Invisible Pension Investments[†]

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Abstract

A large share of the more than $6.28 trillion in private pension plan assets is held in certain types of indirect investment vehicles. If those vehicles file their own annual return with the Department of Labor they are called "direct filing entities" (or DFEs), and pension plans that invest in them are excused from providing detailed information concerning the assets, liabilities, and investment performance of the DFEs. Consequently, the publicly-available summary financial information reported by pension plans investing through one or more DFEs is seriously incomplete: while a plan must identify the categorical nature of its direct investments (for example, as common or preferred stock, corporate or government debt, real estate, etc.), indirect investments through a DFE are reported only as interests in the DFE, without regard to the underlying nature of the DFE's assets and liabilities. Matching the DFE's return with the returns filed by plans that invest through the DFE is theoretically possible, but it is technically difficult and has not been comprehensively achieved.

This study undertakes the task of linking returns filed by large private pension plans and DFEs in 2008. After explaining the types of DFEs, summary statistics on the extent of pension plan investment through DFEs and the composition of DFE portfolios are reported. The process employed to link the holdings of each DFE to its investor-plans is described, followed by description and analysis of the results. Important differences in the asset allocations of pension plans of various types are revealed, and the portfolio compositions of plans that do and do not invest through DFEs are compared. Because 35 percent of plans that invest in a DFE are found to file internally inconsistent returns which preclude successful linking of DFE financial information to the investor-plan, the plan characteristics associated with such deficient filings are investigated. Although the composition of DFE portfolios is currently invisible to plan participants and the general public, we find little evidence that DFEs have been systematically exploited to obscure the identity of pension plan investments. Finally, the results of this study are reviewed in light of the purposes of pension plan financial disclosure. Even if routine, accurate, and comprehensive matching of DFE financial information with investor-plans were available, ERISA's text and policies support the regulatory formulation of a far more detailed digital disclosure regime.

[†] This research was supported in part by a grant from the Center for Empirical Research in the Law, Washington University School of Law.

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The authors are grateful for helpful comments on earlier drafts of this paper provided by Marion Crain, Peter Joy, Pauline Kim, Ronald Levin, Russell Osgood, and other faculty colleagues, as well as participants in the conference on Employee Benefits in an Era of Retrenchment, held at Washington University School of Law, March 29, 2012. Correspondence concerning this project should be directed by e-mail to Peter Wiedenbeck, at pwiedenbeck@law.wust.edu.

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I. Introduction

Funds accumulated in private pension plans now exceed $6.28 trillion in the aggregate.[1] This vast store represents a large share of the retirement savings of American workers, both active and retired.[2] How are those pension funds invested? Despite annual financial reporting

[1] EMPLOYEE BENEFITS SECURITY ADMINISTRATION (EBSA), U.S. DEPARTMENT OF LABOR, PRIVATE PENSION PLAN BULLETIN: ABSTRACT OF 2010 FORM 5500 ANNUAL REPORTS Table A1 at 3 (2012), at http://www.dol.gov/ebsa/PDF/2010pensionplanbulletin.PDF.
The 2010 data are the first to report full recoupment of the 23 percent decline in total private pension plan assets that occurred between 2007 and 2008 ($6.1 trillion in 2007 to $4.7 trillion in 2008), apparently due to the impact of the subprime mortgage crisis and the attendant recession. EBSA, PRIVATE PENSION PLAN BULLETIN HISTORICAL TABLES AND GRAPHS, Table E11 at 13, Graph E11g at 14 (2012), at http://www.dol.gov/ebsa/pdf/historicaltables.pdf.

[2] In 2010 individual retirement accounts (IRAs) were estimated to hold another $4.8 trillion of retirement savings. PROQUEST, LLC, PROQUEST STATISTICAL ABSTRACT OF THE UNITED STATES: 2013, Table 1229 at 777 (2013). While

requirements imposed by the Employee Retirement Income Security Act of 1974 (ERISA),[3] we don't know. Nor is the U.S. Department of Labor, which administers the ERISA's reporting and disclosure regime, able to shed much light on the matter.[4] The problem lies in a failure to connect the dots.

Large private pension plans, meaning plans covering 100 or more participants at the start of the plan year, annually report summary balance sheet (asset and liability) and income statement (earnings and expenses) information on Form 5500, Schedule H.[5] These plans commonly invest a large share of their assets in various collective investment vehicles, including common trust funds managed by banks, trust companies, or similar institutions, pooled separate accounts sponsored by insurance companies, and master trusts, which facilitate joint investment of the assets of more than one plan sponsored either by a single employer or by a group of commonly controlled employers.[6] Some of these collective investment vehicles are permitted or required to file their own annual reports with accompanying financial information (Form 5500 and Schedule H), and are referred to a "direct filing entities" (DFEs). A pension plan that invests through a DFE need only report its interest in the entity; the investor-plan is excused from providing detailed information about the underlying assets, liabilities, and transactions of the

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IRAs were originally designed to make tax-favored retirement savings available to workers who are not covered by an employer-sponsored pension plan (about half of the U.S. labor force), the largest share of IRA assets, 43.2% in 2010, is traceable to tax-free rollovers from private pension plans rather than to individual contributions. Employee Benefit Research Institute (EBRI), *Individual Account Retirement Plans: An Analysis of the 2010 Survey of Consumer Finances*, Issue Brief No. 375, Figure 13a at 21 (2012), at http://www.ebri.org/pdf/briefspdf/EBRI_IB_09-2012_No375_IndvAccts.pdf.

The single largest source of retirement income for most Americans is Social Security. In 2010, 65 percent of elderly households (married couples and nonmarried persons age 65 or older) obtained at least 50 percent of their total income from Social Security. SOCIAL SECURITY ADMINISTRATION (SSA), INCOME OF THE AGED CHARTBOO,, 2010, at 9 (2012), at http://www.socialsecurity.gov/policy/docs/chartbooks/income_aged/2010/iac10.pdf.

[3] Annual reports are mandated by ERISA §§ 101(b), 104(a), 29 U.S.C. §§ 1021(b), 1024(a) (2006), and are required to contain the financial information set forth in ERISA § 103, 29 U.S.C. § 1023 (2006). Reports are filed using the Form 5500 Series, "Annual Return/Report of Employee Benefit Plan" and required schedules, instruments which were jointly developed by the Department of Labor, the Internal Revenue Service, and the Pension Benefit Guaranty Corporation, to satisfy annual reporting requirements under ERISA Title I (administered by Department of Labor), Title IV (the termination insurance program for defined benefit pension plans, administered by the Pension Benefit Guaranty Corporation), and the Internal Revenue Code (administered by the Internal Revenue Service). 29 C.F.R. § 2520.103-1 (2011).

[4] As explained below, the information gap stems from the difficulty of attributing assets held by various indirect investment vehicles, known as direct filing entities or DFEs, to the pension plans that invest through those vehicles. The Director of Research of Employee Benefits Security Administration (EBSA) told one of the authors: "I caution you that in practice making the links [between pension plans and the DFEs in which they hold interests] can be complicated. We have made some efforts along those lines but that remains an unfinished project here." Email from Joseph Piacentini to Peter Wiedenbeck (July 13, 2010). In April 2012, the Labor Department released its first statistical overview of DFEs. EBSA, FORM 5500 DIRECT FILING ENTITY BULLETIN: ABSTRACT OF 2008 FORM 5500 ANNUAL REPORTS (Mar. 2012) (ver. 1.0, designated "Preliminary"), at http://www.dol.gov/ebsa/pdf/directfilingentity2008.pdf [hereinafter DFE BULLETIN 2008]. The Labor Department report consists of 12 tables of aggregate statistics, unaccompanied by any explanation of methodology or analysis.

[5] ERISA § 103(b)(2), (3), 29 U.S.C. § 1023(b)(2), (3) (2006); 29 C.F.R. § 2520.103-1(b) (2011).

[6] 29 C.F.R. § 2520.103-1(e) (2011).

DFE.[7] Thus, the annual return of a pension plan that invests some of its funds in a DFE will show its direct investments in stocks, bonds, real estate, and other asset categories, and will report its interest in any DFEs, but will *not* disclose the underlying holdings of the DFE. The DFE's return will of course report a categorical breakdown of its assets and liabilities, but linking the DFE's investments with its investor-plan's presents the challenge. Without such a link we lack a composite picture of a pension plan's direct and indirect holdings of various categories of assets and liabilities, effectively rendering part of the plan's financial position invisible, in the sense that plan participants, federal regulators, policy analysts, and the public at large cannot "see" the characteristics of indirect investments held in DFEs, nor evaluate the composition of the plan's overall portfolio.

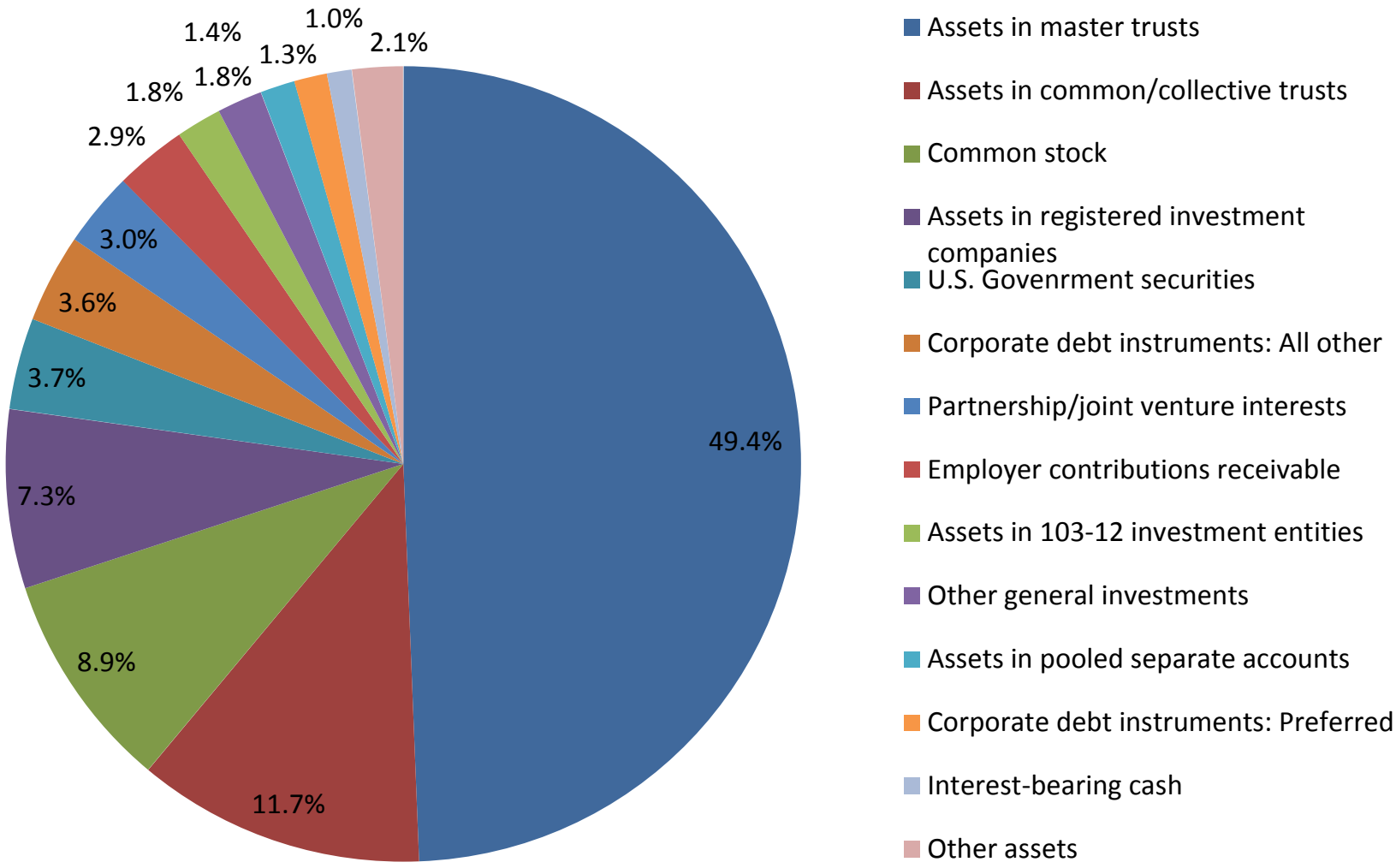
Just how serious is the resulting gap in our knowledge? How concerned should we be about the inability to look inside the black box of DFEs? When it comes to readily available public information on the allocation of private pension plan investments, we are astonishingly ignorant. Figure 1 shows that in 2010 large single-employer defined benefit plans had invested 64.3% of their total assets, on average, in four types of DFEs: master trusts (49.4%), bank common trust funds (11.7%), 103-12 investment entities (1.8%) and insurance company pooled separate accounts (1.4%). Thus, a majority of the assets of large single-employer defined benefit plans are reported only as undifferentiated indirect investments made through DFEs. [See Figure 1, following page.]

Figure 2 shows the corresponding breakdown for large single-employer defined contribution plans in 2010. They held 33.8%, or more than one-third of their total assets, on average, in master trusts (20.4%), bank common trust funds (9.9%), and insurance company pooled separate accounts (3.5%). The single largest slice of defined contribution plan assets in 2010 is the 42.1% invested in registered investment companies (mutual funds). These mutual fund holdings have increased substantially since the early 1990s, apparently due to the growth of 401(k) plans that call for participant-directed investments; such plans typically allow participants to select from a menu of mutual fund investment options.[8]

[7] ERISA § 103(b)(4), 29 U.S.C. § 1023(b)(4) (2006) (statutory authority to relax reporting requirements for plan assets held in either a common trust fund maintained by a bank or similar institution, or a pooled separate account maintained by an insurance carrier); 29 C.F.R. § 2520.103-9 (2011) (regulatory exemption for investor-plans allowing them to dispense with reporting financial information on the underlying assets and liabilities of common trust fund or pooled separate account if the bank or insurance carrier files a Form 5500, including Schedule D and Schedule H, covering the common trust fund or pooled separate account). *Accord* 29 C.F.R. §§ 2520.103-3(c)(2) (current value of investor-plan's proportionate interest in underlying assets and liabilities of common trust fund, along with other financial information, must be reported if the trust does not file Form 5500), 2520.103-4(c)(2) (same for investor-plan's interest in insurance company pooled separate account).

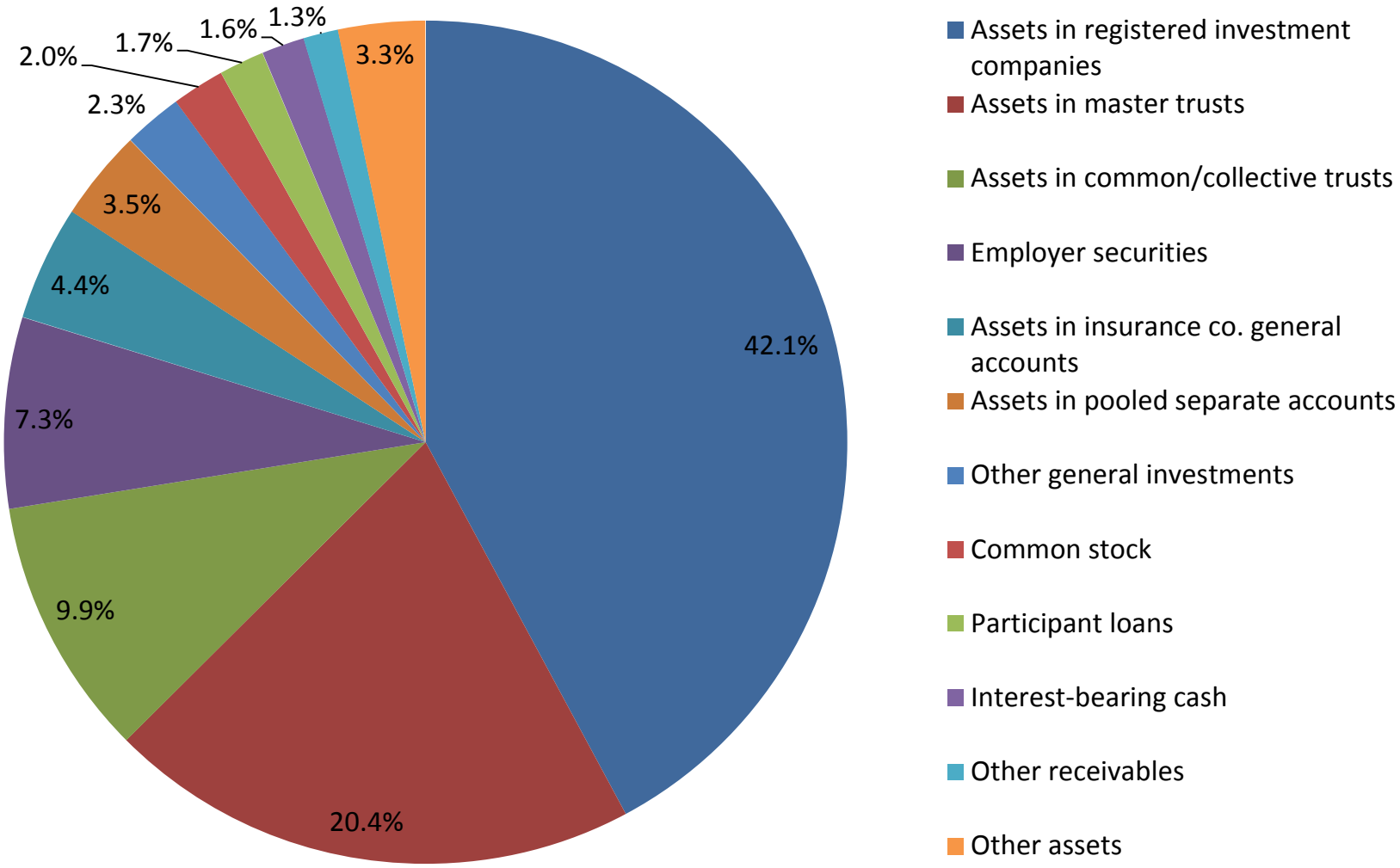
[8] *See* ERISA § 404(c), 29 U.S.C. § 1104(c) (2006); 29 C.F.R. § 2550.404c-1 (2011). Mutual fund investments are also common under a special type of defined contribution pension plan that covers employees of charitable organizations or public schools. These so-called "403(b) plans" (exemplified by TIAA-CREF) may only invest in annuity contracts or mutual fund shares. I.R.C. §§ 403(b)(7), 851(a) (2006).

Figure 1: Large single-employer defined benefit plan asset allocation, 2010



Source: EMPLOYEE BENEFITS SECURITY ADMINISTRATION, U.S. DEPARTMENT OF LABOR, PRIVATE PENSION PLAN BULLETIN: ABSTRACT OF 2010 FORM 5500 ANNUAL REPORTS, Table C5 (2012), at http://www.dol.gov/ebsa/PDF/2010pensionplanbulletin.PDF

Figure 2: Large single-employer defined contribution plan asset allocation, 2010



Source: EMPLOYEE BENEFITS SECURITY ADMINISTRATION, U.S. DEPARTMENT OF LABOR, PRIVATE PENSION PLAN BULLETIN: ABSTRACT OF 2010 FORM 5500 ANNUAL REPORTS, Table C5 (2012), at http://www.dol.gov/ebsa/PDF/2010pensionplanbulletin.PDF

Each DFE's assets and liabilities can in principle be attributed in proper proportion to the pension plans investing through that collective investment vehicle. Form 5500 Schedule D, entitled "DFE/Participating Plan Information," is designed to elicit the information necessary to connect the dots. A plan that invests in one or more DFEs is required to report on Schedule D information on its interest in each such DFE, including the name and identifying information of the DFE, the type of DFE (e.g., master trust investment account, common trust fund, or pooled separate account), and the dollar value of the plan's interest in the DFE as of the end of the year.[9] The DFE, in turn, must disclose the name and identifying information of each plan that invested in the DFE at any time during the year.[10] Linking the two data sets presents certain data quality and programming challenges. This paper describes a project to associate DFE asset holdings with the pension plans investing in the DFE based upon returns filed for reporting years ending in 2008. The paper first reports the size and composition of DFE investments, and then turns to investigate the extent to which the composition of pension plan asset holdings, including those held indirectly through DFEs, vary according to a number of plan characteristics.

The paper is organized as follows. Part II, following this introduction, provides additional background information on pension plan reporting requirements and how they relate to collective investment vehicles. That discussion exposes the limits of existing publicly-available information on pension investments. Part III briefly describes the methodology used to link DFE asset and liability data to the balance sheets of investor-plans. Part IV reports the results for 2008 and highlights and discusses interesting correlations between pension plan characteristics and investment allocations. Part V assesses the current state of pension plan financial disclosure from the standpoint ERISA's policies. A brief conclusion summarizes the study's principal findings and suggests avenues for further investigation.

II. Background

A. History and Policy

Financial disclosure was the focus of the first federal foray into the regulation of employee benefit plans. In the 1950s a number of state and federal investigations into labor racketeering uncovered notorious examples of embezzlement and abuse of employee benefit funds by union officials.[11] Most instances of misconduct involved multiemployer welfare funds; although jointly managed by representatives of contributing employers and labor organizations under the Taft-Hartley Act, in practice these funds often came to be dominated by union officers. President Eisenhower recommended congressional study of pension and welfare benefit plans in

[9] *See, e.g.*, IRS *et al.*, 2008 Form 5500, Schedule D, Part I ("Information on Interests in MTIAs, CCTs, PSAs, and 103-12IEs"); IRS *et al.*, 2008 Instructions for Form 5500, 11-13, 25. 29 C.F.R. §§ 2520.103-3(c)(1) (plan must identify DFE and report current value of its investment or units of participation in the common trust fund), -4(c)(1) (same for pooled separate accounts), -12(a) (same for so-called "103-12 investment entities").

[10] *See, e.g.*, IRS *et al.*, 2008 Form 5500, Schedule D, Part II ("Information on Participating Plans""); IRS *et al.*, 2008 Instructions for Form 5500, 11-13, 25.

[11] *See generally*, JAMES A. WOOTEN, THE EMPLOYEE RETIREMENT INCOME SECURITY ACT OF 1974, 45-50 (2004). S. Rep. 85-1440, at 2, 3 (1958), *reprinted in* U.S. DEPARTMENT OF LABOR, LEGISLATIVE HISTORY OF THE WELFARE AND PENSION PLANS DISCLOSURE ACT OF 1958, AS AMENDED BY PUBLIC LAW 87-420 OF 1962, 73-74 (1962) [hereinafter WPPDA LEGISLATIVE HISTORY].

1954 and put forward draft legislation in 1956 to require benefit plans to report their terms and finances to the Department of Labor. Fortified by public outrage over corrupt practices revealed by the McClelland Committee's investigations in 1957-1959, proponents of federal regulation pushed through the Welfare and Pension Plans Disclosure Act of 1958 (WPPDA). The objective of disclosure was to deter abuses and promote self-policing by employees, assisted by the press. Yet as originally enacted, the core financial information required in the annual report was limited to a "summary statement of assets, liabilities, receipts and disbursements of the plan".[12] The WPPDA imposed reporting obligations on both multiemployer and single-employer (company-managed) plans, but withheld investigative and enforcement authority from the Labor Department. In signing the bill President Eisenhower lamented that it accomplished little more than "establish[ing] a precedent of Federal responsibility in this area."[13]

The Kennedy Administration took up the cause, championing legislation to strengthen the disclosure act.[14] The 1962 WPPDA amendments gave the Labor Department investigative authority and the right to sue to enjoin violations, made false statements and concealment of facts relating to disclosure obligations a federal crime,[15] and in place of the "summary statement of assets" required that the annual report specify "the total amount in each of the following types of assets: cash, Government bonds, non-Government bonds and debentures, common stocks, preferred stocks, common trust funds, real estate loans and mortgages, operated real estate, other real estate, and other assets".[16] Routine disclosure of broad categories of investments was as far as Congress was prepared to go; the Secretary of Labor was authorized to demand an itemized report of all investments only if he found reasonable cause to believe that investigation would uncover violations of the act.[17]

Even as amended in 1962, the WPPDA imposed no federal standards of investment propriety or fiduciary conduct on employee benefit plan administrators,[18] so the limited disclosure it demanded merely provided access to information that might help workers vindicate their rights under state contract or trust law. Plan participants' state law rights, however, were

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[12] WPPDA, § 7(b), Pub. L. No. 85-836, 72 Stat. 997, 1000. Certain conflict of interest transactions involving pension plans were required to be listed in detail, including investments in securities or properties of the employer, the union, or plan officials, and fund loans made to such parties. *Id.* § 7(f)(1)(C), (D).

[13] PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES: DWIGHT D. EISENHOWER, 1958, at 663 (1959).

[14] WOOTEN, *supra* note 11 , at 81-83, 98.

[15] 18 U.S.C. § 1027 (2006). The 1962 amendments also made theft or embezzlement from an employee benefit fund a federal crime, and outlawed soliciting or receiving bribes or kickbacks to influence the operation of an employee benefit plan, 18 U.S.C. §§ 664, 1954 (2006).

[16] Welfare and Pension Plans Disclosure Act Amendments of 1962, § 9, Pub. L. No. 87-420, 76 Stat. 35, 36.

[17] S. Rep. 87-908, at 7, 18 (1961); H.R. Rep. No. 87-998, at 9, 11-12 (1961).

> There were people who wanted the Secretary of Labor to have the power to make the report include all types of investments — how much stock there was in General Motors or General Electric, or any other corporation. We resisted this move. We felt that what was necessary here was a general disclosure of the broad category of investments.

108 CONG. REC. 1735 (1962) (remarks of Rep. Goodell). *Accord*, *id.* at 1736, *reprinted in* WPPDA LEGISLATIVE HISTORY, *supra* note 11, at 393-95.

[18] 108 CONG. REC. 1735 (1962) (remarks of Rep. Goodell) ("there shall be no powers given to anyone to control any investment policies in these pension and welfare funds"); *id.* at 1736.

often severely restricted by the terms of the plan.[19] That ended in 1974, when ERISA imposed unalterable federal fiduciary obligations on employee benefit plan trustees and plan decision-makers,[20] and authorized plan participants, beneficiaries, and the Secretary of Labor to bring civil actions to enforce those fiduciary standards.[21] Recognizing the instrumental value of disclosure, ERISA replaced the WPPDA with a more robust, detailed, and exacting information regime. "Federal fiduciary standards were designed to work in combination with improved disclosure of plan finances and powerful enforcement tools to stem misconduct in plan administration."[22] The House Committee on Education and Labor explained:

> The underlying theory of the Welfare and Pension Plans Disclosure Act to date has been that reporting of generalized information concerning plan operations to plan participants and beneficiaries and to the public in general would, by subjecting the dealings of persons controlling employee benefit plans to the light of public scrutiny, insure that the plan would be operated according to instructions and in the best interests of participants and beneficiaries. The Secretary's role in this scheme was minimal. Disclosure has been seen as a device to impart to employees sufficient information and data to enable them to know whether the plan was financially sound and being administered as intended. It was expected that the information disclosed would enable employees to police their plans. But experience has shown that the limited data available under the present Act is insufficient. Changes are therefore required to increase the information and data required in the reports both in scope and detail. Experience has also demonstrated a need for a more particularized form of reporting so that the individual participant knows exactly where he stands with respect to the plan — what benefits he may be entitled to, what circumstances may preclude him from obtaining benefits, what procedures he must follow to obtain benefits, and who are the persons to whom the management and investment of his plan funds have been entrusted. At the same time, the safeguarding effect of the fiduciary responsibility section will operate efficiently only if fiduciaries are aware that the details of their dealings will be open to inspection, and that individual participants and beneficiaries will be armed with enough information to enforce their own rights as well as the obligations owed by the fiduciary to the plan in general.[23]

[19] Most pension plans are designed to qualify for favorable tax treatment. The regulations provide that a qualified pension, profit-sharing, or stock bonus plan must be a "definite written program or arrangement which is communicated to the employees". Treas. Reg. §1.401-1(a)(2) (1976). The definiteness and writing requirements were initially promulgated under § 165 of the Revenue Act of 1938 (which was the source of the anti-diversion rule that now appears as I.R.C. § 401(a)(2)), 26 C.F.R. § 9.165-1(a) (1939 Supp.), and were apparently intended to ensure that employees would have some enforceable rights under state law. Those criteria prevent the employer's commitment from being construed as illusory, a mere gratuity, or unenforceable under the statute of frauds. Nevertheless, state trust law standards of loyalty and care can be relaxed by inserting exculpatory language in the trust instrument, and employee benefit plans commonly included such language prior to ERISA.

[20] ERISA §§ 404(a) (general fiduciary duties), 406 (prohibited transactions), 410(a) ("any provision in an agreement or instrument which purports to relieve a fiduciary from responsibility or liability for any responsibility, obligation, or duty under this part shall be void as against public policy"), 29 U.S.C. §§ 1104(a). 1106, 1110(a) (2006).

[21] ERISA §§ 502(a)(2), 409, 29 U.S.C. §§ 1132(a)(2), 1109 (2006).

[22] PETER J. WIEDENBECK, ERISA: PRINCIPLES OF EMPLOYEE BENEFIT LAW 16 (2010).

[23] H.R. Rep. No. 93-533, at 11 (1973), *reprinted in* 2 STAFF OF THE SUBCOMM. ON LABOR OF THE S. COMM. ON LABOR AND PUBLIC WELFARE, 94TH CONG., LEGISLATIVE HISTORY OF THE EMPLOYEE RETIREMENT INCOME SECURITY ACT OF 1974, AT 2358 (Comm. Print 1976) [hereinafter ERISA LEGISLATIVE HISTORY]. *See* S. Rep. 93-127 at 4 (1973) (experience has demonstrated the inadequacy of the WPPDA in "protecting rights and benefits due to workers. It is weak in its

Concerning plan finances, the annual report required by ERISA must include "a statement of the assets and liabilities of the plan aggregated by categories and valued at their current value,"and in addition a "schedule of all assets held for investment purposes aggregated and identified by issuer, borrower, or lessor, or similar party to the transaction (including a notation as to whether such party is known to be a party in interest), maturity date, rate of interest, collateral, par or maturity value, cost, and current value".[24] The annual report is filed with the Labor Department and is open to public inspection.[25]

A summary annual report (SAR) must be furnished to plan participants, and to beneficiaries receiving benefits under a pension plan, within 210 days of the close of the plan year (today this distribution is often accomplished by electronic means of communication), but the SAR presents only the most general financial information.[26] With respect to assets, the SAR reports only the total net asset value of the plan as of the beginning and end of the plan year.[27] Upon request, participants are entitled to receive without charge a copy of "a statement of the assets and liabilities of the plan and accompanying notes, or a statement of income and expenses of the plan and accompanying notes, or both."[28] This statement of assets and liabilities refers to the broad categorical overview of the plan's financial position (the generic balance sheet data reported on the plan's Form 5500, Schedule H); it does *not* include the detailed schedule of all investment holdings. The plan administrator must make copies of the latest annual report available for examination by plan participants and beneficiaries, and they are entitled to be furnished with a copy of the full annual report (or any portion thereof) upon making a written request and paying a reasonable charge to cover the cost of copying.[29] Only by making such a request and payment can a plan participant obtain a copy of the itemized schedule of plan investments, or information concerning indirect investment vehicles in which the plan holds an interest.[30]

B. Data Sources and Limitations

The Labor Department is authorized to prescribe forms for filing financial information required in the annual report, and to use the data for statistical and research purposes, compiling and publishing "such studies, analyses, reports, and surveys based thereon as [the Secretary of

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limited disclosure requirements and wholly lacking in substantive fiduciary standards."), *reprinted in* 1 ERISA LEGISLATIVE HISTORY 587, 590; 2 *id.* at 3293, 3295 (informal report on substitute version of H.R. 2, to same effect).

[24] ERISA § 103(b)(3)(A), (C), 29 U.S.C. § 1023(b)(3)(A), (C) (2006).

[25] ERISA §§ 101(b)(1) (filing), 104(a)(1) (filing deadline and public inspection), 106 (public inspection), 29 U.S.C. §§ 1021(b)(1), 1024(a)(1), 1026 (2006).

[26] ERISA §§ 101(a)(2), 104(b)(3), 103(b)(3)(A), (B), 29 U.S.C. §§ 1021(a)(2), 1024(b)(3), 1023(b)(3)(A), (B) (2006); 29 C.F.R. §§ 104b-10(d) (prescribed form for summary annual report), 104b-1(c) (disclosure via electronic media).

[27] 29 C.F.R. § 104b-10(d)(3).

[28] *Id.* (penultimate paragraph).

[29] ERISA § 104(b)(2), (4), 29 U.S.C. § 1024(b)(2), (4) (2006).

[30] See 29 C.F.R. § 104b-10(d)(3), which requires that the SAR include notice of the participant's right to additional information, including the schedule of "assets held for investment" and "information concerning any common or collective trusts, pooled separate accounts, master trusts or 103-12 investment entities in which the plan participates" (items 3 and 9 on the list of available annual report information).

Labor] may deem appropriate."[31] Form 5500, the "Annual Return/Report of Employee Benefit Plan," is the vehicle prescribed (in conjunction with the Treasury Department) for satisfying ERISA's annual report obligation.[32] Pension plans and funded welfare plans covering 100 or more participants are obliged to file the financial information called for by Schedule H.[33] Part I of Schedule H contains basic balance sheet information, reporting beginning-of-year and end-of-year values of assets and liabilities aggregated into broad categories, including in the case of assets: non-interest bearing cash, receivables (categorized as employer contributions, employee contributions, and other), interest bearing cash, U.S. government securities, corporate debt instruments (other than employer securities) classified into preferred and other debt, corporate stock (other than employer securities) classified into preferred and common, partnership or joint venture interests, real estate (other than employer real property), loans (other than to participants), participant loans, interests held in various specified indirect investment entities, employer securities, and buildings and other property used in plan operations. Part II reports income and expense information, again aggregated into broad categories, including unrealized appreciation or diminution in value of real estate and "other" assets (including government securities, corporate debt, and stocks), and the net investment gain or loss attributable to interests held in various specified indirect investment entities. The Labor Department annually compiles the categorical balance sheet and income statement data that large pension plans report on Schedule H, Parts I and II, and publishes the results, subdivided into the amounts attributable to defined benefit and defined contribution plans, in a series entitled, "Private Pension Plan Bulletin: Abstract of Form 5500 Annual Reports".[34] This is the published source of asset allocation data on which Figures 1 and 2 are based.

Figures 1 and 2 demonstrate that various indirect investment vehicles, including master trusts and mutual funds, comprise a very large share of overall pension plan investments. Yet such indirect investment vehicles are like black boxes that hide their contents — the underlying investment holdings of such entities, whether comprised of corporate stocks, bonds, real estate, or other assets, are practically invisible. Consequently, even the broad categorical breakdown of pension plan assets is potentially misleading, because the reported value of direct investments in corporate common stock (for example) could be significantly augmented through indirect ownership of common stocks held by opaque investment intermediaries.

Each master trust investment account, or MTIA (defined below), is required to file its own Form 5500 annual report, including a Schedule H reporting the assets, liabilities, income, gains and losses of the MTIA. Correspondingly, an employee benefit plan that invests in the MTIA is granted a simplified method of reporting: instead of including the plan's proportionate

[31] ERISA §§ 109(a) (forms), 106(a) (study quote), 29 U.S.C. §§ 1029(a), 1026(a) (2006).

[32] ERISA § 109(a), 29 U.S.C. § 1029(a) (2006); 29 C.F.R. § 2520.103-1 (prescribed form and required schedules). *See* ERISA §§ 104(e), 3004(a) (coordination of Labor and Treasury Department rules, practices and forms), 29 U.S.C.A. §§ 1024(e), 1204(a) (2006 & Supp. 2010).

[33] 29 C.F.R. §§ 2520.103-1(b), 2520.104-44(b)(1) (exemptions for welfare plans under which benefits are paid solely from the general assets of the employer or union maintaining the plan (unfunded plans), welfare plans which provide benefits solely through insurance or a qualified health maintenance organization (insured plans), and welfare plans under which benefits are paid in part from the employer's general assets and partly through insurance (partly unfunded and partly insured plans)). Certain fully-insured pension plans are also exempt. *Id.* § 2520.104-44(b)(2).

[34] *E.g*, EBSA, *supra* note 1, Tables C-4 to C-11 (2011).

share of each underlying asset (and liability) of the MTIA along with the plan's direct investments in the appropriate categories (e.g., U.S. government securities, corporate debt instruments, common and preferred stock) of the plan's Schedule H balance sheet, the plan reports the beginning and end-of-year values of its interests in all MTIAs as a separate asset category,[35] and files a Schedule D on which the plan identifies each MTIA in which it invests along with the year-end dollar value of its interest in each such MTIA.[36] The Schedule D information is intended to allow the attribution of indirect asset holdings (reported on the MTIA's Schedule H) to the investor-plans that are the ultimate owners.

Certain other indirect investment vehicles are permitted (but unlike MTIAs, are not required) to file their own Form 5500 annual report and accompanying schedules. These include common or collective trusts managed by a bank or trust company, insurance company pooled separate accounts, and investment entities that hold assets of two or more plans that are not members of a related group of employee benefit plans. Such collective investment vehicles that file their own Form 5500 annual reports are, together with MTIAs, referred to as "direct filing entities" (DFEs). An employee benefit plan that invests in one or more DFEs reports on Schedule H the total current value of its interests in all DFEs of each type, and identifies separately on Schedule D each DFE in which it participated at any time during the plan year together with the year-end value of the plan's interest. If an insurance company pooled separate account (for example) does not file its own Form 5500, then it is not classified as a DFE.A plan that invests in such a non-DFE pooled separate account must include the current value of its allocable portion of the underlying assets and liabilities of the pooled separate account in the proper categories of the plan's Schedule H, where those amounts will be combined with any assets (or liabilities) directly owned (or owed) by the plan that fall in those categories.

In principle, the Schedule D information allows proper attribution of indirect asset holdings (reported on the DFE's Schedule H) to the investor-plans that are the ultimate owners of those assets, and that attribution would provide a picture of overall portfolio composition of employee benefit plans that invest through DFEs. In practice, linking the data poses serious challenges, and to date such matching has not been comprehensively accomplished. In 2008, 10,512 large (meaning plans covering 100 or more participants) defined benefit pension plans filed annual reports, as did another 70,029 large defined contribution pension plans.[37] For that same year (2008) there were 7,352 Forms 5500 filed by DFEs.[38] Clearly, comprehensive

[35] *E.g.*, IRS et al., 2008 Form 5500 Schedule H, line 1(c)(11), at http://www.dol.gov/ebsa/pdf/2008-5500-Schedule-H-mp.pdf.

[36] *E.g.*, IRS et al., 2008 Form 5500 Schedule D, Part I, at http://www.dol.gov/ebsa/pdf/2008-5500-Schedule-D-mp.pdf. The MTIA also files a schedule D, on which it identifies (Part II) each employee benefit plan that invests in the MTIA.

[37] *See infra* Appendix note 10.

[38] This total consists of 1,652 filings by master trust investment accounts (MTIAs); 3,115 common or collective trust funds (CCTs); 2,048 insurance company pooled separate accounts (PSAs); and 432 103-12 investment entities (103-12 IEs). Each of those four types of DFEs can be utilized by pension plans. (Differences between them are explained below. *See infra* notes 61-84 and accompanying text.) Another 105 filings were by group insurance arrangements (GIAs), a type of DFE employed by some insured welfare plans which is not relevant to a study of pension fund investments. There were 73 duplicate DFE filings (amended returns) in 2008, leaving a total of 7,174 DFEs that were either MTIA, CCT, PSA or 103-12 IE. *See infra* Appendix, notes 4, 5. Some of these returns reported

attribution of indirect investments held in DFEs to their pension plan owners requires automated data processing.

Automated data processing, of course, requires data to be available in electronic form. Historically, annual reports under ERISA (and its WPPDA predecessor) were submitted on paper forms. Beginning in 1999, the Labor Department instituted a system requiring the information contained in Form 5500 and its accompanying schedules to be submitted in a format that could be read by optical character recognition technology. This initiative, called "EFAST" (for ERISA Filing Acceptance System), entailed scanning paper forms, capturing the data, flagging questionable data for manual verification and key-from-image correction as necessary, and routine random independent quality control audits of data validity.[39] In accordance with ERISA's public inspection mandate, the data, once converted to electronic form and stripped of personally identifiable information (such as plan participant social security numbers), were made publicly available.[40] In addition, the data pertaining to private pension plans received special attention. Private pension plan filings were scrutinized to identify and correct many statistically important logical and arithmetic data inconsistencies that remained after completion of EFAST processing. A private contractor performed various automated error checking and correction operations to improve the accuracy of the pension plan statistics. Important for purposes of this study, special attention was given to the pension plan features and characteristics codes.[41] The resulting edited pension plan statistics (starting with the year 2000) are posted on the DOL web site under the heading, "Form 5500 Private Pension Plan Research Files," together with a "User Guide" for each year that details the editorial operations performed and explains the structure of the Research File data set.[42]

Since January 1, 2010, all Form 5500 returns and required schedules and attachments must be filed electronically using the new EFAST2 system.[43] Thus, an all-electronic system that

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zero year-end DFE assets. Others failed to include the Schedule H report of assets and liabilities, making it impossible in those instances to attribute DFE investments to participating plans.

The Labor Department's count is slightly higher, as it reports 7,702 total DFEs in 2008, as follows: 1,693 MTIAs; 3,448 CCTs; 2,128 PSAs; and 433 103-12 IEs. EBSA *supra* note 4, Table 1. The explanation for this discrepancy is not clear, because this study derived DFE counts directly from the raw data posted on the Labor Department's web site. The raw filings, however, include returns by 2,201 entities which were not identified as either a plan or a DFE, so perhaps in conducting its study EBSA determined that some of these entities of are actually DFEs. No edited or revised DFE data has been posted on the Labor Department's web site, yet it seems that the EBSA numbers are based on a set of data that is somewhat different than the posted raw data.

[39] See U.S. Department of Labor, Employee Benefits Security Administration (EBSA) Privacy Impact Assessment, Employee Retirement Income Security Act (ERISA) Filing Acceptance System (EFAST) 2010, at http://www.dol.gov/cio/programs/pia/ebsa/EBSA-EFAST.htm.

[40] The raw, unedited data from all of the Form 5500 and Form 5500-SF (the short form for small plans that meet certain requirements, see 29 C.F.R. § 2520.103-1(c)(2)) filings for each year, including the data reported in the various schedules, is posted on the DOL's web site under the heading, "Form 5500 Data Sets". The raw data includes all filings by both pension and welfare plans, whether large (100 or more participants) or small, and also includes DFE filings. Consequently, the raw data contains records relating to approximately 800,000 filers. See: http://www.dol.gov/ebsa/foia/foia-5500.html.

