

DEGREES OF INTERMEDIATION

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Normally, we think of intermediation as a binary thing: either you have it or you do not. Disintermediation commands attention because it is dramatic and rare in highly industrialized economies, evoking images of bank runs and start-up funding through crowdsourcing. Yet in our complex financial world, individual investors rarely experience a clean, on-off choice between intermediation and its absence. Instead, retail investors must navigate a system presenting different degrees of intermediation, depending on the vehicle and transaction. The degree of intermediation has important welfare implications for investors.

Typically, we think of intermediation in simplistic terms as the process of pooling individual investments and jointly investing those funds in order to reap the benefits of expertise, diversification, and scale. We know, however, that intermediaries come in many different types. From the viewpoint of an investor, the benefits and risks of a mediated investment will depend heavily on the degree of intermediation.

We see this acutely in the area of retirement savings. In a system with no intermediation, any retirement savings most likely would be buried in the backyard or invested in tangible assets or individual businesses. That is a far cry from the situation in the United States today. The contemporary retirement landscape features a remarkable variety of retirement savings vehicles, offering different levels of intermediation.

Normally, we do not categorize financial intermediaries in terms of the risks they pose to suppliers of capital. However, different forms of intermediation present different constellations of risks and these differences can directly affect the welfare of investors, including those who are saving for retirement. In the retirement context, the most sophisticated financial intermediaries provide their customers or participants with protection against longevity, market, and often inflation risk plus another type of risk I

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refer to as *cumulation risk*. These same intermediaries also afford greater putative investment expertise to their customers. In contrast, other types of retirement savings vehicles that are lower down on the intermediation spectrum do not provide the same high level of investment expertise or safeguards to savers.

In an ideal world, individuals would have unfettered access to the full spectrum of financial intermediaries and could choose their desired level of intermediation based on their needs and risk preferences. In reality, there are severe discontinuities in the supply of financial intermediaries offering the greatest protection against risk for retirement savings. These days, relatively few workers have access to defined benefit plans, and half of U.S. workers lack access to any workplace pension plan at all.¹ Fixed annuities, however, offer many of the same benefits as defined benefit plans without the same constrictions in supply. The Article closes by raising some preliminary questions on what would be needed to transform fixed annuities into a true substitute for the vanishing defined benefit plan.

I. THE ECONOMIC FUNCTION OF FINANCIAL INTERMEDIARIES

At their core, financial intermediaries are middlemen. Their central function is to collect capital from savers and reinvest that capital in ventures and other assets. Financial intermediaries can be grouped into *retail* or *primary* intermediaries, who primarily serve individual households and nonfinancial businesses, and *wholesale* or *secondary* intermediaries—such as the Federal Reserve Banks and reinsurers—who primarily serve financial institutions.² The primary focus of this article will be on retail intermediaries serving retirement savers such as commercial banks and thrifts, insurance companies, securities brokers, mutual funds, and employer-sponsored pension plans.³

1. Emily Brandon, *Half of Workers Lack Retirement Benefits*, U.S. NEWS: MONEY (Aug. 30, 2013, 4:51 PM), <http://money.usnews.com/money/blogs/planning-to-retire/2013/08/30/half-of-workers-lack-retirement-benefits>.

2. See, e.g., RAYMOND W. GOLDSMITH, FINANCIAL INTERMEDIARIES IN THE AMERICAN ECONOMY SINCE 1900, at 50–51 (1958); Robert Charles Clark, *The Federal Income Taxation of Financial Intermediaries*, 84 YALE L.J. 1603, 1605–06 (1975).

3. Private funds such as hedge funds, private equity funds, and venture capital funds are also retail financial intermediaries. Under current federal securities law, however, the average retirement saver does not meet the qualifications to invest directly in these vehicles. See SEC Staff Investor Bulletin No. 158 (Sept. 1, 2013) (the only individuals who can invest in private funds are accredited investors with earned income of over \$200,000 for the past two years or a net worth of over \$1 million). Accordingly, this article will not address these types of intermediaries.

The growth and enduring strength of financial intermediation is one of the most remarkable hallmarks of advanced economies. What accounts for this persistence? The typical financial intermediary offers advantages that savers cannot achieve by investing alone.⁴ The first potential advantage is *investment expertise*—the vaunted ability to discover profitable investment opportunities and accurately price them. In a related vein, financial intermediaries provide their customers with *economies of scale* because those intermediaries can spread the cost of their research, legal support, and asset monitoring over their customer base. These transaction costs are usually too high for small retail investors to conduct those activities profitably alone. In addition, financial intermediaries often do not face the same *information asymmetries* about potential investments as their retail customers due to access to proprietary information. This is especially apparent with depository institutions, which have unique knowledge about the financial health of their borrowers to which most outsiders are not privy.⁵

Many financial intermediaries also offer risk-reduction benefits in the form of *diversification* because of the size of their pooled investments. That same diversification is often otherwise not available to ordinary savers because they only have small sums to invest. Finally, certain key financial intermediaries, most notably depository institutions, offer *maturity transformation* by converting demand deposits and other extremely short-term claims by savers into longer-term assets, thereby providing savers with virtually the same liquidity as cash while facilitating the accumulation of large pools of capital for major long-term projects.⁶

The oldest forms of financial intermediaries, such as commercial banks and insurance underwriters, sell investors claims against a single pool.⁷ Under this model, the intermediary retains sole control over the choice of investments.

This traditional model, however, does not capture the full range of institutional arrangements characterizing financial intermediation today. As the explosive growth of mutual fund families and variable annuity providers suggests, not all financial intermediaries offer claims against one pool alone. In part for this reason, it has become common in the vernacular to refer to financial intermediaries more broadly as firms that collect funds from

4. For general discussion of these advantages, see Clark, *supra* note 2, at 1607–08; DAVID S. KIDWELL ET AL., FINANCIAL INSTITUTIONS, MARKETS, AND MONEY 19–22 (11th ed. 2012).

5. See MARK J. ROE, STRONG MANAGERS, WEAK OWNERS: THE POLITICAL ROOTS OF AMERICAN CORPORATE FINANCE (1996).

6. See KIDWELL ET AL., *supra* note 4, at 24.

7. Jonathan R. Macey, *The Business of Banking: Before and After Gramm-Leach-Bliley*, 25 J. CORP. L. 691, 695 (2000).

multiple investors for investment. This definition is flexible enough to encompass mutual funds, defined contribution plans, variable annuity providers, investment banks, and broker/dealers.

In order to understand the risk calculus associated with different levels of intermediation, we need to delve deeper and analyze the varying claims and protections offered by various types of financial intermediaries. The next section undertakes that analysis.

II. DEGREES OF INTERMEDIATION

As the wide variety of financial intermediaries suggests, the traditional, unitary conception of a financial intermediary begs the question: what distinguishes financial intermediaries from one another. Intermediaries occupy different market niches in response to customer preferences. Some offer equity claims; others offer debt. Some of those claims are long-term in nature; other claims are redeemable on demand. Some offer claims against a single pool of investments; others offer claims against a choice of multiple pools. Some so-called financial intermediaries serve as middlemen but don't pool investments at all.

It is interesting to explore this question through the lens of retirement savings. One reason has to do with the sector's sheer size. In the fourth quarter of 2014, household retirement assets in the United States (including employer-sponsored defined benefit and defined contribution plans, individual retirement accounts ("IRAs"), and annuities) totaled \$27.491 trillion.⁸ Similarly, people have a virtually universal need for retirement security⁹ that cuts across every segment of society. Finally, U.S. residents almost always have to interact with financial intermediaries to assure adequate private sources of savings for retirement because Social

8. BD. OF GOVERNORS OF THE FED. RESERVE SYS., FINANCIAL ACCOUNTS OF THE UNITED STATES: FLOW OF FUNDS, BALANCE SHEETS, AND INTEGRATED MACROECONOMIC ACCOUNTS FIRST QUARTER 2015, 93 tbl.L.117 (2015), <http://www.federalreserve.gov/releases/z1/current/z1.pdf>. This sum was approximately one-and-a-half times the gross domestic product that quarter. See *id.* at 12 tbl.F.6 (author's computations).

9. The death rate in the United States remains low through age fifty-four (apart from infants under the age of one) and does not begin to increase rapidly until the age cohort of sixty-five to seventy-four years when most U.S. residents have retired. See, e.g., *U.S. Death Rates by Age Group*, DATA360, http://www.data360.org/dsg.aspx?Data_Set_Group_Id=587 (last visited Aug. 31, 2015); Alicia H. Munnell, *What Is the Average Retirement Age?*, SOC'Y ACTUARIES, <https://www.soa.org/News-and-Publications/Newsletters/Pension-Section-News/2012/february/What-Is-The-Average-Retirement-Age.aspx> (last visited Aug. 31, 2015).

Security is not designed to serve as the exclusive source of retirement income.¹⁰

In the retirement savings space, financial intermediaries vary along a number of dimensions representing different degrees of intermediation. The first dimension, naturally, is *mediation*. Financial intermediaries mediate investments by serving as middlemen who accept funds from the public for purposes of investment. This trait is common to all financial intermediaries, and it is only when there is no intermediary—as with cash stored at home, direct investment in individual issuers, or tangible property—that we have full disintermediation.

