case for low balance participants. Indeed, according to one survey (The Pew Charitable Trusts, 2021), only 24% of participants with balances between \$5,000–\$25,000 left their assets in their 401(k) plans when leaving their employers, compared with 36.5% of those with balances over \$100,000. Among low balance participants, 33% rolled their assets to IRAs, versus

28% of participants with assets over \$100,000. The biggest difference was in the share of lump sum withdrawals: 30% of low balance participants took lump sum withdrawals, compared with only 8% of participants with assets over \$100,000.

7.5. Annuities

There is increasing interest among policy analysts and researchers in ways to help protect retirement savers against longevity risk (the risk associated with outliving their assets in old age). A natural way to insure against this risk is to include annuities in 401(k) lineups that promise to pay income checks for life. To date, however, relatively few 401(k) plans have offered annuities, though some providers are beginning to integrate these insurance products into target date funds (Dierking, 2017). One large plan recordkeeper reported that 14% of its plans with 5,000+ participants and 12% of all its plans offered annuities (Vanguard, 2021b). Also, recently enacted and proposed legislation such as the Secure Act and the Secure 2.0 Act, include provisions making it easier for 401(k) plan sponsors to offer annuities.

The reality is that IRA holders can purchase annuities more readily than 401(k) participants can today. Nevertheless, the take-up of annuity products in the United States remains low. Part of the reason may be that to gain an accurate understanding of how annuities work and appreciate the benefits of owning them requires substantial financial literacy and active education by the advisor, on the benefits of owning an annuity (Brown et al., 2017, 2021).

7.6. Roth conversion

While this paper focuses on differences in fees, investment options, access to advice, fiduciary protection, and disbursement options, another issue for some participants may be the tax treatment of the different accounts. A retiree with a traditional 401(k) plan may decide that he or she would prefer to roll over to a Roth IRA since there are no required minimum distributions, and the retiree's assets can continue to grow with preferential tax treatment. Moreover, the beneficiary (usually the participant's heirs) may have no tax liability when the retiree dies. A disadvantage is that taxes, which could be substantial, would be due at the time of the rollover, rather than being postponed and taken with RMDs or other disbursements.

8. Why remain in an employer plan?

Several features of 401(k) plans provide incentives for retirees to stay in employer plans, including the ones mentioned below.

8.1. Fiduciary protection

Plan sponsors have a fiduciary duty to participants to manage the plans in participants' best interests; moreover, sponsors can be held liable through private sector lawsuits or Department of Labor enforcement if they charge excessive fees or provide poorly

performing investment options (Turner, 2021). By contrast, Department of Labor enforcement does not apply to IRAs, and lawsuits concerning IRAs are rare because they are conducted on an individual basis, while 401(k) lawsuits are conducted on a class basis. The investment menus and default investment options in 401(k) plans are selected and overseen by ERISA fiduciaries charged with the responsibility to act in participants' best interests. In an investigation of an employer investment fund screening, Sialm et al. (2015) reported that 401(k) participants benefited from plan sponsors dropping poorly performing funds and adding stronger performers.

The SEC plays an important role in investor protection in the retail space, regulating the products that can be sold to retail investors. By contrast, IRAs do not provide participants with a default investment or an investment menu selected by a fiduciary. This is particularly concerning when persons with low or moderate levels of financial literacy lack the expertise to successfully implement a do-it-yourself approach to constructing portfolios or to seek out the most cost-effective IRA options. As a result, they must either pay for somebody to help them construct a portfolio, or they will be likely to construct portfolios with inappropriate risk levels and probably excessive costs.

8.2. Less need for advice

Financially illiterate participants are more likely to need financial advice if they roll over to an IRA than if they remain in their employer's plans. One reason is that most target date funds offered by 401(k) plans convert into balanced funds after retirement, with a risk profile deemed suitable for most retirees. Therefore, many 401(k) participants will achieve a diversified investment portfolio without financial advice, relying on the default options preselected by employers. The employer-selected default options are likely to be particularly valuable for low balance holders who lack financial literacy, as these individuals will tend to find it difficult to access affordable advice outside their employer plans.