[41] *E.g.*, ACTUARIAL RESEARCH CORPORATION, USER GUIDE 2008 FORM 5500 PRIVATE PENSION PLAN RESEARCH FILE (Contract DOLJ089327412) 9 (Dec. 2010), at http://www.dol.gov/ebsa/pdf/2008-5500-researchfileuserguide.pdf.

[42] http://www.dol.gov/ebsa/publications/form5500dataresearch.html.

[43] 29 C.F.R. § 2520.104a-2(a) provides:

should reduce errors as well as delays and costs of data conversion and processing, is now in place for all plan years beginning on or after January 1, 2009. Nearly all filings submitted through EFAST2, including schedules and attachments, are available to the general public through the DOL web site, generally within one day of transmittal.[44]

The primary focus of this study is on large private pension plan annual returns filed for reporting year 2008, the final year of the period in which the part-paper, part-electronic, EFAST filing system was used. Forms 5500 and accompanying schedules were substantially revised in 2000 to facilitate the EFAST filing system, and those changes were motivated in large part by the inability to effectively monitor DFE investments under the prior reporting system.

> [C]ontinuation of the current rules would result in inadequate reporting to the Department [of Labor], would mean that the Department would continue to be unable to correlate and effectively use the data regarding the more than $2 trillion in plan assets invested by plans in DFEs or entities eligible to file as DFEs, and, therefore, in the Department's view, would be adverse to the interests of participants and beneficiaries in the aggregate.[45]

It should be emphasized at the outset that this matching of direct and indirect investments can yield only a very rough and incomplete picture of large private pension plan investments, considered either singly or in the aggregate. The source data for both pension plans and DFEs comes from Form 5500 Schedule H, which, as explained earlier, reports aggregate holdings in specified broad categories of investments (such as U.S. government securities, corporate bonds, preferred stock, common stock, real estate, etc.).[46] Plan holdings of common stock, for example, could be broadly diversified (along the lines of an equity index fund) or concentrated in one or a few sectors or industries.[47] The stocks could represent ownership stakes in either domestic

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> Any annual report (including any accompanying statements or schedules) filed with the Secretary under part 1 of title I of the Act for any plan year (reporting year, in the case of common or collective trusts, pooled separate accounts, and similar non-plan entities) beginning on or after January 1, 2009, shall be filed electronically in accordance with the instructions applicable to such report, and such other guidance as the Secretary may provide.

The ERISA annual reporting and disclosure regulations were revised to mandate electronic filing under EFAST2 in late 2007. Annual Reporting and Disclosure, 72 Fed. Reg. 64710 (Nov. 16, 2007). For an explanation of the proposed rules, see Annual Reporting and Disclosure, 71 Fed. Reg. 41392 (proposed July 21, 2006). The corresponding revisions to Forms 5500 and attachments, and changes to the accompanying instructions, are set forth in Revision of Annual Information Return/Reports, 72 Fed. Reg. 64731 (Nov. 16, 2007).

[44] EFAST2 Electronic Filing System Frequently Asked Questions, Q&A-42, -43, at http://www.dol.gov/ebsa/faqs/faq-EFAST2.html.

[45] Annual Reporting and Disclosure Requirements, 65 Fed. Reg. 21068, 21074 (Apr. 19, 2000). *See id.* at 21069 (absence of standardized reporting format for common or collective trusts and pooled separate accounts "has made it virtually impossible for the Department to correlate and effectively use the data regarding plan assets held for investment by CCTs and PSAs" while the value of plans assets invested in such entities had grown from $113.9 billion to $280 billion between 1990 and 1996).

[46] *See supra* text accompanying notes 33-34.

[47] ERISA generally requires diversification of plan investments "so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so". ERISA § 404(a)(1)(C), 29 U.S.C. § 1104(a)(1)(C) (2006).

companies or foreign enterprises. Similarly, the real estate category offers no breakdown between improved and unimproved realty, much less does it give any clue to property location or relevant markets. So, while this study fills gaps in our knowledge of the allocation of pension plan investments among broad categories of asset types, it has little to say about the risk and return characteristics of pension plan investment portfolios. As noted earlier, a large pension plan is required to file an itemized schedule of its investment assets with its annual report,[48] but that detailed specification of individual investment holdings was not, during the period of the EFAST filing system, submitted in a format that would support routine electronic data capture.[49] Unfortunately, that limitation continues to this day even under the all-electronic EFAST2 filing system.[50]

The remaining sections of this part provide additional context that will aid understanding the results of this study. First, the types of indirect investment vehicles and the consequence of DFE classification are explained. Next we present an overview of the extent to which private pension plans utilize indirect investment vehicles. Finally, before turning to the methodology used to attribute DFE assets to their investor-plans, aggregate descriptive statistics concerning DFE investments are presented.

C. Types of Indirect Investment Vehicles

Disclosure of plan finances facilitates monitoring and oversight, as means to the end of promoting proper investment and disposition of plan property. ERISA imposes stringent and unalterable federal obligations of loyalty and prudence on employee benefit plan fiduciaries, a broad functional category that includes any person to the extent that he "exercises any authority or control respecting management or disposition of [the plan's] assets".[51] To bring sunlight to

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Many defined contribution plans are excused from that requirement, however. ERISA §§ 404(a)(2), 407(d)(3), 29 U.S.C. §§ 1104(a)(2), 1107(d)(3) (2006).

[48] *See supra* note 24 and accompanying text.

[49] Form 5500 Schedule H, line 4(i) asks whether the plan had assets held for investment during the plan year, and if the answer is yes, a detailed schedule is called for. "The schedules must use the format set forth below or a similar format and the same size paper as the Form 5500." 2008 Instructions for Form 5500, at 35, available at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf. No standardized presentation format is prescribed (a "similar format" is expressly permitted), the size of the columns is not specified, and some of the descriptive information is quite variable ("Description of investment including maturity date, rate of interest, collateral, par, or maturity value"). Consequently, automated electronic data capture of the detailed schedule of investments is not feasible.

[50] See 2010 Instructions for Form 5500, at 39-40, available at http://www.dol.gov/ebsa/pdf/2010-5500inst.pdf. "Any information that cannot be contained on the 5500 series forms and schedules may be submitted as an unstructured attachment on EFAST2" and must be submitted as either a PDF file or an ASCII Text file. EFAST2 Guide for Filers & Service Providers, § 5.2.2 at 37 (ver. 5.2, Apr. 27, 2011), at http://www.efast.dol.gov/fip/pubs/EFAST2_Guide_Filers_Service_Providers.pdf. Such "unstructured attachments" include the schedule of assets held for investment. *See* EFAST2 Electronic Filing System Frequently Asked Questions, Q&A-24a, *supra* note 44. The serious policy implications of this limitation are discussed in Part V, *infra*, text accompanying notes 168-179.

[51] ERISA § 3(21)(A)(i), 29 U.S.C. § 1102(21)(A)(i) (2006). Uniform federal fiduciary obligations, including both general standards of conduct (derived from the traditional trustee duties of loyalty and care), and a set of objectively-defined prohibited transactions, were a central policy innovation.

bear on financial management, the annual report must include "a statement of the assets and liabilities of the plan aggregated by categories and valued at their current value, and the same data displayed in comparative form for the end of the previous fiscal year of the plan".[52] Hence both fiduciary duties and disclosure obligations are keyed to the existence and extent of "plan assets." Until 2006, however, the statute left this key category undefined, leaving it to Labor Department to fill in the meaning of the term by rule.[53]

The regulatory definition of plan assets, which applies for purposes of both ERISA's information forcing and fiduciary obligation provisions, sets out the general rule:

> Generally, when a plan invests in another entity, the plan's assets include its investment, but do not, solely by reason of such investment, include any of the underlying assets of the entity. However, in the case of a plan's investment in an equity interest of an entity that is neither a publicly-offered security nor a security issued by an investment company registered under the Investment Company Act of 1940 its assets include both the equity interest and an undivided interest in each of the underlying assets of the entity, unless it is established that—
>
> (i) The entity is an operating company, or
>
> (ii) Equity participation in the entity by benefit plan investors is not significant.
>
> Therefore, any person who exercises authority or control respecting the management or disposition of such underlying assets, and any person who provides investment advice

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> ERISA imposes uniform federal fiduciary obligations to control mismanagement and abuse of employee benefit programs. While drawing on general principles of trust law, ERISA's fiduciary standards include two fundamental departures from prevailing state law. First, the statutory definition of fiduciary extends far beyond state law trustees, imposing standards of competence and fair dealing on anyone who has or exercises any discretionary authority in the administration of the plan or the management of its assets, and on investment advisors as well. Second, ERISA voids any attempt to relax its stringent fiduciary obligations through the inclusion of exculpatory clauses in the plan, even though such indulgences are common and effective under state law.
>
> Federal fiduciary standards were designed to work in combination with improved disclosure of plan finances and powerful enforcement tools to stem misconduct in plan administration.[51] Particularized reporting of transactions between the plan and certain related parties would give participants and the Labor Department information needed to assert workers' rights, while the federal courts, armed with broad remedial powers and supported by nationwide service of process, would grant effective relief. Moreover, employees would be free to assert their rights without fear of employer retaliation by discharge, demotion, or other adverse employment action.

WIEDENBECK, *supra* note 22, at 16 (footnotes omitted).

[52] ERISA § 103(b)(3)(A), 29 U.S.C. § 1023(b)(3)(A) (2006).

[53] The Pension Protection Act of 2006, Pub. L. No. 109-280, § 611(f), 120 Stat. 780, 972, added a definition of plan assets as ERISA § 3(42), 29 U.S.C. § 1002(42) (2006), which essentially reinforces the prior regulatory definition, 29 C.F.R. § 2510.3-101. The principal departure of the new statutory definition from the longstanding Labor Department rule imposes a limitation on the definition of "benefit plan investor" for purposes of determining significant equity ownership under the 25 percent test described below. *See infra* note 57 and accompanying text. The 1986 plan asset regulation counted equity ownership by all pension or welfare plans, including government plans and church plans that are not subject to ERISA, 29 C.F.R. § 2510.3-101(f)(2)(i); the new statutory definition adopts the 25-percent threshold but forbids counting government or church plan investments, ERISA § 3(42), 29 U.S.C. § 1002(42) (2006).

> with respect to such assets for a fee (direct or indirect), is a fiduciary of the investing plan.[54]

This standard creates the prospect that the managers of an independent entity could, if employee benefit plans own a sufficient equity stake in the entity, be held accountable under ERISA for failure to operate the entity "solely in the interest of the [investor-plans'] participants and beneficiaries". This derivative or look-through fiduciary status might at first seem startling, but consideration of the limits of the rule shows that it designed to prevent evasion of ERISA's oversight of fiduciary conduct through the use of financial intermediaries.

The look-through rule does not apply to an equity interest that is a publicly-offered security or is issued by a registered investment company (e.g., mutual fund shares), regardless of the extent of an employee benefit plan's proportionate ownership of the entity. In such cases the periodic disclosure obligations imposed by federal securities laws with respect to the finances and operations of the entity provide a benchmark against which the propriety of the plan's equity ownership of the entity can be assessed.[55] Where federal securities laws do not apply to a plan's ownership interest in another entity, the look-through rule is triggered only if the entity is not an "operating company" and benefit plan investors own a "significant" share of its equity. An "operating company" is defined as "an entity that is primarily engaged, directly or through a majority owned subsidiary or subsidiaries, in the production or sale of a product or service *other than the investment of capital*."[56] Significant equity participation means that benefit plan investors own 25 percent or more of any class of equity interest in the entity.[57] Taken together, these conditions indicate that an investment vehicle which may be controlled by one or more employee benefit plans offers no escape from ERISA's unyielding standards of fidelity and care, nor from the reporting and disclosure obligations that implement those standards. Moreover, the look-through rule applies regardless of the form of organization of the investment entity (e.g., trust, joint venture, partnership, limited liability company, or corporation). Hence, ERISA fixes the scope of financial disclosure with reference to the persons who control plan funds and the extent of their control.

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[54] 29 C.F.R. § 2510.3-101(a)(2). The Labor Department's definition of plan assets also applies for purposes of the excise tax on prohibited transactions. *Id.* -101(a)(1); *see* I.R.C. § 4975 (2006).

[55] For the definitions of "equity interest" and "publicly-offered security," see 29 C.F.R. § 2510.3-101(b). Moreover, when it comes to mutual funds, the scope of ERISA's fiduciary obligations have always been limited by statute: "In the case of a plan which invests in any security issued by an investment company registered under the Investment Company Act of 1940, the assets of such plan shall be deemed to include such security but shall not, solely by reason of such investment, be deemed to include any assets of such investment company." ERISA § 401(b)(1), 29 U.S.C. § 1101(b)(1) (2006).

[56] 29 C.F.R. § 2510.3-101(c)(1) (emphasis added). Despite the focus on financial services, however, the look-through rule does not apply to certain entities that predominately make venture capital or real estate investments, but only if the entity qualifies as a "venture capital operating company" or "real estate operating company". *Id.* Those categories are defined with reference to whether the entity has the right to substantially participate in the management of the underlying venture capital or real estate investments. *Id.* -101(d)(3), -101(e). The look-through rule also does not reach the underlying assets of certain government-guaranteed mortgage pools. *Id.* -101(i). A special rule provides that if a related group of employee benefit plans owns all of the outstanding equity interests (other than director's qualifying shares) of an entity, then the assets and management of the wholly-owned enterprise are fully subject to ERISA even if it is an operating company and is not engaged rendering financial services. 29 C.F.R. § 2510.3-101(h)(3), (4).

[57] 29 C.F.R. § 2510.3-101(f).

Consistent with the look-through rule, the instructions for completing the annual report financial information (Form 5500, Schedule H) state:

> If the assets of two or more plans are maintained in a fund or account that is not a DFE [direct filing entity], a registered investment company, or the general account of an insurance company under an unallocated contract . . ., complete Parts I and II [balance sheet and income statement] of the Schedule H by entering the plan's allocable part of each line item.[58]

In contrast, a plan that utilizes an indirect investment vehicle that qualifies as a direct filing entity (DFE), may simply report the value of the plan's interest in the entity. In principle, there is no need to itemize the plan's allocable share of the DFE's underlying assets because the DFE files its own Form 5500 and accompanying financial information.[59] In practice, however, the indirect investments reported by DFEs have not been routinely or comprehensively matched with other assets owned directly by a plan that holds an interest in the DFE (an investor-plan).

A pension plan follows simplified financial reporting rules for investments in any of four types of DFEs: (1) master trust investment accounts; (2) some common or collective trusts maintained by banks or trust companies; (3) some insurance company pooled separate accounts; and (4) certain investment entities that hold plan assets (under the look-through rule described above), which may include real estate investment funds, hedge funds, and private equity funds. Pension plan sponsors share an impetus to consolidate funds for investment purposes, thereby obtaining the financial advantages of economies of scale and increased diversification, so long as that pooling will not jeopardize the favorable tax treatment of their plans.[60] As explained below, these four DFE varieties are common mechanisms to consolidate funds for investment.

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[58] 2008 Instructions to Form 5500, at 29, at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf. Accord, *id.* at 30 (warning that a plan's interest in the underlying assets of a common or collective trust or pooled separate account that does not file its own Form 5500 "*must* be allocated and reported in the appropriate categories on a line-by-line basis on Part I of the Schedule H"). See also 29 C.F.R. § 2520.103-10(b)(1)(ii) ("Except as provided in the Form 5500 and the instructions thereto, in the case of assets or investment interests of two or more plans maintained in one trust, all entries on the schedule of assets held for investment purposes that relate to the trust shall be completed by including the plan's allocable portion of the trust.").

[59] Direct Filing Entity (DFE) Filing Requirements, 2008 Instructions to Form 5500, *supra* note 58, at 11-14.

[60] Tax exemption of a qualified trust requires that it form "part of a stock bonus, pension, or profit-sharing plan of an employer for the exclusive benefit of his employees and their beneficiaries", I.R.C. § 401(a), and the use of the singular ("an employer") created doubt about whether multiple employers could pool qualified plan assets in a combined trust without forfeiting favorable tax treatment. At least as early as 1939 the IRS announced that "A trust forming part of a plan of affiliated corporations for their employees may be exempt if all requirements are otherwise satisfied." Regulation 101, 26 C.F.R. § 9.165-1(f) (issued under the Revenue Act of 1938 and published in the 1939 Supplement to the Code of Federal Regulations). That language was carried forward in various iterations of the regulations under the Internal Revenue Code of 1939. *E.g.*, 26 C.F.R. § 39.165-1(b) (1953) (applicable to taxable years beginning after Dec. 31, 1951; *id.* § 39.1-1(b)). By its terms, however, this regulation only blessed a trust created under "a plan" (singular) covering the employees of an affiliated group of corporations. Moreover, in determining whether "all requirements are otherwise satisfied" the qualification standards were apparently applied to each member corporation separately because each is a distinct "employer." *See* I.R.C. § 404(a)(3)(B); H.R. Rep. No. 1337, at 43, A150-A151 (1954) (member of affiliated group lacking current or accumulated earnings and profits cannot make contributions for its employees under common profit-sharing plan of the group, and prior

A master trust pools assets of two or more plans sponsored by a single employer or by a group of commonly controlled employers, with a bank, trust company, or similar regulated financial institution that is subject to periodic examination by a federal or state agency serving as trustee.[61] (The regulated financial institution that serves as trustee may exercise discretionary authority over asset management in accordance with the terms of the master trust agreement, or it could instead function as a so-called "directed trustee" carrying out the instructions of the plan's named fiduciary.[62]) This definition of "master trust," it should be noted, only applies "[f]or purposes of annual reporting" — the term master trust lacks a single fixed meaning. (In other contexts it describes different types of collective investment devices, including trusts combining assets accumulated under plans of unrelated employers.[63]) Typically, a master trust is composed

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to 1954 profitable group members could not deduct contributions for loss corporation's employees); S. Rep. No. 83-1622, at 54-55, A150-A151 (1954) (same); Rev. Rul. 69-35, 1969-1 C.B. 117.

By 1944 the Service was permitting unrelated corporations to adopt a single plan and contribute to a common exempt trust, but the qualification requirements of I.R.C. § 401(a) and the limits on deductible contributions of § 404(a) were applicable to each participating employer separately. P.S. No. 14 (Aug. 24, 1944), *reprinted in* GERHARD A. MUNCH, FEDERAL TAXATION OF INSURED PENSIONS, app. 4, at App-103 (1966), *restated and superseded by* Rev. Rul. 69-230, 1969-1 C.B. 116; *see* Rev. Rul. 32, § 3, 1953-1 C.B. 265 (requests for advance rulings may be submitted by industry-wide or other multiple employer plans), Treas. Reg. § 1.401-1(d) (adopted 1956).

With ERISA's enactment in 1974 plans adopted by unaffiliated companies became subject to a few special qualification requirements. A "multiemployer plan" is a plan maintained pursuant to a collective bargaining agreement under which two or more unrelated employers are required to contribute. ERISA § 3(37), 29 U.S.C. § 1002(37); I.R.C. § 414(f). Some qualification conditions are relaxed for multiemployer plans, I.R.C. § 413(b), as are the advance funding and PBGC termination insurance rules for DB plans. ERISA §§ 302(a), 304, 4201-4303, 29 U.S.C. §§ 1082(a), 1084, 1381-1453; I.R.C. §§ 412(a), 431-32. Where two or more unrelated employers maintain a *single plan* that is not the product of collective bargaining the program is now generally called a "multiple employer plan." Mere adoption by distinct employers of a plan having identical terms does not make the program a single plan; a single plan exists if and only if all assets are availa ble to provide benefits to a covered employee of either employer. *See* I.R.C. § 413(c), Treas. Reg. §§ 1.413-2, 1.413-1(a)(2), 1.414(*l*)-1(b)(1); *see generally*, 1 MICHAEL J. CANAN, QUALIFIED RETIREMENT PLANS §§ 6:2, 6:11, 6:13 (2011-2012 ed.) (distinguishing collectively bargained plans, multiemployer plans and multiple employer plans). Hence a form plan adopted by several employers ordinarily is *not* a multiple employer plan; despite uniform terms the arrangement gives rise to independent single employer plans sponsored by each adopting company. Similarly, the Labor Department takes the position that for purposes of ERISA Title I, including reporting and disclosure rules and fiduciary obligations, a plan and trust adopted by several unrelated employers is not a single multiple employer plan if the adopting employers are not members of a bona fide group or association of employers. ERISA Op. Ltr. 2012-04A (May 25, 2012); *see generally*, U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-665, PRIVATE SECTOR PENSIONS: FEDERAL AGENCIES SHOULD COLLECT DATA AND COORDINATE OVERSIGHT OF MULTIPLE EMPLOYER PLANS (2012). *See infra* notes 63, 69 (concerning master plans and associated trusts).

[61] 29 C.F.R. § 2520.103-1(e).

[62] *Id.* (parenthetical clause); *see* ERISA § 402(a)(1), 29 U.S.C. § 1102(a)(1) (2006) (permission for directed trustees).

[63] For example, the master trust moniker is commonly applied to a collective trust established under a master plan. Master plan means a form plan which "is made available by a sponsor for adoption by employers and for which a single funding medium (for example, a trust or custodial account) is established, as part of the plan, for the joint use of all adopting employers" and which complies with IRS procedures for obtaining an advance determination as to its qualification. Rev. Proc. 2011-49, § 4.01, 2011-44 I.R.B. 608, 611. Typically, master plans are developed by trade associations, professional organizations, banks, insurance companies, or regulated investment companies, and the sponsor offers the master plan as low-cost preapproved plan that may be utilized by its members or customers. As the employers adopting a master plan are unrelated, a master trust that serves as the collective funding medium for the participating employers is not a "master trust" within the meaning of the Labor

of several distinct asset pools, the beneficial ownership of which is shared in varying proportions by the plans that participate in the master trust, and each such subsidiary "master trust investment account" (hereafter MTIA), rather than the encompassing master trust itself, is a DFE.

> The assets of a master trust are considered for reporting purposes to be held in one or more ''investment accounts.'' A ''master trust investment account'' may consist of a pool of assets or a single asset. Each pool of assets held in a master trust must be treated as a separate MTIA if each plan that has an interest in the pool has the same fractional interest in each asset in the pool as its fractional interest in the pool, and if each such plan may not dispose of its interest in any asset in the pool without disposing of its interest in the pool. A master trust may also contain assets that are not held in such a pool. Each such asset must be treated as a separate MTIA.[64]

Accordingly, although several plans of one employer or of one group of commonly controlled employers can employ a single master trust administered by a particular bank as trustee, if the trust maintains multiple accounts (representing distinct underlying asset pools) and there is any variation in the proportionate beneficial interests of the investor-plans between those accounts, then a separate Form 5500 must be filed for each such MTIA.

In contrast to a master trust, participation in which is (for purposes of annual reporting[65]) restricted to plans maintained by commonly controlled businesses, a common or collective trust (CCT) is a fund maintained by a bank, trust company, or similar regulated financial institution for the collective investment of funds contributed by unrelated participants, which may be employee benefit plans or other persons. A CCT may hold funds from plans maintained by unrelated employers,[66] and it may also contain other funds held by the financial institution in a fiduciary capacity, whether as trustee, executor, guardian, or custodian under state laws that correspond to the Uniform Gift to Minors Act (UGMA).[67] For tax reasons, a CCT ordinarily constitutes either a *common trust fund* or a type of collective trust sometimes called a *group trust*. A *common trust fund* receives special treatment under the Internal Revenue Code: it is not

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Department's annual report regulations. *See* Rev. Rul. 71-461, 1971-2 C.B. 227 (where several employers adopted master plan but coverage under one adopting employer's plan became discriminatory, exempt status of master trust not adversely affected if the trustee transfers the funds held under the disqualified plan to an unrelated trust as soon as administratively feasible). Instead, a trust funding vehicle for a master plan is ordinarily classified as a common or collective trust for annual reporting purposes. *See infra* note 69.

Master plan procedures were first developed to handle the flood of determination letter requests by small employers following the 1963 extension of qualified status to plans covering self-employed individuals (so-called "Keogh" or "H.R. 10" plans covering partners and sole proprietors). Rev. Proc. 63-23, § 3.02, 1963-2 C.B. 757. The program was so successful that the IRS later extended it to corporate plans, Rev. Proc. 68-45, § 2, 1968-2 C.B. 957, 958, and it has been repeatedly expanded, refined, and updated ever since, Rev. Proc. 2011-49, *supra*. Indeed, a random survey of 1,200 sponsors conducted in 2010 found that 86% of 401(k) plans are some form of pre-approved plan (such as a master, prototype, or volume submitter plan); only 14% were individually-designed plans. EMPLOYEE PLANS COMPLIANCE UNIT, INTERNAL REVENUE SERVICE, SECTION 401(K) COMPLIANCE CHECK QUESTIONNAIRE INTERIM REPORT 56-57 (2012), at http://www.irs.gov/pub/irs-tege/401k_interim_report.pdf.

[64] 2008 Instructions to Form 5500, *supra* note 58, at 11.

[65] *See supra* note 63 and accompanying text.

[66] 29 C.F.R. § 2520.103-3(a), (b).

[67] 12 C.F.R. § 9.18(a) (2011) (authority for national banks to establish collective investment funds for assets held in a fiduciary capacity, referring separately to common trust funds in (a)(1) and group trusts in (a)(2)).

subject to tax as an entity (as either a corporation or a complex trust) but instead reports to its participants their proportionate shares of the fund's ordinary income (loss), short and long-term capital gains (losses), and qualified dividend income for the calendar year, whether or not distributed or distributable.[68] Participating qualified plans, of course, do not pay tax on their shares of the common trust fund's income, but the pass-through of the tax results of operations is important to taxable participants, which may include estates of decedents or incapacitated individuals, private trusts, and minors receiving property under the UGMA. A *group trust* pools the assets of several qualified pension or profit-sharing plans, including plans with different terms maintained by unrelated employers. If certain conditions are satisfied, including adoption of the group trust as part of each participating retiree benefit plan and express language in both the group trust instrument and each participating plan barring diversion of assets attributable to one participating plan to employees or beneficiaries under another participating plan, then the participating trusts retain their tax-exempt status and the group trust also constitutes a qualified trust.[69] The exemption for such group trusts originated in 1956,[70] but has been continued and expanded over the years, so that participants may now include, in addition to qualified pension, profit-sharing and stock bonus plans, individual retirement accounts, eligible governmental deferred compensation plans under I.R.C. § 457(b), custodial accounts and retirement income accounts under § 403(b) tax-sheltered annuity plans, and governmental plans specified in § 401(a)(24).[71] CCTs (both common trust funds and group trusts) may also qualify for certain

[68] I.R.C. §§ 584 (common trust fund), 581 (definition of bank). Participants in the common trust fund include these amounts on their own returns in combination with similar items of income or loss derived from other sources. Thus, a common trust fund receives a simplified version of conduit or pass-through tax treatment, akin to that accorded regulated investment companies (mutual funds) under I.R.C. § 852. I.R.C. § 584 originated as § 169 of the Revenue Act of 1936, in response to court decisions that held such commingled investment funds taxable as corporations. S. Rep. No. 74-2156, at 20 (1936).

[69] Rev. Rul. 2011-1, 2011-2 I.R.B. 256. The "master trust" funding medium under a preapproved master plan (*see supra* note 63) would ordinarily qualify as a group trust and therefore be classified as a CCT for annual reporting purposes. Such a "master trust" is not an MTIA for reporting purposes because it pools funds accumulated under multiple plans (albeit plans that share common terms) of unrelated employers. *See* Treas. Reg. §§ 1.413-2(a)(2) ("mere fact that a plan, or plans, utilizes a common trust fund or otherwise pools plan assets for investment purposes does not, by itself, result in a particular plan being treated as" a multiple employer plan subject to § 413(c); master or prototype plan maintained by employers that are not members of commonly controlled group is subject to § 413(c) only if it is a single plan), 1.413-1(a)(2), 1.414(*l*)-1(b)(1) (single plan requires that all plan assets be available to pay benefits to employees covered the plan), Rev. Rul. 2011-1, *supra* (terms of a group trust required to provide that assets contributed under one participating plan may not be used to benefit employees or beneficiaries under another participating plan).

[70] The Federal Reserve Board amended its regulations specifying trust powers of national banks in 1955 to permit collective investment of the funds of two or more qualified pension, profit-sharing, or stock bonus plans. 20 Fed. Reg. 3305 (May 14, 1955) (amending 12 C.F.R. § 206.10(c) (1955)); *see* 12 C.F.R. § 9.18 (2011) (current version). Shortly thereafter the IRS ruled that if participation in such a "group trust" is limited to trusts under qualified pension or profit-sharing plans and specified protections were in place, then the group trust would constitute a qualified trust. Rev. Rul. 56-267, 1956-1 C.B. 206; *see also* Rev. Proc. 56-12, § 2.02(d), 1956-1 C.B. 1029 (procedure to apply for determination of qualified status of "master trust" under a pooled fund arrangement, where "individual trusts under separate plans pool[] their funds for investment purposes through a master trust").

[71] Rev. Rul. 2011-1, 2011-2 I.R.B. 256; *but see* G.C.M. 39873 (Apr. 15, 1992) (participation by voluntary employees' beneficiary association will disqualify the group trust). *See also* H.R. Conf. Rep. 93-1280 at 337-38 (1974) (ERISA conference committee directs IRS to allow IRAs to participate in group trusts).

exemptions under the federal securities laws.[72] The authorization for national banks to operate collective investment funds is closely coordinated with their special treatment under federal tax and securities laws.[73]

A pooled separate account (PSA) is a collective investment fund like a CCT, but one that is managed by a state-regulated insurance company.[74] The PSA was developed in the 1960s to allow insurance companies to offer an investment vehicle for pension plan assets that would not be subject to the stringent investment constraints (particularly limits on holding common stock) imposed by state insurance laws and could provide a higher return than the insurer's general asset account.[75] The insurance company does not guarantee preservation of principal or a minimum investment return on funds invested in a PSA; plans that participate in the PSA are credited with units representing a proportionate share of the assets in the separate account and are entitled upon withdrawing funds to a redemption payment that reflects the investment return and market value of the account assets. To offer a competitive pension investment alternative, PSA income must escape tax at the insurance company level. Under the special tax regime applicable to life insurance companies, gains and losses on assets held in the separate account are

[72] 15 U.S.C. §§ 77c(a)(2) (registration exemption under the Securities Act of 1933), 78c(a)(12)(A)(iii), (iv) (common trust fund an exempted security under Securities Exchange Act of 1934), 78c(a)(12)(A)(iv) (same for group pension trust), 80a-3(c)(3) (exemption under the Investment Company Act of 1940, provided that interests in the fund are not advertised or offered for sale to the general public), 80a-3(c)(11) (exemption under the Investment Company Act of 1940 for bank-maintained common trust funds consisting solely of assets of qualified plans or certain government or church plans) (2006). *See generally* 1 TAMAR FRANKEL & ANN TAYLOR SCHWING, THE REGULATION OF MONEY MANAGERS § 6.06[B] & [C] (2d ed. 2001).

[73] *Compare* 12 C.F.R. § 9.18(b)(7) ("A bank may not advertise or publicize any fund authorized under paragraph (a)(1) of this section, except in connection with the advertisement of the general fiduciary services of the bank.") *with* 15 U.S.C. § 80a-3(c)(3) (exemption under the Investment Company Act of 1940, provided that interests in the fund are not advertised or offered for sale to the general public) (2006). Indeed, an earlier version of the national bank regulation authorizing collective investment of fiduciary funds explained:

> The purpose of this section is to permit the use of Common Trust Funds, as defined in section 584 of the Internal Revenue Code, for the investment of funds held for true fiduciary purposes; and the operation of such Common Trust Funds as investment trusts for other than strictly fiduciary purposes is hereby prohibited. No bank administering a common trust fund shall issue any document evidencing a direct or indirect interest in such common trust fund in any form which purports to be negotiable or assignable. The trust investment committee of a bank operating a Common Trust Fund shall not permit any funds of any trust to be invested in a Common Trust Fund if it has reason to believe that such trust was not created or is not being used for bona fide fiduciary purposes. A bank administering a Common Trust Fund shall not, in soliciting business or otherwise, publish or make representations which are inconsistent with this paragraph or the other provisions of this part and, subject to the applicable requirements of the laws of any State, shall not advertise or publicize the earnings realized on any Common Trust Fund or the value of the assets thereof.

12 C.F.R. § 206.17(a)(3) (1959).

[74] 29 C.F.R. § 2520.103-4(a), (b). Insurance company separate account assets are classified as plan assets under ERISA. 29 C.F.R. § 2510.3-101(h)(1)(iii).

[75] *See generally* FRANKEL & SCHWING, *supra* note 72, at § 5.06[A].

not taxed.[76] Similarly, income produced by PSA investments (dividends, interest, rents, etc.), to the extent credited to the account, is not taxed as income of the insurance company.[77] PSAs may also qualify for certain exemptions under the federal securities laws.[78] A PSA may hold funds from plans maintained by *unrelated* employers, but to qualify for the securities law exemptions participation must be limited to qualified pension, profit-sharing, or annuity plans, and certain governmental retirement plans.[79] Hence, welfare plan involvement would trigger loss of the securities law exemptions. Observe that the requirement that all plans participating in a master trust must be sponsored by a single employer or related group of employers means that an MTIA may invest in a CCT or PSA, but not vice versa.[80]

Both CCTs and PSAs predate ERISA, and Congress anticipated that many employee benefit plans would turn to them for investment services. The statute provides that if some or all of the assets of a plan are held in a CCT or PSA, then the investor-plan's annual report "shall include the most recent annual statement of assets and liabilities" of the CCT or PSA, but it allows the Labor Department, by regulation, to dispense with plan filing "if such statement or other information is filed with the Secretary by the bank or insurance carrier which maintains the common or collective trust or separate account."[81] A CCT or PSA may or may not be a DFE. (This is in contrast to an MTIA, which is an obligatory DFE.) If a CCT or PSA files its own Form 5500 accompanied by Schedule D, to identify the participating plans, and Schedule H, reporting financial information for the CCT and PSA, then the investment fund is a DFE and each investor-plan need only identify the DFE and report the current value of and net investment

[76] I.R.C. §§ 817(b) (basis of assets in variable contract segregated asset account increased or decreased by any appreciation or diminution in value), (d), (e) (pension plan contracts treated as variable contract), 818(a) (pension plan contract includes contracts with qualified pension, profit-sharing, stock bonus and annuity plans, § 403(b) plans, IRAs, governmental plans qualified under § 401(a), and eligible deferred compensation plans under §457(b)); *see* Priv. Ltr. Rul. 9230023 (Apr. 29, 1992) (PSA qualifies as variable contract under § 817(d)). *See also* I.R.C. § 817(a) (separate account asset appreciation excluded from increase in reserves, thereby preventing insurer from claiming deduction under § 807(b) for an amount not included in gross income); RICHARD S. ANTES ET AL., FEDERAL INCOME TAXATION OF LIFE INSURANCE COMPANIES § 17.05[3] (2011).

[77] *See* I.R.C. §§ 801(d)(1), (e)(1)(B), 818(a) (deductible reserves for pension plan contract set by reference to balance in the policyholder's fund).

[78] 15 U.S.C. §§ 77c(a)(2) (registration exemption under the Securities Act of 1933 for contract issued by insurance company in connection with qualified pension, profit-sharing, stock bonus or annuity plan, as well as certain governmental and church plans), 78c(a)(12)(A)(iv), (a)(12)(C) (exempted security under Securities Exchange Act of 1934), 80a-3(c)(11) (exemption under the Investment Company Act of 1940) (2006). FRANKEL & SCHWING, *supra* note 72, at §§ 5.06, 6.06[G]. Observe that the exemptions under the 1933 and 1934 Acts do not apply to contracts issued in connection with a plan covering one or more owners of an unincorporated business (a so-called Keogh or H.R. 10 plan). *See* H.R. Rep. No. 91-1382, at 44 (1970) (Keogh plans not exempted "because of their fairly complex nature as an equity investment and because of the likelihood that they could be sold to self-employed persons, unsophisticated in the securities field").

[79] 15 U.S.C. §§ 80a-3(c)(11), -2(37), 77c(a)(2)(C) (2006) (exemption under the Investment Company Act of 1940 restricted to insurance company separate accounts the assets of which are "derived solely from" qualified pension, profit-sharing, or annuity plans, or certain governmental plans).

[80] *See* 2008 Instructions to Form 5500, *supra* note 58, at 11 (Form 5500 for MTIA must include "Schedule D, to list CCTs, PSAs, and 103-12 IEs in which the MTIA invested at any time during the MTIA year and to list all plans that participated in the MTIA during its year").

[81] ERISA § 103(b)(3)(G), (b)(4), 29 U.S.C. § 1023(b)(3)(G), (b)(4) (2006).

gain or loss relating to the plan's interest in the CCT or PSA.[82] If the CCT or PSA does not file as a DFE (and so does not submit Schedules D and H), then an investor-plan must report with its financial information (Schedule H for a large plan) "the current value of the plan's allocable portion of the underlying assets and liabilities of the [CCT or PSA] and the net investment gain or loss relating to the units of participation [held by the plan in the CCT or PSA]" along with identifying information relating to the CCT or PSA.[83]

The remaining variety of DFE that may be utilized by pension plans is known as a "103-12 Investment Entity" (or 103-12 IE), after the number of the Labor Department regulation that authorizes separate filing. This reporting option is available to any investment vehicle other than a CCT or PSA, regardless of the entity's form of organization (joint venture, partnership, limited liability company, etc.), if the entity holds plan assets of two or more plans that are not members of a related group of employee benefit plans.[84] The definition of plan assets provides that significant equity ownership of an investment entity by employee benefit plans causes the underlying assets of the entity to be classified as plan assets, making any person who exercises authority or control respecting the management or disposition of such underlying assets a fiduciary of the investor-plans.[85] This look-through rule is triggered where aggregate ownership by employee benefit plans constitutes 25 percent or more of any class of equity interests in the entity, but DFE filing as a 103-12 IE requires two or more unrelated plans to be equity owners. If such a look-through investment vehicle does not file as a DFE, then an investor-plan must include on its annual report financial information relating to the plan's allocable share of the underlying investments and transactions of the entity.[86]

Each of these four types of DFE (MTIA, CCT, PSA, and 103-12 IE) can be utilized by either large (100 or more participants) or small (less than 100 participants) pension plans. They can each also be used as indirect investment vehicles by funded welfare plans. In practice, however, welfare plan utilization seems to be quite limited. A DFE is required to identify each plan that participates in it at any time during the DFE's reporting year on Part II of Schedule D.[87] That identification calls for a report of the employer identification number (EIN) and plan number (PN) of each investor-plan. For each DFE included in our study that had non-zero assets

[82] 29 C.F.R. §§ 2520.103-9 (DFE treatment conditioned upon bank or insurance company that maintains the CCT or PSA filing completed Form 5500 and required schedules; administrator of investor-plan must also supply the plan number, and the name and employer identification number of plan sponsor, to the bank or insurer to enable identification of the plan on the return filed for the CCT or PSA (see Schedule D Part II)), -3(c)(1) (CCT), -4(c)(1) (PSA).

[83] 29 C.F.R. §§ 2520.103-3(c)(2) (CCT), -4(c)(2) (PSA); *see supra* note 58 and accompanying text. The sponsoring financial intermediary is required to transmit to the administrator of each investor-plan a certified annual statement of assets and liabilities of the CCT or PSA and the value of the plan's units of participation, and must also state whether or not the CCT or PSA will file as a DFE. ERISA § 103(a)(2), 29 U.S.C. § 1023(a)(2) (statutory information-forcing authority); 29 C.F.R. § 2520.103-5(c)(1)(ii), (iii) (PSA), -5(c)(2)(i), (ii) (CCT).

[84] 29 C.F.R. § 2520.103-12(c), (e). For participating plans to obtain the full benefit of tax-free accumulation, it is important that the investment entity not be subject to the corporate income tax. Consequently, 103-12 IEs are ordinarily organized in a form that qualifies for conduit tax treatment as a partnership (or conceivably, as an S corporation). I.R.C. §§ 701, 1363(a); Treas. Reg. § 301.7701-3(a).

[85] 29 C.F.R. §§ 2520.103-12(c) (definition of 103-12 Investment Entity), 2510.3-101 (plan asset definition). *See supra* notes 54-58 and accompanying text.

[86] *See* 29 C.F.R. § 2520.103-12(a); *supra* text accompanying note 58.

[87] 2008 Instructions for Schedule D, *in* 2008 Instructions to Form 5500, *supra* note 58, at 25.

at the close of the DFE's year we tried to match reported investor-plan identifiers to a 2008 Form 5500 filing by the investor-plan, and where a match was found we recorded whether the investor was a large pension plan, small pension plan, welfare plan, another DFE, or an investor of unidentified type. From the summary results reported in Table 1 it is readily seen that very few welfare plans are identified as investors in any of the four DFE types. It is also apparent that DFEs — especially CCTs and PSAs — report a very large number of investors on Schedule D, Part II, that could not be associated with the EIN and PN of a pension or welfare plan that filed a Form 5500. While the explanation for this phenomenon is not clear, it seems likely that some of these unidentified investors are single-participant plans that are not required to file Form 5500 with the Labor Department, instead filing Form 5500-EZ with the IRS.[88]

Table 1: Summary of Reported DFE Investors by DFE Type, 2008

DFE Type	No. DFEs (non-zero)	Total No. Reported Investors	Identified Investors					Unidentified Investors
			Pension Plans	Large Pension Plans	Welfare Plans	DFEs	Unknown Type	
MTIA	1,485	5,316	4,548	3,525	315	36	9	408
CCT	2,877	93,510	55,885	28,139	380	2,907	92	34,246
PSA	1,819	1,051,556	818,938	174,904	387	124	1,936	230,171
103-12 IE	402	6,698	3,612	2,096	147	325	9	2,605

In addition to DFEs, ERISA allows a plan to invest in a registered investment company (including, most commonly, mutual funds), or in the general account of an insurance company, without treating the underlying assets of the fund or account as plan assets.[89] As a result, the look-through rule does not apply, and the investor-plan is not obligated to report its share of the assets, liabilities, or investment results of the mutual fund or insurance company. Moreover, because a mutual fund is subject to regular financial disclosure under federal securities laws,

[88] Alternatively, the unidentified investors might be plans that were misidentified on the DFE's Schedule D (incorrect EINPN supplied), or they might be plans that failed to file Form 5500 in 2008. Indeed, perhaps these mystery investors are not employee benefits plans at all — maybe the bank or insurance company might simply list the EIN of all entities that invest in the CCT or PSA without regard to whether they are pension or welfare plans.

For the exemption from filing Form 5500 for one-participant plans, see 2008 Instructions to Form 5500, *supra* note 58, at 3.

