

**SOCIAL SECURITY AND THE PRIVATE PENSION SYSTEM:
THE SIGNIFICANCE OF INTEGRATED PLANS**

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ABSTRACT

Since the enactment of Social Security, the concept of “integration” with Social Security has been a feature of the private pension system. Integration permits employers to take their contributions to Social Security into account and reduce the benefits of low-paid workers in their tax-qualified retirement plans. Prior studies suggest that (1) integration is declining among defined benefit plans and (2) integration among defined contribution plans is rare.

This study contradicts those findings. Using Form 5500 data obtained from about 1,000,000 plans from 1993 to 1997, this research finds that integration is a persistent and stable feature of the private pension system. One out of every four plans is integrated, and their numbers increased by 7% between 1993 and 1997. The number of participants covered by integrated plans grew by 11% to about 24,000,000 by 1997.

Slightly less than one out of every three defined benefit plans is integrated. As measured by the number of participants, integration in such plans does not appear to be decreasing. Integrated defined benefit plans tend to be large and represent almost half of all plans with 2,000 or more participants. Their assets grew to \$774 billion by 1997, equivalent to about 42% of the assets in non-integrated defined benefit plans. Annual employer contributions fell from \$11 billion in 1993 to \$9 billion in 1997, about half the amount contributed to non-integrated defined benefit plans in that year.

Integrated defined contribution plans represent the wave of the future for integrated plans. Integration in such plans is not rare. As measured by the number of plans, about one in four of all defined contribution plans is integrated, and their numbers increased at the same rate (14%) as non-integrated defined contribution plans from 1993 to 1997. As measured by the number of participants, some 5,600,000 people participated in an integrated defined contribution plan by 1997. Integrated defined contribution plans tend to be small with 75% having fewer than 20 participants. Even so, the number of participants in integrated defined contribution plans of all sizes increased in every year from 1993-1997. Moreover, yearly employer contributions increased to about \$6 billion by 1997 while their total assets were about \$205 billion, a 63% increase over 1993 values.

Regression analyses were reasonably successful in estimating the likelihood of integration in defined benefit plans but defined contribution plans remain a puzzle. Understanding which employers choose to integrate their defined contribution plans and why will require additional research with relevance beyond the integration context. This research suggests that integration may make plan sponsorship more attractive to small employers where pension coverage issues are most acute. More research could contribute to an enhanced understanding of the dynamics of pension coverage. In addition, learning more about integration in defined contribution plans is critical to the debate over Social Security reform. The primary effect of plan integration is to make low-paid workers even more dependent on Social Security for retirement income, and responsible proposals for reform will need to take that consequence into consideration.

INTRODUCTION

Most workers earn retirement income over their work lives through two distinct, usually independent programs. The vast majority of workers receive income from Social Security, the almost universal, federally run and regulated program to which both they and all their employers contribute. Many, but not all, workers also receive retirement income from the private pension system. The private pension system is a voluntary, federally regulated program that makes special tax benefits available through the Internal Revenue Code to encourage employers to sponsor pension plans. If a company chooses to provide a pension plan, its workers will earn retirement income while employees based upon either their or their company's contributions or some combination of the two.

A subset of workers, however, receives retirement income from the private pension system that is not independent of Social Security benefits. Their companies have taken advantage of special provisions in the Internal Revenue Code permitting them to take their contributions to Social Security into account when calculating retirement benefits in their tax-qualified pension plans. As a result, employees who earn less than the maximum wage subject to Social Security receive reduced pension benefits from their employer's plans.

Integration with Social Security is an important issue for both the private pension system and Social Security. As Social Security reform is debated, it assumes an added significance. Because Social Security provides progressive benefits, any reform efforts will have their greatest impact (for better or for worse) on the retirement income of low-paid workers. In addition, as commentators have argued, any changes in the current Social Security program will have repercussions for the private pension system (Gregory,

1998; Moore, 2001; Olsen, VanDerhei and Salisbury, 1997). The private pension system is facing its own set of challenges with respect to low-paid workers. There is a persistent problem of low pension coverage rates for these workers (Copeland, 2001; Munnell and Sunden, 2001). Even if they do participate in a plan, plan integration will provide low-paid workers with a reduced benefit, and the magnitude of those reductions in integrated defined benefit plans is apparently increasing (Bender, 2001). In addition, with the shift in recent years from defined benefit to defined contribution plans and the increase in “do-it-yourself” retirement plans, low-paid workers are under more pressure to fund their own retirement income. The increase in contribution limits now in effect is unlikely to benefit these workers because few can afford to contribute more (Perun, 2001). Because plan integration adds to the burden on low-paid workers to generate their own retirement income, understanding its role in the private pension system is both a relevant and timely issue.