8.3. Institutional pricing on investments and advice

Many retirees who remain in the larger employer plans will benefit from institutional pricing for investment products, which tends to be lower than average IRA pricing. Also, many employer plans offer managed account services that enable participants to receive advice to create investment portfolios based on the plan menu that considers a wider range of inputs, compared with purely retirement date-based target date funds.

The average fees paid for investments in IRAs are higher than those in 401(k)s, which may imply that most participants do not seek the least expensive products. Pension participants surveyed by Turner and Korczyk (2004) were asked if they knew how much they paid in fees (in dollars or as a percentage of assets) for the stock mutual funds they held in their 401(k) plans, and that study concluded that three-quarters of respondents could not answer the question. Hastings et al. (2011) also showed that people with greater financial knowledge paid lower fees for mutual funds. It may also indicate that IRA participants need advice for

portfolio construction, and they are paying indirectly for this advice in the form of higher fees for investment products.

8.4. Protection from creditors

A participant's 401(k) plan assets are protected from creditors under U.S. law, while IRA money is not exempt when a person files for bankruptcy (there is some variability in state law, as noted in Folger, 2021).

8.5. Early access

People who retire from employers who offer 401(k) plans may access their 401(k) assets at age 55 without paying a 10% penalty, compared with age 59½ in an IRA.

9. How new technology and legislation could change the balance

Employer-sponsored 401(k) plans were originally intended to be supplementary retirement savings vehicles to complement conventional defined benefit plans. Nonetheless, with defined benefit plans disappearing from the private sector, fewer Americans today have access to guaranteed retirement income from their retirement savings, compared with the past. There has recently been increased interest among plan sponsors, legislators, and asset managers in keeping participants in employer plans after retirement, but so far, these have gained limited traction due to both legal and technological hurdles. Recent and pending legislation, as well as technological advances, may change this situation going forward.

Legislators have introduced several bills with provisions that make it easier for 401(k) plan sponsors to offer products allowing participants to convert their defined contribution savings into retirement income stream. As noted above, the 2019 Secure Act gave plan sponsors a safe harbor for annuity selection by allowing them to rely on state insurance regulators' assessments of the creditworthiness of insurance providers. It also included provisions permitting easier portability of annuity products. The proposed LIFE Act of 2022 (Norcross, 2022) would allow qualified default investment alternatives (QDIAs) to include allocations to illiquid and potentially variable annuities in 401(k) accounts as well. The Securing a Strong Retirement Act (2021) that recently passed the House of Representatives includes additional provisions facilitating the inclusion of annuities in 401(k) plans, including raising the percentage and potentially the asset limit that can be used for qualified life annuity contracts (QLACs) and expanding the range of products that can be used. These innovations will have limited effect if the problem is lack of demand for annuities from participants, rather than a lack of easily accessible supply.

The SEC's (2019) "Regulation Best Interest: The Broker-Dealer Standard of Conduct" requires advisors and brokers to act in the best interest of clients when considering rollovers from employer plans to IRAs. The Department of Labor (2021) also signaled its intention to apply more stringent regulation to advice on potential rollovers from 401(k) plans to IRAs.

As noted above, participants in small, high-fee plans might benefit the least by remaining in their employer's plans after retirement. Nevertheless, since early 2021, U.S. employers have gained the opportunity to join Pooled Employer Plans (PEPs) that permit otherwise unrelated employers to use the same retirement plan while offloading most administrative and fiduciary responsibility to the Pooled Plan Provider (PPP). So far, PEPs have gained limited traction, but as they gain scale, they could aggregate multiple small or medium-sized employer plans into one larger plan. This could significantly reduce costs and improve the rationale for staying in the employer-sponsored plan after retirement.

Technology has so far been one of the obstacles to keeping participants in employer plans after retirement. This is because 401(k) recordkeeping systems are designed primarily for the accumulation phase, and they have traditionally not offered participants much flexibility in drawing down assets. The options for receiving advice within employer-sponsored retirement plans have also been limited.

