Working Paper

How Should Retirement Plans Be Organized?

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Ross School of Business Working Paper Series
Working Paper No. 1332
October 2016

Forthcoming in *NYU Journal of Law and Business* Vol. 13 No. 2, 2017

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Forthcoming in NYU Journal of Law and Business, 2017, 13:2.

by

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October 27, 2016

Abstract: Americans have a tough time saving for their retirement. To make matters worse, the move from defined benefit (DB) plans that are regulated by ERISA to defined contribution (DC) plans over recent decades has required greater investor sophistication, discipline, and sound investment advice. Unfortunately, even the most recent regulation regarding investment advice for DC plans does not address the two critical deficiencies of the current system, namely opacity and conflicts of interest. We propose that a one-principal standard be instituted along with strict transparency requirements to control the conflicts of interest and improve retirement savings advice. We also recommend that only low-cost, passive, well-diversified index funds for stocks and bonds should qualify as retirement vehicles to address concerns regarding opacity.

* We thank Stephen Handlon and Ivana Mrazova for excellent research assistance, Dana Muir and Vikram Khanna for extensive comments, and participants at University of Michigan Ross School of Business finance seminar participants for helpful discussions.

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Introduction

Designing sensible retirement-plan rules is a challenging task since most Americans do not have sufficient financial acumen and self-discipline to manage their own retirement portfolio. In spite of the fact that retirement plans constitute the bulk of their savings, most American families struggle with the management of defined contribution (DC) plans. Consequently their savings are inadequate to meet their retirement needs. According to a recent report, 56% of Americans have less than $10,000 in their retirement accounts. One in three Americans reported that they had no retirement savings.[1] Clearly, the current DC plans for retirement savings are not working very well for the typical American. In this paper, we analyze simple and sensible rules that can help every American family get the most out of its DC retirement plan.

Since 1975, a structural change has occurred in our private retirement system away from defined benefit (DB) plans and into DC plans which include self-directed Keogh and IRAs, and employer-sponsored 401(k) and 403(b) plans. DC plans provide tax-advantaged retirement savings vehicles for individuals and typically represent a large portion of the individual's savings. At the end of 2015, DC plan assets alone totaled $6.7 trillion.[2] This massive shift from DB plans to DC plans has increased the urgency and importance of both transparency and sound investment advice regarding retirement savings.

One of the impediments for inadequate retirement savings in DC plans is the poor performance of trillions of dollars of investments in DC plans.[3] The poor performance

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[1] Elyssa Kirkham, *1 in 3 Americans Have Saved $0 for Retirement*, Time (Mar. 14, 2016), http://time.com/money/4258451/retirement-savings-survey/.

[2] *See 2016 Investment Company Factbook, http://www.icifactbook.org/ch7/16_fb.*

[3] During 1990-2012, the geometric average annual return of DC plans was 2.7 percentage points lower than equity returns and 2.8 percentage points lower than long-term corporate bond returns. DC plans also returned 0.7 percentage points less than DB plans. See Alcia Munnell, Jean-Pierre Aubry, and Caroline Crawford,

itself is a consequence of the lack of investor sophistication, discipline, as well as the complexity of the investment instruments and investment concepts. Another critical factor that compounded the problem was that regulations did not require investment advice to be in the best interest of the plan beneficiaries.

To address these serious and growing problems, policy makers have targeted the 'suitability rule' in providing investment advice. Under Department of Labor's (DOL) recently adopted new rule,[4] brokers/investment advisers for DC retirement accounts would be subject to a higher fiduciary standard and investment advisers must recommend investment products with the "best interest" of the beneficiaries in mind. The new rule is prima facie laudable. However, there are two provisions in the recently instituted standard that undermine its primary intent of ensuring that investors get unbiased investment advice at a reasonable cost. The first one allows brokers and investment advisers to receive compensation such as commissions from financial institutions whose products they recommend for inclusion in the investors' retirement portfolio. By allowing advisers to receive compensation from both the buyer (investor) and the seller (financial institution),

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Investment Returns: Defined Benefit Vs. Defined Contribution Plans, Center for Retirement Research at Boston College, December 2015, Number 15-21.

[4] Under the DOL's definition, any individual receiving compensation for providing advice that is *individualized or specifically directed* to a particular plan sponsor (e.g., an employer with a retirement plan), plan participant, or Individual Retirement Account (IRA) owner for consideration in making a retirement investment decision is a fiduciary. Such decisions can include, but are not limited to, what assets to purchase or sell and whether to rollover from an employer-based plan to an IRA. The fiduciary can be a broker, registered investment adviser, insurance agent, or other type of adviser (together referred to as "advisers" here). Some of these advisers are subject to federal securities laws and some are not. Being a fiduciary simply means that the adviser must provide impartial advice in their client's best interest and cannot accept any payments creating conflicts of interest unless they qualify for an exemption intended to assure that the customer is adequately protected. DOL's regulatory impact analysis estimates that the rule and related exemptions would save investors over $40 billion over ten years, even if one focuses on just one subset of transactions that have been the most studied. The real savings from this new rule are likely much larger as conflicts and their effects are both pervasive and well hidden. See *Department of Labor Proposes Rule to Address Conflicts of Interest in Retirement Advice, Saving Middle-Class Families Billions of Dollars Every Year*, U.S. DEPT. OF LABOR, https://www.dol.gov/ebsa/newsroom/fsconflictsofinterest.html.

this provision creates an obvious conflict of interest between the investor and the adviser. Furthermore, these fees get passed on to the investor reducing the net returns.[5]

The second provision of concern allows brokers/advisers to include proprietary products (privately owned, nontraded assets, also referred to as alternative investments) in the retirement portfolio. These products are also allowed in Defined Benefit (DB) plans. They suffer from greater informational asymmetry, with the seller holding an informational advantage, and have complex features that are difficult for the average investor to understand and analyze. There is considerable evidence that the average investor is not as financially sophisticated as she needs to be to evaluate non-traded retirement assets. Moreover, proprietary products and alternative investments are also likely to involve higher transaction costs. While either of the two issues of informational asymmetry and complexity is sufficient to put the investor at a significant disadvantage, the combination compounds the problem. The above two provisions in combination exacerbate the concern that investors' might not get sound advice: brokers/advisers who receive compensation from institutions have a greater incentive to recommend costly alternative investments and proprietary products that earn them greater commissions. In summary, the provisions that create potential conflicts of interest between advisers and investors are further compounded by allowing non-traded proprietary products and alternative investments.

The relevant policy question is how significant these issues are. That is, are these potential conflicts of interest likely to result in significant losses to investors due to poor advice? And does the lack of transparency in proprietary products have adverse

[5] See Ian Ayers and Quinn Curtis, Beyond Diversification: The Pervasive Problem of Excessive Fees and "Dominated Funds" in 401 (k) Plans, 124 YALE L.J. 1476-1550 (2015)

consequences to investors? In this paper we provide evidence that the answer is "yes" to both questions.

To answer the first question on the effect of conflict of interest, we choose a unique setting in which a similar potential conflict of interest exists: namely, DB pension funds that were already subject to the fiduciary standard under ERISA. We analyze the performance of DB pension funds in which an executive of the firm that employs the beneficiaries is also a fiduciary. Such a set up creates a conflict of interest with fiduciary-executive required to serve two principals: the beneficiaries of the DB fund and the shareholders of the firm.

Our evidence indicates that a simple requirement that investment advisers be subject to the fiduciary standard (under ERISA) does not by itself address the conflict of interest issue in DB pension funds: in funds with conflicts of interest, beneficiaries are short-changed for the benefit of the shareholders. Returns from insider trades of pension funds in which conflicts of interest are likely to be present underperform the market by more than 5.5% over a year. This figure understates the loss to plan beneficiaries: returns from insider trades in general outperform the market. This loss is significantly greater than the figures reported by others using different methods.[6] Based on this experience of DB pension funds, we can conclude that the effect of conflict of interest is real, is much bigger than previously documented, and will very likely be to the detriment of the beneficiaries of the DC plans as well. Therefore, without addressing the cause of the conflict of interest

[6] See Alcia Munnell, Jean-Pierre Aubry, and Caroline Crawford, Investment Returns: Defined Benefit Vs. Defined Contribution Plans, Center for Retirement Research at Boston College, December 2015, Number 15-21; and Jason Furman & Betsy Stevenson, *The Effects of Conflicted Investment Advice on Retirement Savings*, THE WHITE HOUSE (Feb. 23, 2015), https://www.whitehouse.gov/blog/2015/02/23/effects-conflicted-investment-advice-retirement-savings.

issue, the current rules for DC plans are unlikely to be successful in addressing the issue of inadequate retirement savings.

To address the second question regarding non-traded alternative assets and proprietary products, we consider two representative products that would continue to be allowed as appropriate retirement investments. We simulate the performance of these products and find that, on a risk-adjusted basis, the performance is inferior compared to both the risk-free rate (Ten-Year Treasury Notes) and S&P 500. Hence our evidence suggests that without also addressing the transparency problem, the fiduciary standard rule for DC plans is not likely to be successful.

The empirical evidence in this paper shows that the current investment advisory rules are deficient. On the one hand, the current rules require that brokers/investment advisers act in the best interest of the beneficiaries, yet they allow them to receive income from third parties. In addition, the rules do not prohibit opaque, non-traded alternative investments and proprietary products, which would lead to uninformed and costly investment decisions. In fact, the current rules are likely to lead to continued conflicted investment advice, confusion, and wide-spread litigation to sort out these internal conflicts in a multi-trillion-dollar market.[7] We offer three policy recommendations to remedy these problems.

[7] The new rules have already created a wave of lawsuits regarding conflicts of interests and opacity in defined contribution plans. See for instance Wall Street Journal, August 6, 2016, "Self-Dealing with 401 (k)," and Wall Street Journal, September 14, 2016, "MIT, NYU, Yale Sued over Retirement-Plan Fes." Also see, Wall Street Journal, September 7, 2016, "Wall Street Remakes the CD, Hitting Yields." Furthermore, U.S. Supreme Court recently ruled in favor of the Plaintiffs in 401(k) plans and rejected a strict six-year statute of limitations to bring lawsuit. See, http://www.wsj.com/articles/high-court-ruling-adds-protections-for-investors-in-401 (k)plans-1431974139

Our first policy recommendation addresses the current rule that allows brokers/advisers to receive income both from the investor as well as the sponsor of the investment product. Any serious reform in retirement investment area must address the conflict of interest problem caused by this income exemption rule. The key to eliminating conflicts of interest involves insuring that the brokers/investment advisers serve, and therefore receive income from, only one principal. Unfortunately, the current advisory rules and the associated exemptions simply fail to address the multiple-masters problem.

Second, any serious reform must prohibit non-traded alternative investments and proprietary investment vehicles from the menu of investments in retirement plans because of the lack of transparency which impedes informed decisions by beneficiaries. As we show, these non-traded investment vehicles are likely to provide lower returns thereby reducing the retirement savings of beneficiaries. Furthermore, we show that by using non-traded products in retirement accounts, certain wealthy taxpayers can avoid paying any taxes on their income. Thus, allowing alternative and proprietary investment products into retirement accounts does not make any sense either from the average beneficiary perspective or a public policy perspective. We recommend a very strict transparency rule in order for any investment to qualify as a retirement asset for both DB and DC plans: All qualified retirement equity securities must be publicly traded in U.S. public exchanges or over-the-counter market in case of notes and bonds.

Our final recommendation is that only passive index funds or well-diversified exchange traded funds (ETFs) consisting of broadly diversified portfolios (such as ETFs that track the Standard and Poor's 500 index) be allowed the tax exemption as retirement accounts. It is our view that simply requiring a fiduciary standard in itself is not going to

solve retirement savings problems. Instead, it is likely to lead to additional problems by creating an inconsistent set of rules. Our recommendation of limiting retirement accounts to index funds will prevent conflicts of interests and lack of transparency from creeping back into the retirement-advice business. To this end, we further recommend the establishment of broad age-based minimum, maximum, and target percentages of common stocks, corporate and government bonds, and real-estate securities that can be held in DC plans. Anyone requiring an exception to the well-diversified ETF rule would need to be qualified on the basis of financial education or size of retirement assets. The restriction to limit investment choices to passive funds will also increase investor returns by reducing the fees charged by financial institutions.