But, in large part due to difficulties on obtaining data, there is little systematic information available about the extent of Social Security integration in the private pension system. The few studies that exist have largely focused on defined benefit plans and used survey data collected for other purposes. The purpose of this study is to provide comprehensive information on the prevalence of Social Security integration in the private pension system. It analyzes a unique dataset of information on the private pension system that consists of the annual reports, Form 5500s, that retirement plans are required to file each year. The analysis presented below first discusses the prevalence of integrated plans in the private pension system between 1993 and 1997 in comparison to non-integrated plans and the private pension system as a whole. It then compares

integrated defined benefit and defined contribution plans on a number of measures, including number of plans, number of participants, amount of employer contributions, and total plan assets and describes observed changes in these measures during this period. Finally, it presents the results of logistic regression analyses that attempt to explain the characteristics of the employers who sponsor integrated plans in conjunction with those of the plans themselves.

BACKGROUND

Previous Studies

The topic of plan integration with Social Security has received little systematic attention, an oversight due more to the lack of data than any lack of interest. Previous studies have analyzed data providing indirect information on the extent of integration in the private pension system from two sources: the periodic Employee Benefits Survey (“EBS”) of the Bureau of Labor Statistics; and the Health and Retirement Study (“HRS”) begun in 1992. Over the last twenty years, the EBS conducted a series of surveys of employers in state and local governments, medium and large private firms with at least 100 employees, and small private firms with less than 100 employees to obtain information about the employee benefits they offered. It collected data on Social Security integration, however, only on defined benefit plans. The EBS data provide information on the percentage of employees believed to participate in integrated defined benefit plans, although that information is not available for all years. The HRS, in contrast, is a longitudinal, nationally representative survey of only one cohort - individuals aged 51-62 in 1992. It collects data from sample participants on the pension plans in which they have participated and includes supplemental information on the

design of those plans. These data can be used to estimate the level of integration in the private pension system based upon both the defined benefit and defined contribution plans in which sample members have participated.

Because the data are fragmentary, they provide only an impressionistic picture of the presence of plan integration in the private pension system. Table 1 illustrates the percent

Table 1. Percentage of Employees in Integrated Defined Benefit Plans			
	State Governments	Large Firms	Small Firms
1998	7%		
1997		49%	
1996			44%
1995		51%	
1994	4%		
1993		48%	
1992			46%
1991		54%	
1990			49%

of employees in integrated defined benefit plans found in successive waves of EBS data collected in the 1990s.¹ The EBS data suggest that the percentage of private sector employees in integrated defined benefit plans decreased during this period. Defined benefit integration does seem to be declining among workers in small firms in recent years as well. In 1990, 49% of small firm employees participated in an

integrated defined benefit plan but that percent had decreased to 44% in 1996 (BLS, 1999; Slusher, 1998). Data on government workers, on the other hand, does not show the same trend, perhaps because integrated plans are rare among government employers. Recent EBS data indicate that only 7% of such workers were in integrated plans in 1998, while 4% did so in 1994 (BLS, 1999; Fox, 1997).

Mitchell (1999), however, reviewed the EBS data from large firms for the 1980 – 1997 period and found that the apparent recent decline is not part of a long-term downward trend. Her analysis indicates that the percentage of employees in integrated

plans has fluctuated greatly during the last twenty years. A smaller percentage of employees, 45%, participated in such plans in 1980 but that percentage increased to 63% in 1989. But the increase reversed itself in the 1990s and only 49%, close to the same percentage of 1980, were in such plans by 1997. Replicating the EBS large firm data using a subset of the HRS sample, Bender (1999) found that 45% of the sub-sample were in integrated defined benefit plans in 1992, a similar but slightly smaller figure than that reported in the 1993 EBS survey.

Integration among defined contribution plans remains a mystery. Because the EBS does not collect integration information on these plans, the only data available for analysis comes from the HRS. Those data suggest that integration is rare among defined contribution plans. Using the 1992 HRS data, Slusher (1998) calculates that less than 2% of the HRS sample ever participated in an integrated defined contribution plan. Using that same data set, Bender (1999) estimates that only 8% of HRS workers who participate only in a defined contribution plan are in an integrated plan.