This is now starting to change, however, thanks to partnerships between policymakers, asset managers, advisors, insurers, and technology providers. For instance, policymakers have recommended adding annuity products to retirement plans (IRS Notice 2014-66; Iwry & Turner, 2009) and asset managers are beginning to embed annuity products into target date funds, the most used default investments in 401(k) plans (BlackRock, 2021; State Street Global Advisors, 2021). Insurers, recordkeepers, and asset managers are partnering to deliver new retirement income solutions (Pechter, 2022). Managed account providers are also partnering with insurance hubs to provide retirement planning advice and annuity offerings within employer plans (Investment News, 2022). The technology is improving, and managed accounts are expanding to provide additional options for the postretirement phase. This is likely to make it increasingly attractive for advisors to manage their clients' assets within 401(k) plans.

10. Conclusions and implications for the decumulation period

This paper has examined the question of how individuals should think about the choice of retaining their retirement assets in their 401(k) plans after retirement versus rolling them over to IRAs. Our particular focus is on people with low or moderate levels of financial literacy, who comprise much of the older workforce. Against this backdrop, we analyze the choices for retirees most likely to make mistakes concerning rollovers. We conclude that, for people in plans with high fees, which are mostly small plans and thus represent a relatively small group of people, rolling over to IRAs could be a sensible financial decision. Yet most people with low or moderate levels of financial literacy will do better financially by remaining in their employer 401(k) plans. An important reason is that 401(k) plans, through the use of defaults, are more likely to provide retirees more appropriate investment portfolios at lower cost compared with IRA accounts.

Even though most 401(k) plans are likely to offer lower fees in retirement than IRAs, many retirees still do roll their assets over to IRAs. One reason is that the advantages of better access to advice, easier account consolidation, and greater flexibility of withdrawals

offered by IRAs can be seen to outweigh the cost advantages of 401(k)s. Another is that they may not understand that they could leave their assets in their employer plans after retirement, as plan sponsors may not actively promote this option. By contrast, IRA providers continue to actively market their services. We suggest that this may be changing, as legislators make it easier to include income products in 401(k) plan menus. Moreover, asset managers, managed account providers, insurers, and recordkeepers are beginning to partner with new technology providers to make it easier for retirees and their advisors to continue using their 401(k) plans to manage assets in retirement.

Both 401(k) plans and IRAs must evolve if they are to provide better options for participants in the decumulation phase of life. Fornia and Doonan (2022) argue that a typical defined benefit (DB) plan with longevity risk pooling, lower fees, and professional money management can deliver almost twice as much income per dollar invested as a typical DC plan, with four-fifths of this advantage stemming from more efficient management of the post-retirement phase. Incorporating longevity risk pooling into the management of DC assets in the retirement phase could enable many DC plans to adopt attractive features of DB plans while avoiding employer liability as well as the funding and portability problems that the latter have experienced. One new approach proposed by Fullmer and Turner (2022) would be to enable robo-advisors to provide tontines. These involve financial risk pools where participants "mutually and irrevocably agree to receive payouts while living and share the proceeds of their accounts upon death" (Fullmer & Sabin, 2018). Longer term, retaining assets in employer plans after retirement could usher in a new era of collectively managed investment solutions for retirees that could help plan sponsors "put the pension back" into DC plans (Horneff et al., 2020; Iwry et al., 2021). Ultimately, and most importantly, this could yield better outcomes, more retirement confidence, and greater security for retirees.

Notes

- 1 For instance, only 34% of older Americans over age 50 could correctly answer the "Big Three" questions on interest rates, inflation, and stock risk posed in the 2004 Health and Retirement Study (Lusardi & Mitchell, 2014).
- 2 There is also a suboption, where participants who retire with benefits at more than one workplace plan may choose to consolidate all their benefits into one of these workplace plans.
- 3 Generally, the amounts an individual withdraws from an IRA or retirement plan before reaching age 59½ are called "early" distributions. Individuals must pay an additional 10% early withdrawal tax unless an exception applies. One exception is that employees in 401(k) plans who leave their job after age 55 are not subject to the penalty tax (Internal Revenue Service, 2021).
- While we refer specifically to 401(k) plans, our analysis applies generally to employer-sponsored defined contribution plans, including money purchase, 403(a), 403(b), and governmental 457(b) plans, and the federal Thrift Savings Plan.
- 5 Some robo-advisors have also started to provide advice concerning the decumulation phase, though Agnew and Mitchell (2019) and Fisch et al. (2019) report that much remains to be done in this regard.