The remainder of our paper is organized as follows: Section 1 provides the historical context in which the shift from DB to DC plans took place and provides a comparison of the two types of plans. Section 2 describes the fiduciary standard and analyzes conflict of interest problem in the context of corporate-sponsored pension funds. Section 3 uses the evidence of conflict of interest in DB plans to provide an insight to the likely effect of the potential conflict of interest in DC plans. Section 4 explains the problems with allowing proprietary products in pension funds and provides evidence of the harm it can cause investors. Section 5 describes the policy recommendations to resolve the potential conflicts of interest in individual retirement accounts. In Section 6, we present the paper's conclusions.

1. The Shift from Defined Benefit to Defined Contribution

In this section we review the factors that caused the shift from DB to DC plans and the pros and cons of each type of plan.

a. Historical Background

For decades, Americans saved for their retirement using employer-sponsored pension plans.[8] Under this system, the employers bore the burden of managing the assets prudently because the employers promised the employee specific benefits. The beneficiaries did not need to be financially savvy and yet enjoyed the stability and security of retirement income.

After World War II, employers began to offer pension plans to their employees; and they used these benefits to compete for the best employees.[9] Americans began to expect these benefits as they became increasingly popular.[10] Older Americans remember retirement plans where they received a fixed income after retirement, but only if they stayed with an employer for many decades.[11] The plan, used by the majority of Americans in previous generations, is a DB plan. The plan is a defined-benefit plan because the benefit – the money paid out of the pension – is set by a tenure/salary calculation.

While secure and convenient, the old system eventually came under pressure. One issue was that employers were burdened with future retirement liabilities that were beyond their control and that created significant uncertainty in the marketplace. Also some firms deliberately underfunded their pension plans or went bankrupt. To deal with firms that failed, the federal government created the Pension Benefit Guarantee Corporation (PBGC) that took over the pension liabilities of failed firms, thus transferring the risk and responsibility of the retirement plans to the U.S. taxpayers. The second issue was that

[8] *See*, Edward A. Zelinsky, *The Defined Contribution Paradigm*, 114 YALE L.J. 451, 460-62 (2004).
[9] *See* Dennis Triplett, *The Great Shift: Moving from Defined Benefit to Defined Contribution*, THE INSTITUTE FOR HEALTHCARE CONSUMERISM (2016).
[10] *Id.* at A1.
[11] *See, e.g.*, Leora Friedberg, *Not Your Father's Pension Plan*, THE FEDERAL RESERVE BANK OF ST. LOUIS (Jan. 2002), https://research.stlouisfed.org/publications/review/02/01/23-34Friedberg.pdf.

Americans began changing jobs frequently. Consequently, shorter work tenure often meant that the employee did not qualify for any retirement benefits at all. Finally, shorter tenures also meant that American were burdened with the task of having to keep track of multiple streams of benefits.[12]

To deal with these problems, Employee Retirement Income Security Act (ERISA), enacted in 1974, popularized DC pension plans and changed the American retirement system permanently.[13] Following the passage of ERISA, employers shifted employees from the traditional DB plans to employer-sponsored 401(k) and 403(b) plans [14]or the DC plans, in which the contributions to the retirement plan was set in advance, but the ultimate value at the time of retirement depended on the performance of the assets held in the plan. Therein lay the danger of DC plans. Unless the retirement savings and investments were managed competently, most Americans could end up in their old age with little savings and at the mercy of various social safety-net programs, such as Social Security or Medicaid, which are only meant to be supplementary retirement vehicles.

Several actions by ERISA increased the popularity of the DC plans, from the point of view of both employers and beneficiaries. The increased regulatory burden imposed on DB plans made the DC option more appealing to employers: they simply shifted the

[12] *See, e.g.*, Quentin Fottrell, *Typical U.S. Worker Now Lasts 4.6 Years on the Job* (Jan. 12, 2014 7:58 AM), http:// http://www.marketwatch.com/story/americans-less-likely-to-change-jobs-now-than-in-1980s-2014-01-10 (arguing that Americans are no longer tied to a single employer for long periods of time).
[13] *See* Monique Morrissey, *Private-sector Pension Coverage Fell by Half Over Two Decades*, ECONOMIC POLICY INSTITUTE (Jan. 11, 2013, 9:27 AM), http://www.epi.org/blog/private-sector-pension-coverage-decline/ (describing the decline of private-sector pension plans).
[14] A 401(k) plan is an employer-sponsored, defined-contribution plan that allows employees to save for retirement as a deduction from their paychecks before taxation. Sometimes employees' contributions are matched by the employer. As of 2015, the maximum pre-tax contribution is $18,000. 403(b) plans are available for employees of certain tax exempt institutions such as public schools.

fiduciary burden to the employees.[15] The fact that ERISA permitted DC plans to hold more of an employer's stock than DB plans if desired by the employees made DC plans more attractive to management trying to ward off hostile takeovers.[16] The creation of the modern Individual Retirement Account (IRA) by ERISA allowed beneficiaries to roll over the amounts in their DC plans to tax-deferred IRAs when they changed employers or retired.[17] Therefore, once DC plans became available, more assets shifted to these vehicles.[18] Following ERISA, the total value of assets in private DC plans jumped from $104 billion in 1978 to $6.7 trillion in 2015, according to the Investment Company Institute.[19] Evidence shows that Americans have increasingly accepted DC plans, which gave them more control over their retirement assets.[20] While trade unions have favored DB plans (especially when managed by the unions), the erosion of unions' power and membership as well as shift from manufacturing to the service sectors have also contributed to the decline of DB plans.[21] It is important to note that some Americans (federal and state government employees being the biggest group) are still DB plan participants.[22] Nevertheless, over 100,000 DB plans with over 7 million plan participants have terminated since the early

[15] For DB plans, investment advisers are subject to the fiduciary standard meaning that any investment decisions must be in the "best interest" of the plan beneficiaries.
[16] *See, e.g.*, Edward A. Zelinsky, *The Defined Contribution Paradigm*, 114 YALE L.J. 451, 460-62 (2004).
[17] An IRA account allows an individual to save for retirement on a tax-free or tax-deferred basis to supplement employer sponsored plans. There are limits to how much individuals can save to take advantage of tax benefits.
[18] *Id.* at 474.
[19] *See 2016 Investment Company Factbook, http://www.icifactbook.org/ch7/16_fb_*
[20] Friedberg, *supra* note 8, at 1.
[21] Daniel Beller and Helen Lawrence, *Trends in Private Pension Plan Coverage*, U.S. DEP'T OF LABOR, 1992.
[22] Zelinsky, *supra* note 10 at 460-62.

1980s.[23] Moreover, the shift from DB pension plans to DC plans appears to be accelerating.[24]

The boom in assets in DC plans is closely linked to the explosion in IRA assets because a significant majority of the flows into IRAs is a result of rollovers from DC plans, rather than direct IRA contributions.[25] At the end of 2015, IRA assets totaled $7.3 trillion.[26]

b. Investors' Financial Sophistication

While DC plans provide investors control over their retirement portfolio in terms of its risk profile, timing of trades, etc., they also impose on investors the responsibility of managing the portfolio. Therefore, a key question is whether investors have the education, skills and self-discipline to manage their own financial assets. According to a recent White House report, many DC plan participants struggle to understand basic financial concepts such as costs, risks and reward, and diversification.[27] According to the report, many individuals also do not understand the most fundamental concepts and terminology in investing. The report additionally documents cognitive biases such as over-confidence, over-optimism, and loss aversion. These deficiencies often lead to lower investment returns, because they lead households to: 1) trade too much by seeking active management

[23] *Funding Challenge: Keeping Defined Benefit Plan Pension Plans Afloat: Hearing Before the Senate Comm. On Fin.*, 108th Cong. 57 (2003).
[24] *See* Dennis Triplett, *The Great Shift: Moving From Defined Benefit to Defined Contribution*, THE INSTITUTE FOR HEALTHCARE CONSUMERISM, http://http://www.theihcc.com/en/communities/hsa_hra_fsa_admin_finance/the-great-shift-moving-from-defined-benefit-to-def_hzohzk89.html.
[25] *See*, Jason Furman & Betsy Stevenson, *The Effects of Conflicted Investment Advice on Retirement Savings*, THE WHITE HOUSE (Feb. 23, 2015), https://www.whitehouse.gov/blog/2015/02/23/effects-conflicted-investment-advice-retirement-savings.
[26] *See 2016 Investment Company Factbook*, *http://www.icifactbook.org/ch7/16_fb*.
[27] Jason Furman & Betsy Stevenson, *The Effects of Conflicted Investment Advice on Retirement Savings*, THE WHITE HOUSE (Feb. 23, 2015), https://www.whitehouse.gov/blog/2015/02/23/effects-conflicted-investment-advice-retirement-savings.

or chasing returns, 2) sell sound investments and hold risky, undiversified, underperforming assets based on recent performance, 3) overweight past returns, or 4) under-diversify.[28] Jill Fisch and Tess Wilkinson-Ryan document that the majority of American investors do not understand the basic ideas like diversification, investment costs, inflation, and compound interest.[29] They conclude that most Americans lack the requisite knowledge to protect them from outright financial fraud.[30] Further evidence of investors' lack of financial literacy comes from the study undertaken by the SEC at the directive of the U.S. Congress as part of the Dodd-Frank Act. The study finds that investors had many fundamental financial misconceptions that were leading to important investment mistakes.[31] The study also documents that most Americans are not even aware of how much they pay in fees and other costs.[32]

c. Relative performance of DC and DB plans

Given the lack of appropriate education, financial skills, and self-discipline to manage their financial assets, coupled with the inability to evaluate conflicted advice, one would expect DC plans to underperform DB plans. DB plans spell out what benefit the enrollee will get upon retirement age, which is often calculated using a set formula and hence do not depend on the skill set of the beneficiary. In contrast, the value of the DC plans at the time of retirement depends on how those assets are managed by the beneficiaries.

[28] *Id.* at A1.
[29] *See Jill E* Fisch, and Tess Wilkinson-Ryan, "Why Do Retail Investors Make Costly Mistakes? An Experiment on Mutual Fund Choice" (2014). *Faculty Scholarship*. Paper 415.
[30] *Id.* at 23.
[31] *Id.* at 608.
[32] *Id.* at 620.

Conceptually, traditional DB pension plans provide not only more professional management but also a better balance of risks and rewards.[33] This is because the DB plans place almost all of the risk of performance on the shoulders of the employers. If the DB assets outperform, the employer is able to reduce their contributions. If the plan underperforms, the employer has to increase its contributions to the plan. Because the employer has the ability to hire competent professional staff to assist with employee benefits planning, the system works reasonably well, achieving cost efficiencies, economies of scale, and diversification over generational cohorts.[34] Nevertheless, it is conceptually possible that for financially-educated beneficiaries, DC plans can be used to control risk better. [35] Furthermore, some beneficiaries can custom tailor risk-reward tradeoff to their own particular needs.[36]

Evidence shows that DB plans significantly outperform defined contribution plans. By design, DB plans handle inflation risk by computing benefits as a fraction of the beneficiaries' salaries during the last few years of their working years.[37] In contrast, in DC plans, the employees are expected make financial decisions that help protect against inflation risk. In one study, DB plans outperformed DC plans by 76 basis points annually between 1995 and 2011.[38] Another study found that DB plans outperformed DC plans

[33] Edward A. Zelinsky, *The Defined Contribution Paradigm*, 114 Yale L.J. 451, 468 (2004).
[34] *Id.* at 8.
[35] *Id.* at 8.
[36] *Id.* at 10.
[37] ZVI BODIE ET AL, PENSIONS IN THE U.S. ECONOMY 158 (Nat'l Bureau of Econ. Research ed., 1988), *available at* http://www.nber.org/chapters/c6047.pdf.
[38] *See, e.g., Defined Benefit Plans Outperform Defined Contribution Plans Again*, WILLIS TOWERS WATSON (July 2013), htpp:// https://www.towerswatson.com/en-US/Insights/Newsletters/Americas/us-finance-matters/2013/Defined-Benefit-Plans-Outperform-Defined-Contribution-Plans-Again.

during 1990-2012 by about 70 basis points annually.[39] Given that there is over $6.7 trillion invested in DC plans accounts alone in 2015, underperformance of 70 basis points implies a cost of about $50 billion per year. Once again, the lagging performance of the DC plans adds an additional burden on the American worker to increase their future contributions as well as to take higher levels of risk.

d. Conflicts of interest in investment advice

Because of their lack of financial education or even basic familiarity of investments, the American public needs professional investment advice. For investors who seek professional advice, there are additional hurdles. Since most investors cannot evaluate the appropriateness of the investment advice, they receive at times conflicted advice. In its most basic form, conflicted advice promotes investment options that are profitable for the advisers and their firms but disadvantageous to the investor: these investments tend to underperform, impose higher transaction fees, and result in under-diversification. Hence, it should come as no surprise that conflicted advice should result a negative effect on the performance of retirement assets.