The second degree of intermediation involves the *pooling of investments*. In the retirement area, most financial intermediaries invest funds received from customers into pooled vehicles of one type or another. By pooling, I mean investment in a portfolio of assets as opposed to purchase of a single asset. Defined benefit plans, annuity providers, banks, defined contribution plans, most IRAs, and mutual funds all offer pooled investments.¹¹ The only investment avenues that do not offer pooling are cash and investments in individual issuers or assets such as individual commodities or real estate (whether those investments are mediated).

Intermediaries who pool investments are not alike, however. In the third degree of intermediation, intermediaries differ according to the *nature of the contractual claims* they provide. Some pooled intermediaries—notably defined benefit plans, fixed annuity providers, and banks—offer only one pool of investments, consisting of the assets in the intermediary's general account. For instance, a depositor invests in a pool consisting of the assets of a bank, while a fixed annuity buyer invests in a pool made up of the assets in an insurer's general account. When a financial intermediary offers a single pool to retirement savers, normally those customers receive claims in the form of debt or other fixed claims¹² in return.¹³ In

10. See *Prepare For Your Financial Needs*, SOC. SEC. ADMIN., <http://www.ssa.gov/retire2/r&m6.htm> (last visited Aug. 31, 2015) (stating that the “three major elements of your retirement portfolio are” pension benefits, savings and investments, and Social Security benefits).

11. It is not surprising that so many retirement vehicles involve pooling. Pooling offers diversification and expertise to ordinary investors who would often be hard-pressed to achieve those benefits on their own.

12. Liabilities in the form of defined benefit pension claims and fixed annuity claims are technically not accounted for as debt. They resemble debt, however, in that customers are only entitled to fixed periodic payments for a stated period and do not have a right to share in any additional gains of the investment portfolio. See, e.g., *Funding Challenge: Keeping Defined Benefit Pension Plans Afloat*, *Hearing Before the Comm. on Fin.*, 108th Cong. 1–2 (2003) (statement of Sen. Baucus, U.S. Sen.); *Liabilities—Accounting for Long-*

contrast, defined contribution plans offered through the workplace, standard IRAs, and mutual funds and variable annuities offered outside of both of those retirement vehicles offer savers a choice of investment pools. Individuals who invest in those plans or funds only receive equity claims, not debt or other fixed claims.

These debt and equity claims offer different tradeoffs in risks and rewards.¹⁴ Debt and debt-like claims provide a contractual promise of a fixed periodic return over the life of the investment.¹⁵ In addition, debt claims take priority over equity if the issuer goes insolvent.¹⁶ The upside potential of debt instruments is capped contractually, however. In contrast, equity claims offer unlimited potential appreciation, but can lose principal and stand last in line in the event of insolvency.¹⁷

The last degree of intermediation is tailored to the retirement context and features the use of *actuarial methods*. Defined benefit plans and fixed annuity providers distinguish themselves from other financial intermediaries and full disintermediation by offering a contractual promise to make fixed periodic payments until death (similar to Social Security).¹⁸ These providers underwrite this commitment through actuarial analysis based on the statistical risk of mortality in the populations they insure.¹⁹

Term Liabilities, INVESTOPEDIA, <http://www.investopedia.com/exam-guide/cfa-level-1/liabilities/long-term-liabilities-accounting.asp> (last visited Aug. 31, 2015). While the Social Security Administration and Trust Fund, as government entities, are not financial intermediaries in the commercial sense, they resemble private providers who offer fixed claims against a single pool by collecting payroll deductions, investing them, and paying out defined retirement benefits.

13. Of course, investors can also buy stock in depository institutions and fixed annuity providers. The point is, however, that those providers offer retirement savers a choice of debt or debt-like claims. Most other investment vehicles further down the intermediation spectrum do not afford that choice.

14. See KIDWELL ET AL., *supra* note 4, at 16.

15. Traditional debt claims, such as depository accounts and bonds, offer a stated interest rate plus full return of principal. Defined benefit plans and fixed annuities offer a fixed monthly benefit (sometimes with inflation protection).

16. See Robert K. Rasmussen, *The Ex Ante Effects of Bankruptcy Reform on Investment Incentives*, 72 WASH. U. L.Q. 1159, 1176–77 (1994).

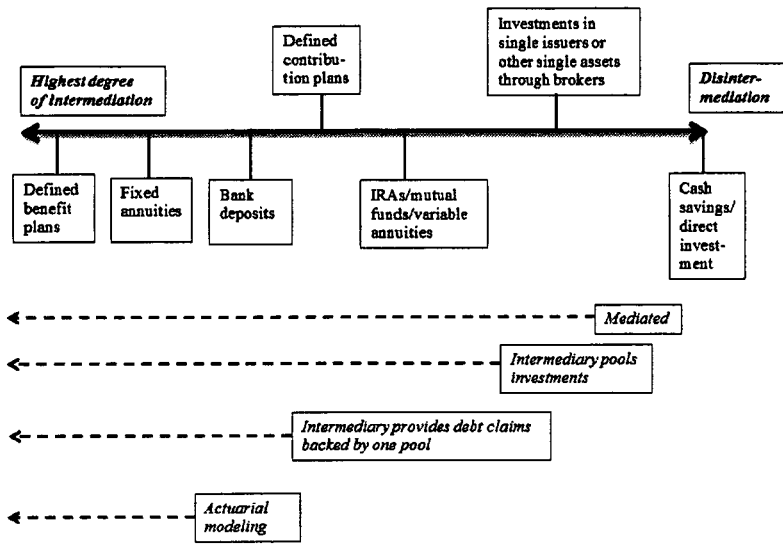
17. *Id.* at 1177.

18. Some fixed annuities only pay out for a set number of years, instead of through the beneficiary's death (the other two vehicles do not). However, investors who want a payout until death can find fixed annuities that provide that protection. *Explaining Types of Fixed Annuities*, INVESTOPEDIA, <http://www.investopedia.com/articles/retirement/05/071205.asp> (last visited Aug. 31, 2015).

19. See, e.g., David F. Kays, *Impact of Mortality Table Projection Scales on Defined Benefit Pension Plan Valuations*, SOC'Y ACTUARIES, <https://www.soa.org/research/research-projects/pension/research-impact-of-mortality-projection->

Taking these dimensions, we can array retirement investment vehicles along a spectrum, with the highest degree of intermediation on the left end and full disintermediation on the right.

FIGURE 1



At the far left of the spectrum are defined benefit plans and fixed annuity providers, which offer the highest degree of intermediation by providing debt claims against one pool based on actuarial modeling. To their immediate right are banks, which also offer debt claims against a single pool but do not use actuarial methods to compute those claims. In the middle of the spectrum are defined contribution plans, IRAs, mutual funds, and variable annuities, which offer equity claims to savers and a choice among multiple portfolios and pools. (As Subpart III.B will discuss, defined contribution plans fall to the immediate left of IRAs, mutual funds, and variable annuities because those plans offer a double layer of expertise that the other two vehicles do not). Moving to the right, brokers and dealers who offer investments in single issuers provide mediation without the benefit or expertise of pooling.²⁰ Finally, disintermediation offers retirement savers neither pooling nor actuarial modeling, but it does reduce or eliminate principal-agent problems from relying on intermediaries. These different degrees of

scales-on-defined-benefit-pension-plan-valuations.aspx (last visited Aug. 31, 2015).

20. These claims can consist of equity or debt, depending on the type of investment.

intermediation have strong welfare implications for retirement savers.

III. THE IMPLICIT WELFARE TRADEOFFS IN DIFFERENT DEGREES OF INTERMEDIATION

In the retirement context, the welfare implications of given degrees of intermediation depend most importantly on the risks to retirement savers. These risks play out against a backdrop of other important considerations, including the availability of investment expertise, the effective use of that expertise, and the investor's range of choice.

A. *The Shifting Risk Calculus of Degrees of Intermediation*

No retirement savings vehicle is risk-free and each presents tradeoffs. However, the nature and magnitude of those risks vary significantly, depending on the degree of intermediation being offered. As a general rule, the higher the degree, the greater the protection to retirement savers. In other words, the type of claims that a financial intermediary offers directly shapes the risk-return calculus for its customers.

Savers face five main risks when investing for retirement: (1) longevity risk, (2) cumulation risk, (3) market risk, (4) inflation risk, and (5) solvency risk. Whether the tradeoffs among these risks are optimal for any given vehicle will depend, in part, on an individual's life situation, preferences, and ability to absorb loss. It will also depend, as we will see, on whether that vehicle is available to that individual for investment.