- A similar point was made by Tang et al. (2010) for a large sample of private sector 401(k) plans. Turner et al. (2016) investigate issues relating to rollovers from the Thrift Savings Plan, and Turner and Klein (2014) study rollovers from 401(k) plans.
- Nevertheless, one large provider reported that very few (1%) of the 30% of participants provided access to brokerage windows through their plans actually used them (Vanguard 2021a).
- 8 These numbers refer to all distributions on termination of employment, not just termination at retirement. Some employers may force participants with balances below \$5,000 to make an immediate distribution into an IRA at termination.

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References

- AdvisoryHQ. (2021). Average Advisor Fees in 2021: Everything You Need to Know. Available at https://www.advisoryhq.com/articles/financial-advisor-fees-wealth-managers-planners-and-fee-only-advisors/
- Agnew, J. & Mitchell, O. S. (Eds.). (2019). *The Disruptive Impact of Fintech on Retirement Systems*. Oxford: Oxford University Press.
- Best, R. (2022). *Best Gold IRA Companies*. Investopedia. Available at https://www.investopedia.com/best-gold-ira-companies-5087720
- Betterment. (2021). Explore Our Pricing. Available at https://www.betterment.com/401k/plan-pricing/
- Betterment. (2022). *Pricing at Betterment*. Available at https://www.betterment.com/pricing?utm_content=brand&utm_medium=sem&&lid=437000 32812145085&ds_s_kwgid=58700004022642666&ds_a_cid=405186663&ds_a_caid=92013 89213&ds_a_agid=91383124217&ds_a_lid=kwd-305491188865&utm_source=bing&utm_campaign=&utm_medium=cpc&utm_keyword=%2Bwww.betterment.com&utm_matchtype=p&utm_creative=&utm_term=%2Bwww.betterment.com&msclkid=69f9548d192912b9cbfa350d24467855&utm_content=www.betterment.com&gclid=CLC7j83w9_MCFSUGiAkdzbEGmg&gclsrc=ds
- BitcoinIRA. (2022). *Invest in Bitcoin Tax-Free With Your IRA*. Available at https://bitcoinira.com/buy-bitcoin/? AID=701&keyword=bitcoin%20ira&network=g&device=c&placement=&adgroup=126567578382&campaign=15147644605&creative=580350434104&adp=&gclid=CjwKCAi A1JGRBhBSEiwAxXblwTfZJzBdBd7U UxdDCPyk3a1TQcCMlSa6klfXM7G0M7TYq6DN vnqCnRoC6FYQAvD_BwE
- BlackRock. (2021). BlackRock's Retirement Income Solution: A Major Step Forward for American Retirement Security. Available at https://ir.blackrock.com/news-and-events/press-releases/press-releases-details/2021/BlackRocks-Retirement-Income-Solution-a-Major-Step-Forward-for-American-Retirement-Security/default. aspx
- BrightScope/Investment Company Institute. (2020). *The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at 401(k) Plans*, 2017. Available at https://www.ici.org/system/files/attachments/pdf/20_ppr_dcplan_profile_401k.pdf
- Brown, J. R., Kapteyn, A., Luttmer, E., & Mitchell, O. S. (2017). Cognitive constraints on valuing annuities. *Journal of the European Economic Association*, 15, 429–462. https://doi.org/10.1093/jeea/jvw009
- Brown, J. R., Kapteyn, A., Luttmer, E., Mitchell, O. S., & Samek, A. (2021). Behavioral impediments to valuing annuities: Evidence on the effects of complexity and choice bracketing. *The Review of Economics and Statistics*, 103, 533–546. https://doi.org/10.1162/rest_a_00892