Estimates indicate that the aggregate annual cost of conflicted advice in IRA assets is about $17 billion each year. [40] Retirees who received conflicted advice when rolling over their 401(k) balance to an IRA retirement will lose approximately 12% of the value of his or her savings if drawn down over 30 years. The average IRA rollover for those aged 55 to 64 in 2012 was $100,000, hence losing 12% to fees is the equivalent to losing

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[39] *See* Alicia H. Munnell, *Investment Returns: Defined Benefit vs. Defined Contribution Plans,* BOSTON COLLEGE CENTER FOR RETIREMENT RESEARCH (Dec. 2015), http://crr.bc.edu/wp-content/uploads/2015/12/IB_15-211.pdf (finding that defined benefit plans did better by .7 percent).

[40] *See, e.g.,* Jason Furman & Betsy Stevenson, *The Effects of Conflicted Investment Advice on Retirement Savings*, THE WHITE HOUSE (Feb. 23, 2015), https://www.whitehouse.gov/blog/2015/02/23/effects-conflicted-investment-advice-retirement-savings.

$12,000. This is a significant sum, exceeding the total savings of a typical American family for many years. This evidence corroborates the initiative by DOL that reducing conflicted advice will improve the retirement of savings of typical Americans.

2. Investment Advisory Standards

a. Evolution of the Current Standard

DOL has the authority to set rules and standards under both ERISA and the Internal Revenue Code governing fiduciaries of retirement plans and IRAs. Prior to the current standard the rule in effect was the 1975 DOL rule. Separately, SEC rules govern the conduct of registered investment advisers and broker-dealers who advise retail investors, under the provisions of federal securities laws (Securities and Exchange Act of 1934 and the Investment Advisers Act of 1940).[41] The current system, established in the 1940s, left it to states to develop separate definitions of what the fiduciary standard should be, which often lead to confusion. [42]

In response to the increased significance of the conflict of interest issue due to the change in the retirement savings environment from DB to DC plans, various government agencies have been floating the idea of a new fiduciary standard for years. The Dodd-Frank Act directed the SEC to consider a uniform standard for investment advisers and broker-dealers, in part to standardize the care that investors get across jurisdictions.[43] As of the

[41] *Regulating Advice Markets*, Department of Labor Report, April 2016.
[42] *Fiduciary Standard Resource Center,* SECURITIES INDUSTRY AND FINANCIAL MARKETS ASSOCIATION, http://www.sifma.org/issues/private-client/fiduciary-standard/overview/ (last visited May 3, 2016).
[43] *Fiduciary Standard Resource Center,* SECURITIES INDUSTRY AND FINANCIAL MARKETS ASSOCIATION, http://www.sifma.org/issues/private-client/fiduciary-standard/overview/ (last visited May 3, 2016).

writing of this paper the SEC has not released any proposals regarding a uniform fiduciary standard.

In Oct 2010, DOL proposed amendments to the 1975 regulation. The proposed fiduciary standard included both a duty of care and a duty of loyalty. These duties require the fiduciary to act in the best interest of the consumer and to provide full and fair disclosure of material facts and conflicts of interest. The proposals prompted an intense debate with opponents claiming that the conflicts of interest were not material and that it would have an adverse impact on small IRA accounts. In response, DOL announced in September 2011 its intention to develop a more robust proposal with extensive analysis of the economic impact. [44]

In April 2015, DOL announced its withdrawal of the 2010 proposal and issued a new proposal. After an extensive comment period, the Office of Management and Budget received DOL's final rule on January 28, 2016.[45] By broadening the definition of fiduciary investment advice, the new rules subject brokers, among others, to the fiduciary standard, thereby requiring them to put client interests ahead of their own when offering investment advice for retirement plans. The rule includes changes to the definition of fiduciary investment advice for purposes of the ERISA standards of fiduciary conduct and the prohibited transaction rules of section 4975 of the Internal Revenue Code. The new rules include the "Best Interest Contract exemption" (BICE), which the DOL indicated was intended to preserve common compensation practices while requiring those who provide fiduciary investment advice to adhere to the "best interest" standard of care. BICE requires

[44] *Regulating Advice Markets*, Department of Labor Report, April 2016.
[45] Daniel R. Kleinman et al., *Department of Labor Sends Fiduciary Rule to OMB for Review*, THE NATIONAL LAW REVIEW (2016).

that investment advisers: 1) provide advice in the client's best interest; 2) create policies that deal with any potential conflict of interest; 3) clearly disclose any conflict of interest (an example of this would be hidden fees); and 4) enter into a written agreement contractually committed to these requirements.

While the "final" proposal itself went through multiple iterations, there are two critical changes in the final rule that are important for our purposes.[46]

- Advisers can receive compensation such as brokerage or insurance commissions, 12b-1 fees, revenue-sharing payments.
- Advisers can include proprietary products.

Unfortunately for the retirement beneficiaries, these two exemptions that DOL provided in response to last minute industry pressure in fact recreate the problems of multiple-principals and opacity, respectively, and consequently can completely undermine the entire intent of the new rule.

b. Commentary on the Pros and Cons of the New Standard

Some commentators have argued that there is a moral case for the new fiduciary standard. People who are investing other people's money should be providing advice and guidance that are in the best interest of the clients who might not have the necessary expertise to evaluate the services. The fiduciary standard is in line with this moral view because it requires financial professionals to make decisions based on the question: "Is this really in the client's best interests?" Clearly, the suitability standard falls short of this

[46] *Fact Sheet*, U.S. Dep't of Labor, http:// https://www.dol.gov/ebsa/newsroom/fs-conflict-of-interest.html (last visited May 4, 2016).

requirement because it 1) creates conflicts of interest and 2) leads to more expensive and less appropriate services.[47]

Others have pointed to the potential adverse impacts of the new rule. [48] One potential negative may be that the fiduciary rule will be costly for financial firms to implement. Stephen Ellis has stated:

> "We think that the investors and analysts looking at the more studied implementation costs of the rule are vastly underestimating the rule's potential impact on the financial sector. Current government and financial industry reports have a high-end annual cost of $1.1 billion, but even our low-end prohibited transaction revenue estimate is $2.4 billion."[49]

Clearly, higher costs of implementation of the new rule for financial firms are an undesirable burden on the entire economy.

Some commentators have argued that the new rule may also lead to political fallout for the Government and a decline in trust of government agencies by increasing costs and reducing investors' choices. In the last few weeks, House Speaker Paul Ryan has become the most vocal opponent of the new fiduciary rule.[50] Mr. Ryan has called the new rule "Obamacare for financial planning." His main contention is that the new rule will lead to higher costs for the beneficiaries as well as financial firms. The House has introduced two bills that were designed to reduce by half the implementation costs of the new rule, but it is unclear whether these bills will marshal the necessary support. In a public statement,

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[47] *See* Barry Ritholtz, *Find a Financial Adviser who Will Put Your Interests First*, WASHINGTON POST (Oct. 25, 2014), https://www.washingtonpost.com/business/get-there/find-a-financial-adviser-who-will-put-your-interests-first/2014/10/23/21f3a898-596f-11e4-bd61-346aee66ba29_story.html.

[48] Bloomberg, *Inside the Pros and Cons of a New Fiduciary Rule*, YOUTUBE (Apr. 7, 2016), http:// http://www.bloomberg.com/news/videos/2016-04-07/inside-the-pros-and-cons-of-a-new-fiduciary-rule.

[49] *DOL to Continue Fiduciary Fight in 2016*, BANKRATE, (Jan. 12, 2016, 12:00 PM), http://www.bankrate.com/financing/investing/dol-to-continue-fiduciary-fight-in-2016/.

[50] Mark Schoeff, *House Speaker Paul Ryan Becomes Leading Opponent of DOL Fiduciary Rule*, INVESTMENT NEWS (Mar. 8, 2016, 1:46 PM), http://www.investmentnews.com/article/20160308/FREE/160309931/house-speaker-paul-ryan-becomes-leading-opponent-of-dol-fiduciary.

Mr. Ryan has argued: "When this rule comes down, we will be ready to do what we can to protect the savings of hardworking Americans."[51]

Mr. Ryan's concerns are also shared by the financial services industry. Some are concerned that the new rule could increase litigation costs for financial firms.[52] Some argue that the rule will encourage clients to sue and the threat of litigation may lead advisers to leave the business.[53] Some experts predict that financial services firms will move more assets to fee-based performance which could limit choice for investors.[54]

As a result of the opposition from the financial services industry, the final rule has been watered down significantly.[55] The final rule did not include some previously proposed regulatory requirements, including annual investment projections and disclosures and 401(k) plan contract requirements. The rule also contains exceptions that allow financial firms and advisers to market themselves to consumers. For example, advisers can engage in marketing and public relations without violating the new rule. Public comments, press release, and marketing materials are exempt.[56] The Obama administration spent a lot of time discussing the urgent need for the new rule, yet some of the provisions have been delayed until 2017 or 2018. The delay in implementation means that a subsequent administration could further modify or nullify the new rule through the political process.

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[51] *Id.* at 1.

[52] Several lawsuits have been filed on behalf of fiduciaries against the new rules. See http://www.investmentnews.com/article/20160930/FREE/160939992/thrivent-financial-files-sixth-lawsuit-against-dol-fiduciary-rule.

[53] Andrew Welsch, *Will Fiduciary Rules Spur New Lawsuits Against Advisers?* ONWALLSTREET (Apr. 19, 2016, 6:22 PM), http://www.onwallstreet.com/news/will-fiduciary-rule-spur-new-lawsuits-against-advisers-IAG2696400.

[54] *Id.* at A1. A fixed fee such as $50 per year management fee or consultation fee may be too heavy burden for many small investors.

[55] Ashlea Ebeling, *DOL Issues Final Fiduciary Rule: Does it Fall Short?* FORBES (Apr. 7, 2016, 4:28 PM), http://www.forbes.com/sites/ashleaebeling/2016/04/07/dol-issues-final-fiduciary-rule-does-it-fall-short/#3664cd75548e.

[56] *Id.* at A1.

In this paper, we argue that the two most important deficiencies of the new rule, allowed by DOL in response to industry pressure, are the exemptions for multiple sources of income for the advisers and alternative and proprietary investments. These two provisions together can undermine the foundation of the fiduciary rule, namely enabling the retirement beneficiaries to receive the best investment advice. Consequently, without transparency and single-principal requirements, we do not expect investors to be the main beneficiaries of the new fiduciary rules, because investors will continue to get conflicted advice.[57]

c. Multiple-principals problem

The first major problem with the new DOL rule is BICE which allows investment advisers to receive income from both investors as well as financial institutions such as brokerage firms whose products the adviser may recommend. [58] This exemption has created potential conflicts of interest when an agent (investment adviser) attempts to serve multiple principals (investors and financial institutions) whose interests diverge. Benefiting one principal more necessarily means hurting the other. In effect the potential conflict of

[57] See *What it Means for Investors: Rules for Financial Advisers are Changing,* USA TODAY (Apr. 6, 2016 11:41 AM), http://www.usatoday.com/story/money/personalfinance/2016/04/05/fiduciary-ruling-investor-adviser-adviser/82655312/.