[89] ERISA § 401(b)(1), 29 U.S.C. § 1101(b)(1) (2006) (mutual fund assets not deemed plan assets); 29 C.F.R. § 2520.3-101(a)(2), -101(h)(1) (look-through rule inapplicable to security issued by investment company registered under the Investment Company Act of 1940). Insurance company assets are statutorily exempt from the look-through rule only if the plan's policy or contract with the insurance company provides for benefits the amount of which is guaranteed by the insurer. ERISA § 401(b)(2), 29 U.S.C. § 1101(b)(2) (2006). The scope of this guaranteed benefit policy exception was uncertain until the Supreme Court gave it an expansive reading in *John Hancock Mut. Life Ins. Co. v. Harris Trust & Sav. Bank*, 510 U.S. 86 (1993). The insurance industry reacted with alarm to the decision in *Harris Trust*, seeking protection from ERISA fiduciary obligations. Congress responded by providing a safe harbor for policies issued to an employee benefit plan that are supported by the assets of the insurer's general account, but that safe harbor applies only to policies issued before 1999. ERISA § 401(c), 29 U.S.C. § 1101(c) (2006); 29 C.F.R. § 25520.401c-1. *See* 29 C.F.R. § 2510.3-101(h)(2) (look-through rule does not apply to plan's interest in an insurance company, apparently including an equity interest obtained by virtue of being a policyholder in a mutual insurance company).

while an insurance company is subject to state regulation and periodic examination, the mutual fund or insurance company is not — unlike investment vehicles that are DFEs — obligated to file an annual report under ERISA.[90]

D. Pension Plan Utilization of Indirect Investment Vehicles

To what extent do private pension plans utilize these types of indirect investment vehicles? Figure 1 shows the aggregate results for large (100 or more participants at the start of the plan year) defined benefit (DB) plans in 2010, and Figure 2 gives the comparable overview for large defined contribution (DC) plans of all types.

In 2010 almost half (49.4%) of DB plan assets consist of MTIA interests, while the second-largest DB asset category consists of interests in another type of DFE¸ investments in CCTs (11.7%). Shares of registered investment companies (mutual funds) are the fourth-largest asset class (7.3%), while large DB plans invested very little through insurance companies (1.4% in pooled separate accounts and only 0.6% in general accounts), or 103-12 investment entities (1.8%).

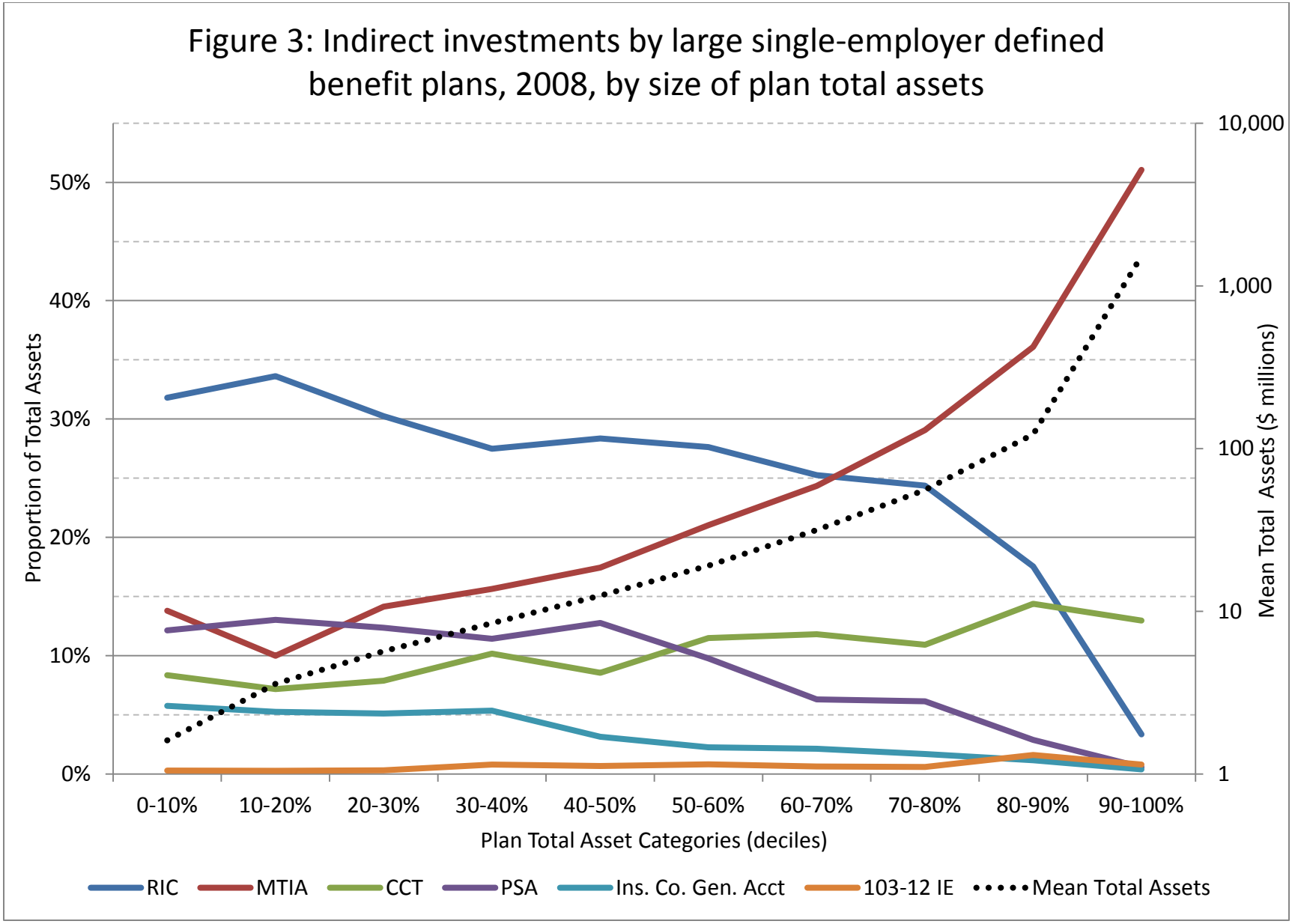
The composite asset allocation picture is quite different for large DC pension plans (Figure 2). Here the largest single asset category is mutual fund shares (42.1% in 2010), followed in second place by interests in MTIAs (20.4%). The third largest asset category consists of CCT interests (9.9%), while stakes in PSAs come in sixth (3.5%). Insurance company general account assets are significant for large DC plans (4.4%), while 103-12 investment entities contribute a miniscule fraction of average holdings (less than 0.1%).

A more nuanced picture emerges if private pension plans are subdivided into categories based on the size of each plan's total assets. Ranked by asset size, there is tremendous variability in "large plans" (meaning 100 or more participants). Figure 3 [insert next page] shows the utilization of six indirect investment vehicles by large DB plans in 2008, grouping the plans into 10 categories (deciles) according to the size of their total assets. There are 1,053 plans in each decile (because there were 10,532 large DB plans in 2008 that reported non-zero assets), but average total plan assets in each decile increases from only $1.56 million in the lowest decile, to $149 million in the second-highest category, rocketing to $1.57 billion in the top decile. (Note that the dotted line showing mean total assets is plotted against a logarithmic scale on the secondary vertical axis.) MTIA shares grow rapidly in the highest asset categories (top three deciles); the dominance of master trusts is clearly attributable to the investment technique of a few hundred plans with huge portfolios. CCT usage grows slowly but steadily with plan asset size, roughly doubling (from about 7% to 14%) between plans having the smallest and the largest amounts of investment assets. Conversely, reliance on mutual funds drops dramatically in the upper asset ranges, while use of insurers as financial intermediaries, whether through a pooled separate account or via investment in the insurance company's general account, steadily declines in the upper half of the asset spectrum.

[90] Although it does not file Form 5500, an insurance company that provides funds from its general account for the payment of benefits is obligated to provide information to the plan administrator that is needed to prepare the plan's annual report and schedules, 29 C.F.R. § 2520.103-5(b)(1), (c)(1)(i).

Figure 4 presents the corresponding picture for large DC plans (of all types) in 2008. There are 7,002 plans in each decile (because there were 70,020 large DC plans in 2008 that reported non-zero assets), and average total plan assets in each decile increases from only $320,000 in the lowest decile, to $255 million in the top decile. (Again in Figure 4 the dotted line showing mean total assets is plotted against a logarithmic scale on the secondary vertical axis.) Interestingly, MTIA utilization is insignificant except in the very largest DC plans: it jumps from almost nothing to 25 percent of total assets between the second-highest and the highest asset classes (9^{th} and 10^{th} deciles). While mutual funds investments dominate all DC plan asset ranges, their share falls sharply (from 53% to 33%) at the very top (between the 9^{th} and 10^{th} deciles). As with DB plans, usage of CCTs increases steadily with plan asset size, while PSA usage declines over the upper asset ranges. Unlike the DB pattern, investments in insurance company general accounts do not appear to be inversely related to a DC plan's total assets.

Figure 3: Indirect investments by large single-employer defined benefit plans, 2008, by size of plan total assets



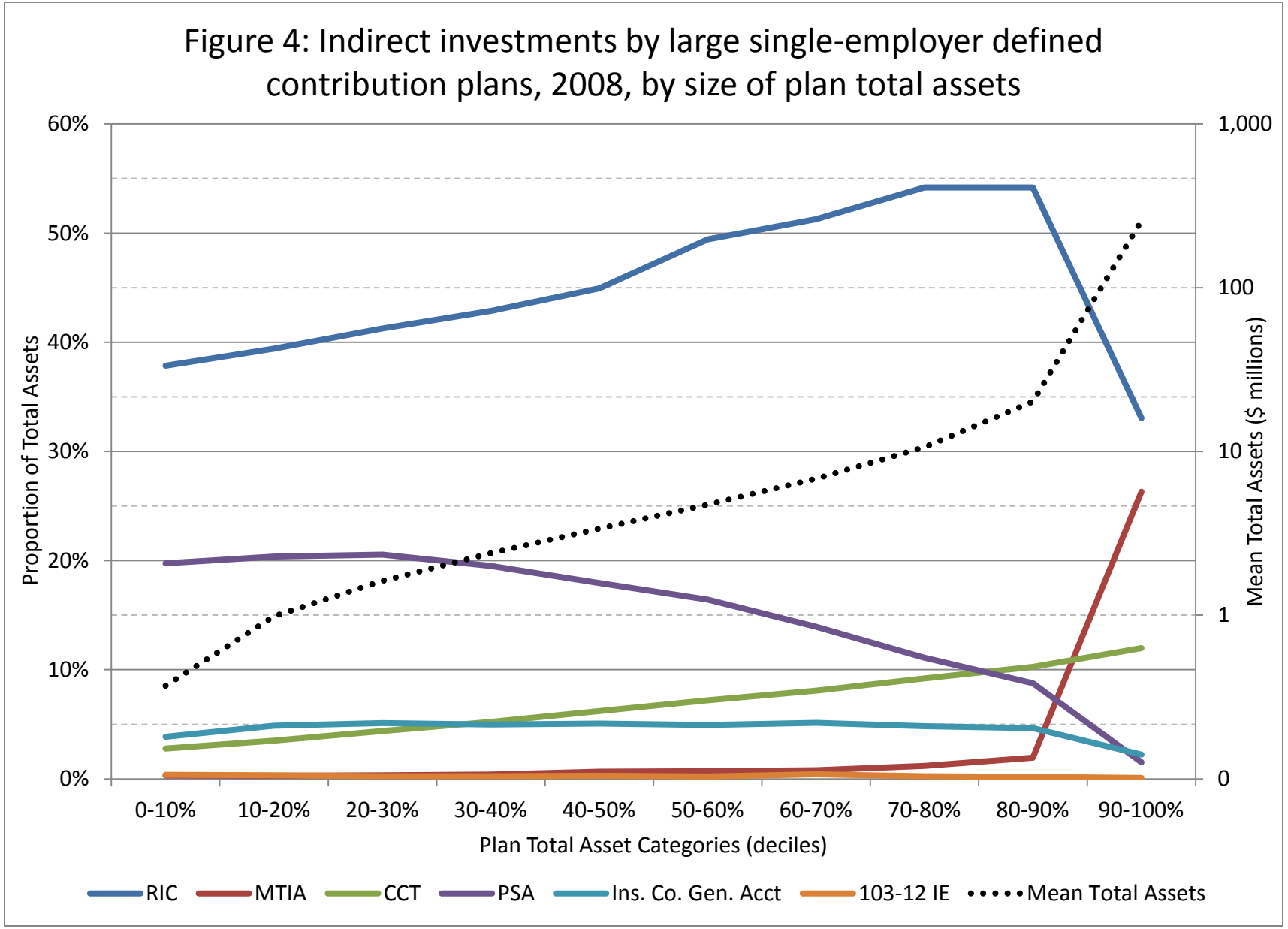


Figure 4: Indirect investments by large single-employer defined contribution plans, 2008, by size of plan total assets
60%
50%
40%
30%
20%
10%
0%
Proportion of Total Assets
1,000
100
10
1
0
Mean Total Assets ($ millions)
0-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Plan Total Asset Categories (deciles)
RIC
MTIA
CCT
PSA
Ins. Co. Gen. Acct
103-12 IE
Mean Total Assets

The indirect investment vehicle utilization patterns presented in Figures 3 and 4 (for DB and DC plans, respectively) exhibit some noteworthy relationships that suggest a number of preliminary hypotheses. Beginning with the DB data, observe the striking inverse relation between registered investment company (mutual fund) and MTIA investments at all asset levels. The sum of RIC and MTIA investments remains nearly constant, lying between 45 and 50 percent over all deciles of plan total assets, and so the curves are almost mirror image reflections about a horizontal line drawn at the 25% portfolio share. This inverse relationship seems to imply that MTIAs and RICs operate as functional substitutes for DB plans, with investment through master trusts becoming more attractive and mutual funds correspondingly less desirable as the size of a plan's total assets increases. Two explanations for such a shift to MTIAs as plan assets increase seem plausible. First, maintaining a master trust may entail high fixed costs so that MTIAs provide a lower expense ratio (higher net return) than mutual funds only where there is a fairly high level of assets under management. Alternatively, mutual funds might limit the size of pension plan investments out of concern that the fund could suffer liquidity and stability problems should an investor-plan demand redemption of a large stake in the fund on short notice.[91] The DC data (Figure 4) show the same dramatic inverse relationship between RIC and MTIA investments among high-asset plans (note the sharp countervailing bends in the curves between the ninth and tenth deciles).

Low-asset DB plans make some significant use of insurance companies as a financial intermediaries — either through a separate account investment (PSA) or a guaranteed interest in an insurer's general account — but reliance on insurance steadily declines as the level of plan assets increases. Insurance, and in particular PSA investment, is markedly more important to DC plans than to DB plans. Also unlike DB plans, DC plan utilization of insurers' general accounts remains fairly steady rather than markedly declining with increases in total plan assets. The allocation of a constant proportion of the portfolio to general account investments, regardless of DC plan asset level, might be explained by the popularity of guaranteed investment contracts (GICs), which are commonly offered as a stable value fund investment option under now-ubiquitous participant-directed 401(k) plan designs.[92]

The utilization of 103-12 IEs by either DB or DC plans is very limited. That observation might indicate that pension plans make realty and other investments through partnerships in which plan holdings are kept below 25 percent, thereby avoiding characterization of the partnership's property as plan assets.[93]

The broad categories of defined benefit and defined contribution plans mask large variations in plan characteristics. Defined contribution plan, for example, is defined by reference to whether benefits are based solely on the amount of contributions credited to an individual

[91] Generally, a mutual fund (open-end investment company) must redeem its securities within seven days of tender. 15 U.S.C. § 80a-22(e); FRANKEL & SCHWING, *supra* note 72, at §§ 5.08[C][2], 26.01.

[92] *See* DAN M. MCGILL ET AL., FUNDAMENTAL OF PRIVATE PENSIONS 693 (9th ed., 2010).

[93] In 2008, the portion of single-employer DB plan assets reported as "Partnership/joint venture interests" increases with the overall level of plan assets, from an average of 0.5% for plans with below-median assets to 3.5% of total assets for the ten percent of plans having the highest total assets. In contrast, single-employer DC plans held hardly any partnership interests in 2008 (less than 0.1% on average), regardless of plan asset size. (Throughout this study any plan reporting no year-end assets is excluded from consideration, so plan asset size categories are determined without reference to the number of such zero-asset plans.)

account maintained on behalf of the employee, plus any income, expenses, gains, losses, and forfeitures (of the accounts of other participants, if applicable) which may be allocated to the account.[94] DC plans are classified into a number of subsidiary types, according to the method of determining contributions and (sometimes) the nature of plan investments. The most common variety of DC plan today is the 401(k) plan, under which employee-participants may elect to contribute a portion of their wages or salary to the company's retirement savings program on a pre-tax basis, rather than receiving it as current (taxable) cash compensation; the employer typically contributes as well, either by matching all or part of the employee's elective deferral or by making non-elective contributions (i.e., contributions to all workers eligible to participate, regardless of whether or how much each chooses to defer). In contrast, under a money purchase pension plan (MPPP) the employer promises to make specified annual contributions to each participant's account in an amount that is commonly set as a percentage of the employee's current compensation (and which is independent of firm profits). Are these different DC plan types associated with significant differences in a plan's utilization of indirect investment vehicles?

Figure 5 presents the results for large 401(k) plans in 2008. The pattern is extremely similar to Figure 4, the composite picture for all DC plans. That result is not surprising, because in recent years the DC plan universe has come to be dominated by 401(k) plans. By 2008 about 75 percent of all DC plans were of the 401(k) type, and the proportion of active participants was about the same (see Figures 8 and 9). The authors also computed utilization rates of the same six types of independent investment vehicles by large profit-sharing plans and by large DC plans which allow participants to direct the investment of their accounts (not shown). In each case the results are essentially identical to the 401(k) plan results. The 401(k) elective contribution feature is usually a component of a profit-sharing plan, and over the last 15 years most 401(k) plans sponsored by large companies have been amended to give participants control over the investment of their accounts, typically by allowing them to select among a menu of mutual fund investment options that offer a broad range of risk and return characteristics. Accordingly, the connection between 401(k) elective contribution features, profit-sharing plans, and participant-directed investments is so tight that one would expect the common pattern of utilization of indirect investment vehicles that is actually observed.

The money purchase plans is a different creature entirely. Figure 6 shows the extent of reliance on indirect investment vehicles by large MPPPs in 2008. Here the pattern is subtly but noticeably different. As with DC plans overall (compare Figure 4), hefty reliance on mutual funds is the norm, and with a dramatic drop in the top decile. Mutual fund usage by MPPPs — unlike DC plans in general or 401(k) plans — actually falls below master trust investments for plans in the largest-asset category. Most significant is the surprisingly large reliance of MPPPs on insurance company general account investments (in all asset ranges except the top decile),

[94] ERISA § 3(34), 29 U.S.C. § 1002(34) (2006); *accord* I.R.C. § 414(i) (2006). A defined benefit plan is a pension plan that is not a defined contribution plan. ERISA § 3(35), 29 U.S.C. § 1002(35) (2006); *accord* I.R.C. § 414(j) (2006). Under a traditional DB plan, the employer promises a specified level of benefit payments (typically paid in the form of a life annuity) to provide support commencing on retirement, and the contributions necessary to fund the promised benefits are determined actuarially. The plan sponsor's commitment, therefore, is fixed by reference to contributions (money going in) in the case of a defined contribution plan, and is fixed by reference to benefit distributions (money going out) in the case of a defined benefit plan.

giving insurer-intermediaries an importance in this sector of the pension plan universe that they do not have elsewhere. Money purchase plans are a dying breed, apparently as a result of changes in the limits on deductibility of contributions enacted in 2001, which eliminated employers' incentive to offer a MPPP in addition to a 401(k) or other profit-sharing plan.[95] (See Figure 8.) As the rapid demise of the MPPP overlaps the period of the EFAST filing system, the authors also looked for changes in the utilization of indirect investment vehicles by large MPPPs between 2000 and 2008. Although 4,135 large MPPPs filed returns reporting non-zero assets in 2000, compared to only 2,289 in 2008, the utilization pattern of indirect investment vehicles in 2000 (not shown), is very similar to Figure 6.

The cash balance plan is a DB subtype that is often referred to as a hybrid plan because the promised benefit is a lump sum payment based on a specified percentage of the participant's annual compensation (pay credits) augmented by an assumed rate of return (interest credits), and so mimics the yield of a DC plan (specifically, a MPPP). In contrast, most DB plans — often referred to as "traditional" pension plans — promise benefits in the form of a life annuity, the amount of which is specified by a formula that typically takes into account some measure of the worker's average compensation and length of service. The resemblance between cash balance and MPPPs raises the question whether cash balance plan utilization of indirect investment vehicles is more like the pattern for DB plans or MPPPs. Figure 7 displays the answer. Perhaps surprisingly, in the aggregate cash balance plan indirect investments are quite similar to DB plans generally (compare Figure 3), and notably dissimilar to the MPPP pattern (Figure 6).[96]

[95] *See* WIEDENBECK, *supra* note 22, at 349-51.

[96] *See infra* notes 143-145, Figure 15, and accompanying text.

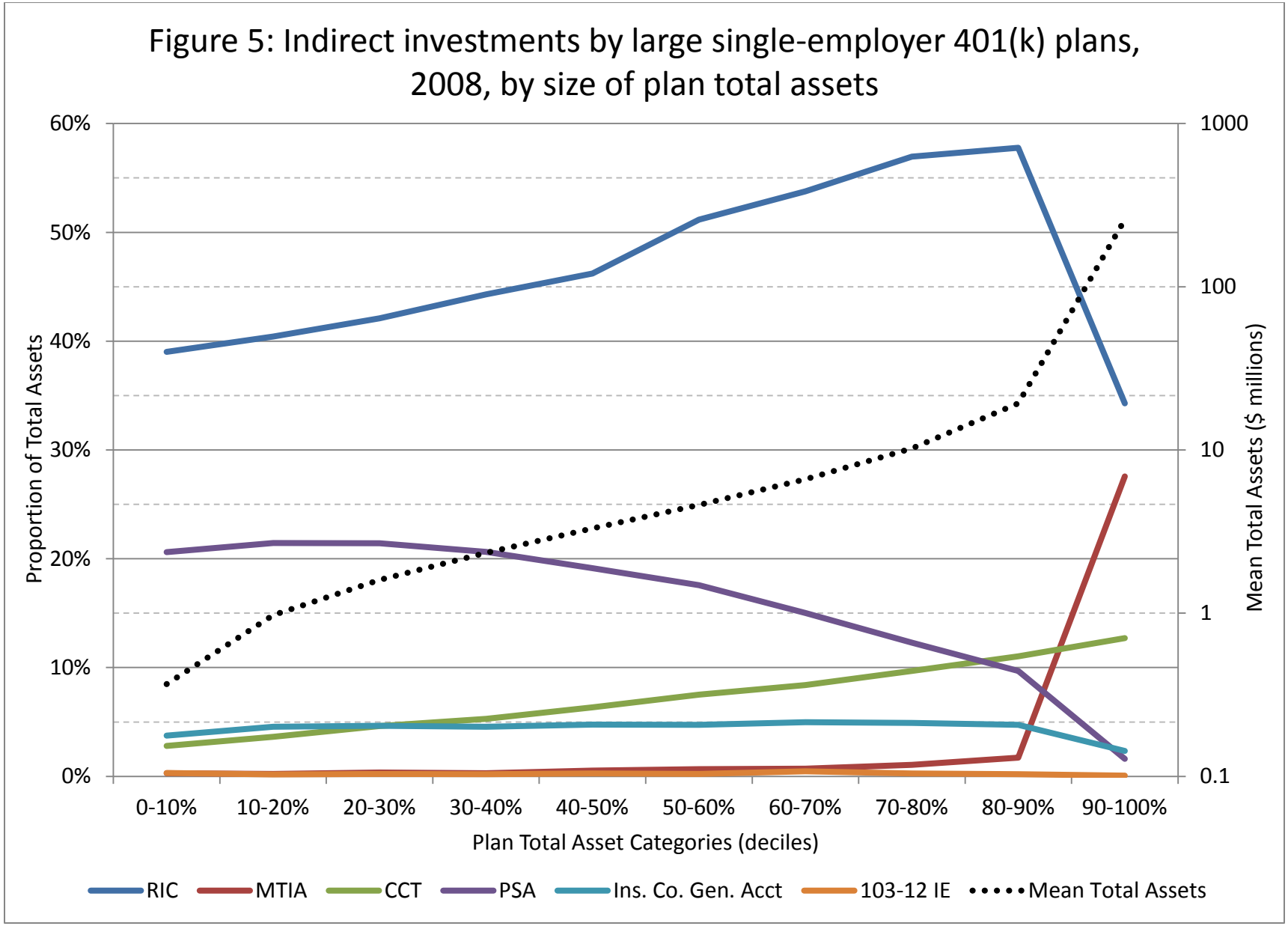


Figure 5: Indirect investments by large single-employer 401(k) plans, 2008, by size of plan total assets
60%
50%
40%
30%
20%
10%
0%
Proportion of Total Assets
1000
100
10
1
0.1
Mean Total Assets ($ millions)
0-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Plan Total Asset Categories (deciles)
RIC
MTIA
CCT
PSA
Ins. Co. Gen. Acct
103-12 IE
Mean Total Assets

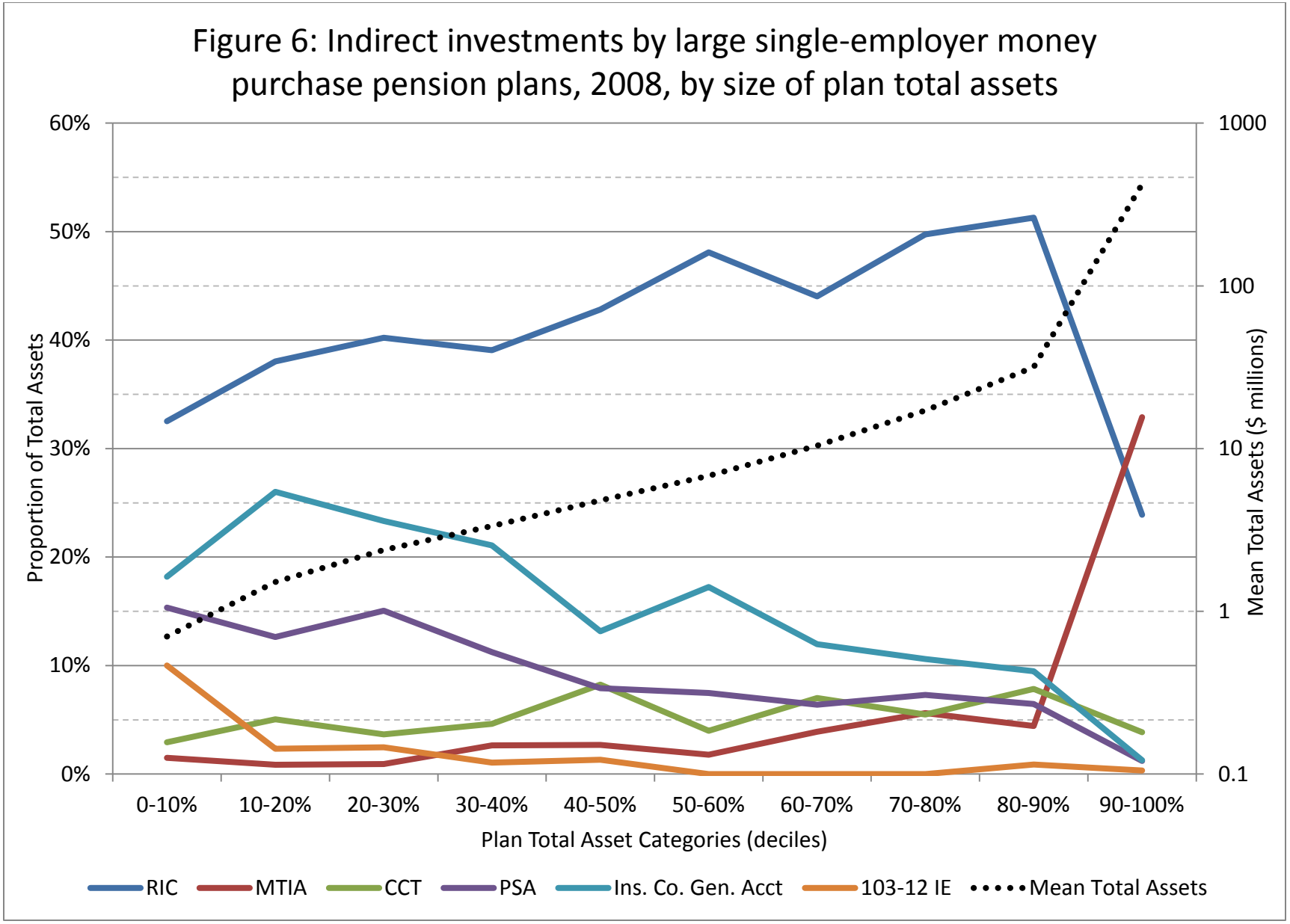


Figure 6: Indirect investments by large single-employer money purchase pension plans, 2008, by size of plan total assets
60%
50%
40%
30%
20%
10%
0%
Proportion of Total Assets
1000
100
10
1
0.1
Mean Total Assets ($ millions)
0-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Plan Total Asset Categories (deciles)
RIC
MTIA
CCT
PSA
Ins. Co. Gen. Acct
103-12 IE
Mean Total Assets

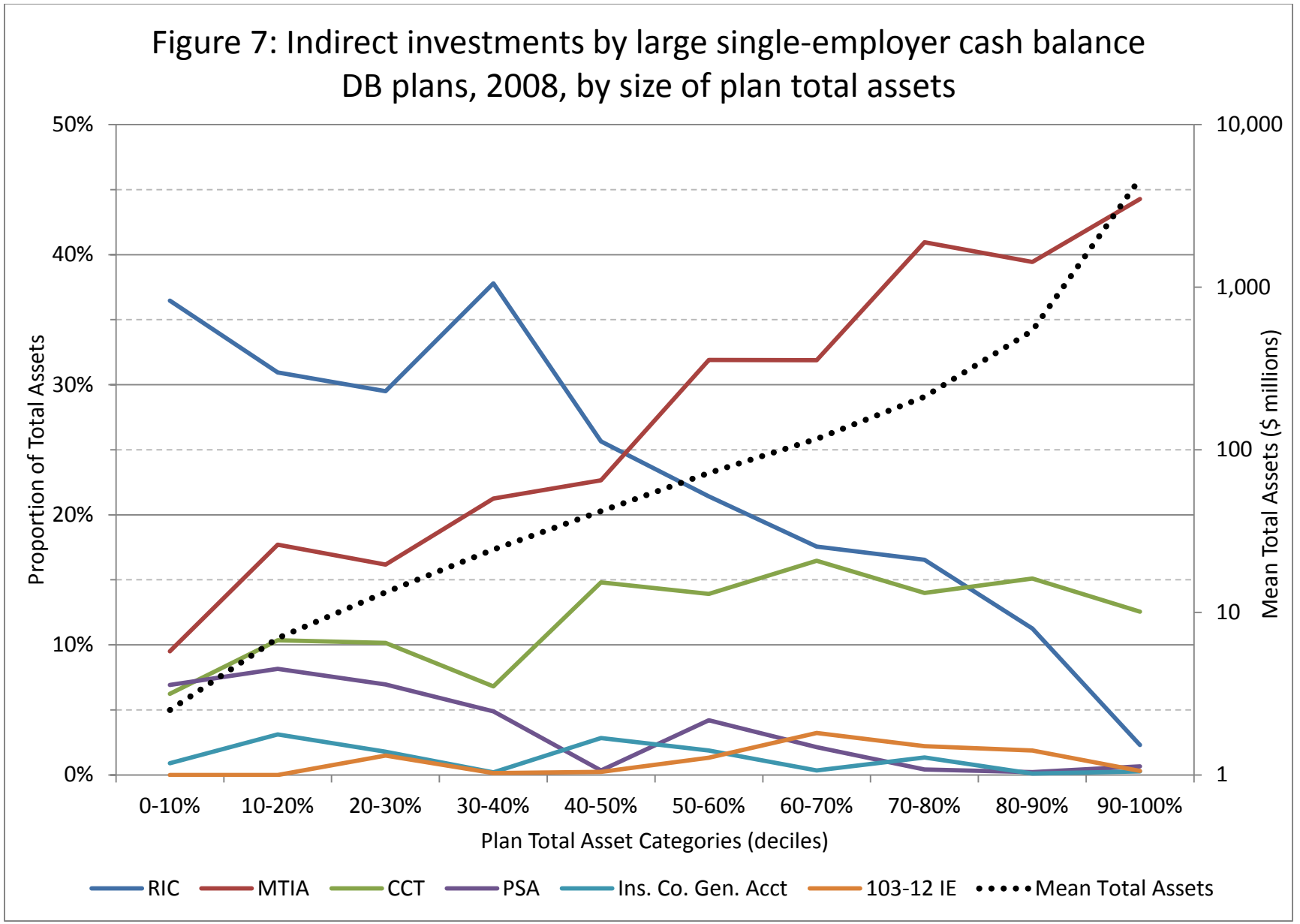


Figure 7: Indirect investments by large single-employer cash balance DB plans, 2008, by size of plan total assets
50%
40%
30%
20%
10%
0%
Proportion of Total Assets
10,000
1,000
100
10
1
Mean Total Assets ($ millions)
0-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Plan Total Asset Categories (deciles)
RIC
MTIA
CCT
PSA
Ins. Co. Gen. Acct
103-12 IE
Mean Total Assets

Figure 8: Number of private pension plans:
DB, DC, 401(k) & MPPP, 1975-2008

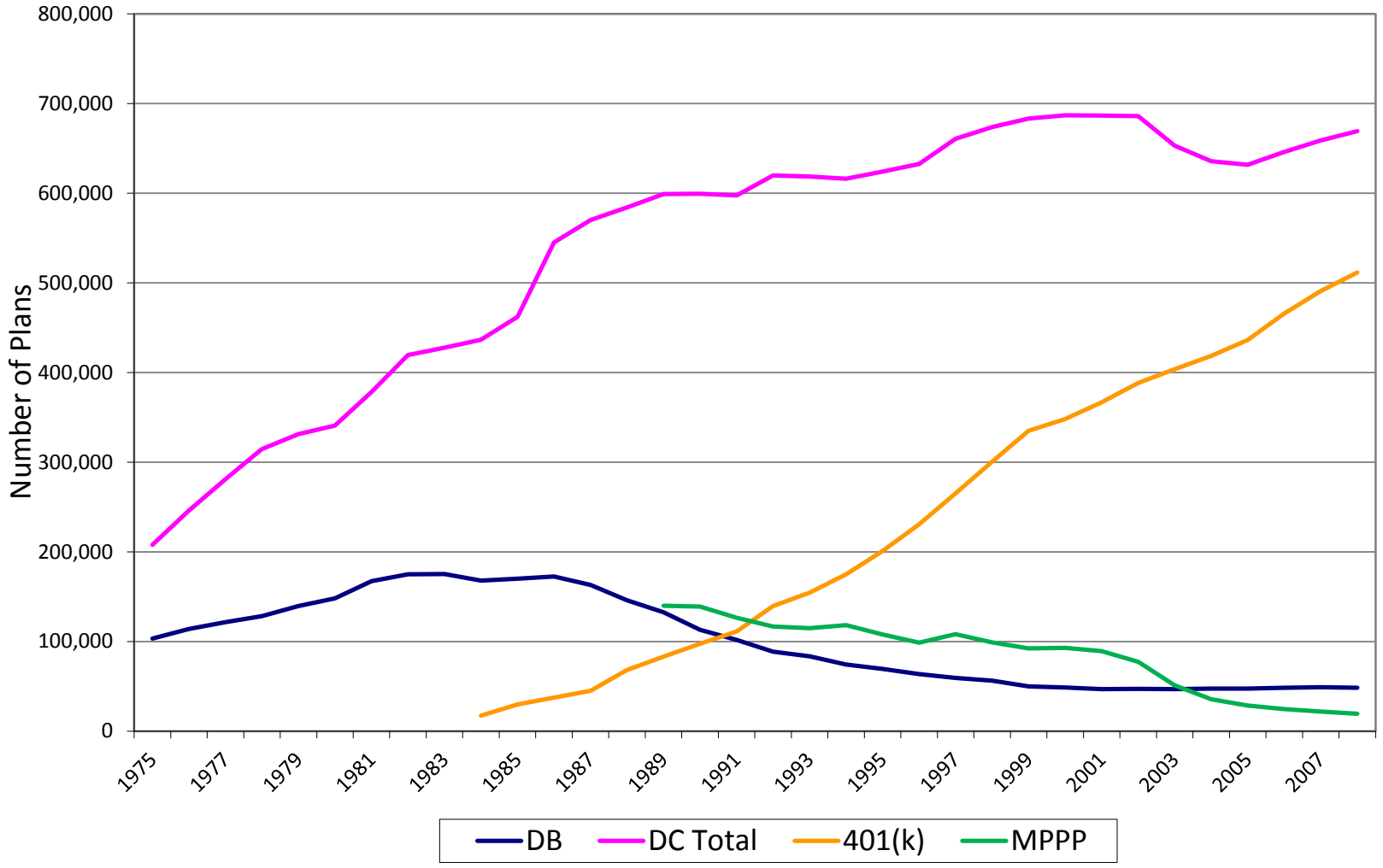
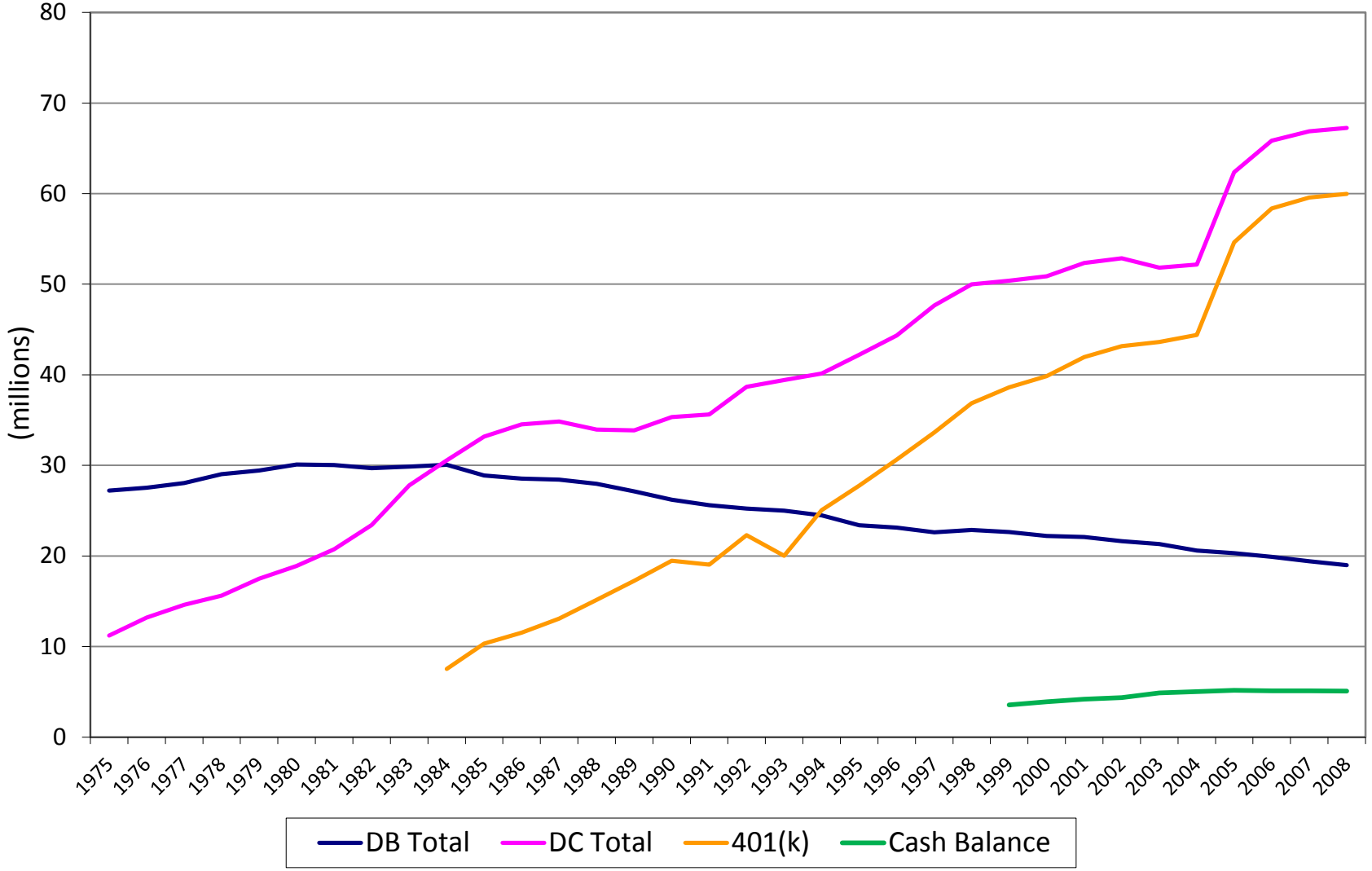


Figure 9: Number of active private pension plan participants: DB, DC, 401(k), and cash balance, 1975-2008



E. DFE Asset Holdings

Having investigated the general patterns of pension plan utilization of indirect investment vehicles, we now briefly review the general patterns of investment allocation by DFEs themselves. Aggregate descriptive statistics concerning asset holdings of the four types of DFEs were compiled by extracting from the DOL's raw data files all annual reports by DFEs.[97] DFE-type codes were used to categorize the filings,[98] and Schedule H balance sheet data for each type of DFE were combined.

A simple comparison of the total net assets held in each type of DFE (i.e., MTIA, CCT, PSA, or 103-12 IE) with the aggregate amounts reported by all large pension plans as the year-end value of interests held in DFEs of the same type reveals some fundamental facts. Virtually all MTIA assets are attributable to large pension plans; small plans (meaning plans with less than 100 participants) do not utilize MTIAs to any significant extent.[99] This fact is consistent with the finding discussed earlier that the utilization of MTIAs by "large" plans increases dramatically with the size of total plan assets (see Figures 3 and 4). The net assets of the other three varieties of DFEs substantially exceed the reported value of large pension plan interests. Large pension plans account for 65 percent of PSA net assets in 2008; the remaining 35 percent is apparently attributable to PSA interests held by small plans or governmental plans.[100] Unlike MTIAs and

[97] *See supra* note 40 and accompanying text. The DOL's edited data, available in the Form 5500 Private Pension Plan Research Files, *see supra* note 42 and accompanying text, do not include DFE filings.

[98] The first question on Form 5500 calls for identification of the type of filing entity. *E.g.*, 2008 Form 5500, Part I, line A(4), at http://www.dol.gov/ebsa/pdf/2008-5500-mp.pdf. If the DFE box is checked the filer is instructed to enter a one-letter code to specify the type of DFE (M = MTIA; C = CCT; P = PSA; E = 103-12 IE). *See* 2008 Instructions to Form 5500, at 15, at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf.