1. *Longevity Risk*

Typically, a defined benefit pension pays beneficiaries a fixed monthly annuity from the retirement date until death. Social Security and private fixed annuities also offer this contractual feature. Retirement savers with any of these vehicles can count on receiving those income streams until they die.²¹ Precisely for this reason, defined benefit pensions are often regarded as the gold standard of private retirement plans.²²

21. Defined benefit pension checks, Social Security payments, and fixed annuity payments also protect retirees from the risk that a criminal will abscond with their full retirement savings because anyone intent on doing so cannot steal the underlying corpus but can only steal one payment at a time. Lawrence A. Frolik, *Rethinking ERISA's Promise of Income Security in a World of 401(k) Plans*, 20 CONN. INS. L.J. 371, 396, 401 (2014).

22. That said, defined benefit plans can limit employee mobility due to their vesting requirements and lack of portability. In addition, employers who provide defined benefit plans may expect to pay their workers lower salaries and wages.

Only retirement savings vehicles with the highest degree of intermediation offer this type of contractual protection to retirement savers. In contrast, retirees who depend on other retirement savings vehicles lower down on the intermediation spectrum run the risk of outliving their assets, a risk known as *longevity risk*.

During the spend-down (or decumulation) phase of retirement, savers face the challenge of drawing down their savings slowly enough that they do not outlive their assets. Unless a retiree has a contractual or statutory right to annuitized payments that defined benefit plans and fixed annuities offer, the chance of depleting one's assets before death is substantial.²³ Retirees who must depend on lump sum savings face numerous uncertainties in attempting to gauge how far their money will stretch. The unknowns include how long those individuals will live, how high their future living expenses will rise, whether they will remain able to manage their money successfully from a cognitive and physical perspective, how markets will perform, and whether they will cash out their entire lump sum investments.²⁴

Defined benefit plans and fixed annuity providers solve these challenges by using actuarial modeling to project the income that would be needed to make fixed periodic payments until death. In the process, the sponsors of defined benefit plans and fixed annuity issuers are both able to assume longevity risk, which their customers would otherwise have to bear.²⁵

For retirement savers who do not participate in defined benefit plans or buy fixed annuities, the decumulation phase is fraught with peril because the longevity risk remains on them. The savings or cumulation phase is often problematic as well, as the next section discusses. If either phase goes wrong, chances are that the affected retirees will end up in poverty, relegating them to a miserable existence and generating a need for public assistance.²⁶

23. See, e.g., Barbara A. Butrica et al., *The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers*, SOC. SEC. BULL., at 1, Oct. 2009, <http://www.ssa.gov/policy/docs/ssb/v69n3/v69n3p1.pdf>.

24. See Frolik, *supra* note 21, at 382–87.

25. Jonathan Barry Forman & Michael J. Sabin, *Tontine Pensions*, 163 U. PA. L. REV. 755, 764 (2015) (“Employer contributions are based on actuarial valuations, and the employer bears all of the investment risks and responsibilities.”).

26. A sense of that need can be gleaned from findings showing that nearly thirty percent of people in households age fifty to sixty-four who died between 2010 and 2012 left no assets behind. Sudipta Banerjee, *A Look at the End-of-Life Financial Situation in America*, EBRI.ORG at 1, 9, Apr. 2015, http://www.ebri.org/pdf/notespdfs/EBRI_Notes_04_Apr15_EoL-PolFor.pdf. Among individuals who died during that period age eighty-five or above, 12.2% had exhausted their assets at death. *Id.* at 1.

2. Cumulation Risk

Just as retirees face challenges in how to tap their retirement nest eggs, people also have trouble amassing enough savings in the first place for a financially secure retirement.²⁷ This is a particular problem for workers outside of defined benefit plans. We can see this from 2013 data, when the median retirement account balance was only \$2500 for all working-age households and only \$14,500 for households nearing retirement.²⁸ These low levels suggest that ordinary households have enormous difficulty saving enough for retirement on their own. I refer to the risk of retiring with insufficient savings as *cumulation risk*.

Here too, the level of intermediation matters, although not in the same linear manner as longevity risk. One of the less appreciated aspects of defined benefit plans is that they are actuarially designed to replace earned income at a fairly high rate (assuming, that is, that the worker participates in the plan over the maximum number of years).²⁹ To ensure this replacement rate, defined benefit plans mandate a high rate of contributions.³⁰ Some defined contribution plans—namely, 401(a) plans in which the

27. See generally Brendan S. Maher, *Regulating Employment-Based Anything*, 100 MINN. L. REV. (forthcoming 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2581329 (explaining the failures of employment-based approaches to retirement savings and suggesting possible solutions).

28. Nari Rhee & Ilana Boivie, *The Continuing Retirement Savings Crisis*, NAT'L INST. ON RETIREMENT SEC. (Mar. 2015), <http://laborcenter.berkeley.edu/pdf/2015/RetirementSavingsCrisis.pdf>. In 2015, the Employee Benefit Research Institute estimated the aggregate national retirement savings deficit at \$4.13 trillion for U.S. households with heads of household between the ages of twenty-five and sixty-four. *EBRI: Current U.S. Retirement Savings Deficit Is \$4.13 Trillion*, EMP. BENEFIT RES. INST. (Mar. 12, 2015), <http://www.ebri.org/pdf/PR1115.SenAging.PR.12Mar15.pdf>.

29. Maher, *supra* note 27. One report concluded that employees who stay in the same defined benefit pension plan for more than thirty years receive benefits equal to a replacement rate of sixty percent for their last five years of wages. See James H. Moore, Jr., *Measuring Defined Benefit Plan Replacement Rates with PenSync*, MONTHLY LAB. REV., Nov. 2004, at 57, <http://www.bls.gov/opub/mlr/2004/11/art6full.pdf>. Because Social Security replaces forty percent of the average worker's wage, employees in this situation may be able to replace one-hundred percent of their wages at retirement. See *Prepare For Your Financial Needs*, *supra* note 10. In contrast, workers who participated in a given defined benefit plan for less than ten years only had a 9% replacement rate on average. See Moore, *supra*. Because employer-based defined benefit plans are not portable, a worker's ability to realize this high replacement rate depends on whether she remains in the defined benefit plan for most or all of her career. There are several reasons why this may not occur. The employee may be terminated or voluntarily quit her job to accept a job with another employer. Alternatively, the employer may terminate its defined benefit plan earlier in the worker's career or file for bankruptcy.

30. See, e.g., Moore, *supra* note 29.

employer contractually mandates the level of employee contributions and employer match—can also produce high replacement rates, depending on the contribution rate and a given employee's tenure.³¹ Both types of plans also reinforce the goal of mandatory-targeted savings rates by prohibiting or severely restricting participants' ability to withdraw contributions from the plan before retirement for other purposes.³²

These defined benefit plans and 401(a) plans that mitigate cumulation risk both fall on the left side of the intermediation spectrum. Other savings vehicles located on the same half of the spectrum—namely, fixed annuities and bank deposit accounts—do not expressly aim to produce a high replacement rate. Similarly, none of the investment vehicles on the right side of the intermediation spectrum—including 401(k) defined contribution plans that lack a mandatory contribution feature—defrays cumulation risk for retirement savers.³³ The onus of cumulation

31. Some 401(k) plans are 401(a) plans, but not all are. Normally, the law does not require employers to assume cumulation risk in their 401(k) plans. Undertaking that risk is costly for employers, due to added plan administration expenses and also the cost of any employer match. To avoid those costs, many employers who offer 401(k) plans only offer voluntary plans, often with no employer match. Those plans put the onus of contributing enough (and contributing at all) on the worker. Meanwhile, 401(a) plans can be designed to reduce cumulation risk, but they do not do so as consistently as defined benefit plans. The mandatory contribution rates of 401(a) plans are not always high and other defined contribution plans make contributions purely voluntary. In the vast majority of defined contribution plans, ensuring a high replacement rate is rarely of concern to employers. See *Majority of U.S. Companies Do Not Measure Effectiveness of Retirement Plans for Employees, Wells Fargo Survey Reveals*, WELLS FARGO (Apr. 19, 2012), https://www.wellsfargo.com/about/press/2012/20120419_MajorityofUSCompanies/. Unlike defined benefit plans, moreover, 401(a) plans with mandatory contributions do not contractually promise high replacement rates and do not use actuarial modeling. For 401(a) plans that do mandate high contribution rates, those plans rely solely on high contribution levels to boost the chance of adequate retirement income. Consequently, the risk that a high replacement rate will not materialize due to other factors such as market downturns falls on the employee.

32. See, e.g., 26 U.S.C. § 401(k)(2)(B) (2012) (limiting the distribution of assets in tax-preferred defined contribution plans); *What You Should Know About Your Retirement Plan*, U.S. DEP'T LAB., <http://www.dol.gov/ebsa/publications/wyskapr.html> (last visited Aug. 31, 2015) ("If an employee leaves after vesting in a benefit but before the plan's retirement age, the benefit generally stays with the plan until the employee files a claim for it at retirement.").