[58] "The provisions at issue generally prohibit fiduciaries with respect to employee benefit plans and individual retirement accounts (IRAs) from engaging in self-dealing and receiving compensation from third parties in connection with transactions involving the plans and IRAs. The exemption allows entities such as registered investment advisers, broker-dealers and insurance companies, and their agents and representatives, that are ERISA or Code fiduciaries by reason of the provision of investment advice, to receive compensation that may otherwise give rise to prohibited transactions as a result of their advice to plan participants and beneficiaries, IRA owners and certain plan fiduciaries (including small plan sponsors). The exemption is subject to protective conditions to safeguard the interests of the plans, participants and beneficiaries and IRA owners. The exemption affects participants and beneficiaries of plans, IRA owners and fiduciaries with respect to such plans and IRAs." See, *Best Interest Contract Exemption,* U.S. DEP'T OF LABOR, http://webapps.dol.gov/FederalRegister/HtmlDisplay.aspx?DocId=28807&AgencyId=8&DocumentType=2.

interest caused by this exemption can possibly undermine the entire basis of the fiduciary rule and sets the stage to continued potential conflicts of interest. The conflict of interest caused by this exemption is exacerbated by the exemption for alternative and proprietary investments as explained below.

d. Problems with Alternative and Proprietary Investments

Alternative and proprietary investment products refer to specialized investments portfolios created by the brokerage firms. These products can include combinations of stocks, bonds, and derivative assets. They can also include investments in start-ups and other private investment vehicles or claims on other non-publicly traded assets such as forests, mines, or works of art. The key feature of alternative and proprietary investments is that they are unique to the financial institution offering them. Consequently, there is little or no historical performance or risk data and the information about them is limited to what the sponsor provides. Valuations are often private. In addition, fees and expenses can be built into the product parameters and are typically much higher than that of mutual funds and other publicly listed securities. Given the lack of historical data, public trading records, or easy way of valuing these assets, brokerage firms typically advertise hypothetical returns for these products rather than actual historical performance.[59] Because of the lack of full information and hidden fees, it is very likely that these products are highly profitable to the financial institutions offering them. Since these financial products are a zero-sum game, brokers' profits will come at the expense of retirement investors. Given the exemption about receiving compensation from third-parties, the sponsoring

[59] See, http://dealbook.nytimes.com/2012/07/02/ex-brokers-say-jpmorgan-favored-selling-banks-own-funds-over-others/?ref=susannecraig

brokers and financial institutions can share some of these excess profits with investment advisers. As a result, investment advisers are more likely to recommend alternative and proprietary investments over publicly available mutual funds to investors, to the investors' detriment.

Structured products are a common type of proprietary products. Structured products provide investors with modified income streams using options, leverage, and other derivatives. For instance, a structured product can increase in value when the overall market goes down, volatility or interest rates increase, or oil prices decline. By their very nature, structured products constitute a black-box. One can observe the investment returns they generate without allowing investors a full and complete picture of how they work, what the costs and fees are, and what the future returns may be.[60] As a result, structured products can be characterized as offering poor transparency.

An extreme example of an inappropriate proprietary product is a dominated asset. A dominated asset is one that offers lower returns for the same level of risk or higher risk for the same level of return as another asset (typically publicly traded funds). Therefore, investing in a dominated asset is not in the best interest of any rational investor who prefers higher returns and lower risk. The most common reason a particular proprietary product would be dominated is the high expenses which is simply income for the financial institution that created the proprietary product.

Evidence shows that on average, dominated proprietary products had returns over sixty basis points worse than other similar risk funds.[61] Furthermore, dominated assets are

[60] Katrina Lamb, *An Introduction to Structured Products*, INVESTOPEDIA (2016), http://www.investopedia.com/articles/optioninvestor/07/structured_products.asp.
[61] *Id.* at 1346.

recommended even though they are not in the best interest of the retirement beneficiaries. Given the lack of transparency about the proprietary investment products, investors are unable to judge what product is being recommended, what the risks and expected returns are, sometimes even what the fees are, and whether the product is dominated.

Dominated assets can exist in employer sponsored DC plans also. Employers may insert high-fee assets into retirement plan menus presumably to increase employees' choices. In return, employers may receive direct and indirect benefits from financial institutions sponsoring these products. In extreme cases, some of these high-cost products can become dominated assets. Over half of plans have menus with at least one dominated fund. For such plans, dominated funds have over 10% of plan assets. While it is up to the employees to choose what they believe is the best product for them, their choice is influenced by the options presented to them in the retirement plan. Financial advisers clearly have the incentive to advise clients to invest more in dominated assets in return for payments from the sponsoring institutions. As discussed earlier, investors' relative lack of financial sophistication combined with the opacity of proprietary products makes it difficult for them to critically evaluate the advice they receive from their financial advisers.

Unfortunately, regulations tend to be weaker when the issue is the cost of the investment products. ERISA was focused mainly on diversification, and the regulators have sidestepped their obligation to make sure that fund costs are appropriate. In the case of *Hecker vs. Deer & Co.*, the 7th circuit held it "untenable to suggest that all of the more than 2500 publicly available investment options had excessive expense ratios."[62] Thus,

[62] Hecker v. Deere & Co., 556 F.3d 575, 577-592 (7th Cir. 2009).

courts have granted legal immunity to providers that offer investors the choice of dominated funds that are bad for investors.

Under a fiduciary standard, investment advisers could be tasked with ensuring the plans do not contain dominated funds. Revenue sharing is an additional issue. Plan fiduciaries may move assets to higher-cost funds because of benefits they receive from the product sponsors. Unfortunately, DOL guidelines do not explicitly deal with dominated assets, if the availability of these funds can be argued to be in a client's "best interest."[63]

3. Evidence of Conflicts of Interest

a. Fiduciary Standard and Performance of Corporate Pension Funds

We can gain insights into the likely effects of the conflict of interest built into the new fiduciary standard on the performance of DC retirement accounts by examining the performance of DB corporate pension funds which are already subject to the fiduciary standard yet attempt to serve two principals. Conflicts of interest arise in the case of DB pension funds whenever corporate executives serve as pension fund fiduciaries (fiduciary-executives). These fiduciary-executives are subject to potential conflicts of interest since they also attempt to serve two principals: their shareholders and their beneficiaries. Such conflicts of interest might affect the performance of DB pension funds.

The performance of DB corporate pension funds has also been of great concern to fund beneficiaries, corporate management, and regulatory agencies. These concerns have been triggered by the record aggregate deficit of private pension plans, greater than $330 billion in 2004 compared to less than $100 billion in 1995. Moreover, the number of

[63] Ian Ayres, *The Problem of 401(k) Mapping to Dominated Funds*, FORBES (Mar. 29, 2014, 10:48 AM), http://www.forbes.com/sites/whynot/2014/03/29/the-problem-of-401k-mapping-to-dominated-funds/#5a3595cc7702.

pension plans that are under the trusteeship of the Pension Benefit Guarantee Corporation has also dramatically increased resulting in a seven-fold increase in the benefits paid out by PBGC between 1995 and 2015.[64]

While part of this problem can be traced to the dismal stock market performance during the latter part of this period, it has brought to the forefront the concern that corporate managers may also be responsible for the deficits of their companies' pension funds. The popular press has been rife with accusations of corporate theft of pension funds[65] Some of the wealth transfer tactics that corporations are accused of are: a) projecting an unrealistically high return, claiming the pension plan is overfunded, and reducing contributions to the plan and diverting them to other uses; b) converting from conventional plans to cash balance plans which reduces payouts but does not trigger a tax for termination;[66] c) declaring bankruptcy which typically entails losses to employee pension plans while setting up pension plans for senior management that are protected (example Enron & American Airlines); and d) siphoning pension plan surpluses to pay termination benefits and retirees' medical benefits.[67]

We can assess the likely effects of the conflicts of interest of fiduciary-executives of DB pension funds by examining the performance of the fund trading decisions involving their own companies' stock since such decisions often involve trading off the interests of

[64] The Pension Benefit Guarantee Corporation Annual report states that it paid $5.6 billion in benefits in 2015 compared to $761 million in 1995. See, http://www.pbgc.gov/Documents/2015-annual-report.pdf.
[65] *See, e.g.*, Robert Kuttner, *The Great American Pension Fund Robbery*, BLOOMBERG (Sept. 8, 2003 12:00 AM), http:// http://www.bloomberg.com/news/articles/2003-09-07/the-great-american-pension-fund-robbery.
[66] This tactic was pioneered by Bank of America in 1985. Nevertheless, on July 31, 2003, in response to a lawsuit by IBM workers, a federal judge ruled that such conversions are illegal.
[67] Lucent Technologies, Inc., Dupont Co. and SBC Communications, Inc. are some of the companies that used this tactic. *See* Ellen Schultz, *Coming up Short: Firms had a Hand in Pension Flight They Now Bemoan*, THE WALL STREET JOURNAL (July 10, 2003) at A1.

shareholders against that of pension beneficiaries. Consider for instance, the private, confidential corporate information fiduciary-executives possess routinely as part of their managerial engagement with the firm. If they ignore this confidential information, or use it to trade shares in pension funds to benefit their shareholders (to temporarily influence the stock price to obtain a favorable price in an acquisition, for example), then they fail in their fiduciary responsibility to the pension beneficiaries. If they use this information to benefit their pensioners, then they violate insider trading laws, which is illegal and, in addition, fail in their fiduciary responsibility to their own shareholders.[68] This is the conundrum facing fiduciary-executives when they serve two principals.

To provide a concrete example assume that the executive-fiduciaries possess some positive non-public information regarding a possible takeover of their own firm. Based on this positive, non-public information, should the fiduciary-executives buy shares from the market place for the pension fund, do nothing or sell shares from the pension fund to their favored third parties? If they buy shares in the marketplace, they would be acting in the best interest of the pension beneficiaries but clearly against the best interest of their shareholders. If they do nothing, they are not actively helping either of their principals. If they sell shares out of the pension assets, they are clearly acting against the best interest of the pension beneficiaries.

Evidence indicates that the potential conflicts are real and not just of academic interest. As evidence of conflicts of interest involved in the trading of company stock in DB funds, pension plan beneficiaries have filed several lawsuits accusing fiduciary-

[68] Interestingly, the recent fair disclosure regulation (Regulation FD) has exacerbated this conflict of interest. While ERISA requires fiduciary-managers to act in the best interests of pension fund beneficiaries, Regulation FD forbids them from favoring one investor over another.

executives of breaching their fiduciary duty by not selling the company stock held by their pension plans in time before the stock prices dropped.[69] Critics have pointed to evidence of suboptimal diversification: more than 27% of all employees hold at least half of their 401(k) balances in company stock and nearly 7% have their entire account in company stock, as evidence of suboptimal diversification. In response to the concern that fiduciary-executives may not always act in the interest of fund beneficiaries, some corporations have hired independent fiduciaries to handle the trading of company stock in their own employee pension funds.[70]

In order to provide formal evidence of conflict of interest of fiduciary-executives of DB pension funds, we analyze the performance of pension fund trades in which the fund attains insider status. A pension fund attains insider status either by acquiring more than 10% of the outstanding shares in a given firm (typically this is the sponsoring firm's shares), or by appointing a top level executive (an insider) as the fiduciary. In these instances, the pension fund acquires a legal-insider status and must report all subsequent transactions to the SEC.[71]

It is well-documented that insiders as a group earn abnormal positive returns from trading in their own companies' stocks, presumably taking advantage of their privileged access to information.[72] Top executives typically earn a higher rate of return than officers

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[69] *See* Jeff Opdyke, *Retirement Plans Get New* Safeguards, THE WALL STREET JOURNAL (June 21, 2005, 12:01 AM), http://www.wsj.com/articles/SB111930752257264546. Some of the companies against whom lawsuits have been filed in 2005 are American Insurance Group, Delphi, General Motors, Krispy Kreme Doughnuts, and Merck.

[70] Jeff Opdyke, *Retirement Plans Get New Safeguards*, WALL STREET JOURNAL (June 21, 2005, 12:01 AM), http://www.wsj.com/articles/SB111930752257264546.

[71] Legal-insider status ends if the fiduciary is a lower-level executive or a non-executive and/or the pension fund reduces its equity investment to 10% or under.