[99] For 2008 the total amount reported by all large pension plans (both DB and DC) as the year-end value of interests in MTIAs was $1.195 trillion, while the total net assets reported by MTIAs (reduced by amounts reported as interests held in other MTIAs to avoid double counting) was $1.150 trillion. The small (<4%) apparent excess of the value of plan interests over the total net asset value of MTIAs is presumably attributable to differences in reporting year or reporting errors. In contrast, the Labor Department's 2008 DFE statistical summary reports the total amount invested by private pension plans in MTIAs as $1.216 trillion, and total MTIA assets of $1.389 trillion. EBSA *supra* note 4, Tables 2, 10. The difference apparently stems from variation in the underlying data sets; in conducting its analysis EBSA seems to have corrected or supplemented the raw filings. *See supra* note 38. To date EBSA has not published its methodology.

[100] For 2008 the total amount reported by all *large* pension plans as the year-end value of interests in PSAs was $109 billion, while the total net assets reported by PSAs (reduced by amounts reported as interests held in other PSAs to avoid double counting) was $167 billion. In contrast, the Labor Department's 2008 DFE statistical summary reports the total amount invested by private pension plans in PSAs was $112 billion, and total PSA assets of $193 billion. EBSA *supra* note 4, Tables 2, 10; *see supra* note 99. Although the Labor Department labels the $112 billion as "private pension plan" assets invested in PSAs, implying that the number includes investments by both large and small plans, other reported data suggests that $112 billion in fact represents only large plan investments. *Compare id.* Table 10 *with id.* Table 12 ($112 billion reported as total original large plan PSA interests).

To avoid regulation as an investment company, PSA participation must be limited to qualified retirement plans and governmental plans. *See supra* note 79. Governmental plans are not subject to ERISA and not required to file annual reports, ERISA §§ 4(b)(1), 3(32), 29 U.S.C. §§ 1003(b)(1), 1002(32), while the simplified financial information reported by small pension plans that is available in digital form (Schedule I) does not break out DFE investments. Therefore, while it seems clear that PSA assets in excess of large plan interests are traceable either to small plans or governmental plans, the data do not allow us to precisely determine their respective contributions. The PSAs in

PSAs, ownership of interests in CCTs and 103-12 IEs is not limited to employee benefit plans.[101] Not surprisingly, therefore, interests held by large pension plans account for only a minority of the net assets of these two types of DFEs: specifically, large plans hold in the aggregate about a 40 percent stake in all CCTs, and only a 12 percent interest in 103-12 IEs.[102] Small plans might own some of the remaining interests, but probably very little, because CCT assets not attributable to large plans greatly exceed the total net assets of all small plans in 2008,[103] while as seen earlier, interests in 103-12 IEs reported by large plans are concentrated in the very highest asset plans (Figures 3 and 4).

Somewhat surprisingly, given the dominance of MTIA investments by large plans (see Figures 1-2), in 2008 the largest number of DFE filings came from CCTs,[104] and CCTs also reported the greatest total assets ($2.13 trillion versus $1.28 trillion held in MTIAs). The higher CCT asset total is apparently attributable to two factors.[105] First, recall that a CCT that is a common trust fund is not restricted to holding assets from qualified plans, but may also contain funds attributable to private trusts, estates, and UGMA custodianships.[106] Second, CCT asset totals seem to be afflicted by substantial double counting, due to the fact (discussed below) that

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our data set reported a total of 1,065,693 investor "plans" on Schedule D, Part II, of which 830,147 could be confidently identified as pension plans, but only 177,118 of those (21%) were large pension plans. *See supra* Table 1, note 88 and accompanying text. This indicates that PSAs are heavily utilized by small pension plans (which is consistent with longstanding experience in the industry), and so it seems likely that the 35% of PSA net assets not accounted for by large plan investments are overwhelmingly attributable to interests owned by small private pension plans.

[101] *See supra* notes 67, 84-86 and accompanying text. MTIA participation is limited to plans of a single employer or of a commonly controlled group of employers.

[102] For 2008 the total amount reported by all large pension plans (both DB and DC) as the year-end value of interests in CCTs was $514 billion, while the total net assets reported by CCTs (reduced by amounts reported as interests held in other CCTs to avoid double counting) was $1.281 trillion. In contrast, the Labor Department's 2008 DFE statistical summary reports the total amount invested by private pension plans in CCTs was $525 billion, and total CCT assets of $1.796 trillion. EBSA *supra* note 4, Tables 2, 10.

For 103-12 IEs the corresponding numbers are $26.1 billion and 211 billion. According to EBSA the total amount invested by private pension plans (both DB and DC) in 103-12 IEs was $27.7 billion, and total 103-12 IE assets of $279 billion. EBSA *supra* note 4, Tables 2, 10.

[103] The aggregate net assets of all small plans in 2008 was approximately $514 billion. *See* EBSA, PRIVATE PENSION PLAN BULLETIN: ABSTRACT OF 2008 FORM 5500 ANNUAL REPORTS, Tables A3, D7 (2010) ($4.577 trillion total net assets all plans, of which $4.063 reported by large plans), at http://www.dol.gov/ebsa/PDF/2008pensionplanbulletin.PDF.

[104] The 2008 counts are as follows: 1,484 MTIAs reported $1.28 trillion in gross total assets; 2,877 CCTs reported $2.13 trillion total assets; 1,819 PSAs reported $195 billion total assets; and 402 103-12 IEs reported $316 billion total assets. The DFE counts reported in the preceding sentence include only DFEs of each type reporting non-zero assets. *See supra* note 38. The corresponding numbers, according to the Labor Department, are as follows: 1,693 MTIAs with $1.39 trillion in gross total assets; 3,448 CCTs with $1.80 trillion total assets; 2,128 PSAs with $193 billion total assets; and 433 103-12 IEs with $279 billion total assets. EBSA *supra* note 4, Table 1.

[105] A third possibility should also be noted: conceivably, small pension plans (those covering fewer than 100 participants) might utilize CCTs much more heavily than MTIAs, just the reverse of the relative importance of these investment vehicles for large plans (Figures 1-2). While this could be a contributing factor, its significance is clearly limited, inasmuch as the total assets of all small private plans in 2008 was only $526 billion, which is considerably less than the difference between reported CCT and MTIA total assets in 2008. *See* EBSA, *supra* note 103, at Table C1.

[106] *See supra* text accompanying notes 66-73.

CCTs invest heavily in other CCTs. If CCT investments in other CCTs are subtracted, CCT total assets in 2008 are reduced to $1.47 trillion, while eliminating MTIA investments in other MTIAs only reduces MTIA total assets to 1.26 trillion.

Figure 10 presents a side-by-side comparison of the proportionate asset allocation of the four types of DFEs among the investment categories reported on Schedule H.[107] (Those categories of investments in which no type of DFE invested at least 1 percent of total assets are not displayed.) Consider first the investment by DFEs in other DFEs. As would be expected, some MTIA funds (only 2%) are invested in another MTIA, but because a master trust may pool assets only from plans sponsored by either a single employer or a group of commonly-controlled employers, other types DFEs, which pool assets from unrelated employers, do not put funds in an MTIA.[108] While cross investment in other DFE varieties is not restricted, it is noteworthy that the only substantial DFE investment in PSAs is by other PSAs, and likewise the only substantial DFE investment in 103-12 IEs is by other such investment entities.[109] Because banks and insurance companies compete as financial intermediaries, the absence of cross investment between CCTs and PSAs may come as no surprise. CCTs, however, are a special case — they place a large part of their funds in other CCTs (about 31% in 2008), and MTIAs also entrust a big chunk of their total assets to CCTs (about 18%).[110] This link might be attributable to the fact that a bank must serve as trustee or custodian of a master trust, while a CCT is also a bank-maintained investment fund: perhaps bank-managed master trusts tend to invest in CCTs sponsored by the same bank. The heavy reliance of CCTs on investments in other CCTs would be consistent with banks creating a set of core funds with differing risk and return characteristics (e.g., corporate debt instruments having various ratings and maturities, domestic or foreign equities having varying levels of capitalization, dividend policies, industry concentration), and combining those core funds in various ways to build a broad range of feeder funds, each with a distinct investment policy or temporal horizon (such as target date funds). That CCTs invest an unusually large share of their total assets in common stock (nearly 30%), but put an unusually small amount (less than 1%) in registered investment companies (mutual funds) might suggest that other CCTs fill the role that mutual funds play in the investment portfolio of other DFEs.

Putting tiered or nested DFE investments to one side, perusal of Figure 10 reveals several additional differences in investment concentration between DFE types. Only MTIAs hold any employer securities (4.6%);[111] because other DFEs pool assets from plans of unrelated employers they cannot hold "employer" securities per se. As noted previously, CCTs exhibit a distinctively high level of investment in common stock and low utilization of mutual funds.

[107] The data presented in Figure 10 track the DFE balance sheet report contained in the Labor Department's 2008 DFE statistical summary. EBSA *supra* note 4, Table 2. One important difference is that the Labor Department numbers do not report DFE ownership interests in lower-tier DFEs, instead allocating those lower-tier DFE interests to other asset categories according to the nature of the lower-tier DFE's investments. As a result of this difference, the size ranking of the non-DFE asset categories reflected in Figure 10 corresponds to the ranking reported in the EBSA balance sheet, but the actual proportions (portfolio shares) differ.

[108] *See supra* note 80 and accompanying text. The Labor Department's DFE statistical summary reports that in 2008 no PSAs or 103-12 IEs invested an MTIA, while 95 MTIAs invested in another MTIA. It also reports 10 CCTs holding interests in an MTIA. EBSA *supra* note 4, Tables 9.

[109] *Accord* EBSA *supra* note 4, Table 10.

[110] *Id.*

[111] *Accord* EBSA *supra* note 4, Table 2.

CCTs hold a lot more of their money in interest-bearing accounts (presumably in the same bank that is trustee[112]) than other DFEs (11% compared to 3-5%). Only insurance company PSAs take substantial stakes in real property (nearly 14%);[113] they also make more direct loans than other DFEs, and one might suspect that this is traceable to commercial real estate lending (construction and permanent financing).

The 103-12 IE is an outlier in its high levels of investment in U.S. government securities and "other investments."[114] The "other investment" category includes state and municipal securities, as well as options, index futures, repurchase agreements, collectibles, and other personal property.[115] Hedge funds that are owned 25 percent or more by benefit plan investors (so that the plan asset look-though rule applies) may qualify as 103-12 IEs,[116] and large holdings in debt securities, options, and derivatives would be consistent with the arbitrage-based short-term trading (based on proprietary models) that characterizes the business strategy of many hedge funds.[117] The asset category designated "joint ventures" should be mentioned in this connection, because most hedge funds and private equity funds are organized as partnerships or joint ventures, and if benefit plan participation in such a fund is under 25 percent (so that the assets of the fund are *not* deemed plan assets under the look-through rule), then an ownership

[112] A statutory exemption from ERISA's prohibited transaction rules authorizes a bank that is a plan fiduciary to invest all or part of the plan's assets in deposits in the fiduciary bank itself, provided that the deposits bear a reasonable rate of interest and that such investment is expressly authorized by a provision of the plan or by an independent fiduciary who has the power to direct the bank with respect to such investment. ERISA § 408(b)(4)(B), 29 U.S.C. § 1108(b)(4)(B); 29 C.F.R. § 2550.408b-4.

It is also possible that the pressure on banks to maintain adequate capital reserves in the face of declining asset values caused by the financial crisis might have induced CCT trustees to allocate an unusually large share of CCT assets to deposits in the sponsoring bank in 2008. The objective of this study is to link direct and indirect pension plan investments in 2008, so no comprehensive analysis of prior-year financial data has been undertaken. Nevertheless, reports of CCT asset holdings in 2007 were extracted from the DOL's raw data files for comparison with the 2008 CCT portfolio allocation described above. The combined CCT balance sheet data (Schedule H) show that interest-bearing cash accounted for 7.1% of aggregate CCT investments in 2007, which is substantially less than the 11.3% average portfolio share reported in 2008. This finding suggests that the onset of 2008 credit crunch may have contributed to the higher CCT utilization of interest-bearing accounts relative to other DFEs. Indeed, the two largest changes in CCT portfolio allocations between 2007 and 2008 were a 4.2 percentage point decrease in common stock holdings and a 4.2 percentage point increase in interest-bearing cash.

[113] *Accord* EBSA *supra* note 4, Table 2.

[114] *Id.*

[115] *See* 2008 Instructions for Form 5500, at 30 (instructions for Schedule H, line 1(c)(15), "other investments"), at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf.

[116] Beth J Dickstein & Robert A. Ferencz, *Qualified Plans — Investments*, TAX MGMT. PORT. (BNA) No. 377, at A-26 (2007).

[117] Andrew W. Needham & Christian Brause, *Hedge Funds*, TAX MGMT. PORT. (BNA) No. 736, at A-1 to A-7 (2007); STAFF OF THE SECURITIES AND EXCHANGE COMMISSION, IMPLICATIONS OF THE GROWTH OF HEDGE FUNDS 33-36 (2003), at http://www.sec.gov/news/studies/hedgefunds0903.pdf [hereinafter SEC STAFF HEDGE FUND REPORT]. Private equity funds that are owned 25 percent or more by benefit plan investors (so that the plan asset look-though rule applies) may also qualify as 103-12 IEs. Dickstein & Ferencz, *supra* note 116. Private equity funds are turn-around specialists that buy a controlling interest in underperforming companies and enhance their value through expert management and strategic realignment. Hence a private equity fund is heavily invested in common stock which it typically holds for several years. The 21% of 103-12 IE assets consisting of common stock may be attributable, to some extent, to private equity funds.

interest in the fund would be reported as a "joint venture" interest.[118] While Figure 10 displays asset allocations, it should be noted that the 103-12 IE is also an outlier on the liability side. Total liabilities, as a share of total (gross) assets fall between 7% and 9% for MTIAs, CCTs, and PSAs, but the liability proportion for 103-12 IEs is more than 21%. Qualified plans rarely buy securities on margin or otherwise borrow to acquire or improve non-realty investment properties, because doing so would trigger the tax on unrelated debt-financed income.[119] Therefore one would expect that plan liabilities would typically constitute only a small share of gross assets. Even though leverage is a major component of most hedge fund investment strategies,[120] the larger liability proportion for 103-12 IEs would be consistent with many of these investment vehicles being hedge funds, because hedge funds commonly take steps to insulate tax-exempt investors from the tax on unrelated-debt-financed income by interposing a corporation (a so-called "blocker") between the main fund and its tax-exempt investors.[121]

The DFE asset allocations presented in Figure 10 are dominated by a small number of high-asset DFEs. In the case of MTIAs, in 2008 the top 10 percent of MTIAs, ranked by total assets, accounted for 70 percent of all MTIA assets. Similarly, the top decile of CCTs reported 75 percent of all CCT assets, while the top deciles of PSAs and 103-12 IEs contributed 83 percent and 66 percent of all PSA and 103-12 IE holdings, respectively. Due to the dominance of a small number of high-asset DFEs, the average asset allocations presented here mask some

[118] Of course, partial ownership of an unincorporated operating company would also appear in the joint venture asset category. The instructions for Schedule H, line 1(c)(5), for reporting investments in "Partnership/joint venture interests" state:

> Include the value of the plan's participation in a partnership or joint venture if the underlying assets of the partnership or joint venture are not considered to be plan assets under 29 CFR 2510.3-101. Do not include the value of a interest in a partnership or joint venture that is a 103-12 IE. Include the value of a 103-12 IE in 1c(12).

2008 Instructions for Form 5500, at 30, at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf.

[119] I.R.C. §§ 514, 511(a); Elliot Knitwear Profit Sharing Plan v. Commissioner, 614 F.2d 347 (3d Cir. 1980) (income generated by securities purchased on margin subject to tax on unrelated debt-financed income). Indeed, entry of an amount on Schedule H, line 1i, "Acquisition indebtedness," is virtually a concession that the tax on unrelated debt-financed income applies. *See* 2008 Instructions for Schedule H, in 2008 Instructions to Form 5500, *supra* note 58, at 30-31 (indicating that the acquisition indebtedness liability category does not pertain to real property and applies as provided in Code section 514(c)).

If certain conditions are satisfied, a qualified plan may incur debt to acquire real property without triggering the tax on unrelated business taxable income (UBTI). I.R.C. § 514(c)(9). Therefore the prospect of tax exposure does not discourage leveraged real estate investments by qualified plans, although the exception is subject to special rules where a plan is a partner in a partnership that holds real estate. *Id.* § 514(c)(9)(B)(vi), (c)(9)(C), (c)(9)(E). Another debt-financed income exception provides that participation in securities lending programs will not trigger UBTI. *Id.* § 514(c)(8).

[120] *See* SEC STAFF HEDGE FUND REPORT, *supra* note 117, at 37-38.

[121] If the fund is a partnership for tax purposes its borrowing is attributed to the partners, giving rise to UBTI exposure for tax-exempt investors. The feeder corporation "blocker" strategy prevents this result because shareholders (unlike partners) are not attributed a share of the underlying debt. That is, the hedge fund's leveraged returns belong to its corporate partner, and do not pass through to the corporation's shareholders. Where the feeder corporation is organized offshore (is a foreign corporation), the blocking can be accomplished without incurring corporate income tax. Needham & Brause, *supra*, note 117, at A-46 to A-47 (2007); Vadim Mahmoudov et al., *Playing With Blocks: Testing a Fund's Blocker Allocations*, 133 TAX NOTES 993 (2011).

variations in asset allocations by the large majority of DFEs of the same type. To take one striking example, virtually all PSA investments in real estate and "other loans" (likely real estate financing) is traceable to the 10 percent of PSAs with the largest total assets. In contrast, PSA investments in registered investment companies (mutual funds), which account for more than 90 percent of the total assets of half of all PSAs (i.e., 910 PSAs with non-zero but below-median total assets), falls to under 20 percent of the total assets of the 182 PSAs in the top asset decile.

Before linking DFE asset holdings to their investor-plans, it may be worthwhile to consider how much pooling DFEs accomplish. From the data in Table 1 we can determine minimum values for the average numbers of pension plans (large and small) that invest in each type of DFE: 3.1 for MTIAs, 19.4 for CCTs, 450 for PSAs, and 9.0 for 103-12 IEs. The corresponding minima for the average number of large pension plans that invest in each type of DFE are: 2.4 for MTIAs, 9.8 for CCTs, 96.2 for PSAs, and 5.2 for 103-12 IEs.[122] Interestingly, the number of pension plan investors does not greatly increase with increases in the size of MTIA total assets — on average, high-asset MTIAs have only a few more participating pension plans than low-asset MTIAs, but they pool much larger investments from each participating plan. The number of pension plans per DFE does increase substantially with the amount of DFE total assets for other types of DFEs, and dramatically so in the case of PSAs, as illustrated by the solid lines in Figure 11. The average number of participating plans grows from less than 5 in the lowest PSA asset deciles to 2,407 in the highest decile! Although high-asset PSAs are pooling investments from many more plans, the size of the average plan investment also increases with the size of PSA total assets. As shown by the dotted lines in Figure 11, the average pension plan investment in MTIAs and PSAs rises with the size of the DFE's total assets. The graph also reveals that PSAs pool much smaller investments than MTIAs (note the logarithmic scale). Due to the prevalence of non-pension-plan investors in CCTs and 103-12 IEs, the average plan investment in these indirect investment vehicles cannot be determined simply by dividing total reported CCT or 103-12 IE assets by the number of participating pension plans. Therefore, DFE assets per plan is not a meaningful measure of the average pension plan investment and is not shown for CCTs or 103-12 IEs.

[122] These averages are referred to as minima because they are computed without reference to the large number of unidentified DFE investors, some (perhaps many) of which might be pension plans. *See supra* note 88. The data reported in the Labor Department's DFE statistical summary apparently does not permit computation of the average number of pension plans per DFE. Table 1 of the Labor Department summary reports the "number of invested private pension plans" for each DFE type, but where a plan invests in several DFEs of the same type — for example, where a high asset plan invest in five MTIAs — it seems to be counted only once. See EBSA *supra* note 4, Table 1, n.1 (multiple counting of plan if it invests "in more than one type of DFE"). Another table displays the distribution of DFEs by type among specified ranges of the number of private pension plan investors. *Id.*, Table 3. That distribution seems consistent with the ordinal ranking of the average number of private pension plans per DFE type reported here (i.e., MTIA < 103-12 IE < CCT << PSA), but it does not allow computation of precise averages.

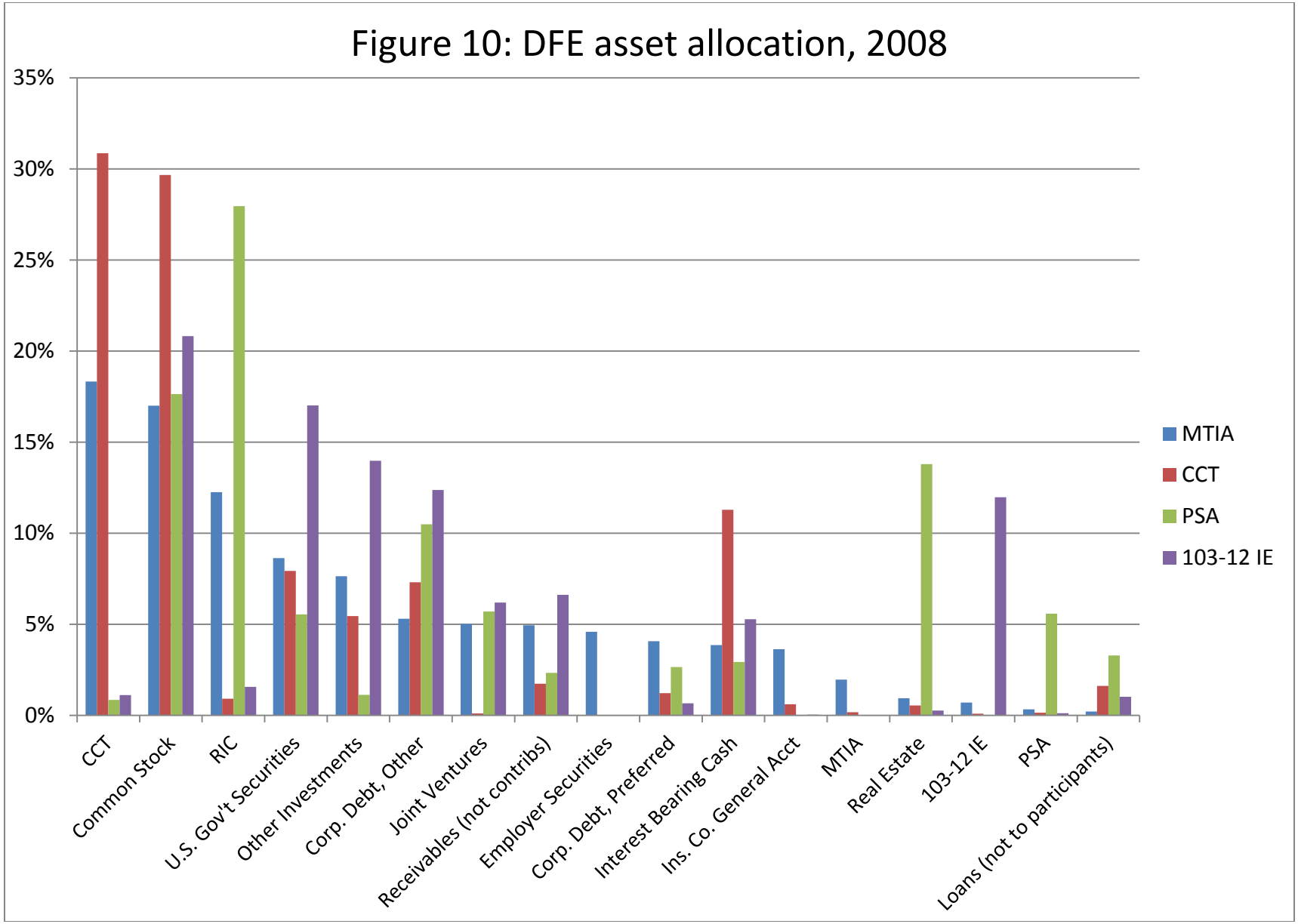
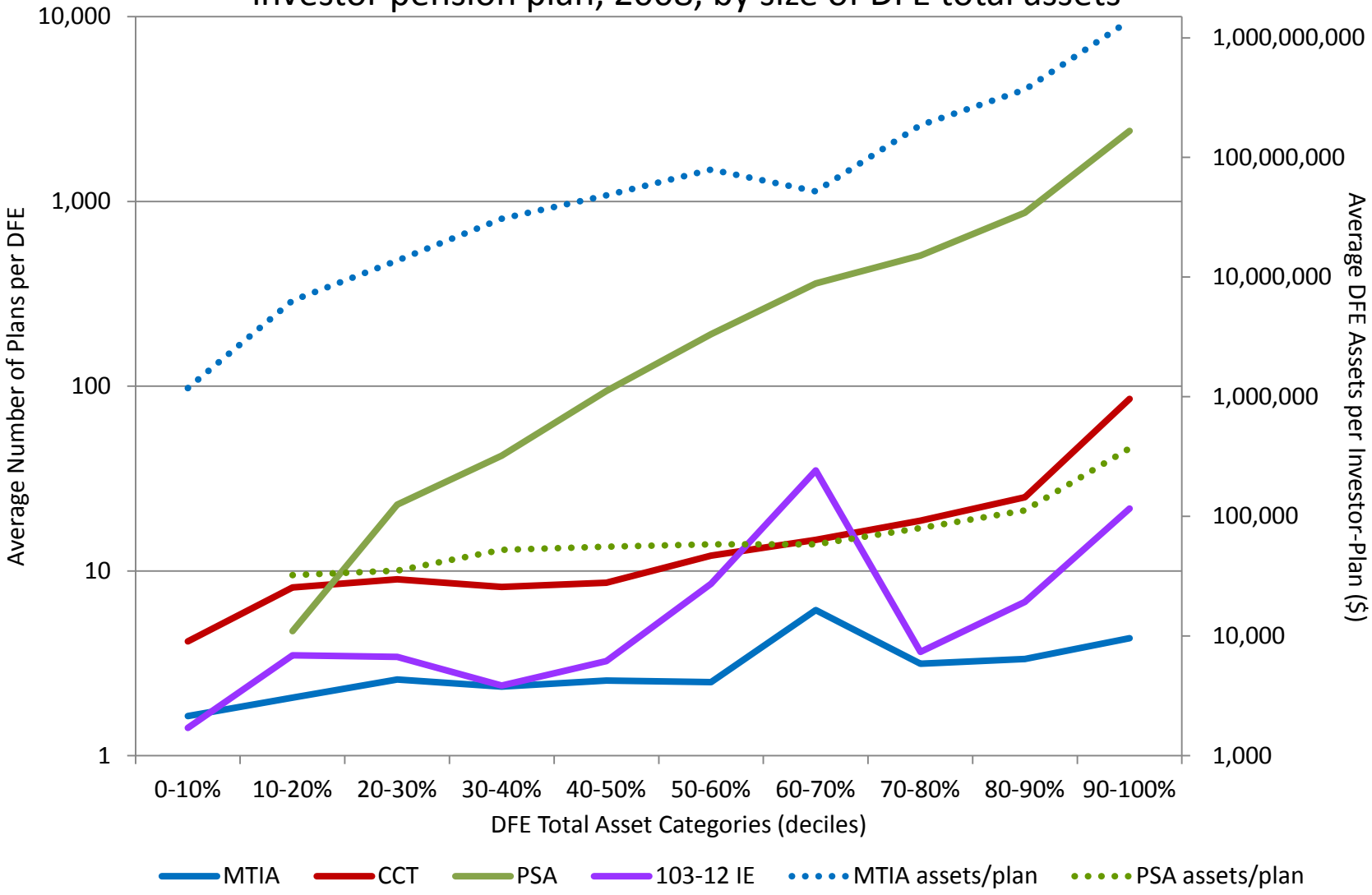


Figure 10: DFE asset allocation, 2008
35%
30%
25%
20%
15%
10%
5%
0%
CCT
Common Stock
RIC
U.S. Gov't Securities
Other Investments
Corp. Debt, Other
Joint Ventures
Receivables (not contribs)
Employer Securities
Corp. Debt, Preferred
Interest Bearing Cash
Ins. Co. General Acct
MTIA
Real Estate
103-12 IE
PSA
Loans (not to participants)
MTIA
CCT
PSA
103-12 IE

Figure 11: Average pension plans per DFE and average DFE assets per investor pension plan, 2008, by size of DFE total assets



III. Methodology

The complete protocol developed to accomplish first-order matching of DFE assets and liabilities to the pension plans that hold interests in DFEs is set forth in the Appendix. Here we merely highlight the major challenges encountered in the effort to link the balance sheet data, and describe how they have been addressed.

The source data for large pension plans, including identifying information, plan characteristics, and balance sheet numbers, is taken from EBSA's Pension Research Files. The Pension Research Files have been subjected to a correction process involving both automated global edits (checking filings for internal consistency) and manual plan-specific edits to enhance data quality.[123] DFE filings are not included in the Pension Research Files[124] and therefore are more apt to be infected with errors, including missing information and reported asset/liability positions that do not match reported totals. In addition, pension plan Schedule D filings, which are necessary to link a plan to the DFEs in which it invests, are not part of the Pension Research Files and must also be taken from the unedited raw data sets.[125]

Perhaps due to errors in the raw data, a significant fraction of reported plan interests in DFEs could not be successfully matched to an identifiable DFE. For 2008, large pension plans reported 411,971 non-zero year-end interests in MTIAs, CCTs, PSAs or 103-12 IEs. Of these 411,971 reported distinct investments, 184,089 actually represent interests in CCTs or PSAs that did not file Form 5500 and so were not DFEs. Excluding those interests in non-DFE CCTs and PSAs, 227,882 reported large plan interests in DFEs remain. Ultimately, 41,173 of those interests (18.1%) could not be matched.

We attempted reverse matching — that is, going from DFEs to the investor-plan — in an effort to raise the matching success rate.[126] Each DFE must file Schedule D, Part II, to identify all plans that hold an interest in the DFE. Unfortunately, however, Part II does not call for reporting current values of those interests. Consequently, a plan's failure to intelligibly identify a DFE in the plan's Schedule D, Part I, can be fixed where the DFE identifies the plan in the DFE's Schedule D, Part II, but only if the plan's filing contains only one garbled link. If there are multiple bad links, then even if each unidentified DFE adequately identifies the investor-plan, there is no way to know how much of each DFE's assets and liabilities to attribute to the investor-plan. For 2008 only 6,190 bad links are attributable to plans that have exactly one bad link, and so reverse matching made only a modest improvement in our attribution success rate. In the end, this additional step salvaged only an additional 1,320 links.

Even if a pension plan reports that it holds an interest in a specifically-identified DFE, often the data proved unusable due to inconsistencies between the amounts reported on the plan's Schedule D and Schedule H. For example, it is surprisingly common for an investor-plan to report on Schedule D a dollar value for its end-of-year interest in *one* particular CCT that is

[123] ACTUARIAL RESEARCH CORPORATION, *supra* note 41, at 8-10.

[124] *Id.* at 4.

[125] *See id.* at 23-31 (reported source for all original data used in Pension Research Files is either Form 5500, Schedule H, or Schedule I; no data taken from Schedule D).

[126] See Appendix, Pension Investment Project Protocol, at Step 11.

substantially greater than the amount the plan reports on its Schedule H balance sheet as the end-of-year dollar value of its interest in *all* CCTs! In such circumstances it is impossible to know how much of the DFE's assets and liabilities should be attributed to the investor-plan. Once this problem came to light the protocol was revised to filter out irretrievably defective filings. All large pension plans were sorted into three groups. Group 1 plans did not invest in any DFE at any time during the year (and so linking of indirect investments is not at issue).[127] Group 2 plans reported a DFE investment but the amounts reported as the value of the plan's investment in each separate DFE of a given type (MTIA, CCT, PSA or 133-12 IE) on Schedule D, when summed, did not match the amount reported on Schedule H as the plan's interest in DFEs of that type. Group 3 consists of those plans that utilized one or more DFEs and filed substantially consistent data on Schedules D and H.[128] The Group 2 plans, containing irretrievably defective financial data, were not run through the linking protocol, but a regression analysis was conducted to identify factors (plan, return, or investment characteristics) associated with bad filings.[129] Group 3 plans were linked to their DFEs and plan balance sheets were reconstructed to properly categorize assets and liabilities attributed from the DFEs in which they invested. This sorting of large pension plans reporting non-zero assets in 2008 produced the following breakdown: Group 1 (no DFE), 38,063 plans; Group 2 (inconsistent information on Schedules D and H), 15,198 plans; Group 3 (consistent DFE information), 27,247. Accordingly, the large pension plan asset allocations (portfolio compositions) reported below exclude 19 percent of all plans, or some 36 percent of plans that invested in one or more DFEs.

The accuracy of our matched results is also impaired somewhat by disparities in the reporting periods used by DFEs and their investors. Schedule D must be filed by a plan or DFE that invests in an MTIA, CCT, PSA or 103-12 IE at any time during the plan year.[130] The beginning and end-of-year (BOY and EOY) values of a plan's interest in each *category of DFE* are reported on the plan's Schedule H, but on Part I of Schedule D the plan reports only the EOY value of its interest in *each separate DFE* (as well as each CCT or PSA that does not file as a DFE). DFE investments attributed to a plan reflect the DFE's EOY Schedule H asset holdings and liability positions.[131] Consequently, if a plan uses an annual reporting period that differs

[127] Plans that did not invest in a DFE at any time during the year were identified by two conditions: (1) no non-zero entry appeared in any of the Schedule H DFE asset categories; and (2) either no Schedule D was filed, or the plan filed a Schedule D reporting interests *only* in CCTs or PSAs that were identified as not being DFEs.

[128] Specifically, a plan is put into Group 3 if the reported Schedule H amount for the EOY value of the plan's interest in a given type of DFE is not more than $10 different from the sum of the amounts reported on Schedule D as the plan's investment in DFEs of that type, and that condition is met for all four types of DFEs. CCTs and PSAs identified on Schedule D as not filing their own Form 5500 for the year (non-DFE CCTs and PSAs) are excluded from the sum used for comparison with the reported Schedule H value of interests in CCTs or PSAs. (In accordance with the regulations, the Form 5500 instructions require such non-DFE CCTs and PSAs to be identified on Schedule D but their assets and liabilities must be allocated among the appropriate specific balance sheet categories on Schedule H, not reported as a unitary interest in a CCT or PSA. A non-DFE CCT or PSA is identified by the sponsor's name and EIN, while a plan number of 000 is used to indicate that the CCT or PSA in question did not file as a DFE.) Any plan that is not in Group 1 (because it invested in a DFE) and does not satisfy the reporting consistency tests for Group 3 is classified in Group 2.

[129] *See infra* Part IVD and Table 2.

[130] 2008 Instructions for Schedule D, in 2008 Instructions to Form 5500, *supra* note 58, at 25.

[131] 2008 Instructions to Form 5500, *supra* note 58, at 11 provides: "Form 5500 filed for the DFE, including all required schedules and attachments, must report information for the DFE year (not to exceed 12 months in length) that ends with or within the participating plan's year."

from the reporting period used by a DFE in which the plan invests, then the information imputed from the DFE's balance sheet will correspond to a different date (the end of the DFE's reporting year) than the date that controls the plan's balance sheet (end of the plan year). Where the snapshot of a plan's indirect holdings is taken at a different time than the snapshot of the plan's direct holdings, pasting them together creates a composite picture with some distortion. Due to portfolio changes intervening between the end of the DFE's year and the end of the plan year, the linked results for a particular plan may generate categorical asset and liability allocations that never actually occurred. These inaccuracies for a particular plan are presumably mitigated in the summary data because other plans will be imputed indirect holdings that err in the opposite direction, leaving average overall asset allocation data largely unaffected. (In the interval between the end of the DFE year and the plan year, for example, one DFE may increase its holdings of common stock while another reduces its position.) More important, most large pension plans and DFEs use the calendar year as their reporting period, so the linked balance sheet results are dominated by apples-to-apples comparisons.[132]

Another limitation of our results concerns the matter of tiered DFEs. As explained previously, both MTIAs and CCTs report that a substantial share of their holdings consists of interests in other CCTs (in 2008, 18% and 31%, respectively).[133] To obtain a complete picture of the portfolio composition of a plan that invests in an MTIA that owns an interest in a CCT (for example), a share of the CCT's assets and liabilities (determined by the MTIA's proportionate ownership of the CCT) should first be attributed to the MTIA, then reattributed to the investor-plan (along with a portion of all the direct holdings of the MTIA) according to the plan's stake in the MTIA. Such multilayered indirect investments are not restricted to two tiers of DFEs, as illustrated in Figure 12. Multilevel asset and liability imputation requires identifying lowest-tier DFEs (those that hold no interest in another DFE) and applying an iterative process for tracing a share of their assets and liabilities up through chains of indirect ownership. DFE Schedule H filings are unedited (unlike the Pension Research Files, only the uncorrected raw data is available), as are all Schedule D filings, which makes multilevel attribution (tracing assets and liabilities through tiered DFEs) particularly susceptible to bad links and cascading reporting errors. To avoid those complications our current protocol only links a share of DFE assets and liabilities to a large pension plan that *directly* owns an interest in the DFE. If the DFE in question (DFE1) holds an interest in another DFE (DFE2), that interest is attributed to the investor-plan but reported as an interest in either an MTIA, CCT, PSA, or 103-12 IE, according to DFE2's type; the DFE2 asset and liability composition will not be reflected in the composite balance sheet constructed for the plan that owns a share of DFE1. Hence our current matching protocol preserves only second-level asset and liability categories. If multilevel asset and liability imputation could be comprehensively implemented (with all links properly identified), then the resulting pension plan balance sheets would have no entries in the asset categories reflecting interests in MTIAs, CCTs, PSAs, and 103-12 IEs.[134]

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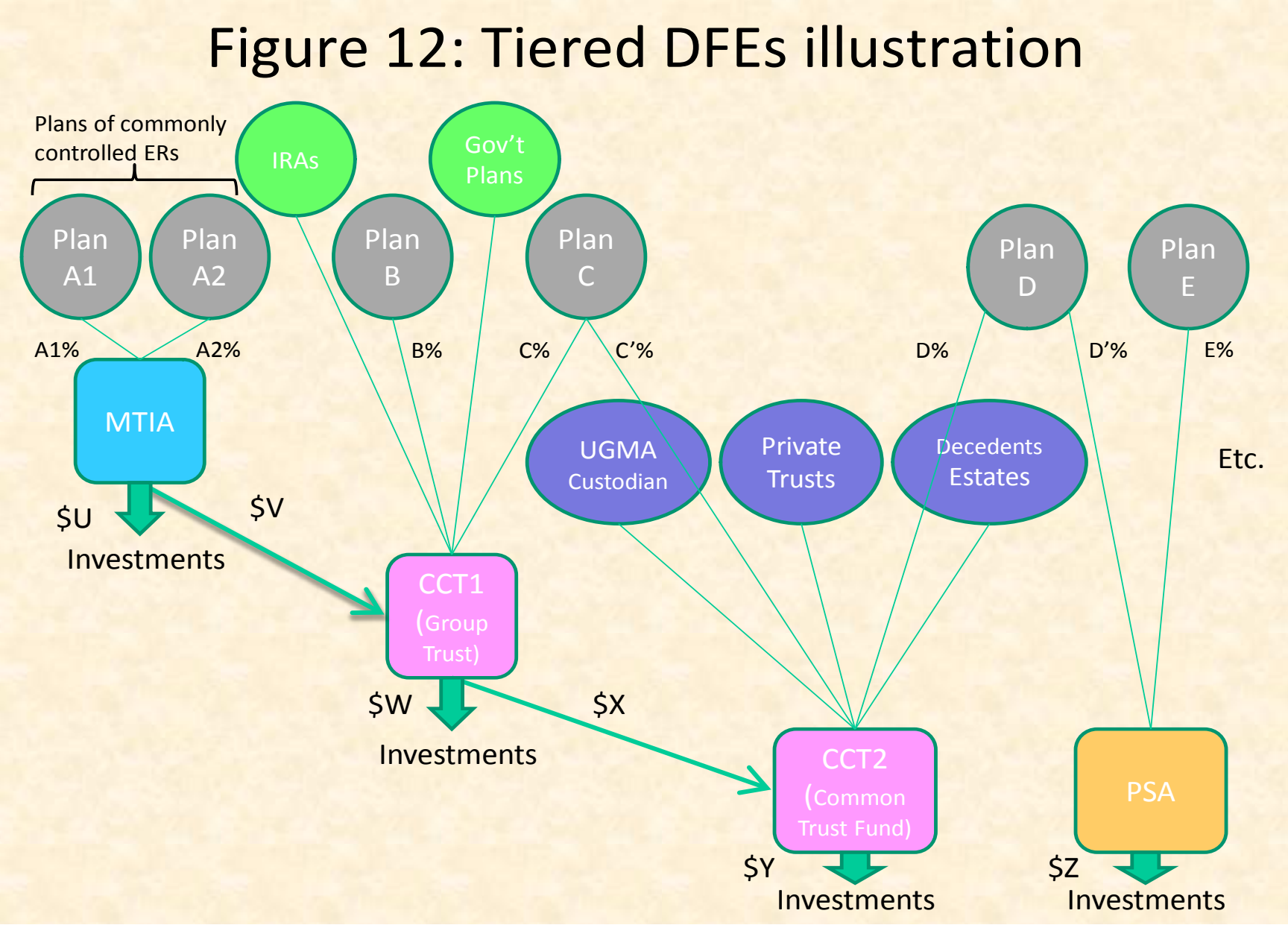
[132] ACTUARIAL RESEARCH CORPORATION, *supra* note 41, at 3 (80% of pension plans file on a calendar year basis). The authors' tally from 2008 DFE Form 5500 filings shows that 87% of DFEs of all sorts filed a return for a plan year beginning on January 1. The proportion is 93% in the case of MTIAs, which are associated with higher-asset plans (as indicated by Figures 3 and 4, *supra*).

[133] *See supra* Figure 10.