Information about the characteristics of workers in integrated plans or about the employers who sponsor such plans is also fragmentary and often contradictory. Slusher, for example, finds that among the HRS sample there was no clear relationship between wage level and the prevalence of integration and only small differences by income and gender. He does report, however, that employees of small firms are less likely to have an integrated plan. In contrast, Bender (1999), also using the HRS sample, finds that men, non-Hispanic blacks and workers with less than a graduate level of education are less likely to have an integrated plan while union members and workers with earnings greater than the Social Security wage base are more likely. Bender also finds no relationship

between firm size and plan integration. Slusher reports that the retail trade, manufacturing and financial industries have the highest incidence of integration and Bender reports that the natural resources, transportation, professional and public administration industries have the smallest. The discrepancies between the findings reported by Slusher and Bender are largely due to the different variables, HRS subsamples and techniques used in each analysis.

In summary, previous studies indicate the following. First, recent data indicate that integration in defined benefit plans appears to be declining among private employers with less than 50% of employees participating in such plans. Second, integration in defined contribution plans appears to be small. Third, it is impossible to draw any firm conclusions about the characteristics of employees in integrated plans or the employers who sponsor them.

Legal Context

The private pension system provides employers with the option of coordinating, or “integrating,” the benefits provided through their plans with Social Security benefits. Because Social Security benefits are progressive, low-paid workers receive benefits that represent a higher percentage of pay than high-paid workers. The general rationale for permitting plan integration is that it provides employers with an opportunity to combine Social Security and plan benefits in order to provide retirement income that represents the same percentage of pay for both high- and low- paid workers.

In an integrated plan, benefits are slanted towards high-paid workers. This result would normally violate the fundamental tax code rule that employers may not favor highly-paid employees in their tax-qualified plans.² But shortly after the enactment of

Social Security, the tax code was amended to sanction plan integration. The relevant rules have changed markedly over the years, and the current regime was enacted as part of the Tax Reform Act of 1986. The new rules limit the extent to which an employer can use Social Security to decrease pension benefits for low-paid workers. Under the prior rules, for example, an integrated plan could be designed to “integrate out” low-paid workers, that is, to provide low-paid workers in the plan with no benefits. If an employer provided only one plan that was integrated to the maximum extent, low-paid workers received only Social Security benefits in retirement, although they ostensibly “participated” in a pension plan at work. The new rules prevent this result by limiting the permissible spread between the accruals or contributions earned by low- and high-paid workers in an integrated plan.

Employers are not permitted to integrate all types of plans. For example, ESOPs, employee 401(k) contributions and employer matching contributions may not be integrated. But most other plans are eligible. Under current rules, an employer can integrate an eligible plan in one of three ways - two direct and one indirect. A plan using either of the first two methods must satisfy the requirements of Internal Revenue Code § 401(l) or § 401(a)(5)(D). The 401(l) rules apply to both defined benefit and defined contribution plans while the 401(a)(5) rules apply to defined benefit plans only. Under 401(l), plans are integrated through either an excess or an offset (available only to defined benefit plans) formula. An excess plan provides higher benefits to employees who earn more than the plan’s “integration level” but by no more than twice what employees who earn less than the integration level receive.³ An offset plan reduces benefits earned by low-paid employees but in general, by no more than 50% of the plan

benefit. Under 401(l), the reductions permitted are derived from formulas established by statute rather than from Social Security directly. Under the 401(a)(5) rules, however, a defined benefit plan may offset low-paid employees' plan benefits by a portion of their actual Social Security benefit.

Integrated plans are designed to pay higher-paid workers a proportionately larger benefit than lower-paid workers. Employers can use this device effectively to reduce their benefits costs while allocating an increased percentage of their contribution to higher-paid workers. Example 1 illustrates how integration works in practice. It describes the profit-sharing plans of two employers, Employer A which does not have an integrated formula and Employer B which does. In this example, a "high-paid" worker is assumed to earn at least \$80,000 a year. The taxable wage base in effect under Social Security is also assumed to be \$80,000 for purposes of Employer B's plan.

Example 1. Integration in Defined Contribution Plans.