[72] See Nejat Seyhun, *Investment Intelligence from Insider Trading* (MIT Press 1998).

and directors, who in turn earn a higher rate of return than large outside shareholders.[73] Another strand of literature ties the profitability of insider trading to corporate governance and internal control mechanisms.[74] In the case of insider-pension funds, however, the presence of conflicts of interest can result in positive or negative abnormal returns. If the concerns of the proponents of fiduciary independence are valid, insider trades by pension funds will favor shareholders and executives at the expense of the beneficiaries, resulting in negative abnormal returns.

b. Data and performance measures

The insider trading data in the study is obtained from a compilation by Securities and Exchange Commission (SEC) and made available for sale. The data contains all open market insider trading in publicly traded firms between January 1975 and December 2014.[75] For the purposes of this study, only open market purchases and sales are included.

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[73] *See, e.g.,* H. Nejat Seyhun, *Insiders' Profits, Costs of Trading, and Market Efficiency*, 16 J. FIN. ECON. 189, 210 (1986); Arturo Bris, *Do Insider Trading Laws Work?* 23 (Yale ICF Working Paper No. 00-19, 2010); H. Nejat Seyhun, *The Information Content of Aggregate Insider Trading*, 61 J. BUS. 1-22 (1988); H. Nejat Seyhun, *Why Does Aggregate Insider Trading Predict Future Stock Returns?* Quarterly J. Econ. 1302, 1329(1992); Bin Ke et al., *What Insiders Know About Future Earnings and How They Use It: Evidence from Insiders' Trade*, 35 J. ACCT. & ECON. 315, 315 (2003); John E. Core et al., *Stock Market Anomalies: What Can We Learn from Repurchases and Insider Trading?* 25 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=533323, 2005); Albert S. Kyle, *Continuous Auctions and Insider Trading*, 53 ECONOMETRICA 1315, 1315 (1985); H. Nejat Seyhun & Michael Bradley, *Corporate Bankruptcy and Insider Trading*, 70 J. BUS. 189, 203, 214 (1997).

[74] Taylan Mavruk & H. Nejat Seyhun, Do SEC's 10b5-1 Safe Harbor Rules need to be rewritten, 2016 Colum. Bus. L. Rev. 153 (2016); Cindy A. Schipani and H. Nejat Seyhun, *Defining "Material, Nonpublic": What Should Constitute Illegal Insider Information?*, 21 FORDHAM J. CORP. & FIN. L. 327 (2016); S. Burcu Avci, Cindy A. Schipani and H. Nejat Seyhun, Ending Executive manipulations of incentive compensation, J. CORP. L. 2016; S. Burcu Avci, Cindy A. Schipani and H. Nejat Seyhun, Manipulative games of gifts by corporate executives, U. PENN. J. BUS. L., 18, 2016, Hollis A.Skaife et al., *Internal Control over Financial Reporting and Managerial Rent Extraction: Evidence from the Profitability of Insider Trading*, 55 J. Acct. & Econ. 91, 107 (2013); Anup Agrawal & Sahiba Chadha, *Corporate Governance and Accounting Scandals*, 68 J L. & ECON. 371, 403 (2005); Scott L. Summers & John T. Sweeney, *Fraudulently Misstated Financial Statements and Insider Trading: An Empirical Analysis*, 73 Acct. Rev. 131, 144 (1998); Enrichetta Ravina & Paola Sapienza, *What Do Independent Directors Know? Evidence from Their Trading*, 23 REV. FIN. STUD. 962, 1001 (2010).

[75] For most of the sample period analyzed here, Section 16(a) of the Securities and Exchange Act requires that insider transactions be disclosed within the first 10 days of the month following the month of the trade. Section 16(b) prohibits insiders from profiting from short-term price movements defined as profitable

Private transactions, shares acquired through exercise of options, and trades with corporations are excluded. The data on stock market returns are obtained from CRSP. The final sample contains all insider trades between January 1975 and December 2014 in firms for which stock return data is available in CRSP.

From this sample we extract trades by insiders identified as pension funds. To be included in this sample, an insider's name (name of trader) in the database must contain the word "pension." As mentioned earlier, for a pension fund to be classified as an insider to a company, either it must hold more than 10% of any equity class of security of the firm, or the fiduciary of the pension fund must be a top-level executive. An insider relation code indicates whether the insider status for the pension fund arises as a result of the large shareholdings or interlocking executives.

Table 1 provides the summary statistics of insider trades by pension funds. Panel *A* provides the statistics by insider type: whether the trade was classified as an insider trade because of 10% equity ownership (Shareholder) or fiduciary-executive (Officer). The sample contains 1,661 purchases transactions and 1,339 sale transactions. The number of shares purchased is about 132 million, while the average purchase size is about 79,000 shares. The total number of shares sold is about 103 million, while the average sale size is about 90,000 shares. The bulk of the trades are by Shareholders (about 121 million shares purchased and 89 million shares sold) while the trades by the Officers are relatively smaller (about 11 million shares purchased and 13 million shares sold).

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offsetting pairs of transactions within 6 months of each other, while Section 16(c) prohibits profiting from short-sales. Sarbanes-Oxley Act of 2002 (effective August 29, 2002) has modified insider trading regulations in many significant ways. First, the new reporting requirement states that insider transactions must be reported electronically by the end of the second business day following the day on which the transaction is executed both through EDGAR and corporate public websites. Sarbanes-Oxley also prohibits purchase and sale of securities during black-out periods. Any profit made from these prohibited transactions shall inure to and are recoverable by the corporation.

Panel *B* of Table 1 classifies pension fund insider transactions based on whether the fund assets are managed in separate accounts or commingled with pension assets of other firms.[76] A separate account is a pension fund held for employees of a single firm. A commingled fund, on the other hand, holds the pension investments of two or more firms' employees. We use two criteria to identify separate accounts and commingled funds. First, if a pension fund traded in shares of more than one firm with insider status we identified this fund as a commingled fund. Second, if the pension fund's name contained only the name of a fund management firm and did not include the name of the client firm whose pension money is being managed (e.g. Morgan Guarantee Trust Pension Fund) we classified the fund as a commingled fund.[77] Panel *B* indicates that separate account transactions involve 2,220 transactions 69 firms with about 98 million shares traded compared with 780 transactions in 89 firms and 136 million shares traded for the commingled accounts.

For all our reported results, we measure market-adjusted abnormal profits computed in the following manner:

$$MAR_{i,T} = \sum_{t=1}^{T} H \times (r_{i,t} - r_{m,t}),$$

where $r_{i,t}$ is the with- dividend return to stock *i* on day *t* and $r_{m,t}$ is the with-dividend return to an equally weighted portfolio of all New York Stock Exchange, American Stock Exchange, and NASDAQ stocks on day *t*.[78] The parameter *H* is equal to 1 if the insider trade is a purchase and −1 if it is a sale. Therefore, a negative reported market-adjusted

[76] As described later, these two types of funds differ in the extent of conflicts of interest.
[77] To the extent our classification is not perfect, we would tend to blur the distinction between separate and commingled categories and we would bias our results toward the inability to distinguish between these two.
[78] We measured abnormal return using the cumulative abnormal return measure and obtain similar results.

abnormal profit implies that the return following a purchase is negative or the return following a sale is positive. The market-adjusted abnormal returns are computed over the horizon of *T* trading days, starting from the day following the insider trade date. We report results for four different horizons, measured in calendar days: 6 months, 12 months, 18 months, and 24 months.

c. Performance of DB funds when trading as insiders

In this section we report the performance of the trades of DB pension funds as insiders and then compare it to the performance of all insiders. Given the potential conflict of interest in pension funds arising from attempting to serve two principals (shareholders and fund beneficiaries), we would expect the returns of pension fund trades to be lower.

Table 2 reports the market adjusted returns of pension funds insider trades. The MAR is reported for all pension fund insider trades as well as for the two classes of insider relationship of the funds (Shareholders and Officers). In the full sample we see returns statistically insignificant from zero for three of the four horizons with a significantly (at the 1% significance level) negative return of -10.54% in the 24-month sample. When we split the sample into the two classes of insider relationship, we see that the results are driven by the subsample where the insider relationship arises because of the shareholding in excess of 10% (i.e., Shareholders). In this subsample the returns are negative and significant at the 1% level for all but the shortest horizon, with the returns ranging from -5.57% to -15.03%.

The implications of the results become more noteworthy when we compare the returns reported in Table 2 with that of all insiders (not just pension funds). These results are reported in Table 4 (first row). It can be seen that insiders as group earn significantly

positive mean MAR over all horizons with returns ranging from 2.40% for the 6-month horizon to 6.35% for the 24-month horizon. When we compare these returns that of pension fund trades of either the Shareholder subsample (negative for most horizons) or the Officer subsample (not different from zero for all horizons), it can be seen that the returns of both these subsamples are significantly lower; the Shareholder subsample performs worse. These results are consistent with the presence of conflicts of interest in DB pension funds. More importantly the impact of the conflict of interest is significant. For example, over a 12-month horizon the return of pension trades in the Shareholder subsample is lower than that of all insiders by 9.47%!

As Table 2 shows, the returns are significantly negative when the pension fund acquires a large equity stake in the sponsoring firm. It is possible to argue that holding a large equity stake in the shares of the sponsoring firm could never be optimal for the pensioners in the first place. Given that their human capital is already tied up in the fortunes of the sponsor, the optimal holding in their own company stock should be very small or nil. Consequently, acquiring these large equity stakes serves as a clear signal of the potential conflicts of interest, which is confirmed by the evidence.

The conclusion from the above results is that pension funds earn negative market-adjusted returns when they acquire a large equity stake in the underlying firms. Thus it is clear that the poor performance of pension fund trades when they trade as insiders is an exception to the performance of overall insider trades. This result is consistent with the finding of noted academics that defined-benefit pension funds that invest in equity underperform the *S&P* 500 index.[79]

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[79] Josef Lakonishok, *The Structure and Performance of the Money Management Industry,* BROOKINGS PAPERS: MICROECONOMICS 339, 339-91 (1992).

d. Comparison of separate accounts and commingled funds

While the poor performance of insider trades of pension funds as whole provides preliminary support for the proponents of independent pension fund fiduciaries, the case for independent fiduciaries will be stronger if we find that the degree of independence is positively related to fund performance. We propose the following methodology to test this relationship. As noted earlier, pension funds can be categorized as separate accounts or commingled funds with the former created exclusively for a sponsoring company's employees, while the latter mingle the pension investments of multiple companies. If one is concerned about conflicts of interest of the fiduciary-executive, an argument can be made that the conflicts of interest are worse in the case of separate accounts. In separate accounts insiders can use pension fund assets either to benefit themselves or their shareholders directly without having to co-ordinate their decisions with anyone else. They can do so by using the pension funds' assets to prop up their stock prices temporarily (by directing the pension fund to buy the shares of their firm prior to exercise of their executive stock options or prior to an acquisition), or push their stock prices down temporarily (by directing the pension fund to sell shares of their firm prior to granting of executive stock options). These actions would hurt the beneficiaries of pension funds and benefit the insiders themselves or the firm's stockholders. In contrast, such actions require co-ordination and collusion with the outside managers of commingled funds. Such coordination and collusion is likely to be difficult to achieve and costly for several reasons. First, the interests of the commingled pension fund manager and the firm's executives and/or shareholders may not be congruent. For instance, the timing of key events relating to the compensation contracts

of firm's executives (granting and exercise of executive stock options) and that of pension fund managers (evaluation dates of pension fund performance) need not be the same. Second, for commingled fund managers, the performance of one of the stocks in their portfolio is less critical than for the firm's executives and shareholders. Third, benefiting the insiders might require quid-pro-quos, payment of which is likely to increase the probability of detection. And finally, outside professional pension fund managers have more to lose in terms of their reputation by engaging in these types of manipulations in a given pension fund. Consequently, we expect conflicts of interest to be less prevalent in outside managed commingled funds. Therefore, if conflicts of interest are present, we expect insider trades of commingled funds to outperform that of separate accounts.