[134] To pursue the example in Figure 12, our protocol attributes to Plan A1 A1% of the $U of MTIA direct investments, preserving their proper characterization, plus A1% of the $V invested in CCT1, but this latter amount

Figure 12: Tiered DFEs illustration



IV. Results

A. DB and DC Plan Allocations

1. Findings of the Current Study

Composite summary results of the linking of large single-employer defined benefit plans with their first-tier DFE investments based on 2008 returns are presented in Figure 13A. The graph shows the proportion of gross assets invested in the Schedule H asset categories by all 3,620 single-employer DB plans that did not utilize a DFE in 2008 (Group 1 plans, shown as blue columns) alongside the corresponding average aggregate asset allocations (direct and indirect) of the 3,348 linkable single-employer plans that invested some portion of their assets in one or more DFEs (Group 3 plans, shown as red and pink stacked columns). Of the 20 non-DFE Schedule H asset categories, the 12 that comprise the largest shares of gross assets for plans that do not use DFEs are displayed on the left side of the graph, with the four DFE types shown to the right. For plans using DFEs, the stacked column format displays the relative contribution of direct and indirect investments. The red column height represents plan assets owned directly and reported on the plan's Schedule H balance sheet, including (on the right side of the graph) reported interests in the four types of DFE. The pink portions of the columns show the incremental increase in asset shares resulting from attributing DFE assets to the proper balance sheet categories. By focusing on the pink increments it can be seen that tracing MTIA assets back to plans holding interests in master trusts translates into substantial increases in the shares of plan investments allocated to common stock and both corporate and government debt (recall that state and municipal bonds are included in "Other Investments"). Consistent with Figure 1, observe the dominance of MTIA interests prior to linking. Proper attribution *reduces* undifferentiated DFE interests, so there is no pink surplus atop the red DFE columns. Instead, the adjacent green and yellow stacked columns display post-linking DFE interests. The green component represents second-tier DFE interests, reflecting the fact that the assets of successfully linked first-tier DFEs include some interests in other DFEs, and the yellow part of the column shows the extent to which reported first-tier DFE interests of each type could not be successfully matched to the assets of a particular DFE (unmatched residue). Observe that linking actually increases proportionate CCT holdings because first-tier MTIAs and CCTs invest a significant portion of their assets in lower-tier CCTs. The side-by-side comparison of plans that do not and do use DFEs (blue and red/pink columns, respectively) indicates that for many asset categories proper identification of indirect investments substantially reduced the apparent disparity in portfolio composition between Group 1 and Group 3 plans, but there are a few striking exceptions. Indirect interests create or increase a disparity in the shares of plan portfolios allocated to two asset categories, preferred corporate debt and receivables. Also observe that linking barely narrows the wide disparity in DB plan utilization of RICs (registered investment companies, or mutual funds).

On average, single-employer defined benefit plans that use DFEs hold far more assets than plans that do not (by a factor greater than six in 2008). Consequently, the post-linking portfolio variation seen in Figure 13A might be attributable to differences in asset size rather than DFE utilization per se. To isolate those factors, Figure 13B shows the same comparison for a subset of single-employer defined benefit plans reporting total gross assets of at least $166.14

million but less than $383.66 million. Different numbers of Group 1 and Group 3 plans fall within this range, but the distribution throughout the range and the average assets of the groups are very similar. (Combining all Group 1 and Group 3 single-employer DB plans and ranking them by asset size, this range corresponds to the 90th to 95th percentile.) The figure reveals that the stark difference in mutual fund (RIC) utilization is not due to differences in plan asset levels.

Corresponding graphs showing the results of linking large single-employer defined contribution plans with their first-tier DFE investments based on 2008 returns are presented in Figures 14A and 14B. (The "imputed assets" category shown in Figure 14A reflects a common reporting error among DC plans, as explained in the margin.[135]) DC plans make less use of DFEs than DB plans do, and the linking failure rate for DC plans is somewhat lower. (Compare the yellow segments representing unlinked first-tier DFE interests with the red columns reporting direct DFE holdings in Figures 14A and 13A.) Just as for DB plans, single-employer defined contribution plans that use DFEs tend to hold more assets than plans that do not, so a comparison of the portfolio compositions of a subset of DC plans of comparable size that do and do not employ DFEs is shown in Figure 14B.[136] Observe that the apparent difference in mutual fund (RIC) utilization between DC plans that do and do not invest through DFEs (seen in Figure 14A) disappears when the comparison is limited to plans of comparable asset size (Figure 14B). This is contrary to the finding for DB plans. The overall average disparity in common stock investments also vanishes when plans with similar asset levels are compared, but only if common stock held in DFEs is taken into account. On the other hand, disparities in DC plan holdings of employer securities, interest bearing cash, and "other investments" (including state and local bonds, options, and derivatives) are seen in both Figures 14A and 14B.

2. Comparison with EBSA Summary Statistics

In April 2012 the Employee Benefits Security Administration (EBSA) of the Department of Labor released its first-ever DFE statistical report, which, like the current study, focuses on

[135] Many DC plan returns (10,795 in 2008) report $0 in all Schedule H asset categories except participant loans, but also report as their total assets a number that is larger than the reported amount of participant loans. This unidentified excess was coded as another asset category, "imputed assets." This situation appears almost exclusively among plans that do not use DFEs (Group 1 plans) having low levels of total assets. On average, imputed assets made up fully 25% of the portfolio of Group 1 DC plans with less than $1.33 million in gross assets (roughly the bottom 20% of DC plans ranked by assets size), but only 0.5% for plans with gross assets greater than $14.69 million (about the top 20% of DC plans).

We hypothesize that such reports correspond to plans that invest all assets in mutual fund shares. If so, Schedule H should report only one entry in the asset categories, namely, an interest in registered investment companies (RICs, ordinarily mutual funds), and the same number should be reported as the plan's total assets, provided that the plan does not make loans to participants. If it does allow participant loans, then the technically correct reporting would be to show entries in two asset categories, both for interests in RICs and loans to participants. (The loan asset amount might well also show up in the "other liability" category if the plan borrows from a bank to raise the cash to make loans to participants.) Where participant loans are allowed, total gross assets should equal the sum of the RIC holdings and participant loans. However, because ERISA provides that the underlying assets of a RIC are not plan assets (in contrast to many other types of indirect investments), inexpert trustees who do no more than pass contribution dollars along to one or more mutual fund companies might not view themselves as holding any plan assets other than claims for repayment of plan loans.

[136] The range is from $32.91 million to $72.69 million in reported gross assets, constituting the 90th to 95th percentile of single-employer DC plans classified in either Group 1 or Group 3 when ranked by asset size.

returns filed in 2008. The report contains counts of DFEs, counts of private pension plans invested in DFEs, and asset counts.[137] Most relevant to this study, the EBSA report also includes a table that takes assets reported by pension plans as invested in DFEs and distributes them into the other financial asset categories according to the composition of the DFE portfolios in which the pension plans invest.[138] These composite balance sheets, reporting the aggregate financial position of all large private DB plans and all large private DC plans in 2008, can be readily converted into proportionate asset allocations and compared to the DB and DC plan results obtained by the current study.

EBSA's results are compared with the current study in Figures 13C (DB plans) and 14C (DC plans). Each graph uses a four-column presentation, where the first (blue) column in each cluster displays the EBSA linked results. The following three columns show the results of the current study, as follows: the second (red) column shows the composite average asset allocation of all plans included in this study (after linking those that use DFEs); the third (green) column separately displays the asset allocation of those plans that do not use DFEs (Group 1); and the fourth (purple) column separately displays the asset allocation of those plans that use DFEs and report consistent information on Schedules D and H (Group 3). Thus, the last two columns in each cluster display the same information presented in Figure 13A in the case of DB plans, or 14A for DC plans, but without the internal breakdown (stacked columns) between direct and indirect investments for plans that use DFEs.

Concentrating on the DB comparison (Figure 13C), the first impression may be that the EBSA numbers don't square well with the current study. Some important differences in approach may explain the disparities, however. EBSA's numbers ostensibly reflect complete linking of DFE assets and liabilities to investor pension plans. Apparently, this includes tracing the assets of second (and lower) tier DFEs back to plans holding an interest in a first-tier DFE, such as when an MTIA or CCT has some of its assets invested in another CCT. Moreover, EBSA reports no unmatched residue resulting from unidentified DFEs (bad links). In sharp contrast to the current study, EBSA reports all post-linking DFE interests as zero. Observe the absence of blue columns in the four DFE categories on the right side of the graph. If EBSA's methodology is reliable, then the DFE interests shown in red (which represent stakes in lower-tier DFEs plus reported first-tier DFE interests that were not successfully associated with a uniquely-identified DFE) should account for all differences in the height of the blue and red columns reporting non-DFE investments. Presumably, EBSA addressed the pervasive problem of poor quality returns (inconsistent reporting of DFE interests on Schedules D and H, as well as inadequately identified DFEs) either by contacting filers and calling on them to correct the data, or by application of some sort of sampling technique. Unfortunately, EBSA has not yet released an explanation of its methodology. Besides EBSA's announcement of comprehensive successful linking, some of the disparity in Figure 13C may be attributable to EBSA's inclusion of *all* large DB plans, in contrast to the current study which focuses on large *single-employer* plans.

The DC plan comparison in Figure 14C shows much closer correspondence between this study and EBSA's report of portfolio composition. That correspondence presumably results from the lower overall utilization of DFEs by DC plans and our higher MTIA linking success rate

[137] EBSA *supra* note 4.

[138] EBSA *supra* note 4, Table 11.

relative to DB plans. Observe that the greatest disparity lies in the share of the portfolio devoted to common stock, while CCTs — which we have seen invest most heavily in common stock (see Figure 10) — represent the largest unlinked DFE interest.

3. Discussion

The question that motivated this investigation is whether material differences in portfolio composition are associated with a pension plan's use of indirect investment vehicles. To a first approximation, Figure 13B presents an initial tentative answer for single-employer DB plans in 2008. This side-by-side comparison of plans holding similar amounts of assets which either do or do not use DFEs (shown by the red/pink and blue columns, respectively) reveals remarkably consistent average portfolio compositions once indirect investments are properly identified. Indeed, these two groups of plans allocate substantially equivalent average portfolio shares to most asset categories; dramatic disparities appear only for holdings of registered investment company shares and interests in insurance company general accounts. The data suggest that CCT interests might substitute for RIC holdings among plans using DFEs. The picture for single-employer DC plans in 2008 (Figure 14B) also displays wide-ranging consistency. Here, RIC holdings constitute almost 60 percent of pension portfolios whether or not a plan uses DFEs; significant differences are found only in the share of assets allocated to employer securities (ESOPs, apparently, do not employ DFEs), interest-bearing cash, and other investments. Generally speaking, these data are consistent with DFE utilization for the purpose of obtaining increased diversification and economies of scale, not for a nefarious objective of obscuring pension plans' overall portfolio composition.

At this stage of the research several big caveats must bracket such an optimistic conclusion, however. First, these results depict average aggregate asset allocations. At the individual plan level it is entirely possible that *disclosed* direct holdings of conservative investments (say, U.S. government bonds and blue-chip stocks) are combined with practically *undisclosed* indirect investments through DFEs in positions that have very different risk, return and liquidity characteristics (such as hedge funds, for example). As a further step, the authors investigated the degree of correlation between direct and indirect investments at the individual plan level, as reported below in part IV.C.

Second, due to the extreme generality of the asset categories reported to the Labor Department by large pension plans and DFEs on their Schedule H balance sheets, even an apparently perfect correspondence between a particular pension plan's direct and indirect investments — equal proportions invested in "common stocks" for example — would not rule out wildly divergent investment characteristics. The common stocks held by the plan and a CCT in which it holds an interest might represent stakes in different industries, publicly-traded enterprises or privately-held operating companies, companies incorporated domestically or abroad, etc. This granularity of the digitized financial data forestalls attempts to drill down further into the truly consequential characteristics of pension plan portfolio composition. This limitation is explored further in part V.[139]

[139] *See infra* text accompanying notes 168-179.

Third, the results displayed here exclude all plans that invested in DFEs but reported inconsistent amounts as the current value of their year-end interests in DFEs on Schedule D and Schedule H (Group 2 plans, as defined earlier). If there were a deliberate effort to hide the nature of plan investments, such inconsistent reporting would surely facilitate it. The characteristics of unlinkable Group 2 plans are investigated below in part IV.D.

Finally, finding corresponding overall asset allocations by plans that do and do not utilize DFEs does not rule out major disparities on the liability side of the balance sheet, and there are some. Among large single-employer DB plans using DFEs (Group 3 plans) indirect liabilities (that is, DFE liabilities linked to plans) are many times larger than the total direct liabilities reported on Schedule H by the investor-plans. Direct liabilities account for only 31% of the total liabilities (direct and linked from DFEs) of *all* Group 3 DB plans, but for plans in the bottom half of the DB plan asset distribution direct liabilities amount to only 1% of the total liabilities! Looking at liabilities as a share of assets, direct liabilities of all Group 3 DB plans are approximately 2.8% of reported Schedule H gross assets, while total liabilities (direct and linked from DFEs) come to 8.4% of total gross assets (direct and linked from DFEs). The ratio of direct liabilities to gross assets reported on Schedule H, it should be noted, is approximately the same for DB plans that do not use DFEs as for those that do (Groups 1 and 3, respectively). Therefore the high levels of indirect liabilities are not simply substituting for lower direct liabilities in Group 3 plans. DB plan DFE investments are associated with much larger liabilities than direct investments, and that DFE debt is currently hidden from plan participants.[140]

The data displayed in Figures 13B and 14B represent weighted average portfolio allocations for a subset of high-asset (90^{th} to 95^{th} percentile) single-employer DB and DC plans in 2008. The investment behavior of plans of this size does not necessarily reflect the asset mix of a "typical" plan. As demonstrated previously, there are systematic differences in DFE utilization as the size of the investor-plan's total assets increase (Figures 3-7). Does the categorical composition of pension plan portfolios, taking into account linked first-tier DFE investments, also vary with asset size? To check for variations in portfolio composition by plan asset size, single-employer DB and DC plans were separately grouped into ten asset size ranges, each containing equal numbers of plans, and the average portfolio composition before and after linking with DFEs was computed for each such decile. The authors then compared the results for mid-range plans (fifth and sixth deciles) with the numbers for high asset plans and the overall weighted averages.[141] The unmatched results discussed earlier show extensive utilization of registered investment companies (RICs, typically mutual funds) by most plans, with that large portfolio share dropping precipitously among plans in the highest asset categories (top one or

[140] Indirect liabilities dominate direct liabilities for Group 3 DC plans as well, but in this case the ratio of total liabilities (direct and linked) to total gross assets (direct and linked) among DC plans that use DFEs (Group 3) is actually less than the ratio of liabilities to gross assets for DC plans that do not use DFEs (Group 1). This lower overall debt ratio appears to be attributable to the very high level of liabilities characteristic of leveraged ESOPs, which typically do not use DFEs (*See infra* Figure 19A and text accompanying note 155.) If one focuses exclusively on the large majority of DC plans that are 401(k) plans, the liability pattern is similar to the findings for DB plans. Indirect liabilities dominate direct liabilities for Group 3 401(k) plans and the ratio of total liabilities (direct and linked) to total gross assets (direct and linked) among 401(k) plans that use DFEs (Group 3) is greater than the ratio of liabilities to gross assets for 401(k) plans that do not use DFEs (Group 1).

[141] Results not displayed here. The authors could post our summary spreadsheets on the CERL website and simply cite to them here. That would avoid wasting space in the article with large mind-numbing data tables.

two deciles), which show a corresponding surge in MTIA investments (Figures 3 and 4). The drop in RIC usage by high-asset plans survives linking first-tier DFE investments; mid-range DB plans (fifth and sixth deciles) that use DFEs hold about 25 percent of their assets in RIC shares, while the overall weighted average is only 7 percent. Although important, RIC shares do not dominate MTIA portfolios (see Figure 10), so attributing MTIA assets to the high-asset plans that invest through MTIAs does not counteract the drop in direct ownership of mutual funds. That finding poses another question: what actually substitutes for the drop in RIC holdings by high-asset plans? Due to the high matching failure rate for DB plans, interests in MTIAs (meaning mostly unmatched MTIAs) still constitute substantially larger shares of the portfolios of top-decile than mid-range plans after matching. For DB plans, however, linking does reveal an increase in utilization with plan asset level of preferred corporate debt securities and partnership/joint venture interests. For DC plans, examination for variation in post-linking portfolio composition by plan asset level shows a substantial fall in RIC investments only at the very top of the asset spectrum (roughly, the top 5% of DC plans), and that drop in RIC holdings is counteracted by notable growth in the share of assets that the largest DC plans invest in employer securities (ESOPs, presumably), and CCT interests (largely second-tier CCTs).

Figure 13A: Single-employer defined benefit plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings

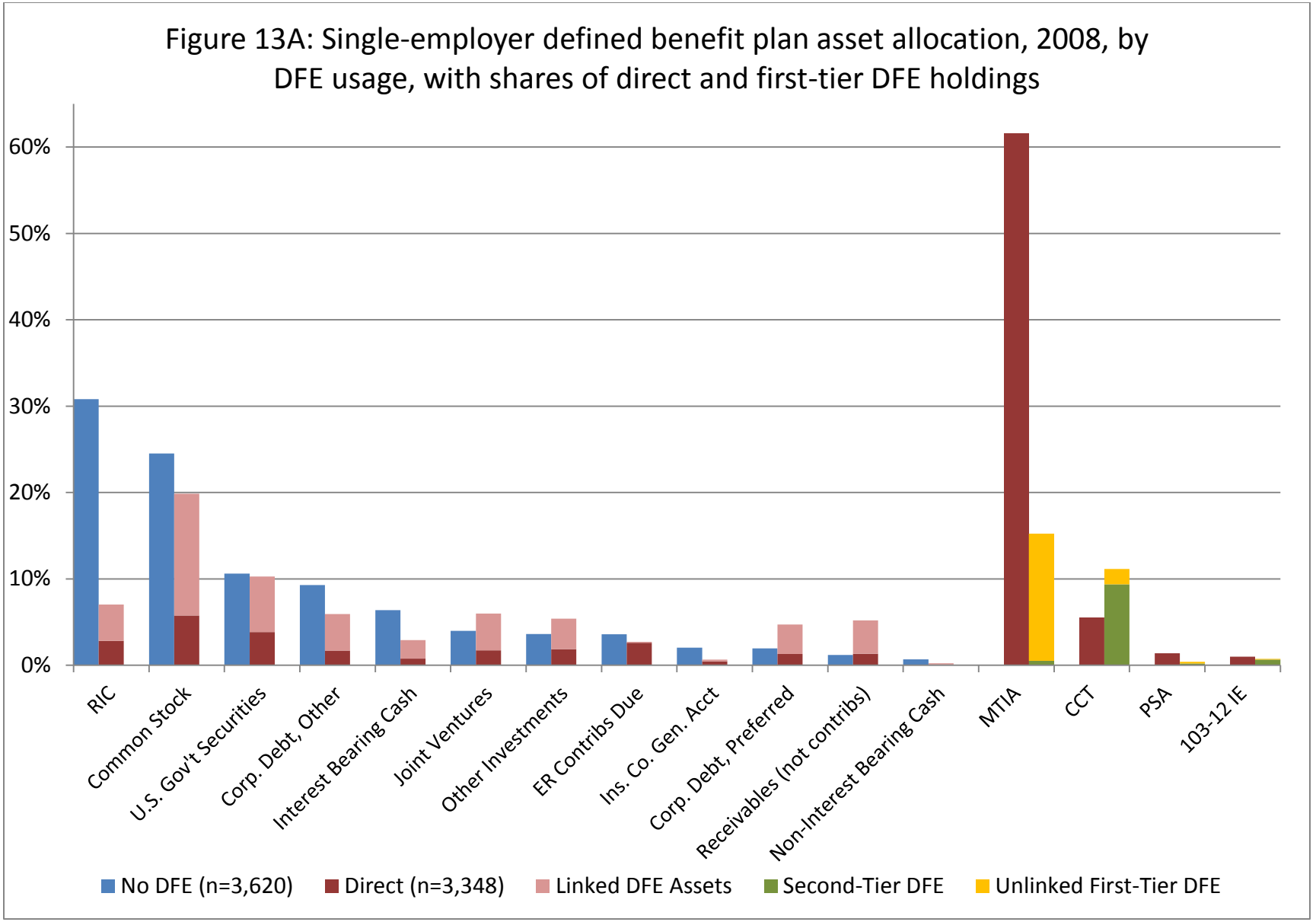
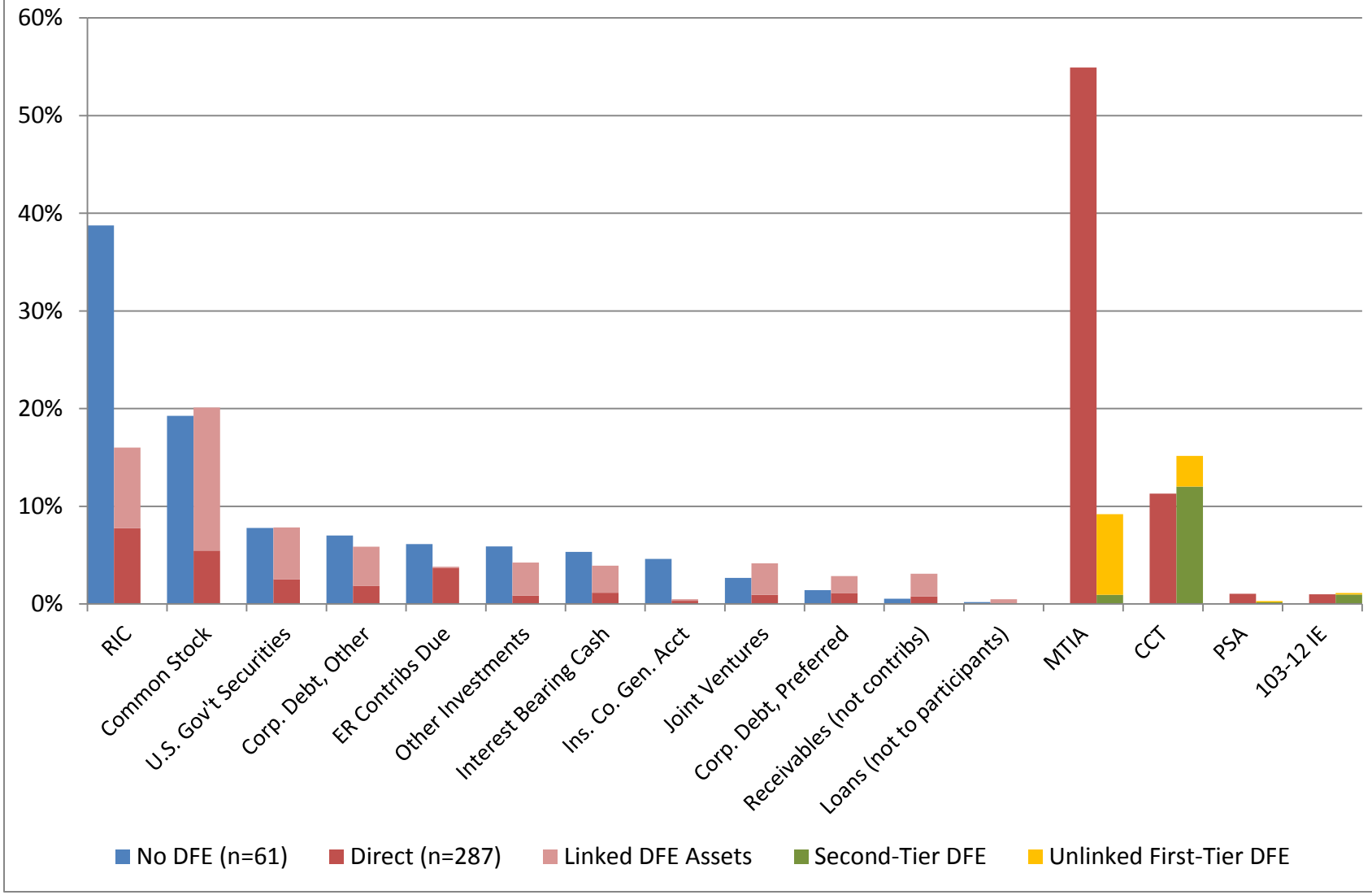


Figure 13B: High-asset single-ER defined benefit plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings



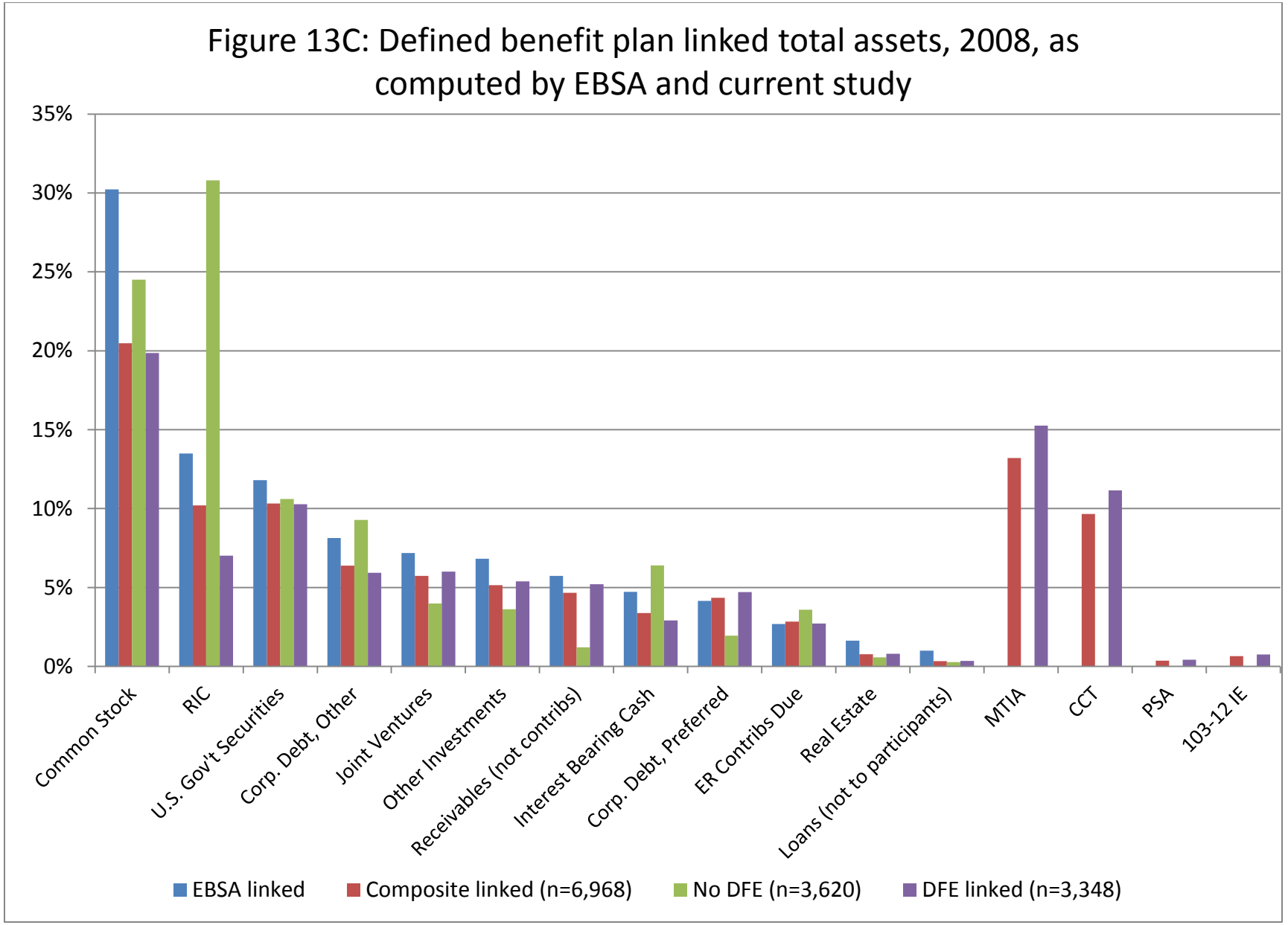
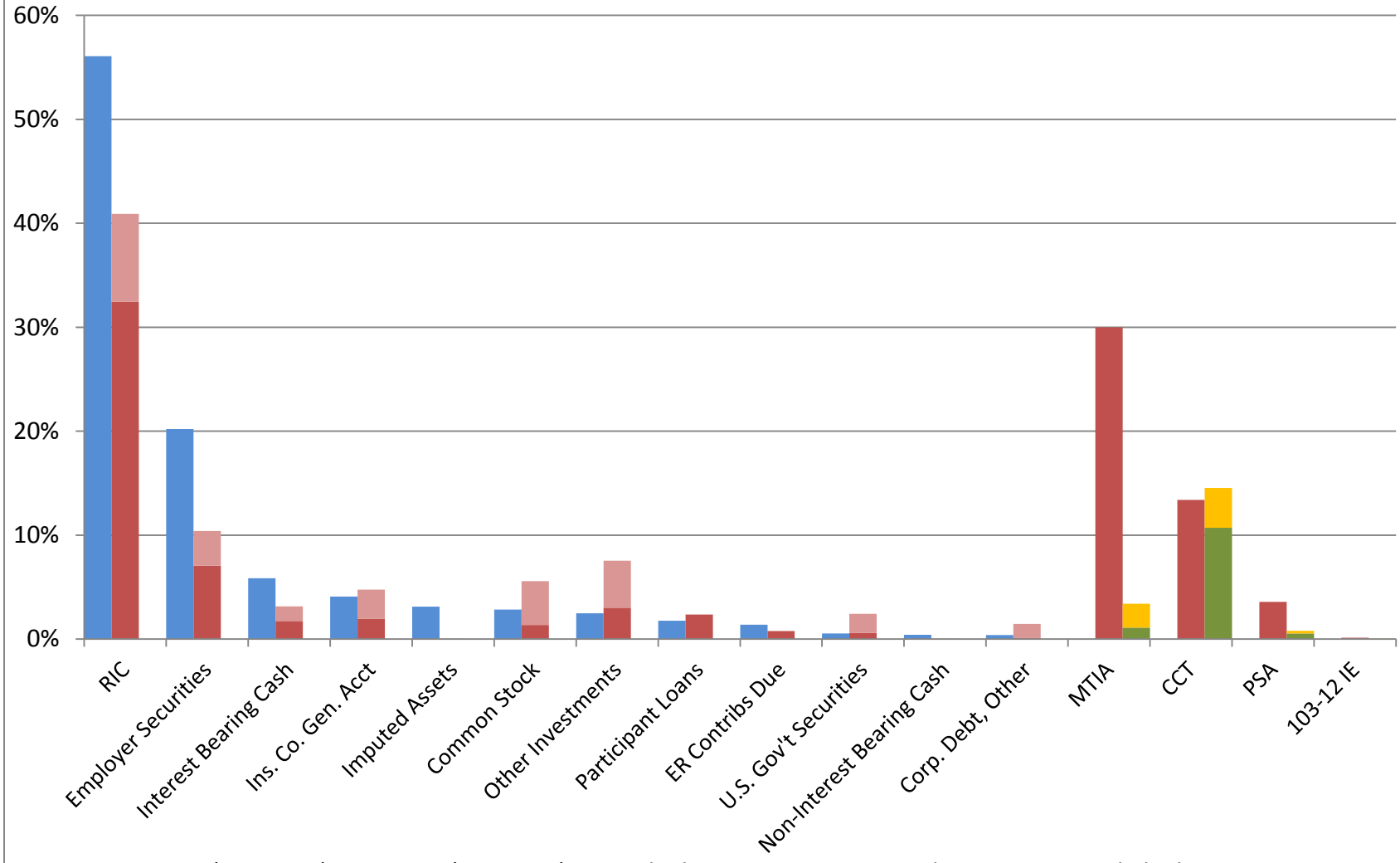


Figure 13C: Defined benefit plan linked total assets, 2008, as computed by EBSA and current study
35%
30%
25%
20%
15%
10%
5%
0%
Common Stock
RIC
U.S. Gov't Securities
Corp. Debt, Other
Joint Ventures
Other Investments
Receivables (not contribs)
Interest Bearing Cash
Corp. Debt, Preferred
ER Contribs Due
Real Estate
Loans (not to participants)
MTIA
CCT
PSA
103-12 IE
EBSA linked
Composite linked (n=6,968)
No DFE (n=3,620)
DFE linked (n=3,348)

Figure 14A: Single-employer defined contiribution plan assets, 2008, by DFE usage, with shares of direct and first-tier DFE holdings



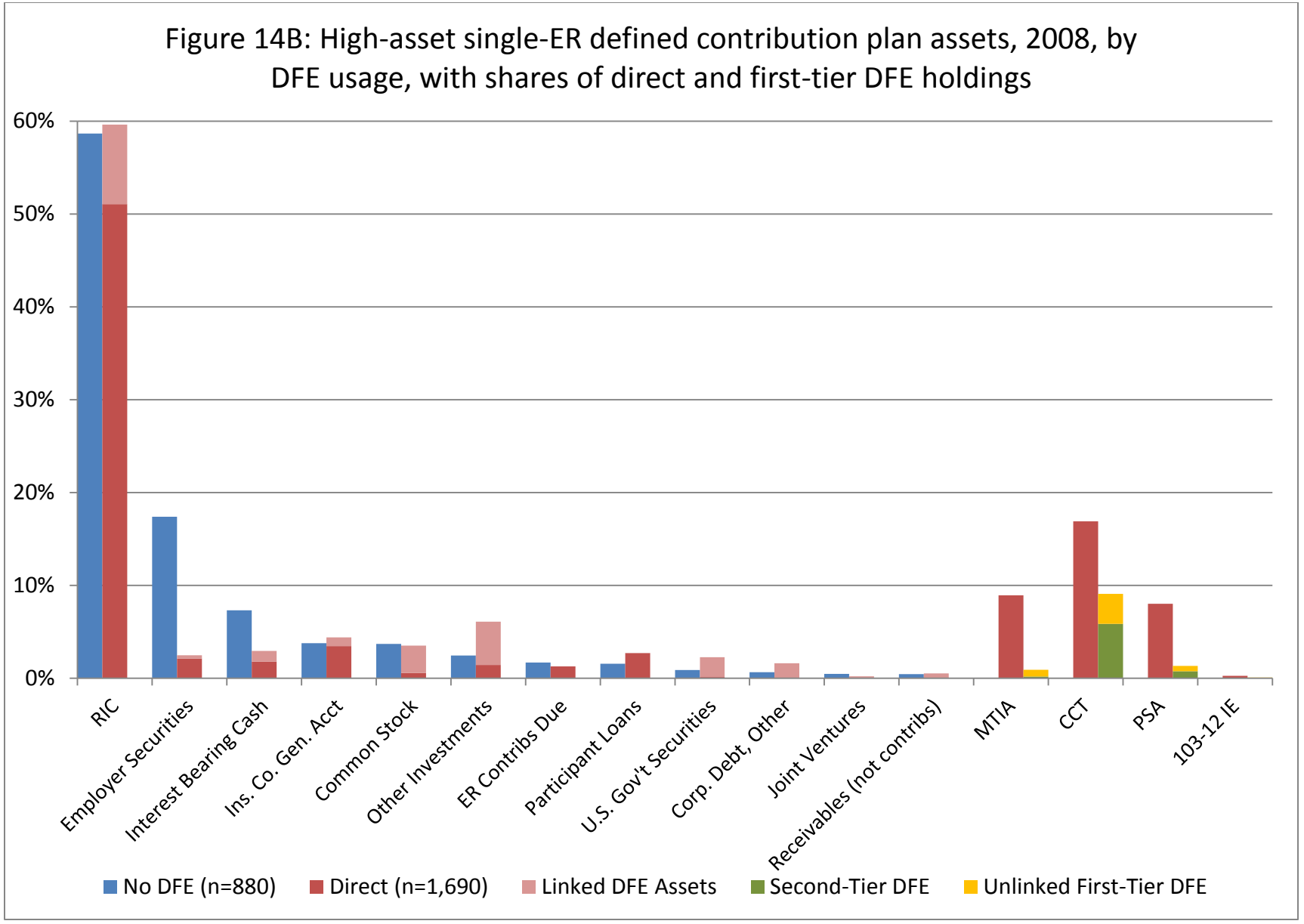


Figure 14B: High-asset single-ER defined contribution plan assets, 2008, by DFE usage, with shares of direct and first-tier DFE holdings
60%
50%
40%
30%
20%
10%
0%
RIC
Employer Securities
Interest Bearing Cash
Ins. Co. Gen. Acct
Common Stock
Other Investments
ER Contribs Due
Participant Loans
U.S. Gov't Securities
Corp. Debt, Other
Joint Ventures
Receivables (not contribs)
MTIA
CCT
PSA
103-12 IE
No DFE (n=880)
Direct (n=1,690)
Linked DFE Assets
Second-Tier DFE
Unlinked First-Tier DFE

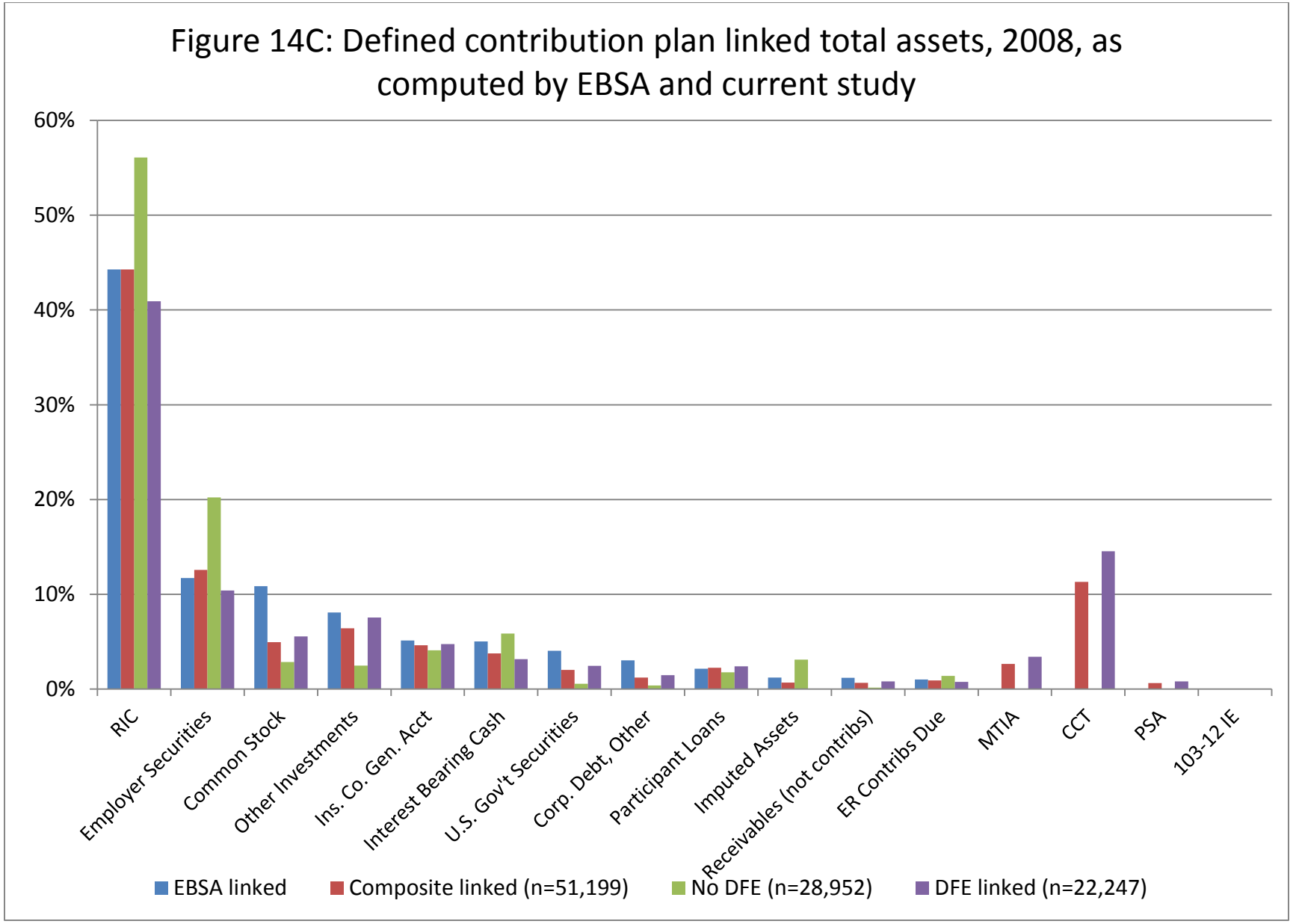


Figure 14C: Defined contribution plan linked total assets, 2008, as computed by EBSA and current study
60%
50%
40%
30%
20%
10%
0%
RIC
Employer Securities
Common Stock
Other Investments
Ins. Co. Gen. Acct
Interest Bearing Cash
U.S. Gov't Securities
Corp. Debt, Other
Participant Loans
Imputed Assets
Receivables (not contribs)
ER Contribs Due
MTIA
CCT
PSA
103-12 IE
EBSA linked
Composite linked (n=51,199)
No DFE (n=28,952)
DFE linked (n=22,247)

B. Other Plan Characteristics

Beyond the great DB/DC divide, some differences in the type and extent of indirect investments were observed earlier among some pension plan sub-varieties. (Compare Figure 5 with Figure 6.) Once first-tier DFE asset holdings are properly attributed to their investor-plans, to what extent do these differences translate into real variation in categorical portfolio composition?

Figure 15 shows the asset allocations of large single-employer cash balance plans for 2008, again separating those plans that do not use DFEs (Group 1, blue columns) from those that report consistent information concerning their DFE investments on Schedules D and H (Group 3, red/pink columns). Comparing Figure 15 with Figure 13A, the similarity between the portfolio compositions of cash balance plans and all DB plans is striking.[142] Cash balance plans comprise only about ten percent of large single-employer DB plans, so the resemblance does not derive from numerical dominance. Although categorized as defined benefit programs, cash balance plans promise a benefit that mimics defined contribution plans and so represent a kind of hybrid arrangement.[143] From that perspective, close alignment between cash balance and traditional DB pension plan portfolio compositions is surprising. From an historical point of view, however, comparable investment behavior becomes understandable. The number of cash balance plans has grown dramatically since 1990, but not by instituting altogether new plans.[144] Instead, a cash balance plan is commonly created by amendment of a preexisting traditional pension plan that has already accumulated substantial investment assets, and the participants of such a converted plan are entitled to receive benefits earned prior to the amendment without diminution.[145] The data appear to support the inference that continuation of an established fund of investment assets and preservation of the plan's prior benefit structure causes the prior investment pattern to endure for an extended period following conversion to the cash balance formula.

[142] This finding is consistent with the similarity, noted earlier, in the utilization of indirect investment vehicles by cash balance and traditional DB plans. *See supra* Figure 7 and text accompanying note 96.

[143] Specifically, a cash balance plan promises a benefit equal to the balance of a hypothetical account which is credited annually with a specified percentage of pay and notional interest tied to the accumulated balance of the account. Such pay credits and interest credits make cash balance plans functionally equivalent to money purchase pension plans, which are defined contribution plans. *See* KYLE N. BROWN, SPECIALIZED QUALIFIED PLANS — CASH BALANCE, TARGET, AGE-WEIGHTED AND HYBRIDS, 352-3d TAX MGM'T PORT. (BNA) A-37 to A-66(11) (2007); Cooper v. IBM Personal Pension Plan, 457 F.3d 636 (7th Cir. 2006). Under a cash balance plan, however, the employer is legally obligated to pay the full promised benefit (balance of the hypothetical account) regardless of the actual investment performance of the pension fund assets, and that allocation of risk causes the arrangement to be classified as a defined benefit rather than a defined contribution plan. ERISA § 3(34), (35), 29 U.S.C. § 1002(34), (35); I.R.C. § 414(i), (j).