Employer A has a profit-sharing plan and makes an 8% of compensation contribution each year for each employee. Its annual contribution is:

Employer A's Workers	Compensation	Contribution
1	\$200,000	\$16,000
2	\$180,000	\$28,000
4	\$160,000	\$51,200
6	\$140,000	\$89,600
16	\$120,000	\$153,600
32	\$100,000	\$256,000
64	\$80,000	\$409,600
128	\$60,000	\$614,600
256	\$40,000	\$819,200
512	\$20,000	\$819,200
Total Contribution		\$3,257,600

Employer B also has a profit-sharing plan but contributes according to an integrated formula of 4% of compensation up to the taxable wage base and 8% of compensation above (the maximum spread permitted) each year. Employer B has the same workforce and compensation structure as Employer A. Its annual contribution is:

Employer B's Workers	Compensation	Contribution
1	\$200,000	\$12,800
2	\$180,000	\$22,400
4	\$160,000	\$38,400
6	\$140,000	\$64,000
16	\$120,000	\$102,400
32	\$100,000	\$153,600
64	\$80,000	\$204,800
128	\$60,000	\$307,200
256	\$40,000	\$409,600
512	\$20,000	\$409,600
Total Contribution		\$1,724,800

Employer B contributed \$1.5 million (47%) less than Employer A and its higher-paid workers receive 26% rather than 18% of the contribution. But suppose Employer B wants to save even more. It can contribute \$400,000 less and give its high-paid workers 30% of its contribution by including only the minimal number of low-paid workers required for the plan to pass non-discrimination tests.

Employer B's Workers	Compensation	Contribution
1	\$200,000	\$12,800
2	\$180,000	\$22,400
4	\$160,000	\$38,400
6	\$140,000	\$64,000
16	\$120,000	\$102,400
32	\$100,000	\$153,600
45	\$80,000	\$143,360
90	\$60,000	\$215,040
179	\$40,000	\$286,720
358	\$20,000	\$286,720
Total Contribution		\$1,325,440

Employer B has the same workforce and compensation structure as Employer A. By using an integrated formula in its profit-sharing plan, Employer B saves \$1.5 million (contributes 47% less than Employer A) every year. In addition, Employer B gives its high-paid workers a larger share of its annual contribution. High-paid workers in Employer A's plan get 18% of the annual contribution while high-paid workers in Employer B's plan get 26%. Employer B may also be entitled to reduce its costs further by including in the plan only the minimum number of low-paid employees required to pass the non-discrimination tests of Internal Revenue Code §§ 401(a)(4) and 410(b). As Example 1 indicates, if Employer B can legally reduce the number of low-paid employees in the plan to the minimum, it will save an additional \$400,000, its high-paid workers will get 30% of the annual contribution and it will contribute only about 40% as much as Employer A each year.

The effect of plan integration from the perspective of employees can perhaps be seen better using a defined benefit model. Example 2 illustrates how these rules work in practice in defined benefit plans using an excess integration formula. Employer C has two defined benefit plans, one without an integrated excess formula (Plan 1) and one with (Plan 2). Harry and Louise retire in 2000 at age 65 with 35 years of service. Plan 2's formula uses \$35,000 (roughly equal to Harry and Louise's covered compensation for Social Security purposes) as the integration level. If they participate in Plan 2 rather than Plan 1, Harry (a low-paid employee) receives a plan benefit that is only 42% and Louise (a high-paid worker) receives a benefit that is only 55% of the benefit they would have received from Plan 1. As a result, their Social Security benefits represent a larger proportion of their retirement income if they participate in Plan 2. If he is in Plan 1,

Harry receives 29% of his retirement income from Social Security but Social Security represents almost half his retirement income if he is in Plan 2. Louise receives 14% of

Example 2. Integration in Defined Benefit Plans.

*Employer C has two defined benefit plans. Plan 1's formula is 2.5% * average earnings * years of service. Plan 2's integrated excess formula is (1% * average earnings up to covered compensation + 1.5% * remaining average earnings) * years of service. Harry retires with \$40,000 of average earnings, Louise retires with \$140,000, both have 35 years of service and their covered compensation is \$35,000. Harry receives \$1200 a month and Louise receives \$1600 in Social Security benefits. Their monthly benefits are as follows:*

	Plan 1	Plan 2
Harry:		
monthly plan benefit	\$ 2971	\$ 1240
monthly plan benefit + SS	\$ 4117	\$ 2440
% represented by SS	29%	49%
Louise:		
monthly plan benefit	\$10208	\$ 5615
monthly plan benefit + SS	\$11808	\$ 7215
% represented by SS	14%	22%

her retirement income from Social Security if she is in Plan 1 but that percentage increases to 22% if she is in Plan 2. When Social Security and plan benefits are combined, participation in Plan 2 costs Louise and Harry about 40% of the retirement income they would have received if they had been in Plan 1.