33. In fact, some defined contribution plans magnify cumulation risk by allowing participants to take out loans or withdrawals before retirement for a variety of other purposes. See AON HEWITT, *LEAKAGE OF PARTICIPANTS' DC ASSETS: HOW LOANS, WITHDRAWALS, AND CASHOUTS ARE ERODING RETIREMENT INCOME* 5 (2011), http://www.aon.com/attachments/thoughtleadership/survey_asset_leakage.pdf.

risk falls on individual households in all of these other retirement vehicles, including elective 401(k)s, IRAs, individual annuities, ordinary mutual funds, and individual securities. Consequently, as the level of intermediation drops, the cumulation risk grows.

3. *Market Risk*

Another distinguishing mark of intermediaries involves whether they expose investors to *market risk*, which is the risk of loss of principal resulting from movements in market prices. At the far left end of the intermediation spectrum, three types of financial intermediaries—defined benefit plans, fixed annuity providers, and commercial banks—offer debt or debt-like claims to investors that are backed by a single pool of assets.³⁴ Due to this structure, all three categories of intermediaries shoulder the market risk presented by the pool, which relieves the investors from having to assume that risk themselves. Further to the right on the intermediation spectrum, savers usually only receive equity claims, not fixed claims, and therefore must bear the market risk themselves.³⁵

Defined benefit plans, fixed annuities, and bank deposits offer a double shield against market risk because the intermediary bears that risk contractually while also being backstopped by social insurance. The government partially guarantees the performance of debt claims made by these issuers, in the form of Pension Benefit Guaranty Corporation ("PBGC") guarantees for defined benefit plan participants, federal deposit insurance for bank depositors, and state guaranty fund protection for fixed annuity customers.³⁶ There are no comparable government guarantees for other types of retirement savings, which all allocate market risk to workers. In the event of an inevitable market downturn, participants in defined contribution plans have no social insurance to fall back on and neither do participants in IRAs, variable annuities,³⁷ or plain vanilla

34. The only other type of pooled intermediary to offer debt-like claims consists of retail money market mutual funds, which are found in the middle of the spectrum. Although claims on retail money market mutual funds are technically equity, not debt, they resemble debt in that the shares are redeemable at par and the share price is set at a fixed \$1 per share. See *Money Market Funds*, U.S. SEC. & EXCHANGE COMMISSION, <http://www.sec.gov/answers/mfmmkt.htm> (last updated Jan. 16, 2013). Except under conditions of extreme inflation, however, money market mutual funds are not ideal retirement savings vehicles because their expected returns are too low to keep abreast of inflation.

35. Cash (at the far right end of the spectrum) is an exception. Similarly, individual bonds do not present market risk unless they are held to maturity.

36. See *infra*, notes 46–48.

37. The only exception for variable annuities consists of minimum guaranteed benefits, which some state guaranty funds will indemnify up to

mutual funds.³⁸ Investors in these vehicles offering lesser degrees of intermediation do not have the double shield against market risk that the highest degrees of intermediation afford.

4. Inflation Risk

Given the length of the average retirement,³⁹ retirees must also worry whether the returns on their portfolios will keep up with inflation. Defined benefit plans typically help defray inflation in two ways: by seeking to manage the risk-adjusted returns on the portfolio to stay ahead of inflation and sometimes by providing contractual promises for annual cost-of-living adjustments (similar to Social Security).⁴⁰ Fixed annuities can also provide inflation riders (although generally at a stiff price).⁴¹ In both cases, this inflation protection is the fruit of the actuarial and financial modeling that defined benefit plans and annuity issuers provide.

stated limits. See, e.g., *Frequently Asked Questions*, CONN. LIFE & HEALTH INS. GUAR. ASS'N, <http://www.ctlifega.org/faq.cfm> (last visited Aug. 31, 2015) (describing what the Connecticut Life and Health Insurance Guaranty Association protects).

38. In 2008, the federal government granted unprecedented temporary coverage of many money market mutual fund balances in order to stem a run on money market funds and an ensuing collapse of the commercial-paper markets. See Press Release, U.S. Dep't Treasury, Treasury Announces Guaranty Program for Money Market Funds (Sept. 19, 2008), <http://www.treasury.gov/press-center/press-releases/Pages/hp1147.aspx>. Those guarantees expired in September 2009. U.S. Dep't of the Treasury, *The Next Phase of Government Financial Stabilization and Rehabilitation Policies* (Sept. 2009), WALL STREET J., <http://online.wsj.com/public/resources/documents/treasury091309.pdf>.

39. At the time of this writing, the average length of retirement in the United States was eighteen years. See *Retirement Statistics*, STAT. BRAIN RES. INST., <http://www.statisticbrain.com/retirement-statistics/> (last visited Aug. 31, 2015).

40. Many government defined benefit pension plans offer cost-of-living adjustments, while most private defined benefit pension plans do not. See *Can Your Pension Plan Afford to Give COLAs?*, PENSION RIGHTS CTR., <http://www.pensionrights.org/publications/fact-sheet/can-your-pension-plan-afford-give-colas> (last visited July 26, 2015). Since the 2008 financial crisis, however, at least seventeen states have reduced or eliminated those adjustments for public employee pensions. Alicia H. Munnell et al., *COLA Cuts in State/Local Pensions*, CTR. FOR RETIREMENT RES. B.C., May 2014, at 1, 2, http://crr.bc.edu/wp-content/uploads/2014/05/slp_38_508rev.pdf.

41. See, e.g., *Should You Get an Inflation-Adjusted Annuity?*, USA TODAY (Oct. 21, 2013, 12:31 PM), <http://www.usatoday.com/story/money/columnist/waggoner/2012/10/18/waggoner-inflation-adjusted-annuity/1639119/> ("An inflation-adjusted annuity aims to solve the problem [of inflation] by giving you an automatic cost-of-living increase every year. But the cost is steep. A \$100,000 inflation-adjusted annuity policy from Principal Life Insurance offers a \$379 monthly payout for a 65-year-old man; American General offers a \$363 monthly check. At 3% inflation, you'd have to wait 15 years before you'd equal the payout from an immediate annuity without inflation protection.").

With limited exceptions, all other investment options shift inflation risk to the saver. Retail investors in these other options must weigh the risk of overly conservative returns on bonds and other debt instruments against the risk of higher volatility equity returns. In contrast, as discussed, some defined benefit plans and fixed annuity issuers provide inflation riders. While this protection is not universal, to the extent it can be had, it is on the left end of the intermediation spectrum.

5. *Solvency Risk*

So far, I have argued that defined benefit plans and fixed annuity providers afford unique risk protections that retirement savers cannot obtain through other forms of investment. At the same time, however, those providers (like depository institutions) pose solvency risk to their beneficiaries and customers, which other pooled investments to the right on the intermediation spectrum do not pose, at least not to the same degree.

The solvency risk from defined benefit plans, insurance companies, and banks emanates from the fact that the creditworthiness of their customers' claims depends directly on the provider's own solvency.⁴² Of course, one component of that solvency risk is the same risk that one or more of a pooled intermediary's investments will default or go insolvent.⁴³ But unlike mutual funds and defined contribution plans, insurance companies, defined benefit plan sponsors, and banks can go insolvent for reasons other than the poor performance of their individual investments. Insurance companies and defined benefit plan sponsors may collect too few premiums or contributions, or misgauge the actuarial assumptions used to meet their payout obligations. Banks may underestimate their liquidity needs and find themselves vulnerable to runs.⁴⁴ Mismanagement of other lines of the company's business can also topple an insurance underwriter, a plan sponsor, or a bank.

The government seeks to defray this solvency risk through regulation and social insurance. The Employee Retirement Income Security Act of 1974 ("ERISA"), state insurance law, and state and

42. In the case of defined benefit plans, that provider is the plan sponsor itself.

43. In addition, all financial intermediaries face solvency risk due to theft. There are strict legal safeguards to reduce that risk.

44. Money market mutual funds also experienced runs during the financial crisis in 2008. Diana B. Henriques, *Money Market Fund Says Customers Could Lose Money*, N.Y. TIMES (Sept. 16, 2008), http://www.nytimes.com/2008/09/17/business/17fund.html?_r=0; Lawrence Schmidt et al., *Runs on Money Market Mutual Funds 1* (Feb. 28, 2014) (unpublished manuscript), <http://rady.ucsd.edu/docs/faculty/timmermann-money-market-funds.pdf>.

federal banking regulations heavily oversee the solvency of defined benefit plans, fixed annuity providers, and depository institutions respectively.⁴⁵ If the worst occurs and one of these private-sector intermediaries fails, beneficiaries, annuitants, and/or depositors can look to social insurance to recoup all or part of their claims. The PBGC guarantees payment of basic pension benefits, up to specified dollar limits, for participants in private sector defined benefit plans.⁴⁶ State guaranty funds guarantee fixed annuity claims by insurance companies, again up to stated limits.⁴⁷ Finally, the Federal Deposit Insurance Corporation insures bank and thrift deposits in the event of closure.⁴⁸

This safety net has holes, however. With respect to private-sector pensions, the PBGC is running a large deficit and is not explicitly backed by the full faith and credit of the federal government.⁴⁹ Furthermore, plan funding remains a challenge. As of 2011, the private-sector plans that the PBGC insured were only funded 85% in the aggregate.⁵⁰

A bigger problem involves the PBGC's limited coverage. The PBGC does not insure church or public-sector pensions,⁵¹ where defined benefit pensions are far more prevalent.⁵² Meanwhile, in

45. See GARY A. HERNANDEZ & PAIGE D. WATERS, 2-14 NEW APPLEMAN ON INSURANCE LAW LIBRARY EDITION ch. 14 (2015) (discussing solvency regulation of insurance companies); PATRICIA A. MCCOY, BANKING LAW MANUAL: FEDERAL REGULATION OF FINANCIAL HOLDING COMPANIES, BANKS AND THRIFTS § 6.03 (Lexis 2014 Supp.) (discussing capital adequacy standards for insured depository institutions); JAMES A. WOOTEN, THE EMPLOYEE RETIREMENT INCOME SECURITY ACT OF 1974: A POLITICAL HISTORY 3-5 (2004) (discussing minimum funding standards for private sector defined benefit plans).