[144] *See generally* TOWERS WATSON, PENSIONS IN TRANSITION: RETIREMENT PLAN CHANGES AND EMPLOYER MOTIVATIONS 4-5, 8-9 (2012).

[145] ERISA § 204(g), 29 U.S.C. § 1054(g); I.R.C. § 411(d)(6). For cash balance conversions after June 29, 2005, benefits accrued prior to amendment under the traditional pension formula must be preserved and in addition benefits earned by post-amendment service under the new cash balance formula must serve to increase total benefits, not be credited against the pre-amendment entitlement (i.e., so-called "wear away" transition rules are treated as prohibited age discrimination). ERISA §§ 204(b)(5)(B)(ii), (iii), 203(f)(3), 29 U.S.C. §§ 1054(b)(5)(B)(ii), (iii), 1053(f)(3); I.R.C. § 411(b)(5)(B)(ii), (iii), (a)(13). *See* STAFF OF THE JOINT COMM. ON TAXATION, GENERAL EXPLANATION OF TAX LEGISLATION ENACTED IN THE 109TH CONGRESS 329, 460-68 (Comm. Print 2007); BROWN, *supra* note 143, at A-57 to A-60.

A massive exodus from traditional defined benefit pension plans has occurred over the past 25 years. While some employers converted traditional pension plans into cash balance plans (as described in the prior paragraph), many others simply froze their traditional pension plans, amending them to cease further benefit accruals, with the result that thereafter an active employee's services would generate no additional benefits. Often a new defined contribution plan, typically a 401(k) plan, was instituted in conjunction with such a freeze, allowing workers to continue to earn retirement savings. Although its accrued liability does not increase, a frozen DB plan may continue to operate for many years, receiving annual employer funding contributions, accumulating assets, and paying benefits.[146] Does a frozen plan's investment behavior differ from that of an ongoing DB pension program? Figure 16 shows that, at the level of broad categorical asset allocations, the portfolios of frozen and ongoing traditional DB plans are very much alike. (Cash-balance plans have been excluded from the sets of both frozen and ongoing plans.) The differences are small and those that are discernible seem consistent a marginally greater reliance by frozen plans on lower-risk fixed-income investments. U.S. government securities, corporate debt (both preferred and other), interest-bearing cash, and "other investments" (which include state and local government bonds), all contribute somewhat greater proportions of the holdings of frozen than ongoing plans. Figure 16 groups the data differently than the preceding graphs (Figures 13A, 13B, 14A, 14B, and 15) and uses different column colors to highlight that fact. The quantity displayed in each asset category includes both direct and linked first-tier DFE holdings by plans of the designated type, including both plans that do not use DFEs and those that do (i.e., Group 1 and Group 3 plans are combined). Because investments by plans utilizing DFEs are not segregated, the stacked column display is not used, and the DFE numbers shown on the right side of the graph represent only the combination of linked second-tier DFE holdings and residual first-tier DFE investments that were not successfully linked. The most important feature of Figure 16 is that the comparison group does not consist of all ongoing traditional pension plans. Instead, a matching procedure was used to randomly select, for each frozen plan included in the data set, three ongoing plans having an amount of reported gross assets that falls within 2 percent of the reported gross assets of the frozen plan.[147] As we have already seen, portfolio composition varies (often dramatically) with the level of total plan assets. This matching procedure was developed to neutralize such size effects, providing a comparison of portfolio allocations between plans of different types that is not confounded by differences in the range or distribution of total asset levels between those different plan types.[148] Such an apples-to-apples comparison is particularly important here, because smaller DB plans are much more likely to be frozen, yet any narrow asset range selected to compare frozen and ongoing plans nets very few frozen plans.

[146] Ordinarily, frozen plans continue operations because they have not accumulated sufficient assets to pay all accrued benefits. Under current law, a financially healthy sponsor cannot voluntarily terminate an underfunded plan. *See* ERISA § 4041(a)(1), (b), 29 U.S.C. § 1341(a)(1), (b).

[147] Where the same ongoing plan was randomly selected as a match for more than one frozen plan it is included in the comparison set of ongoing plans only once. Hence the number of matched ongoing plans is less than three times the number of frozen plans. Also, where only one or two ongoing plans report total gross assets falling within a 2-percent collar of the asset level of a particular frozen plan, the frozen plan and the available matches were retained in the data set, but this was the case for only one frozen single-employer plan. Frozen plans were excluded from the comparison if no ongoing plans satisfied the asset-level screen, which ruled out 38 plans.

[148] The authors investigated using a matching protocol that would screen for comparability of both gross and net asset levels, but the simpler gross asset test was adopted because gross and net asset levels were found to track very closely for the overwhelming majority of plans.

Turning to the DC universe, Figure 17A presents the corresponding comparison for all large single-employer 401(k) plans in 2008. To restrict consideration to plans of similar asset size (recall that plans using DFEs tend to have higher total assets than those that do not), Figure 17B presents weighted average portfolio allocations for a subset of high-asset (90^{th} to 95^{th} percentile) single-employer 401(k) plans. With one notable exception, the 401(k) plan portfolios illustrated in Figures 17A and 17B very closely track the results for DC plans generally, shown in Figures 14A and 14B. That's to be expected inasmuch as 401(k) plans account for roughly 75 percent of the DC plan universe. The exception is also quite understandable. Unlike DC plans in general, employer securities account for a much smaller share of 401(k) plan portfolios. The difference is due to the fact that a large share of all employer securities are held by ESOPs, a subtype of DC plan that is included in Figures 14A and 14B but is largely (though not entirely) excluded from the set of 401(k) plans.[149]

Figures 18A and 18B present the corresponding picture for money purchase pension plans (MPPPs), a type of DC plan that has dramatically declined in importance since 2001.[150] The overall pattern is quite similar to the asset allocation of 401(k) plans (Figures 17A and 17B), and hence to DC plans generally (Figures 14A and 14B). One stark difference is the much higher utilization of MTIAs by MPPPs (compare Figures 18A and 17A). The reason seems to lie in the fact that a larger proportion of MPPPs fall into higher asset ranges (recall that MTIA usage is very heavily concentrated among the largest plans, as shown in Figures 4-6) than 401(k) plans.[151] To eliminate the disparity in asset size, Figure 18C compares the set of single-employer money purchase pension plans with a randomly-selected matched sample of 401(k) plans having comparable asset levels. Asset size matching was performed using the procedure described earlier in connection with Figure 16,[152] and as in that figure, the quantity displayed in each asset category includes both direct and linked first-tier DFE holdings by plans of the designated type, including both plans that do not use DFEs and those that do. (The highest-asset money purchase plan was excluded from the data sets compared in Figure 18C, however, because it reports an unusual asset mix—fully 43% as "other receivables"—and its size is so large that inclusion substantially alters the weighted average portfolio of all MPPPs.[153]) The close correspondence between MPPP and 401(k) plan asset allocations, combined with the heavy reliance on registered investment company (mutual fund) shares, suggests that money purchase plans have, like 401(k) plans, largely shifted to responsibility for investment decision-making to participants, who are a

[149] ESOPs can include an elective contribution element, and such a cash-or-deferred component would cause the plan to be classified as both an ESOP and a 401(k) plan. I.R.C. §§ 401(k)(2), 4975(e)(7). That combination, however, is relatively rare. According to the Labor Department, in 2008 there were 7,048 ESOP filings, of which 1,374 had a 401(k) feature and 5,672 did not. By way of comparison, In 2008 there were 510,209 401(k) plans that were not ESOPs. EBSA, *supra* note 103, Table D16 at 62.

[150] *See supra* Figure 8 and note 95.

[151] The Labor Department reports average assets per large (i.e., 100 or more participants) MPPP of $41.6 million in 2008; the corresponding number for large 401(k) plans is $29.7 million. *See* EBSA, *supra* note 103, author's computation from Tables A1(a) and D1 (2,192 large MPPPs; total gross assets $91,194 million), D4 and D9 (64,263 large 401(k) plans with $1,910,099 million total assets).

[152] *See supra* text accompanying notes 147-148.

[153] The excluded plan, with $4.28 billion in reported gross assets in 2008, is the American Airlines, Inc. Pilot Retirement Benefit Program Variable Income Plan.

choice between a menu of mutual funds, as permitted by ERISA § 404(c).[154] And in fact, 69.5 percent of the 1,260 single-employer MPPPs reported plan characteristics codes indicating that the plan provided for total or partial participant direction of investments, as did 96.8 percent of the 3,606 matched 401(k) plans in the comparison group.

The results for large single-employer employee stock ownership (ESOP) plans in 2008 are given by Figures 19A and 19B. An ESOP is defined in part as a plan designed to invest primarily in employer stock,[155] and so it comes as no surprise that for ESOPs that do not use DFEs (Group 1) employer securities is the largest asset category (70% or more) by a wide margin. The shock lies in the asset allocation of plans that use DFEs. To judge by these numbers, many of these plans are not properly classified as ESOPs because they do not invest primarily in employer stock even once indirect investments are properly characterized! No ready explanation for this apparently dramatic misreporting comes to mind.

[154] 29 U.S.C. § 1104(c).

[155] ERISA § 407(d)(6), (5), 29 U.S.C. § 1107(d)(6), (5); I.R.C. §§ 4975(e)(7), (8), 409(*l*); Treas. Reg. § 54.4975-11.

Figure 15: Single-ER cash balance DB plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings

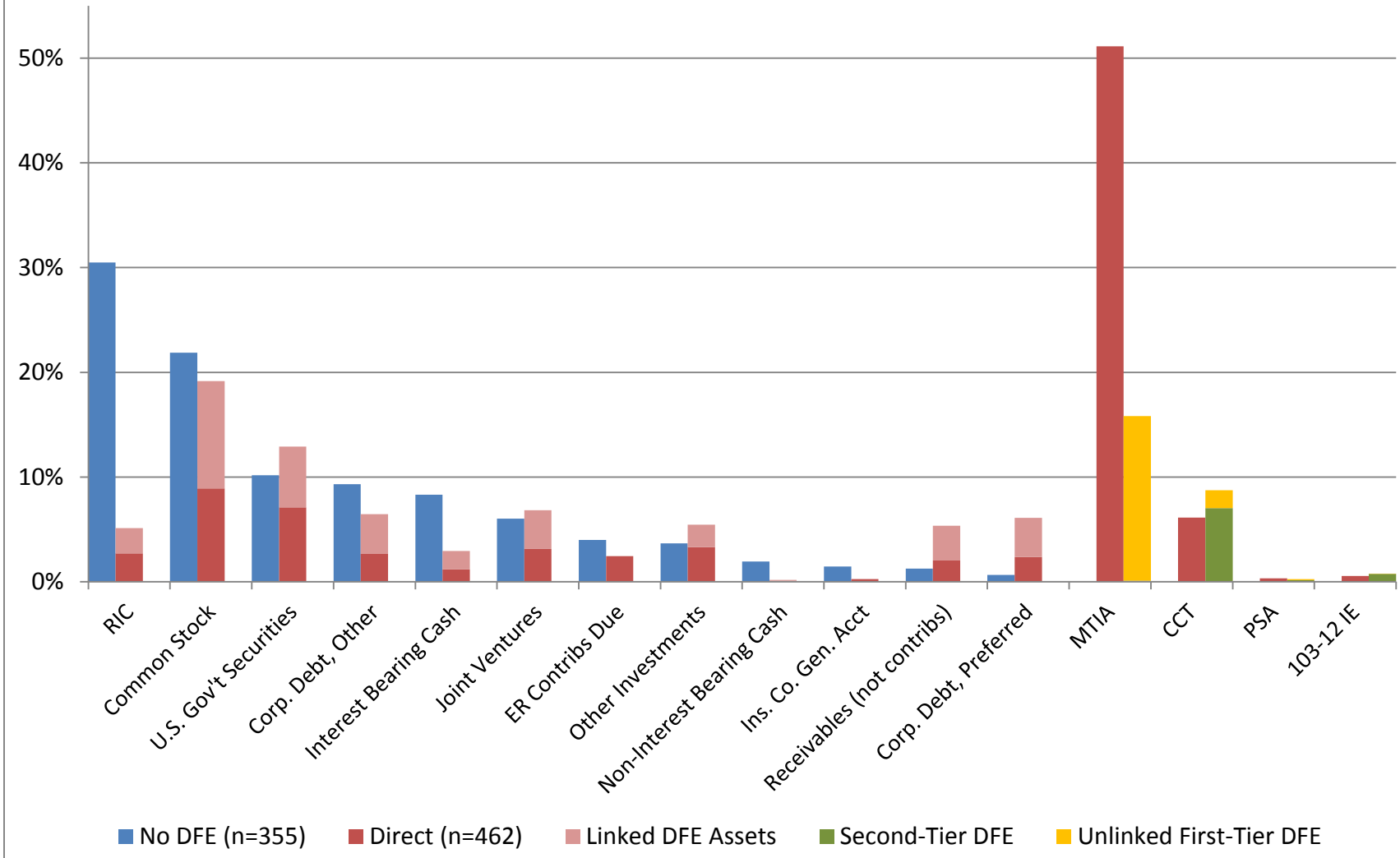
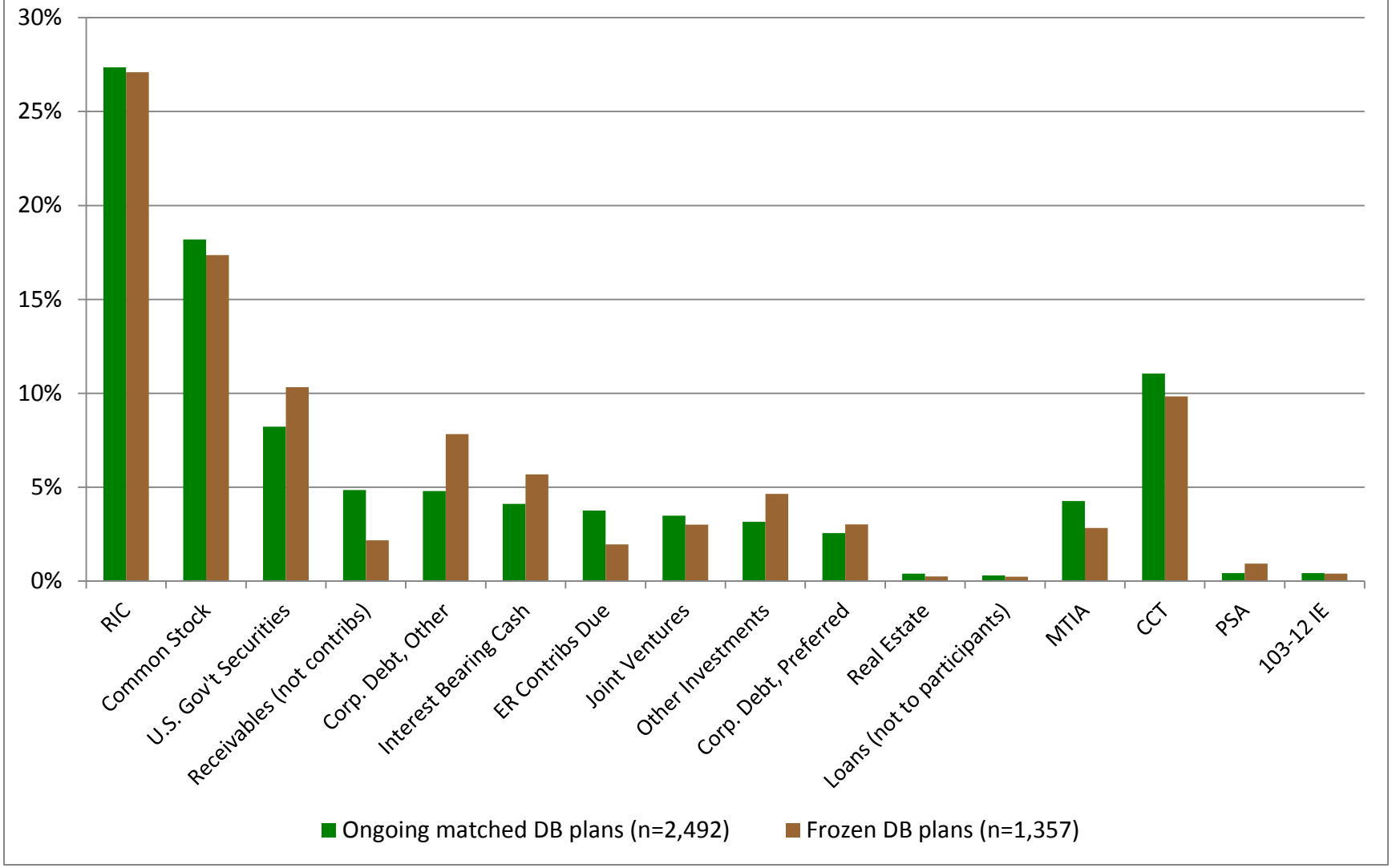


Figure 16: Comparison of frozen and matched ongoing single-ER traditional DB plan asset allocations, 2008 (direct and first-tier DFE holdings combined)



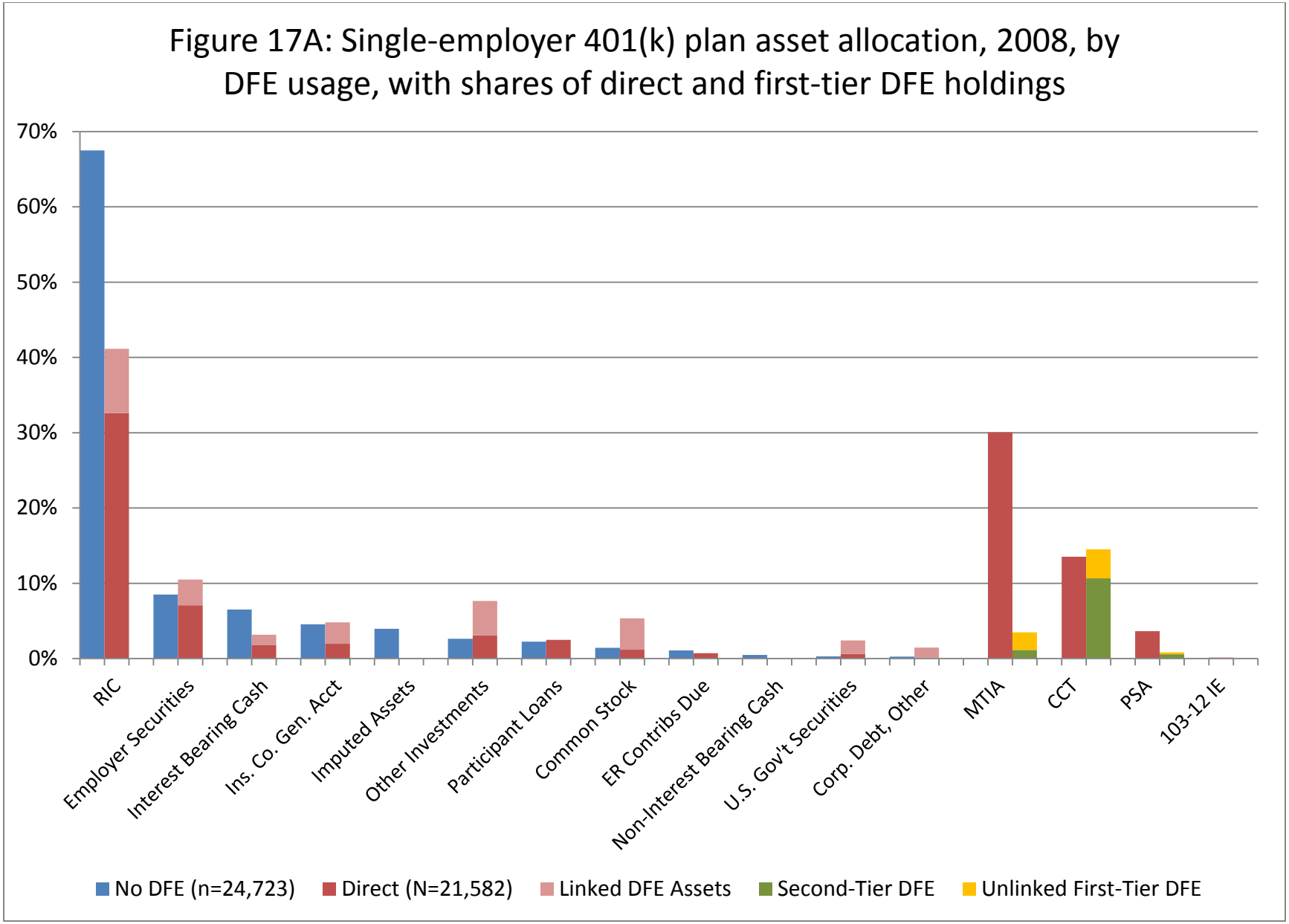
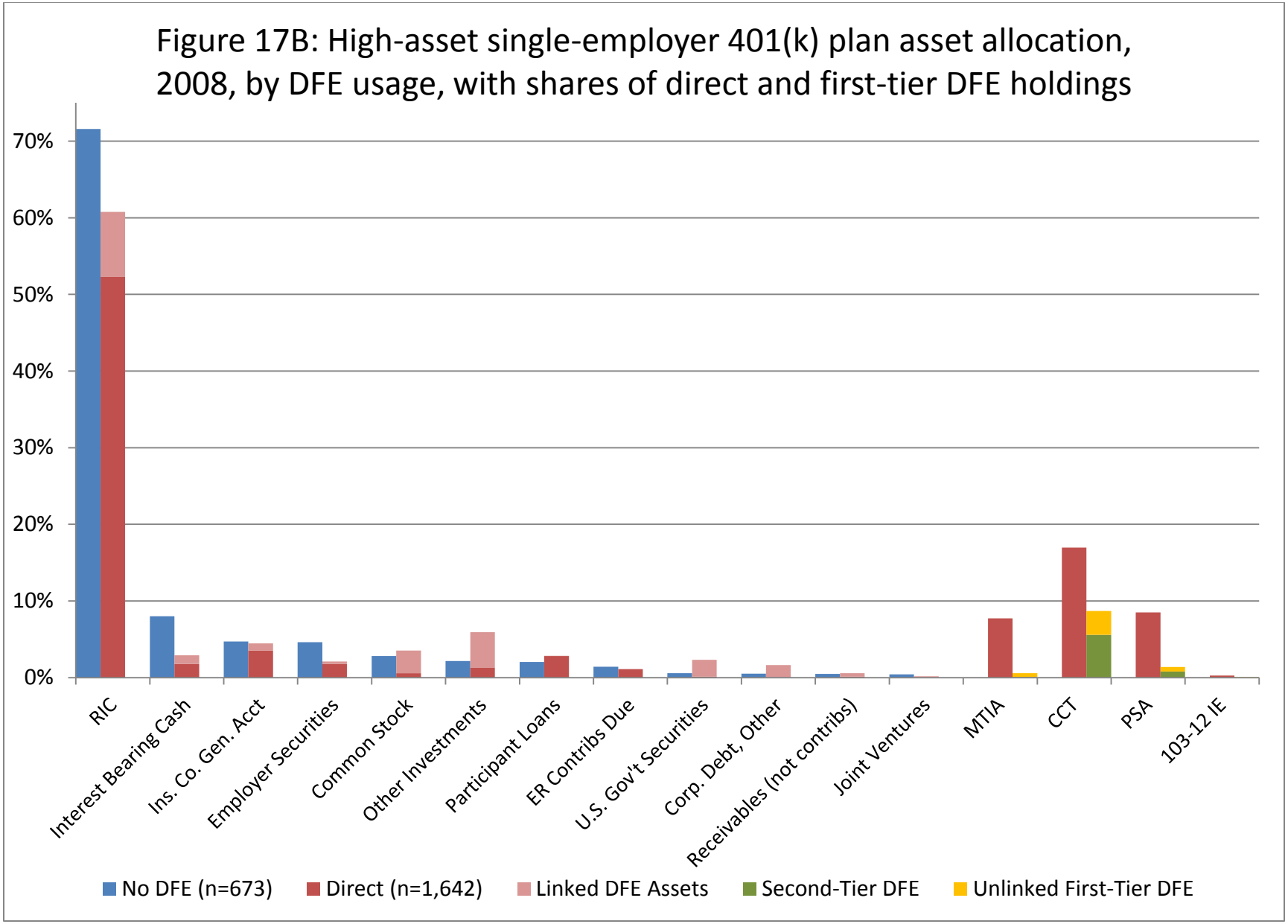


Figure 17A: Single-employer 401(k) plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings
70%
60%
50%
40%
30%
20%
10%
0%
RIC
Employer Securities
Interest Bearing Cash
Ins. Co. Gen. Acct
Imputed Assets
Other Investments
Participant Loans
Common Stock
ER Contribs Due
Non-Interest Bearing Cash
U.S. Gov't Securities
Corp. Debt, Other
MTIA
CCT
PSA
103-12 IE
No DFE (n=24,723)
Direct (N=21,582)
Linked DFE Assets
Second-Tier DFE
Unlinked First-Tier DFE

Figure 17B: High-asset single-employer 401(k) plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings



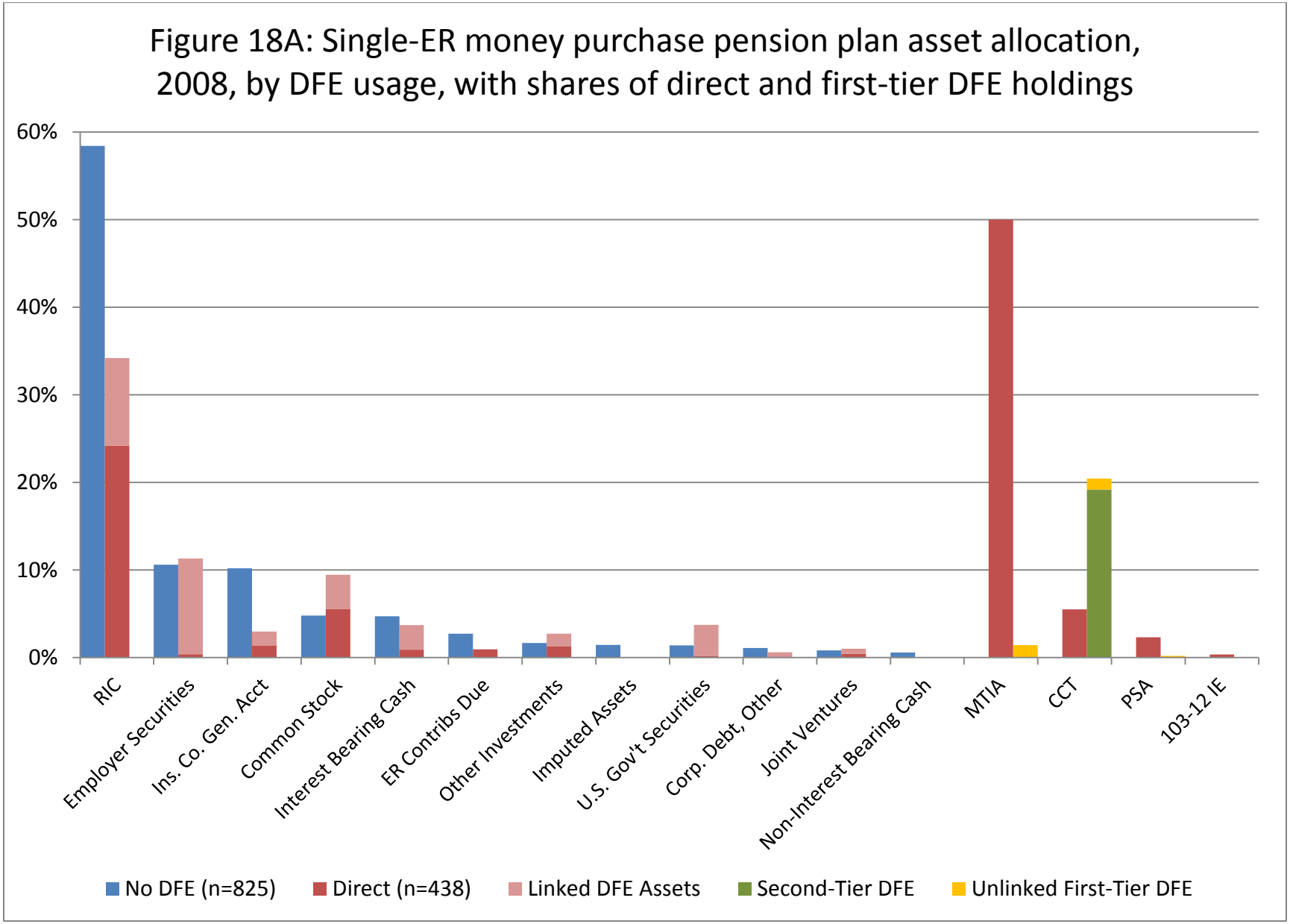
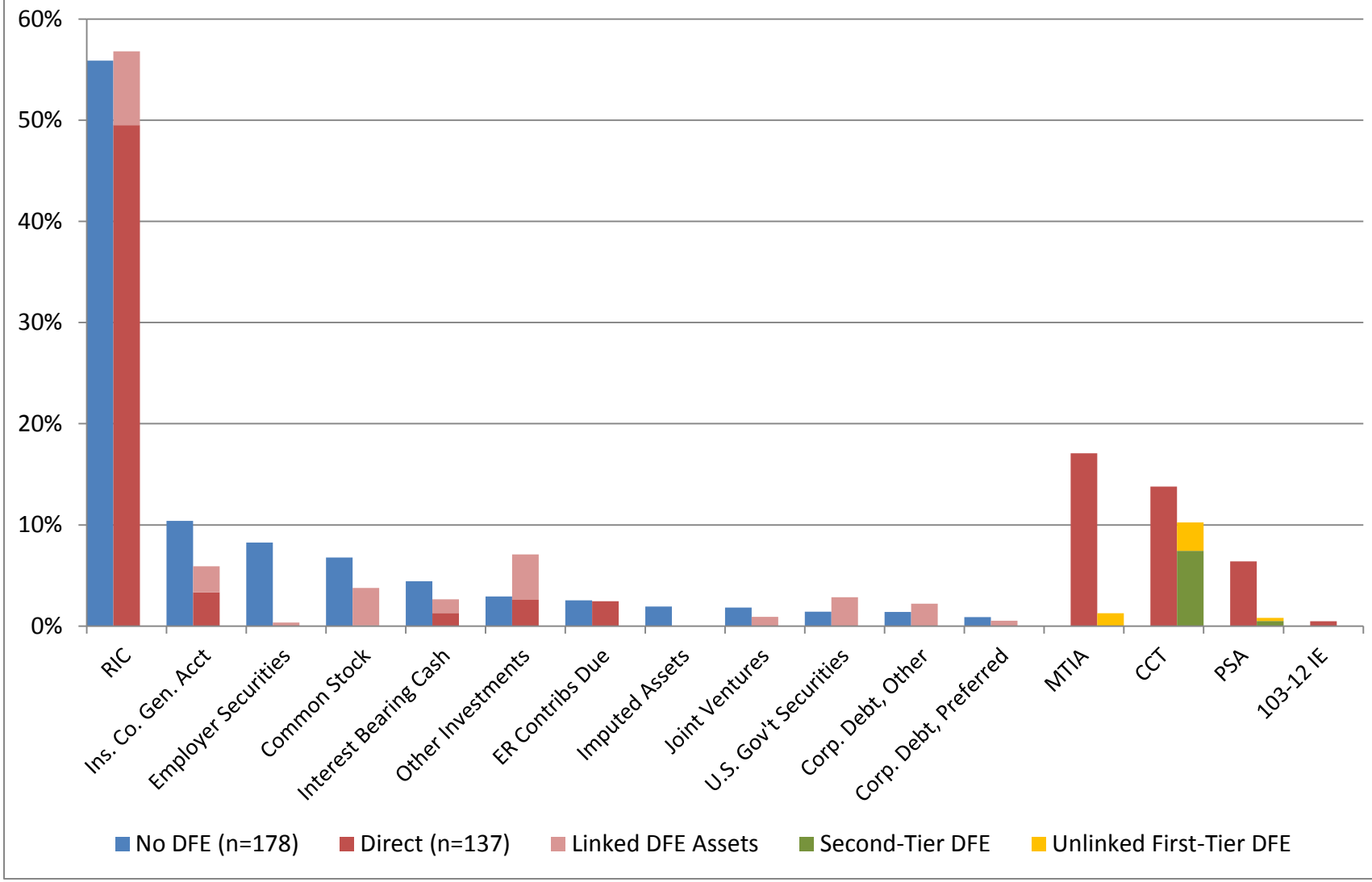


Figure 18A: Single-ER money purchase pension plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings
60%
50%
40%
30%
20%
10%
0%
RIC
Employer Securities
Ins. Co. Gen. Acct
Common Stock
Interest Bearing Cash
ER Contribs Due
Other Investments
Imputed Assets
U.S. Gov't Securities
Corp. Debt, Other
Joint Ventures
Non-Interest Bearing Cash
MTIA
CCT
PSA
103-12 IE
No DFE (n=825)
Direct (n=438)
Linked DFE Assets
Second-Tier DFE
Unlinked First-Tier DFE

Figure 18B: High-asset single-ER money purchase plan asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings



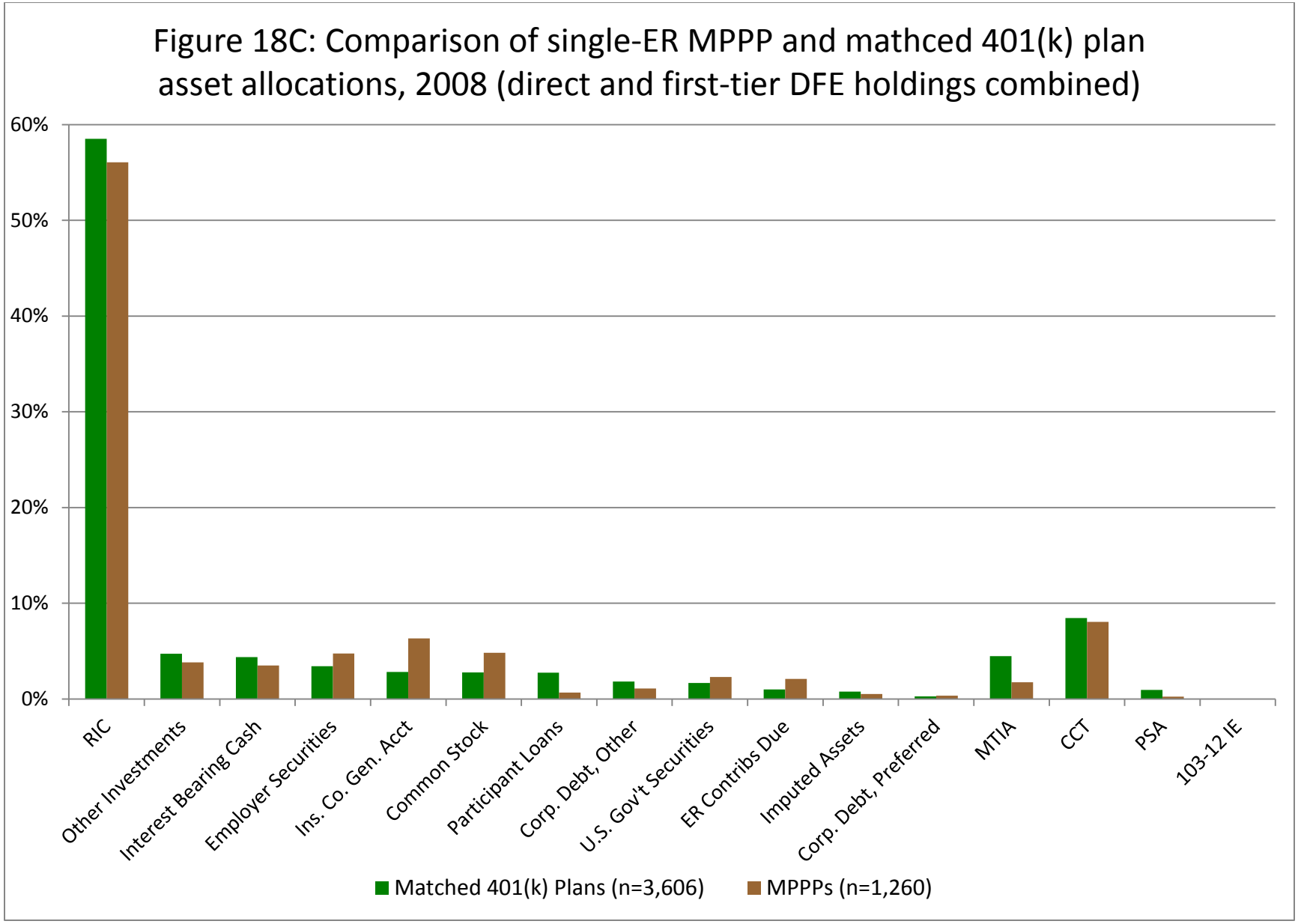


Figure 18C: Comparison of single-ER MPPP and mathced 401(k) plan asset allocations, 2008 (direct and first-tier DFE holdings combined)
60%
50%
40%
30%
20%
10%
0%
RIC
Other Investments
Interest Bearing Cash
Employer Securities
Ins. Co. Gen. Acct
Common Stock
Participant Loans
Corp. Debt, Other
U.S. Gov't Securities
ER Contribs Due
Imputed Assets
Corp. Debt, Preferred
MTIA
CCT
PSA
103-12 IE
Matched 401(k) Plans (n=3,606)
MPPPs (n=1,260)

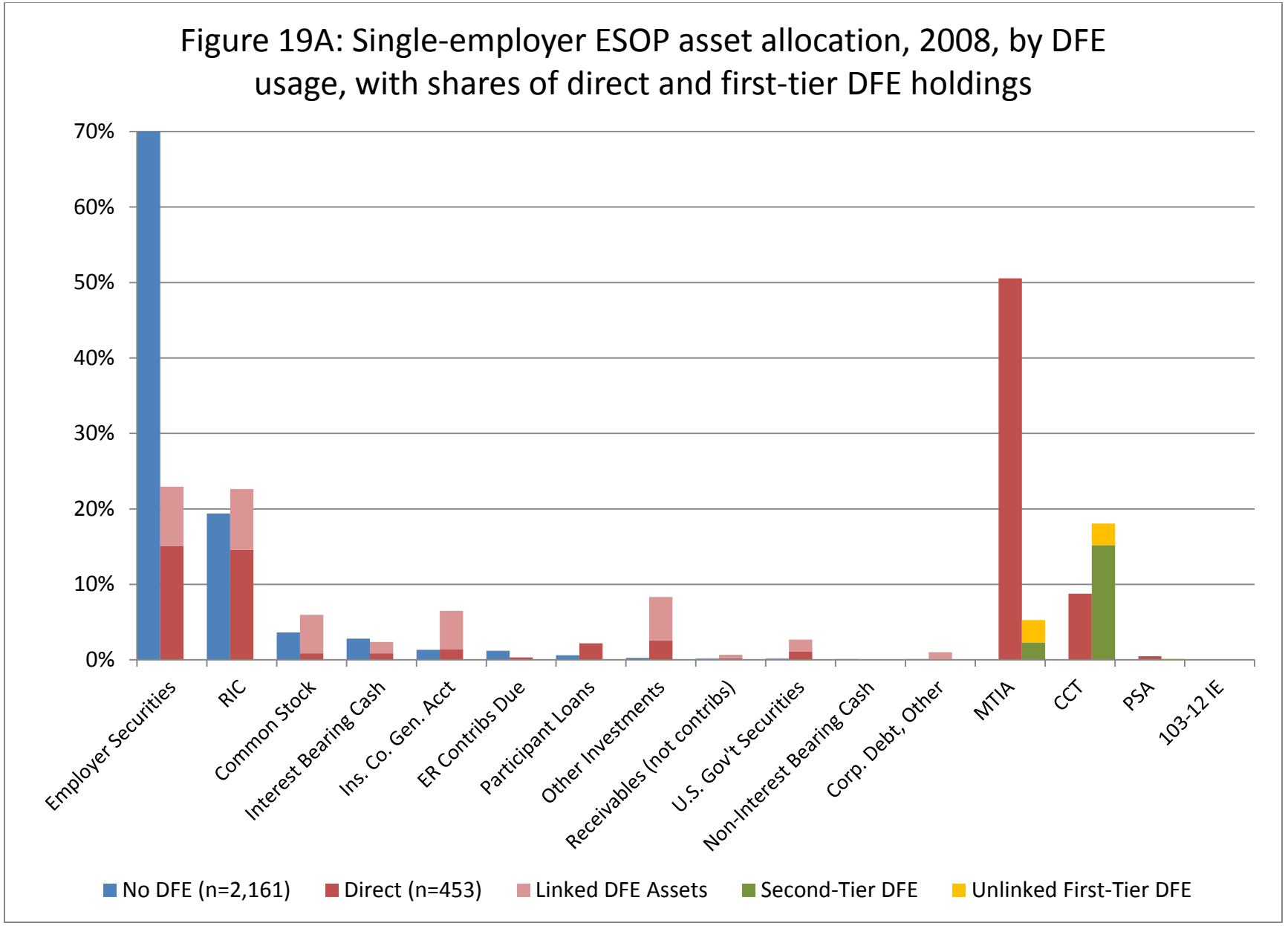


Figure 19A: Single-employer ESOP asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings
70%
60%
50%
40%
30%
20%
10%
0%
Employer Securities
RIC
Common Stock
Interest Bearing Cash
Ins. Co. Gen. Acct
ER Contribs Due
Participant Loans
Other Investments
Receivables (not contribs)
U.S. Gov't Securities
Non-Interest Bearing Cash
Corp. Debt, Other
MTIA
CCT
PSA
103-12 IE
No DFE (n=2,161)
Direct (n=453)
Linked DFE Assets
Second-Tier DFE
Unlinked First-Tier DFE

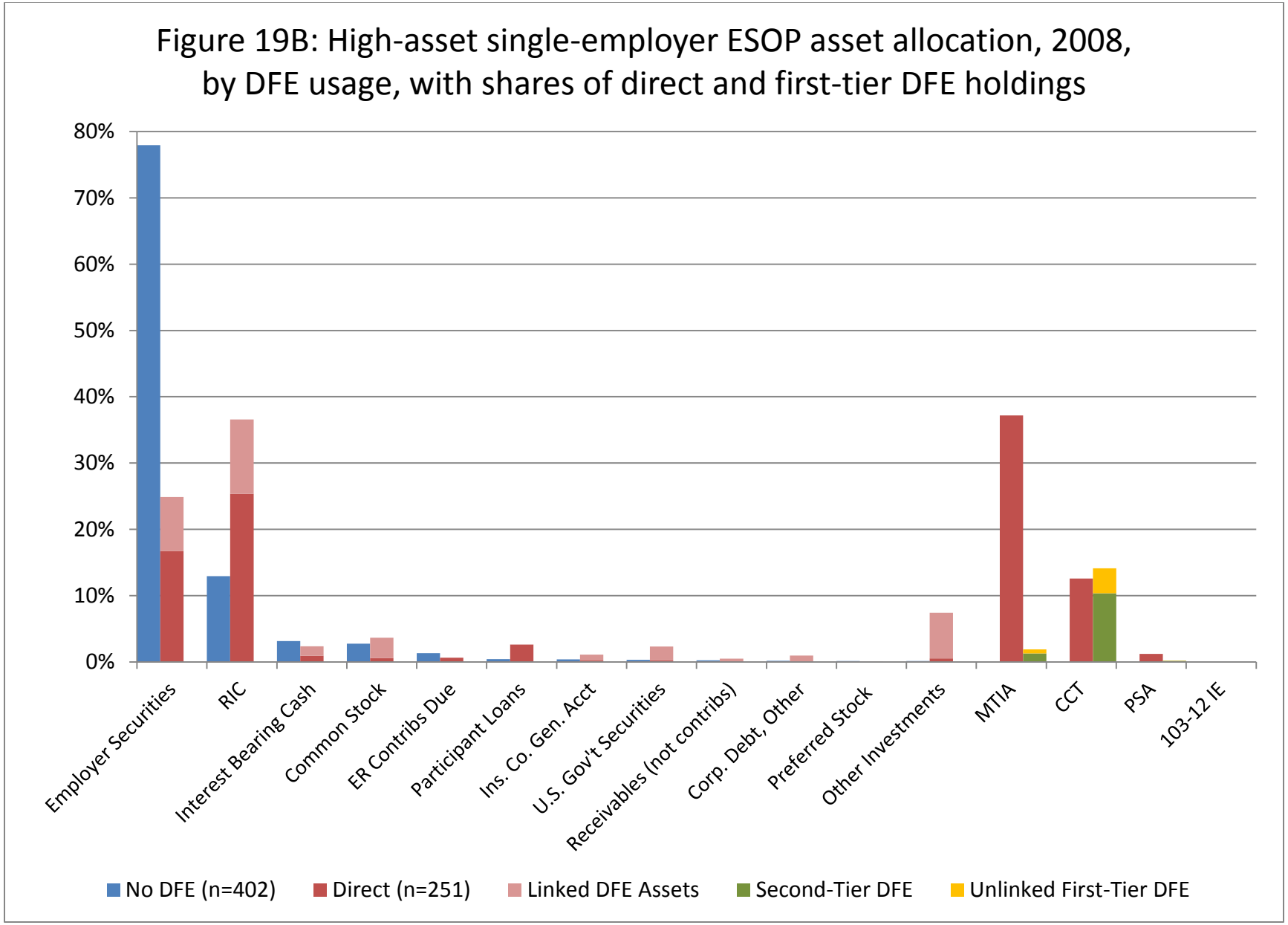


Figure 19B: High-asset single-employer ESOP asset allocation, 2008, by DFE usage, with shares of direct and first-tier DFE holdings
80%
70%
60%
50%
40%
30%
20%
10%
0%
Employer Securities
RIC
Interest Bearing Cash
Common Stock
ER Contribs Due
Participant Loans
Ins. Co. Gen. Acct
U.S. Gov't Securities
Receivables (not contribs)
Corp. Debt, Other
Preferred Stock
Other Investments
MTIA
CCT
PSA
103-12 IE
No DFE (n=402)
Direct (n=251)
Linked DFE Assets
Second-Tier DFE
Unlinked First-Tier DFE

In unionized workforces benefits are the subject of collective bargaining and the union often plays an important role in monitoring the implementation of the agreement. Therefore one might expect to find differences in the portfolio composition of pension plans according to whether or not the plans are products of collective bargaining. Multiemployer plans are the best known example of collectively-bargained pension programs, but those plans cover employees of multiple unrelated employers, have a unique joint governance structure (involving union and employer representatives), are subject to special funding and termination insurance rules, and tend to have very high asset levels.[156] Consequently, if multiemployer plans exhibit different investment allocations than single-employer plans, the difference could be attributable to a number of factors other than union monitoring. To avoid those confounding variables, the authors looked for a unionization effect by sorting the 2008 single-employer pension plan balance sheet data into subsets composed of plans that were or were not collectively-bargained.[157] DB and DC plans were sorted separately, and the subsets (collectively bargained or not) were further subdivided into groups consisting of those plans that did not utilize DFEs (Group 1), and those using DFEs and filing consistent information to permit linking (Group 3).