When a plan is integrated through use of the 401(l) or 401(a)(5) rules, the fact of its integration is obvious. The plan is expressly written to include the language required by the relevant statutes, and its benefit formula explicitly states the integration rules the plan will follow in calculating benefits. Information given to participants about the plan describes how the plan is integrated, and estimated benefit calculations indicate how the plan rules work in practice. But employers can also slant benefits toward high-paid employees using Social Security integration in less transparent ways. Plans are required

to pass mathematical tests every year under Internal Revenue Code §§ 401(a)(4) and 410(b) to demonstrate that their plans do not provide benefits that favor high-paid employees. In order to pass these tests, employers may “impute” benefits derived from Social Security in calculating the benefits received by high-paid and low-paid workers.⁴ This technique permits employers, depending on their employee demographics, to justify a benefits formula that would otherwise be discriminatory even when their plans do not comply with the 401(l) rules.

The following analysis considers only those plans that are explicitly integrated with Social Security through the 401(l) or 401(a)(5) rules. The federal government does not collect systematic data on the use by employers of “imputed” integration to pass the tax code’s non-discrimination tests and therefore the extent of this form of integration is unknown.

Form 5500 Data

As mandated by ERISA § 103, the federal government obtains the equivalent of census information on the private pension system each year. Every welfare and pension plan subject to ERISA is required to file an annual report on Form 5500 providing comprehensive information about the plan and its participants, its financial condition, and its operation. The Form 5500 is not designed or intended to collect general data on benefit plans for research purposes. It is instead a report by each plan to the federal government that it complies with important tax and ERISA requirements and is therefore entitled to retain its tax-free status as a qualified plan. The data therefore emphasize information about the plan, its funded status, its assets and income, and its compliance with relevant aspects of ERISA and tax law. They do not provide information on

individual plan formulas. Neither do they provide any information on such participant characteristics as income levels, gender, race, or occupation or permit estimation of actual participant benefits and account sizes. They do provide some information on employer characteristics but that information is minimal.

With those qualifications, the Form 5500 data still represent a unique and important source of information on the private pension system. The unit of analysis is an individual plan, whether sponsored by one employer or many. Each plan is a separate record, even if an employer has more than one plan. The meaning of the term “plan” in this context is highly technical. In legal terms and also for purposes of the Form 5500, a “plan” is a dedicated pool of assets available to pay benefits to the individuals and on the terms described in a formal, written document. Separate plans are required to file separate Form 5500s. There are, however, many plan types, particularly in the defined contribution world, which can exist either as a stand-alone plan or as one component in a combination plan. For example, employees in a single company could participate in two separate plans: an ESOP and a 401(k) plan, neither of which can be integrated. They might also participate in a third plan: a profit-sharing plan with an integrated contribution formula. Each of these plans would file a separate Form 5500. Alternatively, their employer could create a single plan by combining its 401(k) either with its profit-sharing plan that has an integrated formula or with its ESOP that does not. Either combined plan would file a single Form 5500. The ways in which employers choose to aggregate or disaggregate different types of defined contribution plans depends more on the ratio of low-paid to high-paid workers needed in a particular plan to pass the non-discrimination

tests than on the plan characteristics themselves. So while the term “plan” has a strict legal meaning that meaning does not provide much clarity for analytical purposes.

Despite these limitations, these data provide a relatively accurate and comprehensive picture of the actual plans that make up the private pension system in any given year. With some notable exceptions such as plans sponsored by state and local government or by churches, the data encompass the universe of employer-sponsored pension plans. Few of the omitted plans are permitted to or do take advantage of plan integration so these data largely represent the universe of integrated plans as well. For years prior to 1999, plans with at least 100 participants were required to file the full Form 5500, a very complicated, 6-page form every year.⁵ Plans with less than 100 participants filed the more limited Form 5500-C/R series. This series generally required small plans to submit comprehensive data on their participants and their finances only every third year. Independent of size, defined benefit and defined contribution plans sponsored by private employers under Internal Revenue Code § 401(a) must provide the most extensive data. Plans sponsored by not-for-profit employers under a special section of the tax code, Internal Revenue Code § 403(b), provide only limited information.