46. *Facts from EBRI: Basics of the Pension Benefit Guaranty Corporation (PBGC)*, EMP. BENEFIT RES. INST. 1 (Nov. 2013), <http://ebri.org/pdf/publications/facts/1113fact.pdf>. In 2014, the maximum guaranteed benefit for participants in PBGC-protected, single-employer plans was \$4,943.18 a month. *Data Book Listing*, PENSION BENEFIT GUARANTY CORP. tbl.S-53, <http://pbgc.gov/documents/2012-Data-Book-Tables.pdf> (last visited July 26, 2015).

47. See *Policyholder Information: The Safety Net at Work*, NAT'L ORG. LIFE & HEALTH INS. GUARANTY ASS'NS, <http://nolhga.org/policyholderinfo/main.cfm/location/systemworks> (last visited July 26, 2015).

48. See *Understanding Deposit Insurance*, FED. DEPOSIT INS. CORP., <http://fdic.gov/deposit/deposits/> (last updated June 3, 2014).

49. See *Facts from EBRI: Basics of the Pension Benefit Guaranty Corporation (PBGC)*, *supra* note 46, at 1. At year-end 2013, the PBGC had a deficit of \$27.4 billion for single-employer plans and \$8.3 billion for multi-employer plans. See *FY 2015: Congressional Budget Justification*, PENSION BENEFIT GUARANTY CORP. 18 (2014), <http://pbgc.gov/Documents/Budget-CBJ-2015.pdf>.

50. See *Data Book Listing*, *supra* note 46, tbl.S-44.

51. *Facts from EBRI: Basics of the Pension Benefit Guaranty Corporation (PBGC)*, *supra* note 46, at 1.

52. This disparity is striking. Eighty-seven percent of state and local government employees participated in defined benefit plans in 2009, whereas

recent years, state and local governments have struggled with massive funding shortfalls in their defined benefit plans, with no real solution in sight.⁵³

State guaranty coverage for fixed annuities also has its limitations. Most state guaranty funds are not pre-funded, with New York's being the only exception.⁵⁴ In addition, the most that a state guaranty fund will guarantee for a given individual's annuities per issuer ranges from \$100,000 to \$500,000, depending on the state.⁵⁵

Unlike most state insurance guaranty funds, federal deposit insurance is pre-funded⁵⁶ and thus on firmer financial footing. But it too has limits and only provides coverage of up to \$250,000 per depositor per bank.⁵⁷

Fortunately, while solvency risk exists, its incidence is relatively low. Defaults by private-sector defined benefit plans are rare, as witnessed by the fact that almost 60% of PBGC claims in dollar terms between 1975 and 2012 were attributable to claims by just ten firms.⁵⁸ Similarly, a low number of insured participants in private-sector defined benefit plans receive PBGC payouts in any given year, equaling only 2.4% in 2012.⁵⁹ To the extent a private-sector defined benefit plan does default, most insured participants in single-employer plans receive full pension coverage. Very few of

only 7% of private-sector employees did that year. EMP. BENEFIT RET. INST., EBRI DATABOOK ON EMPLOYEE BENEFITS ch. 1 at 4, ch. 4 at tbl.4.1d (Mar. 2011), <http://www.ebri.org/publications/books/?fa=databook>.

53. See, e.g., *The Fiscal Health of State Pension Plans: Funding Gap Continues to Grow*, PEW CHARITABLE TRUSTS (Apr. 8, 2014), <http://www.pewtrusts.org/en/research-and-analysis/analysis/2014/04/08/the-fiscal-health-of-state-pension-plans-funding-gap-continues-to-grow>. At least one state supreme court has ruled that current participants in the state defined benefit pension plan are constitutionally protected from reductions in benefits, regardless of funding shortfalls. See *In re Pension Reform Litig.*, 32 N.E.3d 1 (Ill. 2015).

54. See Phil Zinkewicz, *State Guaranty Funds . . . What Will Their Future Role Be?*, ROUGH NOTES COMPANY, INC. (Feb. 2009), <http://www.roughnotes.com/rnmagazine/2009/february09/02p102.htm>.

55. See *State Guarantee Funds: Life & Health Guaranty Associations*, ANNUITY ADVANTAGE, <http://www.annuityadvantage.com/stateguarantee.htm> (last visited Aug. 31, 2015).

56. See *The Deposit Insurance Fund*, FED. DEPOSIT INS. CORP., <https://www.fdic.gov/deposit/insurance/index.html> (last updated June 24, 2015).

57. See *Understanding Deposit Insurance*, *supra* note 48.

58. Those ten firms were Pan American Air (1991–92), Trans World Airlines (2001), LTV Steel (2002–04), Bethlehem Steel (2003), National Steel (2003), US Airways (2003 and 2005), Weirton Steel (2004), United Airlines (2005), Delta Air Lines (2006), and Delphi (2009). See *Data Book Listing*, *supra* note 46, tbls. S-4, S-5.

59. See *id.* tbls. S-20, S-30 (author's calculations).

those workers and retirees would have otherwise qualified for pensions exceeding the maximum PBGC benefit limits.⁶⁰

State and municipal defined benefit plans pose greater solvency risk, but so far the default rate has been low.⁶¹ The most publicized cases in recent years have been Detroit, Michigan, and Stockton, California, which both filed for bankruptcy in part due to their pension commitments.⁶² Both cities managed to emerge from bankruptcy without abandoning their pension obligations to their employees.⁶³ The bigger question is what will happen a decade or so from now, now that the baby boomer generation is entering retirement and numerous state and local defined benefit plans are seriously underfunded.⁶⁴

60. See *id.* tbls.S-26, S-53 (stating that in 2012, in single-employer programs, only 2 percent of total PBGC payees claimed monthly benefits of \$2500 or more; the monthly maximum payment that year was \$4653.41). Things are more precarious for employees and retirees in private-sector multiemployer defined benefit plans, where the maximum guaranteed amount is \$12,870 per year for employees with 30 years of service. *Multiemployer Insurance Program Facts*, PENSION BENEFIT GUARANTY CORP., <http://www.pbgc.gov/about/factsheets/page/multi-facts.html> (last visited Aug. 31, 2015). In contrast, for single-employer plans in 2015, the maximum guaranteed amount was slightly over \$60,000 per year for benefits starting at age 65. *Maximum Monthly Guarantee Tables*, PENSION BENEFIT GUARANTEE CORP., <http://www.pbgc.gov/wr/benefits/guaranteed-benefits/maximum-guarantee.html> (last visited Aug. 31, 2015) (author's calculations).

61. PEW CTR. STATES, *THE WIDENING GAP UPDATE 1* (2012), http://www.pewtrusts.org/~media/legacy/uploadedfiles/pes_assets/2012/PewPensionsUpdatepdf.pdf ("States continue to lose ground in their efforts to cover the long-term costs of their employees' pensions and retiree health care [C]ontinued fiscal discipline and additional reforms will be needed to put states back on a firm footing.").

62. See, e.g., *In re City of Detroit*, 504 B.R. 191, 194, 204 (E.D. Mich. 2013); see also *In re City of Stockton*, 478 B.R. 8, 14 (E.D. Cal. 2012).