Figure 20 displays the major categorical asset allocations of collectively-bargained and non-collectively-bargained large single-employer defined benefit plans in 2008. It adopts a clustered stacked column format similar to that used in the preceding charts, but each asset category now contains four columns rather than two. This four-column display permits side-by-side presentation of the portfolio compositions of: (1) non-collectively bargained plans that do not use DFEs (dark blue single columns); (2) linkable non-CBA plans that use DFEs (red/pink stacked columns); (3) collectively-bargained plans that do not use DFEs (light blue single columns); and (4) linkable CBA plans that use DFEs (orange/salmon stacked columns). Also like the preceding charts, the right side of the graph shows the utilization and linking results for the four types of DFEs.

Figure 20 should be compared with Figure 13A, showing the composite results for all large single-employer DB plans regardless of collective bargaining status. So, does unionization of the covered workforce affect DFE utilization or the categorical composition of pension plan portfolios, taking into account linked first-tier DFE investments? The answer for large single-employer DB plans seems to be very little. When DB plans are segregated by collective bargaining status only two conspicuous disparities emerge. First, collectively-bargained plans make substantially greater use of master trust investments than do non-CBA plans (76% versus 51%). Curiously, however, a larger proportion of all non-CBA plans that use DFEs fall into the highest asset ranges than is the case for the CBA plans that use DFEs. Hence higher reliance on MTIA investments by union plans is not attributable (as it was in so many other cases) to higher

[156] *See* 29 U.S.C. § 186(c)(5) (governance structure); ERISA §§ 3(37) (definition of multiemployer plan), 302(a)(2)(C), 304 (minimum funding standards), 4001(a)(3) (definition for purposes of PBGC insurance program), 4006 (premium rates), 4022A (benefits guaranteed), 4201-4303 (withdrawal liability), 29 U.S.C. §§ 1002(37), 1082(a)(2)(C), 1084, 1301(a)(3), 1306, 1322a, 1381-1453. In 2008, 2,939 multiemployer plans reported total assets of $471.5 billion, or on average $160 million per plan; fewer than one percent of single employer plans in 2008 reported assets comparable to or greater than this amount. EBSA, *supra* note 103, at Tables A6 and B2.

[157] The sort was based upon responses to Form 5500, Part I, question C, which instructs: "If the plan is collectively bargained, check here". According to the Labor Department tallies, in 2008 there were 46,926 single-employer plans, of which 3,399 were collectively bargained and 43,526 were not. Of the 667,156 single-employer DC plans in 2008, only 7,627 were collectively bargained. EBSA, *supra* note 103, at Table A6.

average asset levels. Second, an exceptionally large proportion of MTIA interests held by collectively-bargained plans could not be successfully linked to the underlying MTIA investments. Even though the amount reported by an investor-plan as the year-end value of its interest in MTIAs on Schedule H matched the total MTIA values reported on Schedule D (that is, we are dealing with potentially linkable Group 3 plans), it is unusually common for these collectively-bargained DB plans to fail to intelligibly identify the particular MTIAs in which they hold an ownership stake. Indeed, there is a much higher rate of unlinked first-tier MTIA investments among DB plans overall than among DC plans (15% versus 3%, as shown in Figure 13A and Figure 14A), and Figure 20 reveals that exceptional failure rate to be almost entirely attributable to collectively-bargained plans.[158] Why collectively-bargained DB plans are far more likely to file defective Schedule D information is a mystery. One wonders whether some sponsors of collectively-bargained DB plans might be blunting union oversight by engaging in deliberate obfuscation. The situation at least looks suspicious.

Figure 21 gives the corresponding breakdown between collectively-bargained and non-CBA large single-employer DC plans in 2008, again using a four-column format and showing the contributions of the direct and indirect holdings of plans that use DFEs by means of stacked columns. Figure 21 should be compared with Figure 14A, showing the composite results for all large single-employer DC plans regardless of collective bargaining status. There is a very close correspondence between Figure 14A and the Figure 21 columns representing asset allocations of plans that are not collectively bargained, and for the simple reason that collectively-bargained plans are a very small segment of the DC universe. (Note the low "n" reported in Figure 21 for each group of CBA plans.) Comparing the CBA and non-CBA portfolios, the most salient difference is the higher reliance on MTIAs by collectively-bargained plans (45% versus 26% for non-CBA plans using DFEs). Yet this greater utilization of MTIAs by collectively-bargained DC plans is not associated with a high linking failure rate, as was found for collectively-bargained DB plans.

[158] *But see infra* text accompanying note 166.

Figure 19: Single-ER DB plan asset allocation, 2008, by collective bargaining status and DFE usage, with shares of direct and first-tier DFE holdings

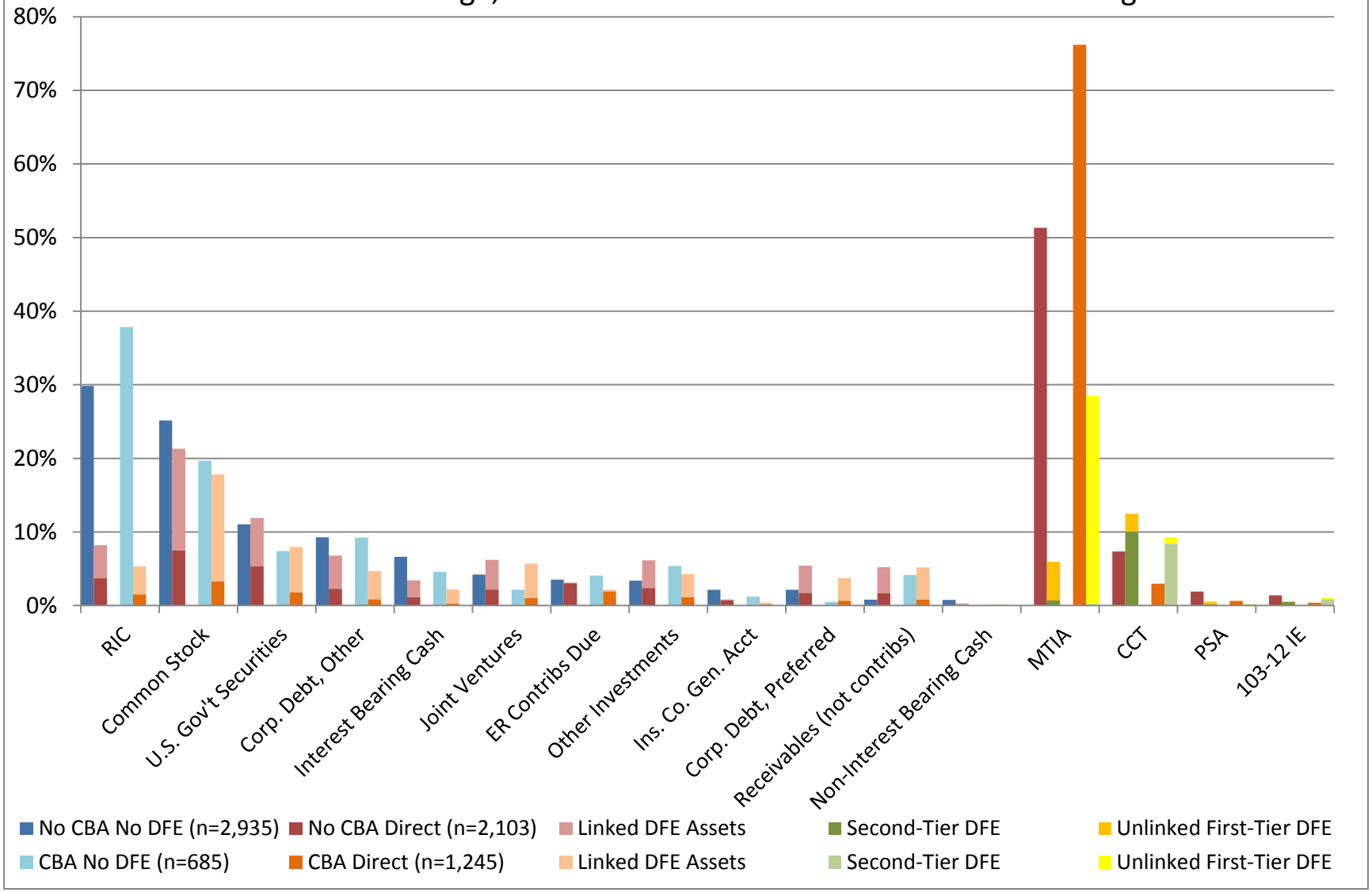
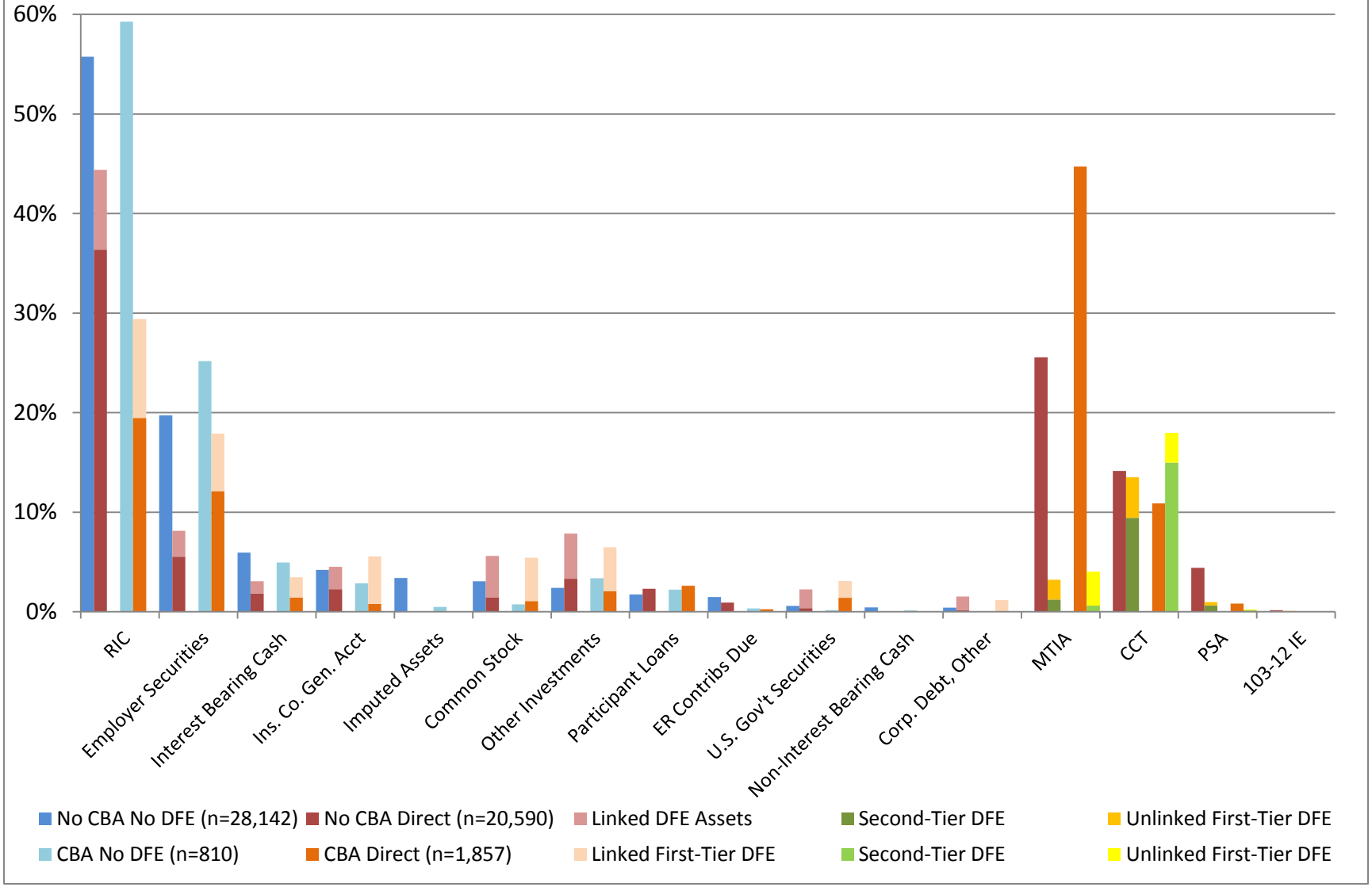


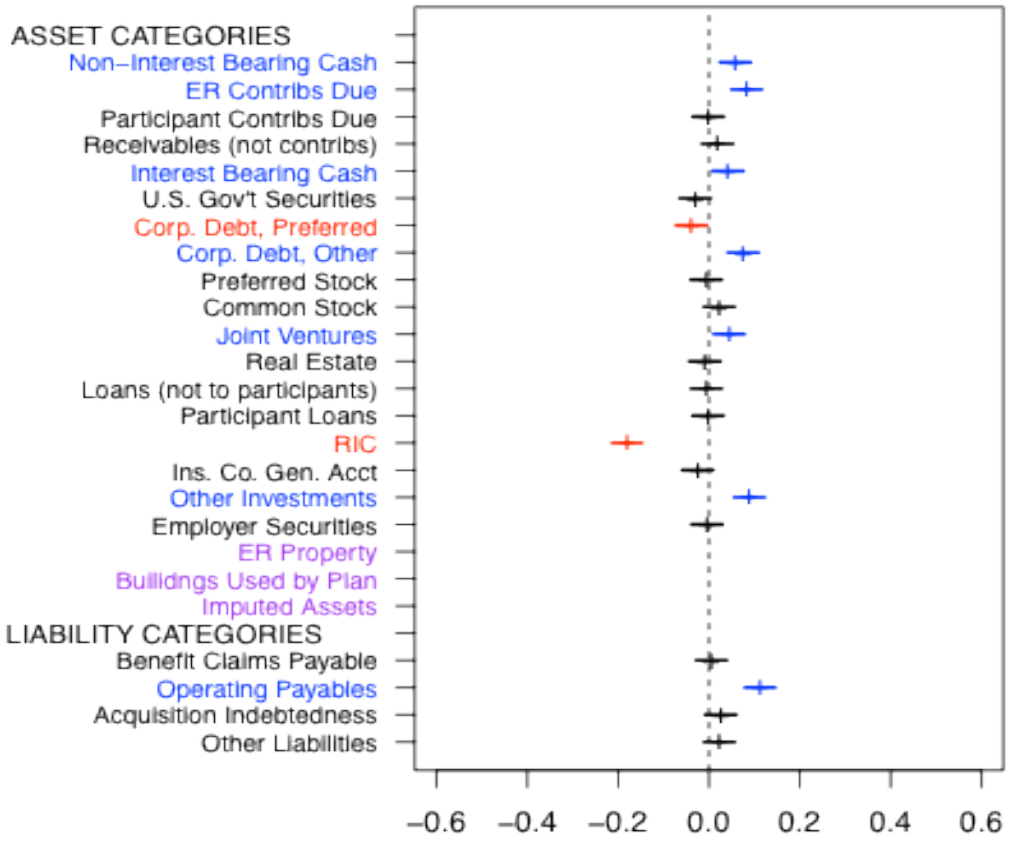
Figure 20: Single-ER DC plan asset allocation, 2008, by collective bargaining status and DFE usage, with shares of direct and first-tier DFE holdings



C. Plan-Level Correlations

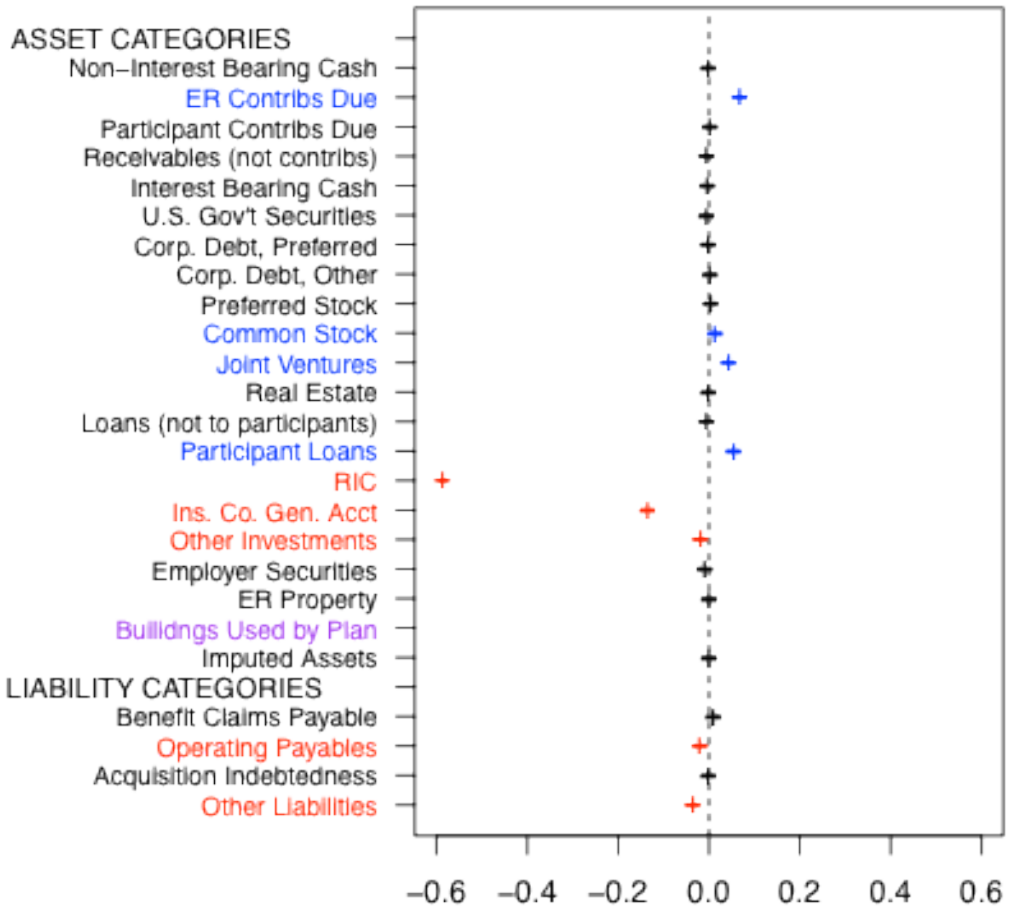
In order to evaluate individual plan behavior we examine the correlation between direct plan investment in each non-DFE asset and liability category and first-tier DFE values for the same category. Figure 22 presents these correlations together with ninety-five percent confidence intervals for large single-employer defined benefit plans in 2008. Categories with a positive correlation are depicted in blue and indicate that as plans hold a higher percentage of their assets (or liabilities) directly in the indicated category, their indirect investment in that category trends upward as well. The categories listed in red have a statistically significant negative correlation between direct and indirect investment and evidence the opposite pattern. For the categories whose confidence intervals include zero, there is no evidence indicating association between the percentage of assets directly invested in a category and the percentage of assets indirectly invested in a category.[159] Figure 23 reports the correlation results for defined contribution plans.

Figure 22: Correlation between direct and indirect investments by large single-employer defined benefit plans, 2008 (with 95% confidence intervals)



[159] Categories listed in purple contained insufficient data to calculate a correlation.

Figure 23: Correlation between direct and indirect investments by large single-employer defined contribution plans, 2008 (with 95% confidence intervals)



Strong negative correlations are seen for mutual funds (RICs), and in the case of DC plans, insurance company general accounts. Thus, an increase in a plan's direct holdings of mutual fund shares is associated with investment in DFEs that allocate a lower proportion of their portfolios to mutual funds. It may be relevant that insurance company general account interests often correspond to guaranteed investment contracts (GICs), and under participant-directed DC plans a GIC investment option may be offered in conjunction with an array of mutual fund (RIC) choices. The dearth of other strong negative correlations seems to confirm that DFEs are not systematically employed to achieve categorically contrarian investment positions (i.e., divergent from a plan's direct holdings). While DFEs could be exploited to obfuscate the broad categorical nature of plan investments, that ulterior usage doesn't appear to be widespread.

D. Characteristics of Plans Filing Inconsistent DFE Information

In 2008, 53 percent of large pension plans reported investing in at least one DFE. Such plans are required to report the dollar amount of their DFE interests in two different ways. First, a plan must report the total amount invested in each of the four types of DFE on Schedule H. Second, Schedule D of Form 5500 calls for the plan to identify each specific DFE in which it invested, indicate the type of that DFE (as either MTIA, CCT, PSA or 103-12 IE), and list the dollar amount invested. The sum of the Schedule H reporting of DFE investment should equal the sum of the DFE investment identified individually on Schedule D. Yet more than 35 percent of plans that invest in DFEs report inconsistent numbers on Schedule H and Schedule D. (In the methodology explanation these are referred to as Group 2 plans.[160]) Such inconsistent filings were excluded from the linking protocol — and therefore from the results and analysis presented above — because knowledge of the value of the plan's interest in a DFE is required to impute the correct share of DFE holdings to the plan. Where the numbers on Schedules D and H don't mesh, it is not clear which numbers (if either) should control the imputation. In this section we investigate the characteristics of plans that are likely to file inconsistent returns.

The appropriate comparison group for inconsistent filers is the set of plans that invested in DFEs and reported consistent numbers on Schedule H and Schedule D. In 2008, 42,445 large plans reported investing in at least one DFE. Of these, 15,198 filed inconsistent returns. To identify factors associated with bad filings we use a probit regression model setting the outcome variable equal to one if a plan filed an inconsistent return and zero otherwise. The explanatory variables include the various pension plan types and a variety of characteristics that might plausibly influence the quality of the plan's annual return. The results of the model are set forth in Table 2. Coefficients with an asterisk are statistically significant at a 0.05 level.

[160] *See supra* text accompanying notes 127-128.

Table 2: Regression Model of Inconsistent Reporting on Schedule H and Schedule D by Large Single-Employer Plans, 2008

	Coefficient	*Standard Error*	*p-value*
Intercept	-0.457*	0.122	0.001
Total assets	0.000	0.000	0.340
Total liabilities	0.000	0.000	0.118
Total DFE investment (D1)	0.000	0.000	0.080
Defined benefit	-0.315*	0.117	0.007
401(k)	-0.341*	0.055	< 0.001
ESOP	-0.068	0.080	0.395
Stock bonus	0.158	0.124	0.203
Profit sharing	0.148	0.114	0.192
Money purchase	0.053	0.118	0.653
Cash balance	0.048	0.067	0.475
Accountant opinion			
Adverse	-1.084	1.983	0.584
Disclaimer	-0.15*	0.028	0.000
Not reported	1.984*	0.032	< 0.001
Qualified	0.064	0.080	0.427
Invested in at least one 000 DFE	4.431*	0.145	< 0.001
Collective bargaining	-0.24*	0.031	< 0.001
Frozen plan	-0.205*	0.061	0.001
Large amount of "other investments"	0.306*	0.058	< 0.001
Data from OPR editor	0.374*	0.033	< 0.001
Plan maturity	-0.291*	0.056	< 0.001
Participant direction			
Partial	-0.140*	0.067	0.036
Total	-0.365*	0.048	< 0.001
Any imputed assets	2.364*	0.200	< 0.001

Somewhat surprisingly, the amount of money involved does not appear to have much, if any, impact on inconsistent filing. Neither the amount of total assets nor total liabilities is statistically significant. The total dollar amount a plan invests in DFEs is not significant at a 0.05 level, but it is at a more relaxed 0.1 level. Defined benefit plans are less likely to file inconsistent returns than defined contribution plans. Similarly, 401(k) plans are less likely to file inconsistent returns than plans without a cash-or-deferred feature. The rest of the plan types are not significant; holding other variables constant, these plan types experience similar rates of inconsistent filing.

Form 5500 is generally accompanied by an accountant's opinion on the fairness and consistency of the presentation of the plan's financial information, including Schedule H and the schedule of investment assets. The accountant is not required to examine or report on financial information relating to a DFE, nor does the accountant's opinion certify the correctness of the annual return generally.[161] The opinion is characterized on Schedule H as either "unqualified," "qualified," "disclaimer," or "adverse." An unqualified opinion indicates that the accountant has no reservations about the plan's financial statements.[162] This category serves as the baseline in our model. This variable produces some surprising results. An adverse opinion does not significantly raise the probability of an inconsistent return, but the estimate is unreliable due to the fact that the data contain only three instances of adverse opinions. More perplexing is the significant, *negative* result for filings with an accountant's disclaimer, where the accountant declines to express an opinion because he or she has not performed an audit sufficient in scope to enable him or her to form a judgment on the fairness of the financial statements. These plans are actually *less* likely to file inconsistent DFE information than those with which an accountant finds no fault. Conversely, returns filed without an accountant opinion reported at all are more likely to be inconsistent. Finally, there are a substantial number of "qualified" opinions (meaning that the accountant opines that the plan's financial statements are fair in all material respects except for one or more matters described in the opinion), yet these filings are not more likely to be inconsistent than those which are approved without qualification.

The rest of the variables in the model all prove to be statistically significant. First consider factors that increase the probability of an inconsistent return. As explained earlier, a CCT or PSA may file its own Form 5500, in which case it is a DFE, but it is not obligated to do so.[163] A plan that invests in a CCT or PSA that does not file as a DFE must allocate its share of the underlying assets and liabilities of the CCT or PSA to the separate asset and liability categories on Schedule H (instead of simply including the net value of the plan's overall interest in the trust or account as the value of an interest in a CCT or PSA). In addition to allocating the underlying assets of the indirect investment vehicle on Schedule H, the plan is also required to file a Schedule D identifying the CCT or PSA, even though it does not file as a DFE. Such a non-DFE CCT or PSA is identified on Schedule D by the name and employer identification number of the CCT or PSA just as if it were a DFE, but the failure to file as a DFE is indicated by reporting a three-digit plan number of "000". (Hence we refer to such a non-DFE indirect investment vehicle as a triple-zero CCT/PSA.) When a plan invests in a triple-zero CCT/PSA in conjunction with at least one true DFE, the probability of inconsistent filing increases. This makes sense due to the confusing mutually exclusive reporting rules applicable to DFE and non-

[161] ERISA § 103(a)(1)(B), (a)(3) (examination and opinion by independent qualified public accountant required), 29 U.S.C. §§ 1023(a)(1)(B), (a)(3); 29 C.F.R. §§ 2520.103-1(b)(5) (rule for large pension plans), 2520.103-8 (limit on scope of examination and report for assets held by bank or insurance carrier, including DFEs that are MTIA, CCT or PSA), 2520.103-12(d) (limit on examination and report concerning 103-12 IE).

[162] An unqualified opinion reports the accountant's conclusion "that the plan's financial statements present fairly, in all material respects, the financial status of the plan as of the end of the period audited and the changes in its financial status for the period under audit in conformity with generally accepted accounting principles" or another comprehensive accounting system such as the cash basis. IRS et al., 2008 Instructions for Form 5500, *supra* note 49, at 33 (Sch. H, line 3(a)(1)).

[163] *See supra* notes 81-83 and accompanying text.

DFE CCTs and PSAs, which is exacerbated by ambiguous terminology used on Schedule H.[164] The other variables that increase likelihood of inconsistent all suggest a lack of competency or knowledge on the part of the filing plan. When the dollar amount in the category "Other Investments" is greater than two standard deviations above the mean, or when the calculated sum of all reported asset categories does not equal the reported sum of assets, the probability of an inconsistent filing increases. Finally, when the data in a Form 5500 had to be edited by hand (in the OPR editor) by the private contractor tasked with cleaning the data, this indicates some underlying problem in the Form 5500 itself. Such data problems are correlated with a higher probability of the inconsistencies which are the focus of our investigation.[165]

Frozen plan (under which active employees accrue no additional benefits), more mature plans (meaning plans with a low ratio of active to total participants), and collectively-bargained plans all have a lower probability of filing inconsistent returns.[166] Also, plans with total participant direction have the lowest rate of inconsistent returns, followed by plans with partial participant direction. Plans with no participant direction (which is the baseline category) have a higher rate of inconsistent returns than those with either partial or total participant direction.

While the regression output in Table 2 provides information on which variables are statistically significant and whether their effects are positive or negative, it does not immediately translate into intuition about the size of such effects and how they might operate in combination. Consequently, we provide graphical illustrations of how the overall predicted probability of filing an inconsistent return changes at different levels of several variables. For purposes of these graphs, any variables not listed are held at their median value and all point estimates are accompanied by ninety-five percent confidence intervals.

Figure 24A illustrates how the probability of inconsistent filing predicted in the model changes with the level of total plan investment in DFEs at different discrete values of the accountant opinion variable. In all cases the probability of an inconsistent filing rises very slightly as total DFE investment increases. While reports filed with an accountant's disclaimer are less likely to be inconsistent that those accompanied by an unqualified report, this difference is quite small. In addition, for larger dollar amounts of DFE investment the confidence intervals overlap, indicating that the small predictive effect of these two types of accountant opinions tends to disappear entirely as the level of DFE investment goes up. The most striking result is the substantial impact of not reporting an accountant opinion at all.[167] Holding other variables at

[164] The Schedule H balance sheet categories call for reports of the "Value of interest in common/collective trusts" and "Value of interest in pooled separate accounts" (lines 1(c)(9) and (10), respectively) without explicitly indicating that entries should be made only for CCTs and PSAs that file as DFEs. 2008 Form 5500 Schedule H, *supra* note 35. That DFE limitation is set forth in the instructions to Form 5500 and Schedule H, but is not made clear on the Schedule itself. *See supra* note 58.

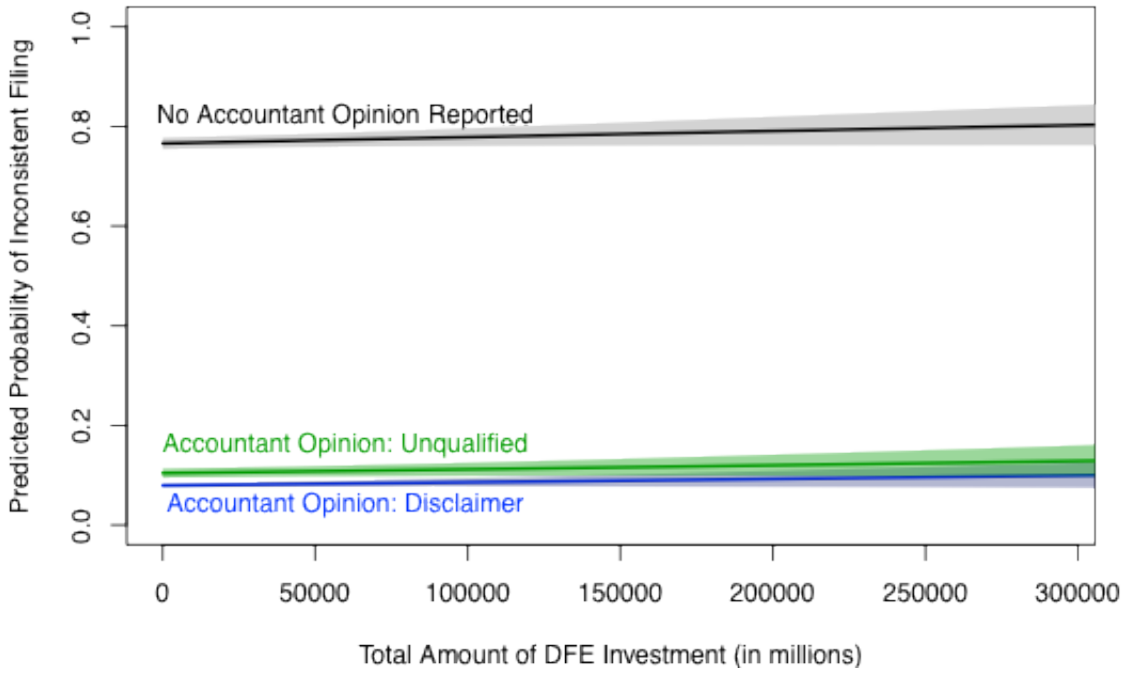
[165] The private contractor does not clean data from Schedule H or Schedule D, just the Form 5500 itself.

[166] The result for collectively bargained plans is somewhat surprising in light of the finding that collectively bargained DB plans that utilize DFEs and file consistent returns frequently fail to properly identify the DFEs in which they invest on Schedule D. *See supra* Figure 20 and text accompanying note 158.

[167] The Schedule H instructions warn that "If the required accountant's report is not attached to Form 5500, the filing is subject to rejection as incomplete and penalties may be assessed." 2008 Instructions to Form 5500, supra note 58, at 33.

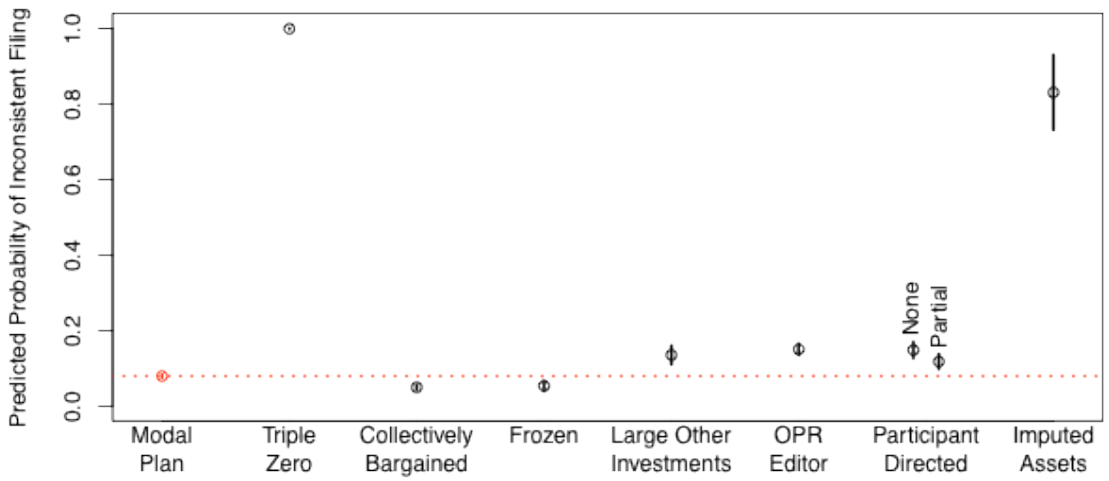
their median, this variable increases the likelihood of filing an inconsistent return from a range of 10 to 20 percent range to around 80 percent.

Figure 24A: Predicted probability of inconsistent filing based on accountant opinions and total DFE investment, 2008 (with 95% confidence intervals)



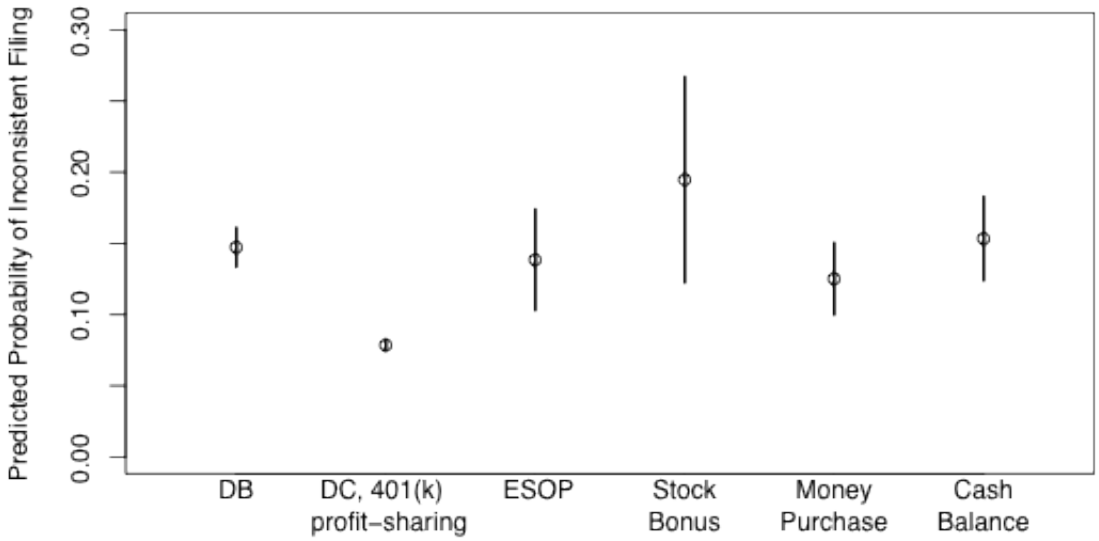
Next, Figure 24B sets forth the predicted probabilities for the modal plan in the dataset together with a variety of comparable estimates in each of which one key variable takes on a different value. The modal plan is a defined contribution 401(k) profit-sharing plan that has an accountant opinion of "Disclaimer", total participant direction, and the other dichotomous variables equal zero. When the continuous variables are set at their median, this modal case has a 0.08 probability of having an inconsistent return. The dotted line in Figure 24B is set at this level to facilitate comparisons with the modal case. Investing in at least one triple-zero CCT/PSA and reporting non-zero imputed assets (which indicates discrepancy in the reported and calculated total assets) both substantially increase the probability of an inconsistent filing, making it much more likely than not. The effect of the other variables is considerably more modest.

Figure 24B: Predicted probability of inconsistent filing based on plan characteristics, 2008 (with 95% confidence intervals)



Most of the different plan types are not statistically significant in the model. Different plan types are strongly associated with different values of some of the other variables, however. Therefore, merely considering the effect of plan type in isolation (while holding everything else constant) is unrealistic and misleading. Figure 24C presents the predicted probabilities for each different plan type determined by holding the other variables at the median for all plans of that same type. Rather than provide a direct comparison of the isolated effect of plan type, this presents a descriptive account of the estimated probability of filing an inconsistent report within each plan type. The most common plan is one variety of defined contribution plan, namely, a 401(k) profit-sharing plan (i.e., profit-sharing plan with an elective cash-or-deferred contribution feature). Since these three characteristic (DC, profit-sharing, and 401(k)) tend to co-occur, they are presented together. The difference between defined benefit and defined contribution plans is fairly substantial, and is actually the opposite of what might be expected. Table 2 shows that, *ceteris paribas*, classification as a defined benefit plan has a negative effect. Taking into account the likely values of other variables, however, a typical DB plan has nearly twice the probability of filing an inconsistent return (0.15) as a typical DC plan (0.08). The estimates for other plan types are less precise (because there is less data) and overall appear to be somewhat similar.