This research analyzes data from the full Form 5500s and the Form 5500C/R series filed during the 1993-1997 period. Data for 1998 have since been obtained and are expected to be added to the analysis later. The 1993-1997 period is important because it spans a period when both the relevant legal rules for integrated plans and the data collected on Form 5500 were relatively stable. It is also the last period in which information on the prevalence of Social Security integration by private plans is available. Beginning in 1999, plans are no longer required to indicate whether they are integrated..

The dataset analyzed in this study is large and contains about 700,000 individual plan records in any given year, each with about 500 variables. Appendix B describes how the dataset was created from the raw data obtained from the Department of Labor. This dataset differs in some important respects from a similar dataset used by the Pension and Welfare Benefits Administration to analyze the Form 5500 filings each year. Appendix C describes the basic differences in the construction of the two datasets. It also provides some information on the numbers and types of plans in each that indicate that the datasets are, in fact, quite comparable.

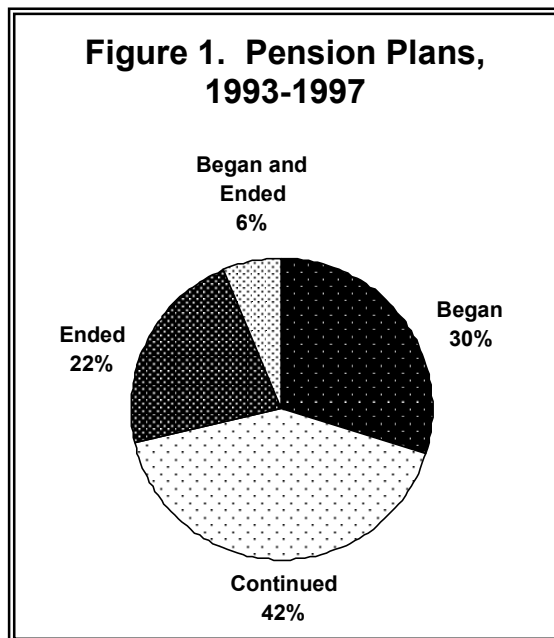
The primary difference between the two datasets, however, is that the dataset used in this study includes multiple years of data. That factor adds a number of complications to the analysis. From a preliminary stage, it was apparent that data from individual plans are often quite inconsistent on a year-to-year basis. In part, this reflects the dynamics of the private pension system where plans can be merged with others or spun-off as a new plan from an existing plan from one year to the next. Important plan features can also be changed through a plan amendment. However, the origin of most inconsistencies seems to be errors in filling out the forms properly, arising either from ignorance or carelessness. Many plans file reports each year that contain nonsensical data or contradict information filed in earlier years in ways that are implausible or impossible. In order to minimize the effect of such inconsistencies, a number of basic classification variables were created for analytical purposes. Those variables and their definitions can be found in Appendix A.

ANALYSIS

Overview of the Private Pension System, 1993-1997

The private pension system exhibits two important characteristics that are often overlooked. First, the vast majority of plans are small, that is, they have fewer than 100 participants. Less than 10% of the plans filing Forms 5500s in any given year - some 60,000 to 70,000 plans - have more than 100 participants. So the private pension system as a whole is largely composed of small plans.

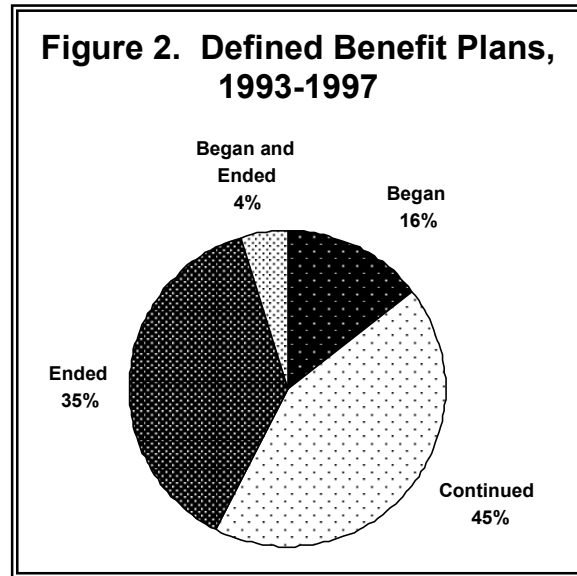
Second, the private pension system is dynamic. Large numbers of plans are terminated every year, and even larger numbers of plans are created. Analysis of the