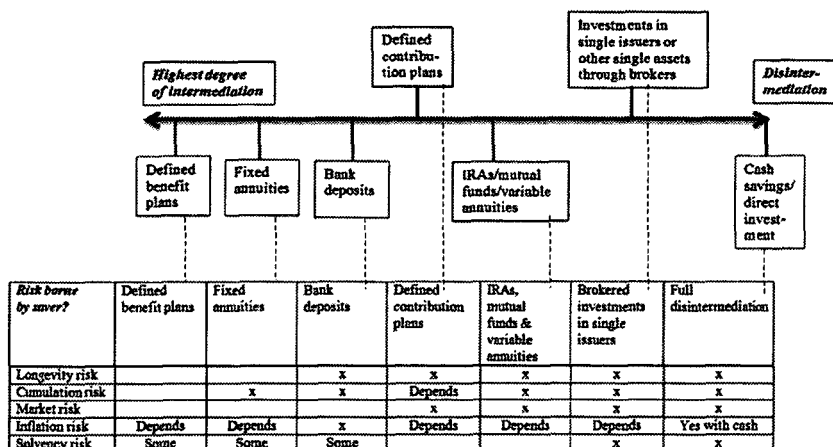
63. See Claire Groden, *Detroit and Stockton Are Just the Beginning of an Attack on Public Pensions*, NEW REPUBLIC (Dec. 22, 2014), <http://www.newrepublic.com/article/120630/stockton-detroit-bankruptcies-gut-budgets-and-imperil-pensions>. Stockton honored its pension payment obligations to Calpers. *Id.* Detroit ended up negotiating reductions to retirees' monthly pension checks while agreeing to continue those checks for the rest of the retirees' lives. Mary Williams Walsh, *Detroit Emerges from Bankruptcy, Yet Pension Risks Linger*, N.Y. TIMES: DEALBOOK (Nov. 11, 2014, 4:27 PM), http://dealbook.nytimes.com/2014/11/11/detroit-emerges-from-bankruptcy-pension-risk-still-intact/?_r=0.

64. See U.S. GOV'T ACCOUNTABILITY OFF., GAO-12-322, *STATE AND LOCAL GOVERNMENT PENSION PLANS: ECONOMIC DOWNTURN SPURS EFFORTS TO ADDRESS COSTS AND SUSTAINABILITY* (2012), <http://www.gao.gov/products/GAO-12-322>; *A Widening Gap in Cities: Shortfalls in Funding for Pensions and Retiree Health Care*, PEW CHARITABLE TRUSTS (Jan. 2013), http://www.pewtrusts.org/~media/legacy/uploadedfiles/pes_assets/2013/Pewcitypensionsreportpdf.pdf; *Moody's: US Municipal Pension Risks Higher Than 10 Years Ago Despite Recent Strong Asset Returns*, MOODY'S (Sept. 25, 2014), <https://www.moody's.com/research>

Fixed annuitants and depositors also have limited solvency risk. The national association of state guaranty funds for annuities has stated that notwithstanding the states' coverage limits, "in recent insolvencies more than . . . 88% of policyholder annuity benefits have been covered in full."⁶⁵ Annuitants can further protect themselves by only buying annuities from top-rated insurers and by spreading their annuities purchases among different issuers and owner designations to keep their total annuities exposure to any one issuer within the state coverage limits.⁶⁶ Meanwhile, with respect to bank accounts, no insured depositor has ever lost a cent of insured deposits.⁶⁷ Nor are the deposit insurance caps a serious hindrance because depositors can obtain potentially limitless deposit insurance coverage by spreading their deposits in increments of up to \$250,000 among different banks.

To summarize, we can see the overall distribution of risk according to the type of financial intermediary in Figure 2.

FIGURE 2



/Moodys-US-municipal-pension-risks-higher-than-10-years-ago—PR 309330 ("[T]he downside risk to funding has heightened because of the increased asset allocation to equities and alternatives, and the large scale of assets necessary to fund the liabilities for demographically aging pensions."); *The Fiscal Health of State Pension Plans: Funding Gap Continues to Grow*, PEW CHARITABLE TRUSTS (Mar. 2014), <http://www.pewtrusts.org/~media/Assets/2014/03/31/PewStatesWideningGapFactsheet2.pdf>.

65. *Policyholder Information: The Safety Net at Work*, *supra* note 47.

66. See, e.g., Danny Fisher, *How to Maximize Safety in Fixed Annuities*, NAT'L UNDERWRITER LIFE & HEALTH 29 (Oct. 4, 2004), <http://www.mrannuity.com/Articles/MaximizeSafety.pdf>.

67. See *Understanding Deposit Insurance*, *supra* note 48.

Solvency risk is the only major risk that financial intermediaries to the far left of the spectrum pose to retirement savers. To date, that risk has been minimal, although questions linger about the future performance of underfunded government defined benefit plans. In all other respects, financial intermediaries at the left end of the spectrum provide the fullest safeguards to workers and retirees from risk.

B. Investment Expertise

All financial intermediaries to the left of securities brokers on the intermediation spectrum offer benefits from pooling to their customers. These benefits include diversification and some form of investment expertise. In contrast, savers who invest through brokers or in disintermediated investments do not enjoy diversification or professional asset management unless they separately contract for it. The benefits from investment expertise to savers increase as one moves left along the spectrum.

Diversification is a principal benefit of pooled investments. Because diversification is so important to reducing risk to investors in a pool, state and federal law mandate diversification through rules that shape the portfolios of pooled intermediaries. Mutual funds, for instance, are subject to mandatory diversification requirements under the Investment Company Act of 1940.⁶⁸ These 1940 Act requirements also extend to mutual funds in IRAs and workplace defined contribution plans.⁶⁹ Meanwhile, banks, insurance companies, and defined benefit plans operate under stringent rules governing diversification of their assets.⁷⁰ For the most part, these diversification rules work well and usually are not the subject of concern.

68. See 15 U.S.C. § 80a-5(b)(1) (2012).

69. See E*TRADE Securities, LLC, SEC No-Action Letter, 2005 SEC No-Act. LEXIS 805 (Dec. 1, 2005) (applying the Investment Company Act to individual retirement accounts); David Pratt, *To (b) or Not to (b): Is That the Question? Twenty-First Century Schizoid Plans Under Section 403(b) of the Internal Revenue Code*, 73 ALBANY L. REV. 139, 173 (2009).

70. See, e.g., 29 U.S.C. §§ 1054(j), 1104(a)(1)(C) (federal provisions imposing a fiduciary duty to diversify the investments in an ERISA-regulated workplace pension plan); HERNANDEZ & WATERS, *supra* note 45, § 14.03[3] (describing diversification requirements for insurance underwriters); MCCOY, *supra* note 45, § 6.05[1] (describing lending limit and other diversification requirements for insured depository institutions). State and local defined benefit pension plan trustees are similarly subject to a fiduciary duty to diversify the assets in their plans. See, e.g., *GFOA Best Practice: Public Employee Retirement System Investments*, GOV'T FIN. OFFICERS ASS'N 1 (Oct. 2009), http://www.gfoa.org/sites/default/files/CORBA_PUBLIC_EMPLOYEE_RETIREMENT_SYSTEM_INVESTMENTS_0.pdf.

Investment advice is a second potential benefit of most investments that are mediated. At the right end of the intermediation spectrum, disintermediation offers no investment advice at all. The same is true for discount securities brokers. Full-service securities brokers do offer investment advice and all pooled intermediaries to the left of full-service brokers employ investment advice for purposes of asset management.

Unlike diversification, this investment advice feature of pooled intermediaries is more problematic. Professional asset management and investment advice, like other aspects of financial intermediation, are susceptible to conflicts of interest (usually based on compensation incentives) that can result in principal-agent problems. Accordingly, whether professional asset management or investment advice serves an investor's best interests depends in part on the nature of the intermediary, its financial incentives, and its legal obligations to the customer.

There are two distinct channels of investment advice. First, pooled intermediaries rely on investment advice in the form of professional asset management to make portfolio selections.⁷¹ Second, securities brokers and certain intermediaries may separately offer individual investment advice to retail savers.

This individual investment advice may not be coupled with professional asset management, depending on the type of intermediary and the choices that it offers. For instance, defined benefit plans, fixed annuity providers, and banks offer professional asset management. However, they do not offer investment advice about their portfolio choices to their customers because their customers are investing in a single pool by definition and therefore are not confronted with a choice.

Unlike defined benefit plans, fixed annuity issuers, and banks, other financial intermediaries offer savers a choice of investments, which can create an opportunity or a need for investment advice. None of those providers is required to provide investment advice directly to their retail customers. But if they do provide investment advice, they have duties to their customers that vary depending on the legal regime and the type of intermediary.

Full-service securities brokers,⁷² who recommend mutual funds and securities issued by individual issuers, operate under weaker

71. See Bernard Delbecque, *Key Functions of Asset Management*, VOX (Mar. 3, 2012), <http://www.voxeu.org/article/key-functions-asset-management> ("Asset management companies offer their intermediary function not only to households, business firms and governments, but also to the other categories of financial intermediaries, in particular pension funds and insurance companies.").