Since the results from Table 2 show that the conflict of interest issue is significant in the Shareholder subsample, we investigate whether in this subsample the returns of comingled funds are greater than that of separate accounts. Table 3 presents the results. There are about 817 and 704 trades by separate accounts and commingled funs, respectively. The mean MAR of separate accounts is negative and statistically significant at the 1% level for all but the shortest horizon, with the returns ranging from −7.98% to −19.69%. The mean MAR of commingles funds on the other hand are not significantly different from zero for all but the longest horizon. For the 24-month horizon the mean MAR for commingled funds is −9.08% and significant; however, it is lower than the mean MAR of the separate accounts for the same horizon (and the difference is significantly different from zero). Thus, the evidence is consistent with the hypothesis that there is a conflict of interest between fund managers and fund beneficiaries with the fund managers

acting in the interest of the firm's shareholders or themselves at the expense of the fund beneficiaries.

e. Investigation of alternative explanations for the results

In this section we investigate three alternative explanations for the poor performance of insider trades of pension funds relative to insider trades as a whole. Specifically, we investigate if the performance is the result of some unknown bias in the subsample of firms in our data with pension fund insider trades; if it is due to liquidity constraints resulting from unexpected outflows; and finally, if it is due to the difference in trading strategies of pension funds. The tests that follow rule out all three alternative explanations for the poor relative performance of pension fund insider trades.

1. Sample bias

To test if the subsample of firms with pension fund insider trades has any special characteristics that result in the poor performance of these trades, we analyze the trading performance of other insiders in the same sub sample of firms with pension fund insider trades. These tests help us check the possibility that there is something unique about these particular set of firms that leads to trading losses. Perhaps, all other insiders (in addition to pension funds) suffer trading losses in these set of firms due to some unspecified chain of events.

It can be seen from the second row of Table 4 that the mean MAR for all other insiders is positive and significant at the 1% level for all horizons. Hence, while pension funds suffer trading losses, the other insiders in the same set of firms are trading profitably. These results contrast sharply with the performance of pension fund insider trades reported in Table 2. In summary, we find that pension funds do systematically worse than other

insiders in the same firms, thus providing no evidence of any bias in the sample of firms with pension fund insider trades.

2. Liquidity constraints

It is possible that the relatively poor performance of pension fund insider trades is due to forced liquidation of assets to meet pension payments to beneficiaries. Open-end mutual funds and ESOPs face similar liquidity constraints. One can reasonably argue that mutual funds face greater risk of liquidity constraints than pension funds since flows in and out of mutual funds are less predictable than the flows in and out of pension funds. To test this hypothesis, we compared the performance of pension fund insider trades with that of mutual fund and ESOP insider trades.[80]

To identify mutual fund trades we searched the names of traders in the insider trading database for words that identify them as a mutual fund. Our algorithm searched for the following specific words: 'Fund', 'Principal', 'Venture Capital' 'Euroventure', 'Capital Corporation', 'Partner', 'Trust', 'Investment', and 'Asset Management'. We also ensured that the name of the insider did not contain the word 'Pension'. ESOP firms were identified by searching for key words 'employee stock ownership' and 'ESOP'.

The performance of mutual fund insider trades is reported in the third row of Table 4. The mean MAR is positive and significant at the 1% level for all horizons. In addition, the monotonic relation between the mean MAR and the horizon indicates that mutual fund insider trades yield positive returns in each of the periods.

[80] Similar to pension funds, fiduciaries of ESOPs also face conflicts of interest situations. They might trade-off private benefits of employees against stock price performance. ESOPs are strong deterrents to takeovers and that changes in ownership due to ESOPs are associated with negative stock price reactions. *See* Susan Chaplinsky & Greg Niehaus, *The Role of ESOPs in Takeover Cases*, 49 THE JOURNAL OF FINANCE, 1451, 1451-70 (1994).

A similar result holds for ESOP insider trades as shown in the last row of Table 4. The mean MAR is positive and significant at the 1% level for all horizons and monotonically increasing with the horizon. Thus our evidence indicates that liquidity constraints are unlikely to explain the poor relative performance of pension fund insider trades. Trades by mutual funds (which face potentially even greater liquidity constraints) and ESOP profit from insider trades just like other insiders.

3. Trading strategies

We also investigate whether the differences between the performance of pension fund insider trades and that of all insider trades can be explained by differences in investment styles. We analyze two investment styles: momentum and mean-reversion.[81] A trade is classified as a momentum trade if a purchase (sale) is made after a positive (negative) MAR over the six-month period ending in the month preceding the trade date. A trade is classified as a mean-reversion trade if a purchase (sale) is made after a negative (positive) MAR over the six-month period ending in the month preceding the trade date.[82] Seyhun finds that insiders tend to follow a mean-reversion strategy for both short horizons of up to one year as well as long horizons up to five years.[83] While the details are not shown, for the entire sample of insider trades, about 63% of the trades are consistent with a mean-reversion strategy (selling winners and buying losers). Similarly, when we limit

[81] Momentum refers the finding that recent performance of stocks continues in the same direction for about 12 months. Mean-reversion refers to the reversal of these patterns over the next three to five year horizons. Jegadeesh and Titman report that past six-month winners on NYSE-AMEX continue to outperform past six-month losers by about 1% per month over the next 6 months. *See* Narasimhan Jegadeesh, *Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency*, 48 Journal of Finance 65-91 (DeBondt and Thaler document mean-reversions over longer holding periods. They show that a strategy of buying long-term losers and selling long-term winners would have earned about 25% over the subsequent three-year period. *See* Werner De Bondt & Richard Thaler, *Further Evidence on Investor Over-reaction and Stock Market Sensationality*, 42 JOURNAL OF FINANCE 557-81 (1987).

[82] Nejat Seyhun, Investment Intelligence from Insider Trading (MIT Press 1998).

[83] *Ibid.*

the sample to insider trades in firms in which pension fund insider trades occur, about 60% of the trades are consistent with a mean reversion strategy. In contrast, the percentage of pension funds trades that can be classified as mean-reversion is much lower (50 – 52%).

While there appears to be some evidence that pension fund insider trades follow on average a different trading strategy than other insider trades, the difference in performance cannot be explained by the difference in trading strategy. To demonstrate this, we compare the performance of pension fund insider trades that follow a mean-reversion strategy with trades of non-pension fund insiders in firms traded by pension funds since both groups seem to follow the same pattern in their investment style. The mean abnormal returns for pension fund trades (unreported) are significantly negative for mean-reversion trades for all horizons. By contrast, the mean-reversion trades of other insiders in the same firms earn a significant positive return for all horizons except the 12-month horizon in which they earn returns not significantly different from zero. Therefore, this evidence does not provide support to the hypothesis that the differences in trading strategies are the cause of the lower profit of pension fund insider trades.[84]

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[84] We also ran the various tests we conducted to check the robustness of our results. For the sake of brevity, we summarize the results of our tests, rather than provide detailed tables.

a. Performance measured by style adjusted returns

Style adjusted returns are computed by taking into account size and book-to-market ratios.[84] First, at the beginning of each year, we classified all firms in the CRSP universe into ten size groups (using NYSE market capitalization decile cutoffs) and five book-to-market groups (using book-to-market values computed at the beginning of the preceding July). For each month between January 1975 and December 2003, we compute the equally-weighted average returns for each of these 50 benchmark portfolios. We then assign the firms in our sample into one of these 50 portfolios based on their size and book-to-market ratios. Abnormal returns are computed as the difference in returns between the firms in our sample and the matched size and book-to-market benchmark groups.

Using this approach, we find that the mean AR of pension fund insider trades is still negative and significant for the two longer horizons (mean AR of –7.2% and –11.9% with *p*-values less than or equal to 0.002). The mean AR for the 12-month horizon is not significantly different from zero while the mean 6-month AR is positive and significant (mean AR of 3% with *p*-value of 0.000). This is in contrast to the performance of all insiders in the same firms with pension fund insider trades; the trades of these insiders still earn significant positive AR consistently over all four horizons.

4. Alternative and Proprietary Investments in Retirement Accounts

Alternative and proprietary products can be any investment vehicle that the investment sponsor creates. They can include a bundle of securities that already trade on public exchanges. They can also include structured products whose payoffs are modified using leverage, option, futures and other derivative products. Finally, they can include investments in start-ups and other private investment vehicles, shopping malls, residential and commercial real-estate, and works of art. The key feature of these products is that they do not trade on any public exchanges and the information about them is limited to what the sponsor provides.

There are multiple problems with allowing alternative and proprietary investment products in retirement accounts. One important problem is valuation. Since these products

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The results using the style-adjusted model for the trades of separate accounts and commingled funds are qualitatively similar to the results reported earlier. The mean AR for the trades of separate accounts are significantly negative for all four horizons and monotonically increasing with the horizon; they vary from –3.2% for the 6-month horizon to –23.9% for the 24-month horizon. By contrast the mean AR for the trades of commingled funds are significantly positive for all four horizons ($p < 0.0001$); they vary from 15.6% for the 6-month horizon to 17.1% for the 24-month horizon. Thus, using the style-adjusted model confirms our finding that the conflict of interest hurts the beneficiaries of pension funds.

b. Performance measured using cumulative abnormal returns

In addition to $MAR_{i,t}$, we also used cumulative market-adjusted abnormal monthly returns of the stock (CAR) starting from the month that follows the trade computed as:

$$CAR_{i,T} = \sum_{t=1}^{T} (r_{i,t} - r_{m,t})h,$$

where $r_{i.t}$ is the with-dividend return to stock *i* for month *t*, and $r_{m,t}$ is the with-dividend return to equally weighted portfolio of all New York Stock Exchange, American Stock Exchange and NASDAQ stocks for month *t*. The parameter *h* is a defined as before as equal to 1 if the insider trade is a purchase and −1 if it is a sale.

The results using CAR are qualitatively similar to those obtained using AR. The CAR of overall pension fund insider trades is negative and significant for all horizons. In addition, CAR of insider trades by separate accounts are negative and significant while that by commingled funds are positive and significant.

c. Volume of trades and performance

In order to check if the performance of pension fund insider trades is related to the volume of trade, the sample was divided into four volume groups based on the number of shares traded: less than 100 shares (sample size = 3 trades), 100 to 1000 shares (224 trades), 1000 to 10,000 (1028 trades) shares, and greater than 10,000 shares (794 trades). The mean AR for the top three volume sub-groups are negative (and significant at the 5% level or better) for the 18 and 24-month horizons. There was no clear relationship between the trade volume and the AR.

are unique and do not trade publicly in exchanges, it is not possible to observe a market determined price or value for them. Instead, the valuation of the alternative and proprietary product is made privately by the owner of the product. This private valuation creates problems both for the taxpayers as well as the retirement investors. From the taxpayers' perspective, these products can be used to create unfair tax shelters. For the small investor, these products constitute black boxes with no way to peer inside and understand the structure, costs, risks and expected returns.

Some examples would be helpful to illustrate the problems associated with the alternative investment products in retirement accounts. First, we illustrate the conflicts created for the U.S. taxpayers. Suppose that an entrepreneur creates a start-up with an expected market value of $20 million. A proprietary investment vehicle is then created using all of the start-up assets and 20 billion shares are issued against it. Consequently, the fair market value of these private shares would be $0.001. However, since is no market for this product, the entrepreneur can attach any private valuation on this investment. Assume that the entrepreneur makes a small valuation error (in absolute value) and privately values each proprietary share at $0.0000001 instead of $0.001. At this price, the entire startup is now valued at $2,000. The entrepreneur then simply uses $2,000 to put all 20 billion shares in his IRA account.

At a later date, say three to five years later, when some or all the proprietary investment is offered to the public at the fair market price of $0.001 per share, the IRA account balance will suddenly grow from $2,000 to $20 million. In effect, the value increase has taken place in a tax sheltered account, thereby free from taxation. This tax-

free wealth can now be consumed or passed to future generations.[85] If sufficient time passes between when the investment was purchased by the IRA account and when the initial public offering took place, it would be difficult if not impossible to determine whether the value increase is due to subsequent improvements in the start-up or the initial misevaluation.[86]

A recent GAO study has found that there are more than 300 taxpayers who own IRA accounts with an aggregate value of about $81 billion.[87] Thus, the average balance in these accounts is over $250 million each. While all of the IRA balances are fully taxed as ordinary income when distributed to the taxpayer, there is an easy way of getting around this taxation as well. After contributing $5,000 to an ordinary IRA account and purchasing privately-valued proprietary product, the taxpayer can simply convert this IRA into a Roth-IRA, pay taxes on extra $5,000 of income and after the valuation step-up, they can enjoy the $20 million wealth increase completely tax-free.[88]

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[85] See the report of the U.S. General Accounting Office, which reports that in 2011 there were over 600,000 individuals with estimated IRA balances over $1 million, more than 1,000 individuals with an estimated IRA balances more than $10 million and over 300 individuals with an estimated IRA balances that exceeded $25 million. The aggregate estimated dollar balance of the $25 million + group is $81 billion, which means this group could be generating significant tax loss for the U.S Government. See http://www.gao.gov/products/GAO-15-16, "IRS Could Bolster Enforcement on Multimillion Dollar Accounts, but More Direction from Congress is Needed."