Figure 24C: Predicted probability of inconsistent filing for median case in each plan type, 2008 (with 95% confidence intervals)



V. Financial Reporting and Disclosure Policy

Collective arrangements for the investment of pension funds yield important financial advantages in the form of enhanced diversification and reduced costs via economies of scale. The current system of simplified annual reporting, whereby a plan investing in a collective vehicle that qualifies as a direct filing entity (DFE) need only identify the entity and report the value of its interest therein, obscures pension plan investment allocations. While a fair picture of a plan's overall portfolio composition, both direct and indirect (i.e., through DFEs), can in principle be pieced together by linking each DFE's balance sheet to its investor-plans, that is a complicated and burdensome undertaking (as this study demonstrates). The results reported here suggest that pension plan sponsors have not in any widespread or systematic way utilized DFEs to hide the true nature of plan investments from participants or regulators. Yet they could, and even if the current reporting regime is not abused, reduced visibility blunts monitoring by interested parties. In a digitized world those risks and costs seem unwarranted. DFEs could send data showing each investor-plan's share of the DFE's assets and liabilities classified into the broad categories required by Schedule H, allowing each plan to transfer those amounts into the proper balance sheet lines for combination with the plan's direct investments, rather than reporting indirect investments as an opaque undifferentiated lump (that is, identified only as an interest in an MTIA, CCT, PSA or 103-12 IE). To accommodate plans with different plan years, such reports might need to be transmitted at the end of each month, but such data transmittal has negligible cost in an era of computerized recordkeeping and the internet. Simplified reporting on the plan's Schedule H, although formerly necessitated by cost considerations, is no longer justifiable. A pension plan should be required to report the current value of the plan's allocable portion of the underlying assets and liabilities of each DFE in which it invests, just as current regulations require itemized reporting of a plan's interest in the assets and liabilities of CCT or

PSA that does not file as a DFE.[168] Linking DFE balance sheets to the investor-plans should be mandated.

This simple step, however, is hardly enough. For the many large plans that delegate the investment of a large share of their assets to DFEs, the plan's Schedule H information as currently reported is meaningless. But the truth is that the Schedule H balance sheet categories themselves are so antiquated and undifferentiated that proper allocation of DFE interests among those broad categories (i.e., abolishing simplified reporting as recommended above) is at best palliative. As observed earlier, the single Schedule H category "common stock" lumps together all plan holdings that formally consist of equity interests in incorporated entities, provided that the ownership interest does not entail priority rights to earnings or assets (i.e., is not preferred). Consequently, the reported value of common stock could be broadly diversified or concentrated in one or a few businesses, industries, or sectors; it encompasses ownership of both domestic and foreign enterprises; and it includes stock in companies that are closely held as well as shares subject to broad public trading. Likewise the "real estate" category offers no breakdown between improved and unimproved realty, nor does it provide any information concerning property location or relevant markets.[169] Clearly, there is a disconnect between the breadth and formalism of the Schedule H categories and the substantive goals of disclosure — in most cases a pension plan's balance sheet fails to convey a reliable picture of the risk and return characteristics of its investment portfolio.[170] ERISA gives the Labor Department authority to prescribe more specific and financially relevant categories for the required statement of plan assets and liabilities,[171] and clearly it should do so.

It might be objected that enhanced Schedule H reporting is unnecessary and duplicative in light of the schedule of investment assets that large plans must submit as a component of their annual reports.[172] That schedule is itemized and requires identification of the "issuer, borrower, or lessor, or similar party to the transaction (including a notation as to whether such party is known to be a party in interest), maturity date, rate of interest, collateral, par or maturity value,

[168] *See supra* notes 82-83 and accompanying text.

[169] *See supra* text accompanying notes 46-49.

[170] In a few instances Schedule H requires itemized reporting of investment positions that have distinctive and highly relevant financial characteristics. Most notably, interests in employer securities must be separately reported (distinct from the generic categories of common stock, preferred stock, and corporate debt), and U.S. government securities are also broken out. It should also be observed that the rise of participant-directed 401(k) plans has probably greatly improved the investment information available to DC plan participants because of the mutual fund information distributed under the rules of ERISA § 404(c), 29 U.S.C. § 1104(c). 29 C.F.R. §§ 2550.404c-1(b)(2)(i)(B)(2), 2550.404a-5.

[171] The statute demands that the annual report include a statement of assets and liabilities "aggregated by categories and valued at their current value," ERISA § 103(b)(3)(A), 29 U.S.C. § 1023(b)(3)(A), but ERISA does not specify the categories. That task was left to the implementing regulation, 29 C.F.R. § 2520.103-1(b)(1), which requires large plans to report the financial information called for by Form 5500 Schedule H and the instructions thereto. Because ERISA grants the Secretary of Labor express authority to prescribe forms and to promulgate regulations to carry out ERISA title I, only administrative action is needed to compel more functional and informative balance sheet reporting. ERISA §§ 109(a) (authority to prescribe forms), 505 (regulations), 29 U.S.C. §§ 1029(a), 1135.

[172] 29 C.F.R. §§ 2520.103-1(b)(1), -10, -11. These regulations implement ERISA § 103(b)(3)(C), 29 U.S.C. § 1023(b)(3)(C).

cost, and current value".[173] The schedule of investment assets is open to public inspection, and available to a plan participant upon written request and payment of the cost of copying.[174] While the schedule of investment assets provides detail that is entirely lacking in the Schedule H balance sheet as currently constituted, it is woefully inadequate as a substitute for a revitalized Schedule H. The schedule of investment assets does not have to be provided to plan participants without charge (unlike the Schedule H contents).[175] Apart from cost, two further deficiencies render the schedule of investment assets inadequate to the task of supplying financially useful information. First, the itemized schedule supplies too much undigested detail to be useful to plan participants; information overload makes it likely that the list would be dismissed out of hand. Second — and most important — the schedule of investment assets is not required to be submitted in a format that supports routine electronic data capture.[176] This format limitation means that government regulators, financial analysts, unions, and other interested parties are not equipped with the information that would be necessary to conduct broad-based statistical analysis of benefit plan portfolios. While the facts of a particular plan's investments are open to inspection, one cannot evaluate whether a plan is an outlier or poses special risks to its participants (or to the PBGC insurance system) unless comparative data is available in a form that allows computer processing.

ERISA demands access to detailed pension plan financial information, but *access* should not be equated with *meaningful ability to assess* the information. The policy goals of financial disclosure — to deter misconduct, facilitate enforcement, and give workers information they need to make better (more efficient) personal career and financial planning decisions[177] — depend for their accomplishment on a meaningful ability to assess plan financial data. Those goals are not well served by a system that makes workers and regulators guess whether the structure of a particular plan portfolio poses special risks, or whether any such risk is adequately compensated.

There are important sticking points, of course. Consider the administrative challenge: given the enormous range of characteristics of investment properties, how construct a uniform comprehensive system of digitized investment reporting? Some cases are straightforward. Ticker symbols could be used for publicly traded stocks and corporate bonds. Government bonds could be identified by the issuer (jurisdiction), date of issue, and maturity date. Real estate might be classified as undeveloped, agricultural, industrial, commercial, or residential rental, with an indication of each parcel's location (within the U.S., perhaps using metropolitan statistical areas), and where appropriate the number of units (or acreage) and occupancy rate. Debt or equity interests in privately-held businesses present special difficulties; business name, headquarters address, principal business location (metropolitan statistical area), and principal business activity (perhaps using North American Industry Classification System codes) might all be necessary

[173] ERISA § 103(b)(3)(C), 29 U.S.C. § 1023(b)(3)(C); 29 C.F.R. §§ 2520.103-10.

[174] *See supra* notes 28-30 and accompanying text.

[175] Compare items 3 and 9 listed under "Your Rights to Additional Information" in 29 C.F.R. § 2520.104b-10(d)(3), which provides that a pension plan's schedule of investment assets and information relating to DFEs in which the plan participates may be obtained upon request and payment of copying costs, with the penultimate paragraph of *id.*, which provides that the Schedule H balance sheet information can be obtained without charge.

[176] *See supra* note 49 and accompanying text.

[177] *See* WIEDENBECK *supra* note 22, at 14-16, 57-58.

identifiers. Options would be identified with reference to the underlying property (such as stock or real estate), duration, conditions on exercise, and strike price. Derivatives and synthetic financial products (e.g., mortgage-backed securities and other collateralized debt obligations) pose a conundrum; some mechanism for reporting maximum loss exposure would be desirable, as would an indication of whether the instrument is held for purposes of hedging, speculation or arbitrage.

Political resistance may present an even greater obstacle than technical feasibility. To provide meaningful ability to assess plan financial information, comparison with representative (not necessarily comprehensive) pension investment data is essential. Individual participants are not going to engage in sophisticated financial analysis of their retirement plans; instead, disclosure policy should aimto empower outside monitors to represent their interests. Such outside monitors can include the Labor Department, the PBGC (in the case of insured defined benefit plans), and unions representing covered employees. Unfortunately, empowering outside monitors creates the threat of encouraging outside meddlers. The prospect of offering ammunition to plaintiff-side class action litigation firms, disclosing investment strategy to competitors, or dropping clues that might facilitate reverse engineering of hedge fund proprietary trading models, would make employers see red. The outside meddlers concern (the risk that plan financial information will be misused) is longstanding — it can be traced back to the earliest federal foray into financial disclosure. It formed the principal ground for opposition to the Welfare and Pension Plans Disclosure Act in 1958, to its strengthening in 1962, and to its replacement in 1974 with ERISA's more robust disclosure regime.[178] It is a concern that deserves to be studied and taken seriously. Clearly, a disclosure regime that induces pension plan sponsors to switch in and out of investments shortly before and after the required reporting date in an effort to prevent questionable or illegitimate use of particularized plan investment information is worse than useless. That response might hide sensitive information from perceived meddlers, but it would generate large transaction costs and destroy the utility of investment information to outside monitors as well, defeating the purposes of disclosure. Perhaps complete digitized investment data should be made available only to DOL, IRS and PBGC, with data sets stripped of all sponsor identifying information released to the public only on a delayed basis.[179]

VI. Conclusion

[178] *See* WPPDA LEGISLATIVE HISTORY, *supra* note 11, at (fill in specifics); ERISA LEGISLATIVE HISTORY, *supra* note 23, at (specifics). Also cross reference to notes 17-18?

[179] Even stripped of sponsor identifying information, a complete plan-level investment report might be easily associated with the corresponding simplified Schedule H balance sheet, which of course is not anonymous. But the Schedule H report (founded, as it is, on largely dysfunctional categories) would become unnecessary under a regime of standardized comprehensive digital reporting. Granting participants a right of access to the complete financial data pertaining to their own plans seems appropriate, but once released to participants such sponsor-identified data might be disseminated to others, and over time many sponsors in the publicly released data set might be identified. To counteract that erosion of anonymity, the arbitrary identifier assigned to each plan in the publicly released data set might be changed annually, but that measure would hinder plan-specific longitudinal studies by scholars and other private-sector analysts. Suffice it to say that devising an effective mechanism to keep sponsor identifying information out of the hands of outside meddlers is no simple task.

The Department of Labor routinely compiles and publishes aggregate statistics derived from summary financial information filed annually by large private pension plans, and the plan level data itself is publicly-available, yet it is all virtually meaningless. The data reveal that a large portion of private pension plan assets — more than 60 percent in the case of defined benefit plans — is held by various indirect investment vehicles (known as direct filing entities) whose portfolios are functionally invisible. Thanks to the failure to systematically link returns filed by direct filing entities with the pension plans that invest through them, the overall pattern of pension plan investments, direct and indirect, is unknown. This article describes a project to carry out such linking (insofar as the quality of the raw data permits) and reports the results.

The linked results confirm that there are large differences in the composition of defined benefit and defined contribution plan investments. Certain plan subtypes also exhibit distinctive asset allocations, such as ESOPs among DC plans. Interestingly, others do not: cash balance plan holdings mirror those of traditional DB pension plans, for example. Once DFE interests are properly categorized and attributed to investor-plans, the overall asset allocation of the investor-plans generally looks quite like the portfolio makeup of plans of the same type and asset level that do not invest through DFEs. When plans that are the product of collective bargaining are compared with those that are not, most holdings appear similar, but collectively-bargained DB plans have a curious propensity to fail to adequately identify DFEs in which they invest. Many plans using DFEs file internally inconsistent returns that preclude successful linking of DFE financial information to the investor-plan (about 35 percent in 2008), and a regression analysis reveals several plan characteristics associated with such deficient filings.

This study brings to light a great deal of heretofore inaccessible data concerning private pension plan finances. Yet when these results are evaluated in light of the purposes of pension plan financial disclosure, serious deficiencies remain. Even routine, accurate, and comprehensive matching of DFE financial information with investor-plans does little to inform plan participants or government regulators of the risk and return characteristics of a specific plan, because the asset and liability categories governing electronic data submission are far too broad and formalistic. When “common stock” of all sorts is lumped together, for example, we learn nothing about the marketability of the equity interests that comprise that category, nor is the industry, geographical concentration, or capitalization of the corporations revealed, much less the diversification of the portfolio as a whole. ERISA’s text and policies support the regulatory formulation of a far more detailed digital disclosure regime.

Appendix

Pension Investment Project Protocol

[Instead of being published as part of the article, this protocol could be posted and archived, along with our linked results, on the CERL website, http://cerl.wustl.edu/ .]

Phase I — Download Data (from http://www.dol.gov/ebsa/foia/foia-5500.html, the posted raw data, and http://www.dol.gov/ebsa/publications/form5500dataresearch.html, the Pension Research Files edited by EBSA)

General overview: Pension and welfare plans must file a Form 5500 annually. Various kinds of direct filing entities (DFEs) must also file this form. Specific types of DFEs include master trust investment accounts (MTIAs), common/collective trusts (CCTs), pooled separate accounts (PSAs) and 103-12 investment entities (103-12 IEs). The Form 5500 contains information about the characteristics of the filing entity. Schedule D, part 1 contains a list of DFEs in which a filing entity invests including the amount. Schedule H contains a breakdown of the filing entity's assets by category. The raw data for all of these filings is available online in .csv files from 1999 to 2008 on the freedom of information pages of the EBSA website. Pension Plan Research Files are available with the information from all these schedules in an edited form with some helpful variables added, but only for pension plans, not welfare plans or DFEs.

Step 1 - Download six (6) files for applicable year:

- Form 5500 (filename: f_5500_*year*.csv)
- Schedule D (filename: F_SCH_D_*year*.csv)
- Schedule D Part 1 (filename: F_SCH_D_PART1_*year*.csv)
- Schedule D Part 2 (filename: F_SCH_D_PART2_*year*.csv)
- Schedule H (filename: F_SCH_H_*year*.csv)
- Pension Research File
    i. Download the SAS file (filename: bulyr.sas7bdat)
    ii. Use Stat Transfer to convert SAS file to a .csv file named form5500.year.clean.csv.

Phase II — Organize Data

General overview: The datasets are quite large and contain considerable information that is not needed, for example, variables we are not interested in and multiple filings. Furthermore, the existing raw datasets do not all contain clear designations of whether an entity is a plan or DFE (and which type of each) so dummy variables need to be created. These dummies then make it simple to pull out the relevant data. (Since the research files contain only plans, this only applies to the raw data files.)

Step 2 — Create objects[1] "dfe.form5500" and "welfare.form5500" using the raw data files

[1] For purposes of this project an "object" can be considered a spreadsheet, i.e., a rectangular set of data with a variable in each column and an observation in each row.

- Load the file "f_5500_year.csv" (rename as form5500) and strip out unnecessary columns (keep columns 1:11, 24, 35:37, 53:68, 81) [see 2008 Form 5500 File Layout, at http://askebsa.dol.gov/FOIA%20Files/2008/F_5500_2008_layout.txt]
- Create variables to reflect whether a filing entity is a plan or a DFE[2]
    - "plan" = 1, if TYPE_PLAN_ENTITY_IND is 1 or 2 or 3
        - [Source: Form 5500 Part I, item A, 2008 Form 5500 File Layout column 6.]
    - "DFE" = 1, if TYPE_PLAN_ENTITY_IND is 4
        - [Source: same.]
- Create variables to reflect whether a plan is a pension plan and/or a welfare plan
    - "pension" = 1, if there is an entry in the variable PENSION_BENEFIT_PLAN_IND
        - [Source: Form 5500 Part II, line 8a, 2008 Form 5500 File Layout column 63.]
    - "welfare" = 1, if there is an entry in the variable WELFARE_BENEFIT_PLAN_IND
        - [Source: Form 5500 Part II, lone 8b, 2008 Form 5500 File Layout column 65.]
    - "penwel" = 1, if pension=1 and welfare=1[3]
- Create variable named "dfe.type" to reflect what type of DFE (if any) a filing entity is[4]
    - "dfe.type" = "mtia", if TYPE_DFE_PLAN_ENTITY is "M"
    - "dfe.type" = "cct", if TYPE_DFE_PLAN_ENTITY is "C"
    - "dfe.type" = "psa", if TYPE_DFE_PLAN_ENTITY is "P"
    - "dfe.type" = "103-12", if TYPE_DFE_PLAN_ENTITY is "E"
        - [Source (all four types): Form 5500 Part I, entry following item A(4), 2008 Form 5500 File Layout column 7.]
- Create a variable named "plan.maturity" that is equal to TOT_ACTIVE_PARTCP_CNT divided by
        - [Source: Form 5500 Part II, line 7a, 2008 Form 5500 File Layout column 54.]

  TOT_ACT_RTD_SEP_BENEF_CNT.
        - [Source: Form 5500 Part II, line 7f, 2008 Form 5500 File Layout column 59.]
- Create a variable to reflect whether a return is amended or not
    - "amended.return" = 1, if there is a "2" in the variable TYPE_PLAN _FILING _IND
        - [Source: Form 5500 Part I, item B2, 2008 Form 5500 File Layout column 8.]
- Create a variable "EINPN" which is a concatenation of the filing entity's EIN and plan number (SPONS_DFE_EIN and SPONS_DFE_PN).
        - [Source: Form 5500 Part II, lines 2b and 1b (respectively), 2008 Form 5500 File Layout columns 2 & 3.]
- Create an object named "dfe.form5500" with only DFE filings.

[2] For 2008, 2,201 observations (out of 795,022) could not be classified as either a plan or a DFE. Of the filing entities that were classified, 7,352 were DFEs, and the remainder were plans.

[3] In the form5500 file for 2008, there are 6,398 filing entities that indicate they are both a pension plan and a welfare plan. Only 63 of these are multiemployer plans. (Only 55 are multiple employer plans.)

[4] For 2008, only 7,247 (of 7,352) DFEs were classified in one of the four categories. The breakdown by category is as follows: 1,652 MTIAs; 3,115 CCTs; 2,048 PSAs; and 432 103-12 IEs.

- Create a variable "last.filing" which equals 1 for the filing of each EINPN which has the largest FILING_ID (and is presumably filed last) and zero otherwise.[5]
- Drop multiple filings by the same DFE from dfe.form5500 (keep only those rows for which last.filing=1.
- Create an object named "welfare.form5500" with only welfare plans (that are not also pension plans).[6]

Step 3 — Create object "pension.form5500" using the research files [For the source of the variables referred to in Step 3, and in the edited Pension Research File generally, consult Actuarial Research Corporation, User Guide to 2008 Form 5500 Private Pension Plan Research File, Contract DOLJ089327412 (Dec. 2010), pp. 23-33 (codebook and list of plan characteristics codes), at http://www.dol.gov/ebsa/pdf/2008-5500-researchfileuserguide.pdf.]

- Load the research file named "form5500.year.clean.csv"
- Strip out unnecessary columns.
- Extract only rows where the BEST_FOR_PLAN variable equals 1.
- Extract only large pension plans (where the LARGE variable equals 1).
- Drop rows with no entry in the FILING_ID variable. (Since this is how plans are identified, the absence of a filing id makes it impossible to use these data.)[7]
- Create a variable "add.filing" to designate when a filing is an additional filing of an entity (as indicated by the addition of a letter to the end of the OPR_PN).[8] Presumably a filing which is both the best for a plan and an additional filing (i.e., not the first filing by the plan) is an amended return.
- Modify the existing variable "EINPN" by reformatting the OPR_EIN and OPR_PN variables and concatenating them. (This is necessary because the EINPN variable in the dataset originally has formatting problems that result in the numbers being incorrect.) Note: the letters appended to the OPR_PN for additional filings are not included for purposes of creating the EINPN.
- Create a variable "last.filing" which equals 1 for the filing of each EINPN which has the largest FILING_ID (and is presumably filed last) and zero otherwise.[9]
- Drop multiple filings by the same pension plan from pension.form5500 (keep only those rows for which last.filing=1.[10]
- Create a variable named "plan.maturity" that is equal to TOT_ACTIVE_PARTCP_CNT divided by TOT_ACT_RTD_SEP_BENEF_CNT.

[5] For 2008, there were a total of 7,174 unique EINPN's associated with DFEs. In other words, 73 duplicate filings were dropped.

[6] There are 78,023 welfare plan filings in 2008. This includes some multiple filings because this is from the raw data, but there are still a total of 76,734 unique EINPN's.

[7] For 2008, there were 378 plans which did not have a filing id (and 80,670 which did).

[8] The 2008 Pension Research File User Guide defines this variable (at p. 11) s follows: "OPR_PN adds a fourth character which distinguishes among filings with the same EIN/PN. The "best" filing will have the traditional three-character PN, while additional filings have a character (A, B, C, …) appended to their plan number." For 2008, there were 243 filings that were not the first for a large plan, yet were still designated as the best for the plan. (Under these circumstances there was typically also an original filing designated as best for the plan).

[9] The majority of the time last filing and best filing correspond. (They are the same for 80,494 filings). There are 250 which are best, but not last. There are 315 which are last, but not best.

[10] For 2008, there were a total of 80,541 unique EINPN's. In other words, 129 duplicate filings were dropped.

Step 4 — Create object "D" using the raw data files

- Strip out unnecessary columns (keep columns 1:3) from schedule D file.
  - [Source: Form 5500 Schedule D, items D and B, 2008 Schedule D File Layout columns 1-3, at http://askebsa.dol.gov/FOIA%20Files/2008/F_SCH_D_2008_layout.txt.]

Step 5 — Create object "D1" using the raw data files

- Strip out unnecessary columns (keep columns 1, 7:11) from schedule D1 file.
  - [Source: Form 5500 Schedule D, Part I, items (a)-(e), 2008 Schedule D Part 1 File Layout, at http://askebsa.dol.gov/FOIA%20Files/2008/F_SCH_D_PART1_2008_layout.txt.]
- Merge with "D" to add identifying information (EIN and PN)

Step 6 — Create object "D2" using the raw data files

- Strip out unnecessary columns (keep columns 1, 7:10) from schedule D2 file.
  - [Source: Form 5500 Schedule D, Part II, items (a)-(c), 2008 Schedule D Part 2 File Layout, at http://askebsa.dol.gov/FOIA%20Files/2008/F_SCH_D_PART2_2008_layout.txt.]
- Merge with "D" to add identifying information

Step 7 — Create object "H" using the raw data files

- Strip out unnecessary columns (keep columns 1:5, 22, 30, 37:67) from schedule H file.
  - [Source: Form 5500 Schedule H, Part I, 2008 Schedule H File Layout, at http://askebsa.dol.gov/FOIA%20Files/2008/F_SCH_H_2008_layout.txt.]

Step 8 — Create object "pension.form5500l" by adding DFE link info from Schedule D to pension.form5500.

- Merge D1 with pension.form5500 to add the variables DFE_P1_PLAN_01_EIN_PN and DFE_P1_PLAN_INT_EOY_01_AMT.[11]
  - [Source: Form 5500 Schedule D, Part I, items (c) & (e), 2008 Schedule D Part 1 File Layout columns 9 &11.]

Step 8a – Create object "dfe.form5500l" by adding info from Schedule D2 to dfe.form5500 in order to create a variable for how many plans each DFE reports as investors.

- Merge D2 with dfe.form5500 to create "dfe.form5500l.D2"
  - [Source: Form 5500 Schedule D, Part 2]

[11] For 2008, pension.form5500l has 501,858 rows. Each row is a pension plan — DFE link. If a plan has not reported any investments in a DFE, it appears in one row only. There are 35,843 pension plans without any DFE links at all. The remaining 44,698 have at least one link, but 1,420 only have link(s) with a zero dollar amount. (This is why the number in note 26 is 43,278.)

- Drop all non-unique combination of the DFE's EINPN, the plan's EINPN, and the plan's plan number. What remains is one row for each plan that invests in each DFE.
- Using "form5500", create a list of all unique EINPN's of pension plans which filed a Form5500.
- Using "pension5500", create a list of all unique EINPN's of large pension plans which have a filing in the cleaned database of Form5500 data.
- In the dataset "dfe.form5500l.D2" create a variable named "pension.plan" which equals one if the plan investing in the DFE is a pension plan (and zero otherwise).
- Create a similar variable named "lpension.plan" which equals one if the plan investing in the DFE is a large pension plan (and zero otherwise).
- For every row where "lpension.plan" equals one, make sure that "pension.plan" equals one as well.
- Create a variable named "num.D2.plans" which sums up the number of rows for each unique DFE. In other words, this is the total number of plans each DFE identifies in their Schedule D2 as investing in them.
- Create a variable named "num.D2.pen.plans" which sums up the number of rows for each unique DFE where "pension.plan" equals one. In other words, this is the total number of pension plans each DFE identifies in their Schedule D2 as investing in them.
- Create a variable named "num.D2.lpen.plans" which sums up the number of rows for each unique DFE where "lpension.plan" equals one. In other words, this is the total number of large pension plans each DFE identifies in their Schedule D2 as investing in them.
- Merge these three new variables into the "dfe.form5500" dataset and rename it "dfe.form5500l".

Note: At the end of phase II the data for each year which is needed for the project is located in the following set of objects:

- dfe.form5500l
- welfare.form5500
- D1
- D2
- H
- pension.form5500l

Phase III — Reconfigure Data

General overview: Now that the datasets contain only the pertinent information, the data they contain must be manipulated to permit the calculation of the breakdown of each pension plan's assets held indirectly in a direct filing entity ("DFE"). The key to this process is linking data between plans and DFEs. Plans and DFEs are uniquely identified by a 12-digit combination of their EIN and plan number (PN). (The IRS itself uses this 12-digit combination to uniquely identify filing entities.) The pension plan is ultimately the unit of analysis with relevant information from the DFE incorporated to permit the calculation of a plan's second level assets. Since a plan can invest in multiple DFEs, the list of unique

plan-DFE pairings can contain the same plan multiple times. The data must be collapsed so that each plan appears only once with the sum of its second level holding in each asset and liability category. Once these second level holdings are calculated it is, of course, a simple matter to calculate the total holding in each asset and liability category.

Step 9 — Create a summary of DFE assets named "dfe.assets.year.csv"

- Merge H with dfe.form5500l to add schedule H information and create an object named dfe.assets.[12]
- Rename "FILING_ID" to "FILING_ID.dfe", and rename "EINPN", to "EINPN.dfe".
- Drop variables which are not needed (plan, DFE, pension, welfare, penwel, and plan.maturity).
- Create a variable "sum.assets" which is the total of all the reported assets in each category and the analogous variable for "sum.liab".
- Create a variable for the difference between the reported total assets and liabilities and the calculated total assets and liabilities.
    - slop.assets = TOT_ASSETS_EOY_AMT – sum.assets[13]
        - [Source: Form 5500 Schedule H, Part I, line 1f col. (b), 2008 Schedule H File Layout column 61.]
    - slop.liab = TOT_LIABILITIES_EOY_AMT – sum.liab[14]
        - [Source: Form 5500 Schedule H, Part I, line 1k col. (b), 2008 Schedule H File Layout column 66.]
- Drop DFEs which have zero total assets (according to ether the reported or calculated total).[15]
- Drop DFEs when the total assets minus total liabilities does not match the reported NET_ASSETS_EOY_AMT and is negative.[16]
    - [Source: Form 5500 Schedule H, Part I, line 1l col. (b), 2008 Schedule H File Layout column 67.]
- Write dfe.assets to a .csv file.

Step 10 — Use D1 to link DFEs to pension plans, create object D1.link.a

- Extract pension plan filings from pension.form5500l which report a non-zero interest in a DFE.[17]
- Create an object "pension.dfe.links" which contains only five variables from pension.form5500l which pertain to DFE links: FILING_ID, EINPN,

[12] For 2008, there were 71 DFEs which did not have a Schedule H filed under the same FILING_ID. So there are a total of 7,103 DFEs in dfe.assets.

[13] For 2008, there were 38 DFEs with a non-zero amount in slop.assets.

[14] For 2008, there were 12 DFEs with a non-zero amount in slop.liab.

[15] For 2008, there were 414 DFEs which reported zero total assets.

[16] There are only two of these for 2008.

[17] For 2008, there are 411,971 non-zero pension-DFE links. The 35,843 rows with pension plans that had no reported DFE investments were dropped. Also, 54,044 pension-DFE links were dropped because the reported dollar amount was zero These 54,044 links are presumably reported on Schedule D because the plan had an interest in the MTIA, CCT, PSA, or 103-12 IE at some point in the year, but it was zero at the end of the year. However, there is no beginning of year number reported that corresponds to "DFE_P1_PLAN_INT_EOY_01_AMT", so it's impossible to say for sure. (See page 25 of the 2008 Form 5500 instructions).

DFE_P1_ENTITY_01_NAME, DFE_P1_PLAN_01_EIN_PN, and DFE_P1_PLAN_INT_EOY_01_AMT.

- Rename "FILING_ID" to "FILING_ID.pension", and rename "EINPN", to "EINPN.pension".
- Merge dfe.assets with pension.dfe.links using EINPN.dfe for the former and DFE_P1_PLAN_ 01_EIN_PN for the latter. Keep all pension-DFE links reported by pension plans even if a link cannot be made to the filing of the relevant DFE.
- Create a variable named "dfe.type" which is based on the plan's Schedule D: "DFE_P1_ENTITY_01_CODE". Using the data from the plan's filing enables categorizing the DFE even when a link is not successful or not possible.
- Create a variable called "trip.zero" which equals 1 if the DFE's plan number is "000" and zero otherwise. The triple zero plan number indicates that a CCT or PSA reported on Schedule D, Part I did not file a Form 5500 for the year and therefore is not a DFE, so there will not be a plan-DFE link.[18] [See 2008 Instructions to Form 5500, pp. 12, 25, at http://www.dol.gov/ebsa/pdf/2008-5500inst.pdf.]
- All triple zero DFEs should be CCTs or PSAs. Recode the small handful that are mistakenly reported as other types of DFEs as "unknown."
- Create a variable called "trip.zero.cct" which equals 1 if the DFE a plan reports investing in is a triple zero CCT and zero otherwise. Also create "trip.zero.psa", and "trip.zero.unknown."
- Create a variable called "bad.link" which equals 1 if the pension plan's reported investment in a DFE should be able to be linked, but cannot.[19]

Step 11 — Use Schedule D2 data to fix bad links where possible. (There is still a separate row for each link.)

- Calculate the total number of bad links for each unique EINPN.pension.
- Merge this total into the D1.link.a data and add the variable named "num.bad.link".
- Extract only the pension plans which have exactly one bad link.[20] (If there is more than one bad link it is not possible to tell which schedule D2 entries are linked to which schedule D1 entries.)
- Create a variable named "D1.good.link" which contains the concatenation of the EINPN of the pension plan and DFE for all initially successful links.
- Load the D2 data and create a variable named "D2.links" which contains the concatenation of the EINPN of the DFE and all the pension plans which it reports invest in them (but with the pension plan's EINPN listed first).
- If a D2.link matches an entry from the list of D1.good.links, drop it from the D2 data. (Since there is a good link from the D1 data already, that link has been accounted for, so it is dropped which will prevent it from erroneously being used to fix a bad link from the D1 data.)
- Using the remaining D2 data, extract only the schedule D2 filings from DFEs which report that a pension plan with one, and only one, bad link invests in them.
- Calculate the total number of schedule D2 filings for each unique EINPN.pension.
- Extract only the schedule D2 links for which exactly one DFE reports being invested in by a pension plan and that pension plan has exactly one bad link.[21]

[18] For 2008, there are 184,089 reported links that have a DFE with a triple zero plan number.
[19] For 2008, there were 42,493 bad pension-DFE links.
[20] For 2008, 6,190 plans have exactly one bad link. (5,150 plans have more than one bad link.)

- Replace the EINPN.dfe from the bad link with the EINPN.dfe from relevant schedule D2 link.
- Rerun Step 10 with slight modifications as follows:
    - Create an object "pension.dfe.links2" which contains only five variables: FILING_ID.pension, EINPN.pension, DFE_P1_ENTITY_01_NAME, EINPN.dfe, and DFE_P1_PLAN_INT_EOY_01_AMT.
    - Merge dfe.assets with pension.dfe.links2 using EINPN.dfe.
    - Create a variable named "dfe.type" which is based on the plan's Schedule D: "DFE_P1_ENTITY_01_CODE".
    - Create a variable called "trip.zero" which equals 1 if the DFE's plan number is "000" and zero otherwise.[22]
    - All triple zero DFEs should be CCTs or PSAs. Recode the small handful that are mistakenly reported as other types of DFEs as "unknown."
    - Create a variable called "trip.zero.cct" which equals 1 if the DFE a plan reports investing in is a triple zero CCT and zero otherwise. Also create "trip.zero.psa", and "trip.zero.unknown."
    - Create a variable called "bad.link" which equals 1 if the pension plan's reported investment in a DFE should be able to be linked, but cannot.[23]
- Save as D1.link.a2.

Step 12 — Calculate proportion of DFE holdings contributed by each plan investing in a DFE, create object D1.link.b

- Create a variable named "net.assets" which is the calculated net assets of the DFE and is calculated using the calculated "sum.assets" and "sum.liab" variables created in Step 9. "net.assets" = "sum.assets" – "sum.liab".
- For each pension-DFE link create the variable "pension.portion" which is the amount a pension plan reports investing in a DFE (DFE_P1_PLAN_INT_EOY_01_AMT) divided by the net assets of the linked DFE (NET_ASSETS_EOY_AMT).[24]
- Create a variable named trip.zero.cct.amt which is the dollar amount invested in a CCT which does not file a form5500. Do the same for PSAs and unknown DFEs.
- For the pension-DFE links where the amount reported by the plan is greater than the net assets of the DFE, create a variable "unmatched.overflow" with the difference between the two.
- For the pension-DFE links where the amount reported by the plan is greater than the net assets of the DFE, make the pension.portion variable equal 1.
- For pension-DFE links that are bad links, put the dollar amount invested in a DFE in the variable "unmatched.overflow".

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[21] For 2008, 1,544 bad links meet these criteria (and thus, can potentially be fixed using schedule D2). There are 3,565 bad D1 links where the pension plan is not listed by any DFE in the D2 filings. There are 1,081 bad D1 links where the pension plan is listed by more than one DFE in the D2 filings.

[22] For 2008, there are 184,089 reported links that have a DFE with a triple zero plan number.

[23] For 2008, there are now 41,173 bad pension-DFE links. Note: Even a plan-DFE link which was corrected previously in this step using Schedule D2 data may still not be successful (i.e., linked to a DFE's schedule H filing) at this stage. There are 224 of these for 2008. Most of them (209) are associated with a DFE that was dropped from the dfe.assets dataset because of reporting zero assets (see Step 9).

[24] For 2008, the amount reported as invested by the pension plan was greater than the net assets of the DFE for 677 pension-DFE links. For 419 of these, the DFE reported zero net assets.

Step 13 — Create variables with second-level assets and second-level liabilities for each pension plan for each pension-DFE link. (There is still a separate row for each link whether it is a triple zero DFE or a bad link or a good link.)

- Create a variable for each category called SECLEV_category which is the product of the portion of the DFE contributed by the pension plan and the amount the DFE reports in the category (i.e., pension.portion * category).
- Delete all the category variables since they are no longer necessary. (This will prevent later confusing them with pension plan first level holdings in each category.) Also drop categories with the form5500 characteristics of the DFE (except dfe.type) so they are not confused with pension plan characteristics.
- If a pension-DFE link is successful, but the DFE type cannot be identified, set the variable dfe.type to "unknown".[25]
- Save as D1.link.

Step 14 — Create an object named "D1.link.agg2" which contains one row for each unique EINPN.pension[26] with a sum of each second level asset and liability category as well as the following variables:

- "mtia.total.amt" — the total dollar amount a pension plan said on the Schedule D (DFE_P1_PLAN_INT_EOY_01_AMT) they invested in a MTIA (good, bad, and triple zero (for CCT and PSA) links). Also create analogous categories for CCT, PSA, 103-12 IE, and unknown DFE type investments.
- "linked.mtia.amt" — the total dollar amount a pension plan said on the Schedule D (DFE_P1_PLAN_INT_EOY_01_AMT) they invested in an MTIA which has been successfully linked. Also create analogous categories for CCT, PSA, 103-12 IE, and unknown DFE type investments.
- "D1.amt.agg" — The sum of all amounts a pension plan reports in schedule D1 filings (whether successfully linked to a DFE or not).
- "total.trip.zero.cct.amt" — The sum of the "trip.zero.cct.amt" variable (from D1.link) for all of a plan's investments in CCTs. Do the same for PSAs and unknown DFEs.
- "subtotal.unmatched.amt" — The sum of the "unmatched.overflow" variable (from D1.link) for all the reported DFE investments which could not be matched to a DFE at all. In other words, the total dollar amount of unsuccessful links.
- "total.unmatched.amt" — The sum of the "unmatched.overflow" variable whether the plan-DFE link was successful or not.
- "SECLEV_category.agg" — The sum of a second level asset or liability category for of a plan's (successful) links.
- "all.mtia.links" — The number of links between a particular pension plan and an MTIA (good, bad, and-if applicable-triple zero). Also create analogous variables for the number of links to a CCT, PSA, 103-12 IE, or DFE of an unknown type.
- "good.mtia.links" — The number of successful links between a particular pension plan and MTIAs. Also create analogous variables for the number of links to CCTs, PSAs, 103-12 IEs, and DFEs of unknown type. These variables exclude both the number of bad links and the number of triple zero links (for CCTs and PSAs).

[25] For 2008, there are 51 links that fit this description.

[26] For 2008, there were 43,278 pension plans. [This means one row for each pension plan that reports an investment in one or more DFEs of any kind. That's how we went from 80,541 plans (in note 10) to only 43,278 here. That is, about 37,000 large pension plans had no money in DFEs in 2008.]

- "num.bad.link" — The number of DFEs a plan reported investing in which could not be successfully linked, but should have been able to.[27]
- "num.trip.zero" — The number of triple zero DFEs a plan reported investing in.

Step 15 — Compile a summary of plan assets with direct holdings, indirect holdings, total holdings, and plan characteristics.

- Create an object named "plan.assets" by merging pension.form5500 with D1.link.agg2 to compile direct holdings, plan characteristics, and indirect holdings.
- Create a variable called "imputed.assets" for the common situation where a plan[28] only reports a non-zero holding in the PARTCP_LOANS_EOY_AMT category (and not any others) and the total reported assets is larger. This imputed category accounts for the improperly unreported assets.
    - imputed.assets = TOT_ASSETS_EOY_AMT – PARTCP_LOANS_EOY_AMT (if participant loans is the only assets category with a reported holding).[29]
- Create a variable for the difference between the reported total assets and liabilities and the calculated total assets and liabilities.
    - slop.assets = TOT_ASSETS_EOY_AMT – sum.assets[30]
    - slop.liab = TOT_LIABILITIES_EOY_AMT – sum.liab[31]
- Drop all pension plans that report a negative number for TOT_LIABILITIES_EOY_AMT or OTHER_LIAB_EOY_AMT, unless the absolute value of the reported negative number is less than one percent of TOT_ASSETS_EOY_AMT.[32]
- Create totals for each asset and liability category called TOT_category, by adding the first level and second level holdings in that category. For the categories for MTIA, PSA, CCT, and 103-12 IEs, the dollar amount which was successfully linked to a DFE (and thus attributed at the second level) must be subtracted from the final totals. For example:

  TOT_INT_MASTER_TR_EOY_AMT = INT_MASTER_TR_EOY_AMT + SECLEV_INT_MASTER_TR_EOY_AMT- mtia.total.amt

- Create variables to reflect whether a plan is single employer, multiple employer, or multiemployer.
    - "single.employer" = 1, if TYPE_PLAN_ENTITY_IND is "2"[33]
    - "multiple.employer" = 1, if TYPE_PLAN_ENTITY_IND is "3"[34]
    - "multiemployer" = 1, if TYPE_PLAN_ENTITY_IND is "1"[35]

[27] For 2008, of the 43,278 pension plans that report DFE investments, 33,133 have no bad plan-DFE links, 4,995 have only one bad link, and 5,150 have more than one bad link.

[28] I double-checked that this problem does not occur at all in DFE filings, so a similar step is not necessary for DFEs. As a result, there is no SECLEV_imputed.assets variable.

[29] For 2008, there are 6,731 plans with non-zero imputed assets. (Note: Most of them are participant directed plans.)

[30] For 2008, there are 5,011 plans which have a non-zero dollar amount of slop.assets.

[31] For 2008, there are only 82 pension plans which have a non-zero dollar amount of slop.liab.

[32] For 2008, 32 plans were dropped according to this criterion.

[33] For 2008, there are 75,755 single employer plans.

[34] For 2008, there are 2,222 multiple employer plans.

[35] For 2008, there are 2,526 multiemployer plans.

- Create a variable named "cct.tot.less.000" which = "cct.total.amt" – "total.trip.zero.cct.amt. Create a similar variable for PSAs.
- Create two variables to designate the asset decile for defined benefit and defined contribution plans separately. For each type of plan, the relevant asset decile variable will equal zero if the plan reports a total of zero assets and otherwise takes on a number 1 through 10 indicated which asset decile the plan is in.[36]
- Create a variable named "mega" which equals 1 if a plan's assets are equal to or greater than 2.5 billion dollars and 0 otherwise.[37]

Step 16 — Classify plans into three groups based on whether they invest in any non-triple-zero DFEs and, if so, whether they file consistent totals on their Schedules H and D.

- Create a variable names "D1.non.000.amt" which equals "D1.amt.agg" minus the dollar amount invested in triple zero CCTs or PSAs.
- Create a variable named "group".
- If "D1.non.000.amt" equals zero, then set the value of the "group" variable as "ONE".
- For each DFE category, create a variable which is the difference between the dollar amount reported invested in that category on Schedule H and on Schedule D as follows:
    - mtia.diff = INT_MASTER_TR_EOY_AMT – mtia.total.amt
    - cct.diff = INT_COMMON_TR_EOY_AMT – cct.total.amt – total.trip.zero.cct.amt
    - ie.diff = INT_103_12_INVST_EOY_AMT – ie.total.amt
    - psa.diff = INT_POOL_SEP_ACCT_EOY_AMT – psa.total.amt – total.trip.zero.psa.amt
- If all four difference categories are between -10 and 10, then set the value of the "group" variable as "TWO". If one or more have a discrepancy greater than $10, set the value of the "group" variable as "THREE".
- Save "plan.assets2" as a .csv file.

[36] For 2008, there are 1,047 defined benefit plans in each non-zero decile category (and 39 with zero assets). There are 6,960 defined contribution pension plans in each non-zero decile category (and 405 with zero assets).

[37] For 2008, there are 232 mega plans.