72. Technically, these brokers are registered representatives of broker-dealers.

legal duties to their customers than investment advisers. Under current law, a broker's principal legal obligation is to assure that a recommended investment is suitable for the customer given the customer's needs and wants.⁷³ Because the duty of suitability is not a fiduciary duty, securities brokers are not required to act in their clients' best interests or diversify their portfolios, so long as individual recommendations are suitable. Nor must brokers avoid recommending investments that will maximize their fees if their advice is suitable otherwise.⁷⁴ In contrast, registered investment advisers⁷⁵ owe a heightened fiduciary duty to investors to act in their best interests under Section 206 of the Investment Advisers Act of 1940.⁷⁶

IRAs, ordinary mutual funds, and variable annuities that are sold outside of employer-based retirement plans leave it to participants and investors to choose the appropriate funds. While investors in these vehicles are always free to hire brokers or registered investment advisers to assist them in that choice, nothing requires them to do so. To the extent they do receive investment advice, often it is from brokers who bombard them with advice to buy high-cost products in order to increase the brokers' sales commissions.⁷⁷

73. See *Hughes v. SEC*, 174 F.2d 969, 975 (D.C. Cir. 1949).

74. See, e.g., COUNSEL OF ECON. ADVISERS, *THE EFFECTS OF CONFLICTED INVESTMENT ADVICE ON RETIREMENT SAVINGS* 6 (Feb. 2015), https://www.whitehouse.gov/sites/default/files/docs/cea_coi_report_final.pdf. One recent field experiment found that securities brokers marketing mutual funds tended to advise clients to move their money out of efficient, low-fee funds into less efficient funds that paid the brokers higher commissions. See Sendhil Mullainathan, Markus Noeth & Antoinette Schoar, *The Market for Financial Advice: An Audit Study* (Nat'l Bureau of Econ. Research, Working Paper No. 17929, 2012), <http://www.nber.org/papers/w17929>; see also MICHAEL S. FINKE & BENJAMIN F. CUMMINGS, *MODELS OF FINANCIAL ADVICE FOR RETIREMENT PLANS: CONSIDERATIONS FOR PLAN SPONSORS* 10–11 (2014), <https://www.soa.org/Files/Research/Projects/research-2014-models-finance-advice-retire-report.pdf> (summarizing similar studies).

75. Technically, these professionals are known as investment adviser representatives and work for registered investment advisers.

76. 15 U.S.C. § 80b-6 (2012); see *Transamerica Mortg. Advisors, Inc. (TAMA) v. Lewis*, 444 U.S. 11 (1979); *SEC v. Capital Gains Research Bureau, Inc.*, 375 U.S. 180 (1963).

77. Recently, the Department of Labor proposed rules to impose stricter fiduciary duties on sales representatives who provide investment advice with respect to these products for the purposes of IRAs and employee benefit plans. Definition of the Term "Fiduciary"; Conflict of Interest Rule—Retirement Investment Advice, 80 Fed. Reg. 21,928 (proposed Apr. 20, 2015) (to be codified at 29 C.F.R. 2510). For a description of the large number and variety of financial professionals providing various sorts of financial advice, see John A. Turner & Dana Muir, *The Market for Financial Advisers*, in *THE MARKET FOR RETIREMENT FINANCIAL ADVICE* (Olivia S. Mitchell & Kent Smetters eds., 2013).

The provision of financial education and investment advice to participants in workplace defined contribution plans is not much more robust. The rules implementing ERISA require plans to furnish sufficient information to participants to enable them to make informed decisions with respect to each investment option.⁷⁸ In 2006, moreover, Congress added a safe harbor to ERISA that allows plans to provide investment advice to their participants without fear of liability, subject to certain safeguards.⁷⁹ It is not clear how much investment advice these plans actually offer,⁸⁰ and employers have reason to avoid it because, notwithstanding the safe harbor, the selection of an investment adviser itself remains a fiduciary act that subjects the employer to potential liability under ERISA.⁸¹

Defined contribution plans present a related issue having to do with the universe of investments from which participants may choose. In the defined contribution space, the breadth of the investment menu depends strongly on the vehicle. While IRAs have loose limitations on eligible investments, the universe of eligible investments for IRAs is bafflingly vast.⁸² In contrast, 401(k)s and other defined contribution plans offered through the workplace are supposed to provide employees with a modicum of expertise by curating a palette of investments (normally consisting of mutual funds and/or fixed or variable annuities). Ninety-five percent of defined contribution plans are “participant-directed,” meaning that participants make a choice of investments from a palette selected by

78. 29 C.F.R. § 2550.404c-1(b)(2)(i)(B) (2010).

79. 29 U.S.C. § 1108(b)(14), (g); see 26 U.S.C. § 4975(d)(17), (f)(8); see also Dep’t of Labor, Interpretive Bulletin Relating to Participant Investment Education, 29 C.F.R. § 2509.96-1 (1996) (describing the circumstances in which the provision of investment-related information to participants and beneficiaries in participant-directed individual account pension plans constitutes investment education instead of investment advice).

80. The Employee Benefit Research Institute reported in 2014 that only nineteen percent of employees and twenty-five percent of retirees had received professional investment advice. *2014 Retirement Confidence Survey*, EMP. BENEFIT RES. INST. (2014), <http://www.ebri.org/surveys/rcs/2014/>. In all likelihood, at least some of that advice was rendered outside of defined benefit plans.

81. See Dana M. Muir, *The Dichotomy Between Investment Advice and Investment Education: Is No Advice Really the Best Advice?*, 23 BERKELEY J. EMP. & LAB. L. 1, 22 (2002).

82. According to the Internal Revenue Service, “there is no list of approved investments for” IRAs. *Retirement Plan Investments FAQs*, IRS, <http://www.irs.gov/Retirement-Plans/Retirement-Plan-Investments-FAQs> (last updated Jan. 29, 2015). However, IRAs may not invest in life insurance policies or collectibles. *Id.*

the plan sponsor.⁸³ In curating that menu, these plans operate under a loose set of federal requirements regarding the investment options that the plans must offer. Each plan must include at least three diversified investments with materially different risk and return characteristics.⁸⁴ In addition, the menu must allow participants to choose different combinations of investments that allow them to vary the aggregate risk and return profile of their investments.⁸⁵

If the selection of funds is thoughtful, curation provides beneficiaries of employer defined contribution plans with even more expertise on top of diversification and the judgment that goes into selecting the portfolio investments for the underlying individual funds. Ideally, defined contribution plans can offer up to three types of expertise that IRAs and ordinary mutual funds do not automatically provide: curation, certain added types of investment information, and sometimes even investment advice. When plan sponsors and investment advisers take their curating responsibilities seriously and pair it with sound investment advice, they can use their expertise to craft a well-thought-out selection of investment options for employees.

The real-world experience with this potential added expertise has been far from satisfying, however. The investment menu process for participant-directed defined contribution plans is far from perfect and has been subject to harsh criticism for years. Too many menus are littered with employer stock, high-cost low-performing funds,⁸⁶ or an excessive number of choices.⁸⁷ While there has been modest improvement over time, with defined contribution plans increasingly migrating toward index fund options

83. See PETER J. WIEDENBECK, 1-4 ERISA: PRINCIPLES OF EMPLOYEE BENEFIT LAW § 4.05 (2013). Plans offering participant-directed investments are known as ERISA section 404(c) plans. See *id.*

84. 29 C.F.R. § 2550.404c-1(b)(3) (2009).

85. *Id.* There are also weak restrictions on including employee stock as an investment option. *Id.* § 2550.404c-1(d)(2)(ii)(E)(4).

86. See, e.g., Ian Ayres & Quinn Curtis, *Beyond Diversification: The Pervasive Problem of Excessive Fees and "Dominated Funds" in 401(k) Plans*, 124 YALE L.J. 1476, 1476 (2015). Further, in a practice known as revenue sharing, some investment advisers provide administrative services for free to employers in exchange for including high-cost funds in pension plans. See *id.* at 1486.

87. Individual investors can experience decision-making paralysis and make inappropriate investment decisions when faced with too many investment options. See Mercer Bullard, *The Social Costs of Choice, Free Market Ideology and the Empirical Consequences of the 401(k) Plan Large Menu Defense*, 20 CONN. INS. L.J. 335 (2014); David Goldreich & Hanna Halaburd, *When Smaller Menus Are Better: Variability in Menu-Setting Ability* 4 (Harvard Bus. Sch., Working Paper No. 11-086, 2011), <http://www.hbs.edu/faculty/Publication%20Files/11-086.pdf>.

with their lower costs and higher average returns,⁸⁸ too many funds continue to offer inappropriate choices.

One of the major problems with investments in individual securities and defined contribution plans is that investors already bear the market risk and then too often compound that risk through common investment errors.⁸⁹ This is another way that fixed annuity providers, banks, and defined benefit plans at the left end of the spectrum provide savers with added protection. Because savers in all three vehicles invest in a single pool, they are relieved of having to make investment choices themselves. Instead, all three providers make their own portfolio selections while assuming the risk of poor investment choices.⁹⁰ This gives savers in these vehicles implicit contractual protection from the risk of improvident portfolio decisions (plus added protection from loss due to social insurance).

In sum, the level of investment expertise that financial intermediaries offer to savers generally increases as one moves from right to left along the intermediation spectrum. Intermediaries at the left end of the spectrum provide participants with the valuable added benefit of assuming the downside risk of their portfolio choices if those choices turn out to be poor.

C. Choice

Another important factor that shapes the tradeoffs between different degrees of intermediation is the issue of choice. Currently, only rare individuals can avail themselves of the full range of retirement savings vehicles. In large part that is because employers have been progressively replacing defined benefit plans with defined contribution plans for decades.⁹¹ On top of this, millions of individuals cannot participate in workplace pensions at all, either because they are not employed or their employers do not offer them

88. See *The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at 401(k) Plans*, INV. COMPANY INST. 27 exh.1.11 (Dec. 2014), http://www.ici.org/pdf/ppr_14_dcplan_profile_401k.pdf.