[86] The GAO Report states" A small number of taxpayers has accumulated larger IRA balances, likely by investing in assets unavailable to most investors—initially valued very low and offering disproportionately high potential investment returns if successful. Individuals who invest in these assets using certain types of IRAs can escape taxation on investment gains. For example, founders of companies who use IRAs to invest in privately traded shares of their newly formed companies can realize many millions of dollars in tax-favored gains on their investment if the company is successful. With no total limit on IRA accumulations, the government forgoes millions in tax revenue. The accumulation of these large IRA balances by a small number of investors stands in contrast to Congress's aim to prevent the tax-favored accumulation of balances exceeding what is needed for retirement." *See Id*.

[87] Supra note 80.

[88] An ordinary IRA account allows the taxpayer to contribute using pre-tax dollars but pay full income taxes upon distribution. In contrast, a Roth IRA allows the taxpayer to contribute from after-tax income, but then enjoy all distributions without taxation upon reaching retirement age.

Another problem with the alternative and proprietary products arising from private valuation is the lack of information regarding their risks and expected returns for the retirement beneficiary. While a complete analysis of the various types of proprietary products is beyond the scope of this paper, we examine the potential performance of a representative example of these products. A common feature of these proprietary products is to limit downside risk and retain upside potential. One representative retirement investment vehicle we analyze, offers the following features:

- Protects the principal from market downturns
- Limits the upside gains to the investor
- Grows retirement assets
- Guarantees rising income for the first 10 years of the contract
- Doubles retirement income potential if no withdrawals are taken for the first ten years

Sometimes these products also explicitly state that there are no fees or commissions charged. In this case, the benefits to the brokerage firm are not zero but they are hidden in the terms of product specifying how much the investors participate in the upside. While the details of how these objectives are achieved is not disclosed to the investor, the payout structure is disclosed.[89]

a. Annual accounting: Interest is earned based on annual changes in S&P 500 index. If S&P is up at the end of the year, interest is credited up to 4% cap. If S&P 500 index is down for the year, no interest is earned.

[89] These specific parameter values are taken from a specific product offered by an anonymous insurance company.

b. Monthly accounting: Interest is based on monthly changes in S&P 500 index. If S&P is up at the end of the month, interest is credited up to 2% cap. If S&P 500 index is down for the month, negative interest is earned with no cap. Interest earned at the end of the year is the sum of twelve monthly interest credits with a floor of zero.

A typical investor is completely unprepared to evaluate a complex financial investment such as this. It is not at all obvious whether these are either good investments or bad investments. It is also not at all obvious whether annual or monthly accounting is better.

To analyze the potential performance of these structured products, we ran a simulation analysis with one million repeated experiments. We simulate the S&P 500 returns using a normal distribution with an annual arithmetic mean of 8% and annual standard deviation of 16%, in line with the observed characteristics of S&P 500 returns. In the case of the monthly accounting product, we use the corresponding monthly arithmetic mean of 0.67% and monthly standard deviation of 4.7%. We analyze the performance of these structured products over a ten-year investment horizon.

The simulated performance of both these products is shown in Table 5. An investment of $100,000 in the S&P 500 index grew to a mean value of $215,113 in ten years, thus producing a mean geometric return of 6.92% per year. The same amount invested in the structured product grew to $129,114 in ten years, corresponding to a mean geometric return of 2.57% per year. In other words, investors who puts his money in the structured product for ten years will, on average, end up with 25% of the dollar return compared to what they would have had if they had invested in the S&P 500 index (dollar

return of $29,114 instead of $115,113). They are of course giving up the 75% upside in order to buy downside protection: recall that the structured product guarantees the principal amount. The question therefore is whether investors are paying a fair premium for the insurance of downside protection. In this case they are giving up on average 3.35% return per year to get downside protection.

One way to answer this question is to compare the average annual return of the structured product to that of the ten-year Treasury bond. Both the structured product and the bond guarantee the principal amount. The buy and hold return of the bond is fixed while that of the structured product is variable as it depends on the return of the S&P 500 index. Given that the structured product is risky (in some years the returns can be less than the risk-free rate), its expected return should be greater than that of the bond. During 1962-2015, only during the last four years has the ten-year Treasury bond yield been lower than 2.57%, the average return of the structured product. Therefore, it is difficult to make the case that the investor is better off with the structured product.

The sub-optimality of the structured product is starker when we considered the monthly accounting case. In this case, an investment of $100,000 in the S&P 500 index grew to a mean value of $221,716 in ten years, producing a mean geometric return of 7.02% per year. The same amount invested in the structured product grew to $115,993 in ten years, corresponding to a mean geometric return of 1.44% per year. In other words, investors who puts their money in the structured product for ten years will, on average, end up with 13% of the dollar return compared what they would have had if they had invested in the S&P 500 index (dollar return of $15,993 instead of $121,716).

The average annual return of the structured product is lower than the Treasury bond yield in any of the years during 1962-2015. In other words, the monthly accounting structured product is a dominated asset: The Treasury bond dominates it by providing better return at lower risk. Thus investors would have been better of investing in Treasury bonds which is much simpler investment than being induced to purchase the complicated structured product they do not fully understand. It is important to note that the superiority of the bond over the structured product is before we take into account transaction costs. The buying and selling of Treasury bonds involves minimal transaction costs in contrast to the fees and commissions normally associated with the structured proprietary product.

Overall, when all the facts have been considered, it would be difficult to argue that such a product would be in the best interest of any retiree. Yet, the current rules would continue to allow these types of alternative investment products in being offered as suitable retirement investments. What is never reported is the expected annual returns and risks from this products. This is an important piece of information that can help investors in deciding whether to invest in this structured product. However, under the current rules, such disclosures are not mandated.

5. Policy Recommendations

Current DOL investment advisory rules are internally inconsistent. They require that investment adviser act in the best interest of the beneficiaries, yet they also allow the advisers to receive income from third parties. Additionally, the current rules allow opaque, non-publicly-traded, alternative and proprietary investments in retirement plans, which can lead to taxpayer exploitation, higher fees, and uninformed investment decisions. Overall,

the current rules are likely to lead to continued conflicted investment advice, confusion, and wide-spread litigation to sort out these internal conflicts.

We make three policy recommendations to resolve these issues. Our first policy recommendation is to require that investor advisers to be paid only by the retirement beneficiaries. This rule change is necessary to ensure that the advisers have only one principal they serve and thereby avoid the conflicts. With multiple principals, investors' advisers will be tempted to recommend products that are most profitable for themselves as well as the investment sponsors instead of those products that are best suited for the beneficiaries. This likely outcome will be higher risk, higher fees, and lower returns to beneficiaries. A consequence will be vastly expanded litigation that will be necessary to sort out the conflicts within the current rules.

Our second recommendation is to prohibit alternative and proprietary investment products in retirement accounts. By their very nature, these alternative and proprietary products do not trade in public markets and thus they require private valuation. Private valuation in turn creates multiple problems both for the taxpayers and for the retirement beneficiaries. From the taxpayers' perspective, private valuation creates potential conflicts. It is easy to undervalue these products, include them in tax-sheltered IRA accounts and then enjoy the capital gains without taxation after the market values are established. These potential conflicts can and should be avoided by banning alternative investments and proprietary products in retirement accounts and requiring that all investments must trade on U.S. exchanges or similarly qualified exchanges.

From retirement beneficiaries' perspective, private valuation of non-publicly traded assets also creates potential conflicts. When it comes to alternative and proprietary

products, retirement investors are simply pitted against financially sophisticated investment advisers and brokers, and they are at a significant informational disadvantage. These alternative and proprietary investment products are complex yet there is insufficient information to evaluate them. Furthermore, current rules do not even require the disclosure of basic information such as hidden fees, comparison to publicly-available alternatives or simulated expected returns. Without such basic information, informed investment decisions are almost impossible. Second, even if some information is provided, the average investor is not financially savvy to process it to properly evaluate these products. Instead, if only publicly traded investments are allowed, investors would be protected to some extent by relying on the wisdom of the public markets which have been shown to be informally efficient.[90] Consequently, we propose that only publicly-traded securities on public-exchanges should be allowed to be included in either DB or DC retirement accounts.

Our final policy recommendation is to restrict the retirement savings to low-cost, well-diversified funds such as index funds and ETFs. To ensure that risk level of the plan is consistent with the risk-tolerance levels of the beneficiaries, we further recommend that

[90] Market efficiency means that price of publicly traded assets fully reflect all available information. See Fama (1970). The evidence in the finance literature generally supports the concept of the semi-strong form of market efficiency. The 2013 Nobel Prize winning economist for his path-breaking work on market efficiency, Eugene Fama often regarded as the father of the efficient market hypothesis, wrote in 1970, "We shall conclude that, with but a few exceptions, the efficient markets model stands up well," and "[i]n short, the evidence in support of the efficient markets model is extensive, and (somewhat uniquely in economics) contradictory evidence is sparse." See Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work," Journal of Finance, 25 (1970), pp. 383-417. In 1991, Fama updated his analysis and wrote, "The empirical literature on efficiency and asset-pricing models passes the acid test of scientific usefulness." Eugene F. Fama, "Efficient Capital Markets: II," Journal of Finance, 46 (1991), p. 1576.7 Eugene F. Fama, "Efficient Capital Markets: II," Journal of Finance, 46 (1991), p. 1576. Although some recent studies have uncovered some evidence of anomalous price behavior, numerous peer-reviewed academic studies by leading financial economists have largely concluded that these anomalies have alternative explanations that are consistent with and support market efficiency. There are a number of such surveys. See: Eugene F. Fama, "Market Efficiency, Long-Term Returns, and Behavioral Finance," Journal of Financial Economics 49 (1998), pp. 283-306; G. William Schwert, "Anomalies and Market Efficiency," in Handbook of the Economics of Finance. G. Constantinides et al., eds. (Amsterdam: North Holland, 2001).

broad age-specific minimums, maximums, and target proportions on large-cap equity, small-cap equity, international equities, fixed-income, consisting of corporate bonds and government bonds, and publicly-traded real-estate securities should be specified. The target proportions of riskier assets should be reduced as the investor gets closer to the retirement age, similar to target-date investments.[91] International equities should be restricted American Depository Receipts (ADRs) only.

The restriction to low-cost well-diversified ETFs restrictions would achieve multiple objectives all in line with welfare of the retiree in mind. First, there is no cost to such restrictions. In fact, by only investing in well-diversified funds or ETFs, investors get lower trading costs, as well as better risk-return tradeoffs.[92] Evidence from practice side also shows that low-cost passive index funds in fact beat a large majority of the actively managed funds year in and year out.[93] Second, the requirement that investors only invest

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[91] Most DB plans have similar restrictions on asset mix.

[92] Academic research provides evidence for the outperformance of passively managed funds over actively managed funds. Sharpe (1991) demonstrates mathematically why passive funds should beat actively managed funds after expenses. [Market return is the weighted average return of active funds and passive funds. At the same time, market return is equal to passive funds if do not count a few mismeasurement problems. Hence, average return of active funds must be equal to market rate to hold this equation]. Active and passive funds earn the same returns on average before expenses; however, higher expenses of active funds upset the balance for net-of-cost returns. The theory was supported by empirical studies in the coming years. Carhart (1997) provides evidence for the lack of managerial skill in mutual funds industry. Positive returns in the industry can be explained by using 4 factor Fama- French- Carhart model. Malkiel (1995, 2003), and Frino and Gallagher (2001) provide evidence for passive funds' outperformance of active funds. Additionally, Zheng (1999) shows that active fund managers' objectives are short- termed (money is smart only for short term) and funds cannot outperform the market in the long- run. See Carhart, Mark M. (1997). On Persistence in Mutual Fund Performance. Journal of Finance 52, 57-82; Frino, Alex and Gallagher, David R. (2001). Tracking S&P 500 Index Funds. Journal of Portfolio Management 28, Fall; Malkiel, Burton G. (1995). Returns from Investing in Mutual Funds 1971 to 1991. Journal of Finance 50, 549-572; Malkiel, Burton G. (2003). Passive Investment Strategies and Efficient Markets. European Financial Management, Vol. 9, No. 1, 1-10; Sharpe, Wiiliam (1991). The Arithmetic of Active Management. Financial Analysts Journal, Vol. 47, No.1, 7-9; and Zheng, Lu (1999). Is Money Smart? A Study of Mutual Fund Investors' Fund Selection Ability. Journal of Finance, Vol. 54, No. 3, 901-932.