- Bureau of Labor Statistics. (2021). 67 Percent of Private Industry Workers Had Access to Retirement Plans in 2020. The Economics Daily: U.S. Bureau of Labor Statistics (bls.gov)
- Carosa, C. (2011). How Many Investment Options Should 401(k) Plan Sponsors Offer? Fiduciary News, October 18.
- Cerulli Associates. (2021a). US Retirement End Investor 2021, Solving for the Decumulation Phase. Available at https://www.cerulli.com/research-areas/us-retirement
- Cerulli Associates. (2021b). *The Cerulli Edge: US Retirement Edition 1Q 2021, Edition #58*. Available at https://www.cerulli.com/research-areas/us-retirement
- deHaan, E., Song, Y., Xie, C., & Zhu, C. (2021). Obfuscation in mutual funds. *Journal of Accounting and Economics*, 72, 101429. https://doi.org/10.1016/j.jacceco.2021.101429
- Dierking, D. (2017). *Target-Date Funds Investing in Annuities May Provide Guaranteed Income*. MutualFunds. com, July 4. Available at https://mutualfunds.com/retirement-channel/target-date-funds-investing-annuities-provide-guaranteed-income/.
- Department of Labor. (2021). Temporary Enforcement Policy on Prohibited Transaction Rules Applicable to Investment Advice Fiduciaries. Field Assistance Bulletin 2021-02.
- Duvall, J. (2021). *IRA Investors Are Concentrated in Lower-Cost Mutual Funds*. Investment Company Institute. Available at https://www.ici.org/system/files/file/2021-07/21_view_irafees_print.pdf
- Employee Benefits Security Administration. (2021). 2018 Form 5500 Annual Reports Abstract. Available at https://www.dol.gov/sites/dolgov/files/EBSA/researchers/statistics/retirement-bulletins/private-pension-planbulletins-abstract-2018.pdf
- ERISA Advisory Council. (2020). Considerations for Recognizing and Addressing Participants With Diminished Capacity. Available at https://www.dol.gov/sites/dolgov/files/EBSA/about-ebsa/about-us/erisa-advisory-council/2020-considerations-for-recognizing-and-addressing-participants-with-diminished-capacity.pdf
- FINRA. (2022). Target-Date Funds—Find the Right Target for You. Available at https://www.finra.org/investors/learn-to-invest/types-investments/retirement/target-date-funds-find-right-target-you#:~:text=One% 20increasingly%20popular%20investment%20option,as%20401(k)%20plans
- Fisch, J. E., Labouré, M., & Turner, J. A. (2019). The emergence of the robo-advisor. In J. Agnew & O. S. Mitchell (Eds.). *The Disruptive Impact of Fintech on Retirement Systems* (pp. 13–37). Oxford: Oxford University Press.
- Folger, J. (2021). Which Retirement Funds are Protected From Creditors? Investopedia. Available at https://www.investopedia.com/articles/personal-finance/040716/which-retirement-funds-are-protected-creditors.asp.
- Folger, J. (2022). What Roth IRA Fees Do I Pay? Investopedia. Available at https://www.investopedia.com/what-types-of-roth-ira-fees-do-i-pay-4771122#:~:text=Some%20Roth%20IRA%20providers%20charge,%2425%20and%20%245 0%20per%20year
- Fornia, W. B., & Doonan, D. (2022). A Better Bang For The Buck 3.0: Post-Retirement Experience Drives Pension Cost Advantage. Washington, DC: National Institute on Retirement Security.
- Fullmer, R., & Sabin, M. (2018). *Individual Tontine Accounts Yes, Seriously!* Journal of Retirement. Available at https://retirementincomejournal.com/article/individual-tontine-accounts-yes- seriously/
- Fullmer, R. K., & Turner, J. A. (2022). Robo Tontines. Journal of Retirement, 10, 63–73.
- General Accountability Office (GAO). (2021). *Many Participants Do Not Understand Fee Information, But DOL Could Take Additional Steps to Help Them.* Available at https://www.gao.gov/assets/gao-21-357.pdf
- Hastings, J. S., Mitchell, O. S., & Chyn, E. T. (2011). Fees, framing, financial literacy in the choice of pension managers. In O. S. Mitchell & A. Lusardi (Eds.), *Financial Literacy: Implications for Retirement Security and the Financial Marketplace* (pp. 101–115). Oxford: Oxford University Press.
- Horneff, V., Maurer, R., & Mitchell, O. S. (2020). Putting the pension back in 401(k) plans: Optimal retirement plan design with longevity income annuities. *Journal of Banking & Finance*, 114, 105783. https://doi.org/10.1016/j.jbankfin.2020.105783
- Institutional Retirement Income Council. (2021). Delivering Additional Income Through Lower-Cost Products and Services Available in the Defined Contribution Industry. Available at https://tinyurl.com/3fxnatus