89. See, e.g., SHLOMO BENARTZI, *SAVE MORE TOMORROW: PRACTICAL BEHAVIORAL FINANCE SOLUTIONS TO IMPROVE 401(K) PLANS* (2012).

90. Successful asset management is not a given, however, and is particularly problematic in the case of defined benefit plans because ensuring optimal investment returns is outside of most employers' core competency. See Maher, *supra* note 27.

91. See, e.g., JACOB S. HACKER, *THE GREAT RISK SHIFT* (2008); Barbara A. Butrica et al., *supra* note 23. In 1975, 62% of active private-sector workers participated in a defined benefit plan (where the defined benefit plan was the only plan); in 2009, that percentage was 7%. Meanwhile, the percentage of active private-sector workers who participated in a defined contribution plan (where the defined contribution plan was the only plan) jumped from 16% in 1975 to 67% in 2009. EMP. BENEFIT RET. INST., *supra* note 52, ch. 1, at 4.

any type of pension plan.⁹² The number of affected workers is substantial: employers of half of all U.S. employees offer no pension plan to their rank-and-file workers.⁹³

Outside of the workplace, most individuals can participate in IRAs but only to the extent they have earned income.⁹⁴ Even then, the annual contribution limits for standard IRAs are substantially lower than those for tax-sheltered employer-based pension plans.⁹⁵ The other main retirement savings options for individuals outside of the workplace are fixed annuities, bank deposits,⁹⁶ ordinary mutual funds, and direct investments in individual issuers or other assets (purchased through a broker or not).

What do retirement savers lose when they lack full choice among retirement savings vehicles? The vast majority of individuals who are shut out of defined benefit plans must bear longevity risk unless they buy a traditional fixed annuity,⁹⁷ which many are reluctant to do. Those same individuals are also exposed to two other risks: market risk and inflation risk.

Many individuals who lack access to defined benefit plans also lack access to defined contribution plans with mandatory contributions and matches, which are designed to produce adequate

92. In the private sector, employers have no legal obligation to sponsor a pension plan unless they agree to do so in collective bargaining or employment contracts.

93. In 2009, for instance, 50.7% of workers were employed by employers who did not sponsor a retirement plan. EMP. BENEFIT RET. INST., *supra* note 52, at ch. 10, tbl. 10.10b.

94. See, e.g., Carrie Schwab-Pomerantz, *Can You Contribute to an IRA If You Don't Have a Job?*, CHARLES SCHWAB (Feb. 26, 2014), http://www.schwab.com/public/schwab/resource_center/expert_insight/ask_carrie/retirement/can_you_contribute_to_an_ira_if_you_dont_have_a_job.html.

95. For 2015, the contribution limit for IRAs was \$5500 (with an added \$1000 catch-up contribution for individuals age fifty or over), whereas the maximum contribution limit for workplace defined contribution plans that year (except for SIMPLE plans) was \$18,000 plus a \$6000 catch-up contribution for older workers. *COLA Increases for Dollar Limitations on Benefits and Contributions*, IRS, <http://www.irs.gov/Retirement-Plans/COLA-Increases-for-Dollar-Limitations-on-Benefits-and-Contributions> (last updated May 12, 2015). Defined benefit plans are subject to a different type of contribution limit. For 2015, plan contributions could not exceed what was needed to provide an annual benefit of 100% of a participant's average compensation for his or her highest three consecutive calendar years or \$210,000, whichever was less. *Retirement Topics—Defined Benefit Plan Benefit Limits*, IRS, <http://www.irs.gov/Retirement-Plans/Plan-Participant-Employee/Retirement-Topics-Defined-Benefit-Plan-Benefit-Limits> (last updated Dec. 19, 2014). As the IRS noted, “[a]ctuarial assumptions and computations are required to figure these contributions.” *Id.*

96. Bank deposits are normally not ideal for long-term investment due to the inflation risk presented by their low rate of return.

97. Social Security benefits partially offset this longevity risk but their replacement rate is relatively low.

replacement rates. These people bear cumulation risk on top of longevity risk, market risk, and inflation risk. This cumulation risk is even greater for savers who have no access to workplace pension plans at all. Not surprisingly, these two groups of households are at the greatest risk of falling short of savings at retirement.

The degree of choice among retirement savings options also affects individuals' degree of access to investment expertise. Practically every saver has access to the expertise offered by full-service securities brokers and mutual funds (with or without IRA wraps). But if savers also want providers to *curate* a menu of mutual funds and annuities, they must have access to an employer-based defined contribution plan. And if they further want intermediaries to take responsibility for choosing the investments while safeguarding against market risk, savers must either go to depository institutions or fixed annuity providers or count themselves among the lucky few with access to a defined contribution plan.

As this situation suggests, the intermediation spectrum in the retirement context has serious discontinuities in supply. Individuals have extremely broad access to brokered securities,⁹⁸ commodities, mutual funds, fixed and variable annuities, IRAs, and bank accounts. They have much less access to defined benefit and defined contribution plans at work. Consequently, the savings vehicles that offer individuals the greatest protection from risk are in the least supply.

This lack of choice is restricted to the left of the intermediation spectrum and turns on whether a particular savings vehicle is employer or market based. Employers have fled from defined benefit plans in recent years to avoid the volatility, high potential costs, and fiduciary responsibilities that are inherent in the market, inflation, and longevity risk that those plans assume.⁹⁹ Defined contribution plans do not pose the same risks to employers, but their high administrative costs and associated fiduciary duties cause many employers to shun those plans as well.

In contrast, fixed annuity providers and depository institutions consciously embrace market risk (and longevity risk, in the case of

98. With the exception of public offerings.

99. By law, defined benefit plan sponsors can freeze a plan at any time by converting a defined benefit annuity to a lump sum plan. In addition, they can often transfer their plan liabilities to a third party. See Brendan S. Maher & Paul Secunda, *Pension De-Risking*, 93 WASH. U. L. REV. (forthcoming 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2577159. Meanwhile, in 2014, the Multiemployer Pension Reform Act allowed plan sponsors of private-sector multiemployer defined benefit plans in "critical and declining status" to suspend benefits for both active and retired participants. See Multiemployer Pension Reform Act of 2014, Pub. L. No. 113-235, 128 Stat. 2132.

annuity providers) as intrinsic to their business models. Compared to run-of-the-mill employers, these insurance companies and banks specialize in investment expertise and have market incentives to deploy that expertise successfully to earn profits. Like employer-based pension plans, both of these intermediaries fall on the left end of the intermediation spectrum, but neither of them is saddled with the limitations on supply that workplace pension plans entail.

In an ideal world, we could harness the positive market incentives of both types of intermediaries to provide retirement savings options with greater safeguards to investors than current alternatives offer. Bank deposits, however, are normally not appropriate investments for the long-time horizon needed for retirement savings due to their low rates of return. Fixed annuities, in contrast, have distinct merits as retirement savings vehicles because they offer tax advantages and sophisticated investment expertise to savers, plus protection from market risk, longevity risk, and even inflation risk (at a price).

The challenge then is to design a system in which fixed annuities become a credible substitute for defined benefit plans. Here, the stress is on the word *credible*. Fixed annuities have the opposite problem of their defined benefit counterparts in that they suffer from a shortfall in demand, not supply. Many savers are reluctant to buy fixed annuities due to their high cost,¹⁰⁰ their low rates of return in today's low interest environment, bequest motives, and the fear that people will not obtain a full financial payout if they prematurely die. Moreover, a substantial minority of states do not hold insurance agents to a strict fiduciary duty or even a duty of suitability when selling fixed annuities.¹⁰¹ The challenge, then, is to design a system that credibly addresses these concerns while incorporating a mandatory savings feature in order to defray cumulation risk. If this can be accomplished, then individuals could have access to the same full range of protections at the left end of the intermediation spectrum without the supply limitations posed by defined benefit plans.

CONCLUSION

In the retirement savings arena, there are a wide variety of financial intermediaries and investment options, some which are

100. See, e.g., Daniel Bauer & Frederik Weber, Assessing Investment and Longevity Risks Within Immediate Annuities 2–3 (2007) (unpublished manuscript), <http://www.aria.org/meetings/2007papers/IE%20-%203%20-%20Weber.pdf> (reviewing literature); Amy Finkelstein & James Poterba, *Selection Effects In The United Kingdom Individual Annuities Market*, 112 ECON. J. 28 (2002).

101. See FINKE & CUMMINGS, *supra* note 74, at 12.

freely available to investors and some which are not. The risk tradeoffs of these different options and the amount of investment expertise they provide to investors vary greatly among types of intermediaries and are a function of the types of claims that those intermediaries provide. The type of intermediary offering the greatest protection—defined benefit plans—is also in short supply. This article explains how fixed annuities, which are not subject to the same constrictions in supply, could provide many of the same protections as the vanishing defined benefit plan if other serious reservations about those products were addressed.