[93] Standard and Poor's SPIVA U.S. Mid-Year 2016 report states: "During the one-year period, 84.62% of large-cap managers, 87.89% of mid-cap managers, and 88.77% of small-cap managers underperformed the S&P 500, the S&P MidCap 400®, and the S&P SmallCap 600®, respectively. • The figures are equally unfavorable when viewed over longer-term investment horizons. Over the five-year period, 91.91% of large-

in a select number of well-diversified low-cost index funds or ETFs also eliminates the temptation to seek recently hot funds, active money managers, complex alternative investments and proprietary products, thus reducing potential conflicts of interest. With a restricted choice set, the role of the financial adviser is limited. This further reduces the incentives and the ability of the financial advisers to offer conflicted advice. Finally, some exceptions to low-cost ETF rule can be considered in special circumstances. One such circumstance is to allow financially-savvy investors to invest in any publicly-traded security. Retirement investors can qualify as financially-savvy in a number of ways, including formal education in finance or the size of their investment portfolio which would allow them to obtain un-conflicted advice from multiple sources.

6. Conclusions

The current DOL regulation regarding fiduciary standard for pension plans and IRAs contains two provisions that are potentially not in the best interests of the beneficiaries. First, it requires that investment advisers act in the best interest of the beneficiaries, while simultaneously allowing them to receive income from third parties. Second, it permits opaque, non-publicly-traded alternative investments and proprietary products, which lead to costly and uninformed investment decisions.

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cap managers, 87.87% of mid-cap managers, and 97.58% of small-cap managers lagged their respective benchmarks. • Similarly, over the 10-year investment horizon, 85.36% of large-cap managers, 91.27% of mid-cap managers, and 90.75% of small-cap managers failed to outperform on a relative basis. Over the 10-year investment horizon, managers across all international equity categories underperformed their benchmarks. • The hunt for yield has become increasingly challenging for fixed income managers. During the one-year period studied, the majority of managers investing in government and corporate credit bond categories underperformed their benchmarks, with the exception of those managing intermediate-term corporate credit funds. Funds disappear at a meaningful rate. Over the five-year period, nearly 21% of domestic equity funds, 21% of global/international equity funds, and 14% of fixed income funds were merged or liquidated. This finding highlights the importance of addressing survivorship bias in mutual fund analysis.", See https://us.spindices.com/search/?ContentType=SPIVA

This paper provides direct empirical evidence that these two provisions are indeed not in the best interests of plan beneficiaries. These findings support the recommendation that broker/fiduciaries must serve only one principal. The evidence supporting the case for independent fiduciaries that serve only one principal is based on the abnormal profitability of company-supported pension funds' transactions in firms in which they acquire insider status. Pension funds are considered as insiders if the pension fund holds more than 10% of the shares of the underlying firm or if there is an overlap among the executives of the underlying firm and the pension fund. The fact that a pension fund acquires such a large stake in the company of the retirement investors itself signals a potential conflict of interest.

Our findings indicate that when the pension fund acquires an insider status, beneficiaries of the pension funds suffer. In fact, pension fund managers exhibit bad timing in the trades of the underlying firm's shares. Stocks tend to underperform after being purchased by the pension fund, and outperform after being sold. The magnitude of the abnormal losses for the beneficiaries of the pension funds is large: for pension funds which have insider status because of greater than 10% shareholding, the loss is 5.6% after one year and 15.0% after two years. These losses are both statistically and economically significant and support the case for un-conflicted, independent fiduciaries. The key to un-conflicted advice is to ensure that the investment advisers receive income from only one principal and thus serve only that principal.

Using simulation, we also show that proprietary investment vehicles are likely to provide lower returns thereby reducing the retirement savings of beneficiaries. We offer three policy recommendations to remedy these serious problems.

Our first policy recommendation addresses the income exemption rule that allows fiduciaries to receive income from third parties. We recommend that regulations be modified to insure that investment advisers serve only one principal and therefore receive income only from one principal. Unfortunately, the current rules and the associated exemptions have completely failed to address the multiple-masters problem.

Our second recommendation addresses the transparency issue regarding investment products, in particular, in alternative and proprietary investment products. Without transparency, retirement beneficiaries will be unable to make informed decisions about their choice of retirement vehicles. It is our opinion based on the evidence presented here that only publicly traded assets should be allowed in either DB or DC plans to address the transparency issue.

Our third policy recommendation is to restrict the retirement savings to well-diversified funds such as index funds and ETFs. To ensure that risk level of the plan is consistent with the risk-tolerance levels of the beneficiaries, we further recommend that age-specific limits on proportions of equity, corporate bonds and government bonds in the retirement portfolio be specified. The proportion of risky assets should be reduced as the beneficiary gets closer to the retirement age, similar to target-date investments.

Table 1

Summary statistics of insider trades by pension funds

This table provides the summary statistics of trades by pension funds that are classified as insider trades. Panel *A* provides sample statistics on insiders' trades, classified by insider type: Shareholders and Officers. The fund can be classified as an insider if it holds 10% or greater stake in the sponsoring firm ("Shareholder") or if an officer of the sponsoring firm serves as a fiduciary of the fund ("Officer"). Panel *B* provides the break of pension fund insider trades by separate accounts (pension fund held for employees of a single firm) and commingled funds (a fund that holds the pension investments of employees of multiple firms).

Panel A: Insiders' trades in Pension Funds by Insider Relationship

	Purchases	Sales
Number of trades	1661	1339
Shares traded (millions)	131.5	102.6
Average trade size (millions)	0.079	0.077
Total shares traded by Shareholders (millions)	121.1	89.4
Total shares traded by Officers (millions)	10.5	13.2

Panel B: Insiders' trades in Pension Funds by Fund Type

Fund type	Number of firms	Number of trades	Number of shares traded (millions)		Average number of shares traded (millions)	
			Purchases	Sales	Purchases	Sales
Separate Account	69	2,220	63.1	35.0	0.030	0.059
Commingled fund	89	780	68.4	67.6	0.135	0.247

Table 2
Performance of pension fund insider trades

The table provides the average abnormal market-adjusted returns (MAR) of pension fund trades in which the fund is classified as an insider for different horizons. The fund can be classified as an insider if it holds 10% or greater stake in the sponsoring firm ("Shareholder") or if an officer of the sponsoring firm serves as a fiduciary of the fund ("Officer"). The abnormal return for each trade is computed as

$$MAR_{i,T} = \sum_{t=1}^{T} H \times (r_{i,t} - r_{m,t}),$$

where $r_{i,t}$ is the with- dividend return to stock *i* on day *t* and $r_{m,t}$ is the with-dividend return to an equally weighted portfolio of all New York Stock Exchange, American Stock Exchange, and NASDAQ stocks on day *t*. The parameter *H* is equal to one if the insider trade is a purchase and negative one if it is a sale. The abnormal returns are computed for 6, 12, 18, and 24 calendar months following the trade date. The *t*-statistics are in parentheses. Estimates that are statistically significant at the 1% level or better are in bold.

	Number of Observations	6 months	12 months	18 months	24 months
All trades	3,000	-0.80%	-0.85%	-4.85%	**-10.54%**
		(-0.25)	(-0.97)	(-0.99)	**(-4.55)**
Shareholders	1,521	-1.29%	**-5.57%**	**-9.89%**	**-15.03%**
		(-0.82)	**(-2.64)**	**(-4.90)**	**(-7.10)**
Officers	1,479	-0.29%	3.95%	**0.28%**	-5.92%
		(0.50)	(1.31)	**(3.15)**	(0.18)

Table 3

Performance of pension fund insider trades grouped by type of fund

The table provides the average abnormal market-adjusted returns (MAR) of pension fund trades by shareholders for two different types of pension funds. Separate accounts account is a pension fund held for employees of a single firm while a commingled fund holds the pension investments of two or more firms' employees. The abnormal return for each trade is computed as

$$MAR_{i,T} = \sum_{t=1}^{T} H \times (r_{i,t} - r_{m,t}),$$

where $r_{i,t}$ is the with- dividend return to stock *i* on day *t* and $r_{m,t}$ is the with-dividend return to an equally weighted portfolio of all New York Stock Exchange, American Stock Exchange, and NASDAQ stocks on day *t*. The parameter *H* is equal to one if the insider trade is a purchase and negative one if it is a sale. The abnormal returns are computed for 6, 12, 18, and 24 calendar months following the trade date. The *t*-statistics are in parentheses. Estimates that are statistically significant at the 1% level or better are in bold.

Type of fund	Number of Observations	6 months	12 months	18 months	24 months
Separate account	817	-2.65% (-0.97)	**-7.98%** **(-4.27)**	**-12.40%** **(-5.68)**	**-19.69%** **(-7.22)**
Commingled Fund	704	0.39% (-0.09)	-2.76% (0.24)	-7.03% (-1.56)	**-9.08%** **(-3.25)**

Table 4

Performance of trades by insiders other than pension funds

The table provides the average abnormal market-adjusted returns (MAR) of trades of all insiders, insiders in firms with pension fund trades, and insider trades of mutual funds and ESOPs for different horizons. The abnormal return for each trade is computed as

$$MAR_{i,T} = \sum_{t=1}^{T} H \times (r_{i,t} - r_{m,t}),$$

where $r_{i,t}$ is the with- dividend return to stock *i* on day *t* and $r_{m,t}$ is the with-dividend return to an equally weighted portfolio of all New York Stock Exchange, American Stock Exchange, and NASDAQ stocks on day *t*. The parameter *H* is equal to one if the insider trade is a purchase and negative one if it is a sale. The abnormal returns are computed for 6, 12, 18, and 24 calendar months following the trade date. *N* indicates the sample size. The *p*-values are in parentheses. Estimates that are statistically significant at the 1% level or better are in bold.

Type of insider	6 months	12 months	18 months	24 months
All insiders	**2.40%** **(0.00)**	**3.90%** **(0.00)**	**6.09%** **(0.00)**	**6.35%** **(0.00)**
N	2,205,681	2,133,895	1,913,550	1,779,879
Insiders in firms with pension fund trades	**3.61%** **(0.00)**	**4.62%** **(0.00)**	**6.08%** **(0.00)**	**7.06%** **(0.00)**
N	30,488	29,901	258,586	27,313
Mutual funds	**3.42%** **(0.00)**	**4.72%** **(0.00)**	**5.78%** **(0.00)**	**8.14%** **(0.00)**
N	63,298	68,870	55,627	51,746
ESOPs	**1.27%** **(0.00)**	**2.65%** **(0.00)**	**4.04%** **(0.00)**	**7.36%** **(0.00)**
N	5,907	5,832	5,702	5,619

Table 5

Simulated performance of structured products

The table provides the simulated results of two structured products described in the paper. We ran a simulation analysis with one million repeated experiments. We simulate the S&P 500 returns using a normal distribution with an annual arithmetic mean of 8% and annual standard deviation of 16%, in line with the observed characteristics of S&P 500 returns. In the case of the monthly accounting product, we use the corresponding monthly arithmetic mean of 0.67% and monthly standard deviation of 4.7%. We analyze the performance of these structured products over a ten-year investment horizon for an investment of $100,000. We report the mean, maximum and minimum terminal values of each product and its annual mean geometric return.

Panel A: Annual Accounting

Invest $100,000 in	Terminal value			Annual mean geometric return
	Mean	Min	Max	
S&P 500 index	$215,113	$13,178	$1,630,151	6.92%
Structured product	$129,114	$100,000	$148,024	2.57%

Panel B: Monthly Accounting

Invest $100,000 in	Terminal value			Annual mean geometric return
	Mean	Min	Max	
S&P 500 index	$227,716	$17,476	$2,287,489	7.02%
Structured product	$115,993	$100,000	$264,421	1.44%