- Internal Revenue Service. (2021). *Retirement Topics—Exceptions to Tax on Early Distributions*. Available at https://www.irs.gov/retirement-plans/plan-participant-employee/retirement-topics-tax-on-early-distributions
- Investment Company Institute. (2021a). *The Economics of Providing 401(k) Plans: Services, Fees, and Expenses*. Available at https://www.ici.org/system/files/2021-06/per27-06.pdf
- Investment Company Institute. (2021b). *Release: Quarterly Market Data*. Available at https://www.ici.org/statistical-report/ret 21 q1
- Investment News. (2022). *Morningstar Partners With Hueler on Annuities*. Available at https://www.investmentnews.com/morningstar-partners-with-hueler-on-annuities-217445
- IRA Reviews. (2021). The Largest IRA Account Provider Companies in 2021. Available at https://www.ira-reviews.com/ira/largest-ira-companies.aspx
- IRS Notice 2014-66. Lifetime Income Provided Through Target Date Funds in Section 401(k) Plans and Other Qualified Defined Contribution Plans. Available at: https://www.irs.gov/pub/irs-drop/n-14-66.pdf
- Iwry, J. M., John, D. C., Pulliam, C., & Gale, W. G. (2021). *Collective Defined Contribution Plans*. Brookings Institute. Available at https://www.brookings.edu/research/collective-defined-contribution-plans/
- Iwry, M., & Turner, J. (2009). Automatic Annuitization: New Behavioral Strategies for Expanding Lifetime Income in 401(k)s. The Retirement Security Project.
- Iyengar, S. S., & Lepper, M. (2000). When choice is demotivating: Can one desire too much of a good thing? Journal of Personality and Social Psychology, 79, 995–1006. https://doi.org/10.1037/0022-3514.79.6.995
- Iyengar, S. S., Jiang, W., & Huberman, M. G. (2004). How much choice is too much? Contributions to 401(k) retirement plans. In O. S. Mitchell & S. Utkus (Eds.), *Pension Design and Structure: New Lessons from Behavioral Finance* (pp. 83–95). Oxford: Oxford University Press.
- LaPonsie, M. (2022). 7 IRA Accounts to Consider for 2022. *US News*, Jan 7. Available at https://money.usnews.com/money/retirement/articles/best-ira-account-providers
- Ludwig, L. (2017). The Rise of the Robo-Advisors Should You Use One? *InvestorJunkie*. Available at https://investorjunkie.com/35919/robo-advisors/
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52, 5–44. https://doi.org/10.1257/jel.52.1.5
- Lusardi, A., Mitchell, O. S., & Curto, V. (2014). Financial literacy and financial sophistication in the older population. *Journal of Pension Economics & Finance*, 13, 347–366. https://doi.org/10.1017/S1474747214000031
- Manganaro, J. (2019). *Recordkeeping Fees Under the Microscope*. Planadvisor, November 17. Available at https://www.planadviser.com/recordkeeping-fees-microscope/.
- Manganaro, J. (2021). Lack of Revenue Sharing Questioned in ERISA Lawsuit. *PlanSponsor*, August 17. https://www.plansponsor.com/lack-revenue-sharing-questioned-erisa-lawsuit/
- Mitchell, O. S., & Utkus, S. P. (2022). Target date funds and portfolio selection in 401(k) plans. *Journal of Pension Economics & Finance*, 21, 519–536.
- Morningstar. (2022). Retirement Plan Landscape Report: An In-Depth Look at the Trends and forces Reshaping U.S. Retirement Plans. Center for Retirement & Policy Studies.
- Norcross, D. (2022). *News Releases*. Available at https://norcross.house.gov/media-center/press- releases/reps-norcross-walberg-reintroduce-legislation-improve-retirement
- Parker, M. (2022). Can You Put Stock Options in an IRA Account? *The Nest*. Available at https://budgeting.thenest.com/ira-rules-selling-stocks-reinvesting-24947.html
- Pechter, K. (2022). 'Income America' Offers '5ForLife.' *Retirement Income Journal*. Available at https://retirementincomejournal.com/article/income-america-offers-5forlife/
- The Pew Charitable Trusts. (2021). How Employees Handle Their Retirement Savings During Work Transitions. Available at https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2021/05/how-employees-handle-their-retirement-savings-during-work-transitions
- Ponte, B. (2022). Vanguard Manages Two-Thirds of Robo Assets. *Ignites*. Available at https://www.ignites.com/c/3559244/455664
- Porter, T. J. (2021). IRA vs. 401(k) Differences Which Retirement Plan is Better? *Moneycrashers.com*. Available at https://www.moneycrashers.com/ira-vs-401k-differences-retirement-plan-better/

- SEC. (2019). *Regulation Best Interest: The Broker-Dealer Standard of Conduct*. Available at https://www.finra.org/rules-guidance/key-topicis/regulation-best-interest
- Securing a Strong Retirement Act 2021. Available at: https://waysandmeans.house.gov/wp-content/uploads/2021/05/SECURE-2.0-Section-by-section-5.3.21-1.pdf
- Schimmer, P. (2021). Fees for 401(k) Services: What Plan Sponsors Need to Know. Harris. Available at https://harriscpas.com/fees-for-401k-services-what-plan-sponsors-need-to-know/.
- Shen, S., & Turner, J. A. (2018). Conflicted advice about portfolio diversification. *Financial Services Review*, 27, 47–82.
- Sialm, C., Starks, L., & Zhang, H. (2015). Defined contribution pension plans: Sticky or discerning money? *The Journal of Finance*, 70, 805–838. https://doi.org/10.1111/jofi.12232
- State Street Global Advisors. (2021). *Addressing Longevity Risk*. Available at https://www.ssga.com/us/en/institutional/ic/insights/addressing-longevity-risk
- Szala, G. (2022). *Vanguard Cuts Target Date Fund Fees*. ThinkAdvisor, February 14. Available at https://www.thinkadvisor.com/2022/02/14/vanguard-cuts-target-date-fund-fees/
- Tang, N., Mitchell, O. S., Mottola, G., & Utkus, S. (2010). The efficiency of sponsor and participant portfolio choices in 401(k) plans. *Journal of Public Economics*, *94*, 1073–1085. https://doi.org/10.1016/j.jpubeco.2010.06.016
- Thrift Savings Plan. (2021). Administrative and Investment Expenses. Available at https://www.tsp.gov/tsp-basics/administrative-and-investment-expenses/.
- Turner, J. A. (2021). Pension litigation as a way of improving participants' outcomes: Investments and fees. Chapter 2. In *New York University Review of Employee Benefits and Executive Compensation* (Eds) NYU School of Continuing and Professional Studies and D. Pratt. New York: LexisNexis. pp 2–1 to 2–15.
- Turner, J. A., & Klein, B. W. (2014). Retirement savings flows and financial advice: Should you roll over your 401(k) plan? *Benefits Quarterly*, 30, 42–54.
- Turner, J. A., Klein, B. W., & Stein, N. P. (2016). Financial illiteracy meets conflicted advice: The case of Thrift Savings Plan rollovers. *The Journal of Retirement*, *3*, 47–65. https://doi.org/10.3905/jor.2016.3.4.047
- Turner, J. A., & Korczyk, S. (2004). *Pension Participant Knowledge About Plan Fees*. Washington, DC: AARP Data Digest. Available at http://assets.aarp.org/rgcenter/post-import/dd105_fees.pdf
- Vanguard. (2021a). *The Brokerage Option in DC Plans*. Available at https://institutional.vanguard.com/iam/pdf/CIRBOP_052021.pdf
- Vanguard. (2021b). *How America Saves 2021*. Available at https://institutional.vanguard.com/content/dam/inst/vanguard-has/insights-pdfs/21_CIR_HAS21_HAS_FSreport.pdf
- Vanguard. (2022). Vanguard Digital Advisor. Available at https://investor.vanguard.com/advice/digital-advisor
- Vanguard Personal Advisor. (2022). Finally. Financial Advice Powered by Relationships, not Commissions. Available at https://investor.vanguard.com/advice/financial-advisor