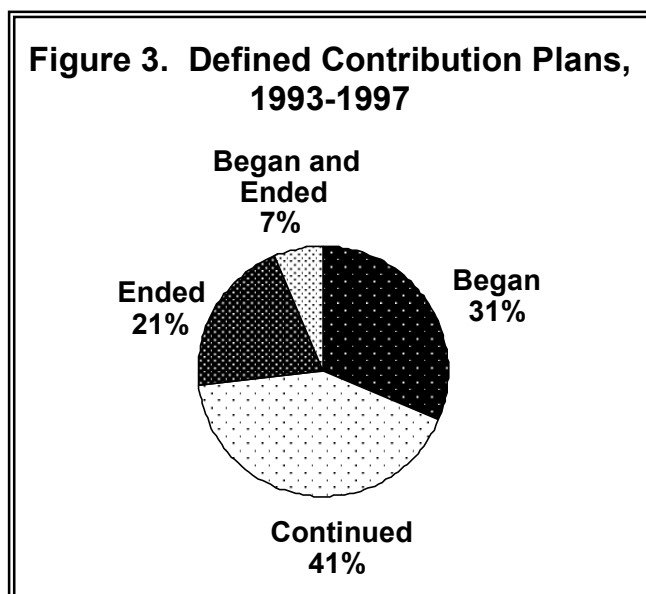
dataset indicates that there were roughly 1,000,000 pension plans in existence during the 1993-1997 period.⁶ In those years, the number of pension plans increased about 9% from about 660,000 in 1993 to 720,000 in 1997 but there was also some significant turnover. Figure 1 illustrates the dynamics of the private pension system during this period. There is a large, stable set of plans,

comprised of about 413,000 plans (42% of all plans) that began before or in 1993 and were still in existence in 1997. About 293,000 (30%) began during this period and were still in existence in 1997 while some 217,000 (22%) were terminated. There were also a small number of short-lived plans as some 64,000 plans (6%) both began and ended during this five-year period.

This analysis replicates the finding that the number of defined benefit plans is declining. Figure 2 illustrates the experience of defined benefit plans during this period. There were about 101,000 defined benefit plans in existence during this entire period. The largest group, roughly 43,000 plans (45% of all defined benefit plans) began before or in 1993 and were still in existence in 1997. Between 1993 and 1997, the number of defined benefit plans fell by about 25% from roughly 84,000 plans in 1993 to some 63,000 plans in 1997. A large group, about 38,000 (35%), of defined benefit plans terminated during this period while only about 15,000 (16%) new plans were created. There were also a small number, some 4800 (4%), of short-lived plans.



This analysis also replicates the finding that defined contribution plans are increasing their presence in the private pension system. Figure 3 illustrates the experience of defined contribution plans during this period. The number of defined contribution plans increased by about 14% from some 579,000 plans in 1993 to about 659,000 plans in 1997. The largest

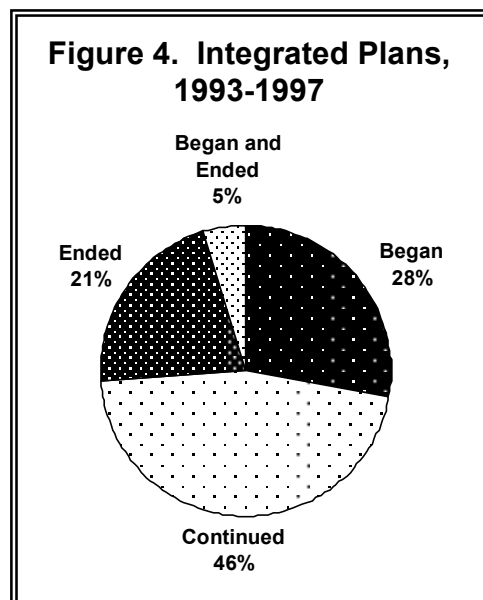


group of plans, some 360,000 plans (41% of all defined contribution plans) began in 1993 or before and were still in existence in 1997. Roughly 269,000 defined contribution plans (31% of all defined contribution plans) were created during this period while some 174,000 defined contribution plans (21% of all defined contribution plans). As was true of defined benefit plans, a small number, some 56,000 defined contribution plans (7%), both began and ended during this period.

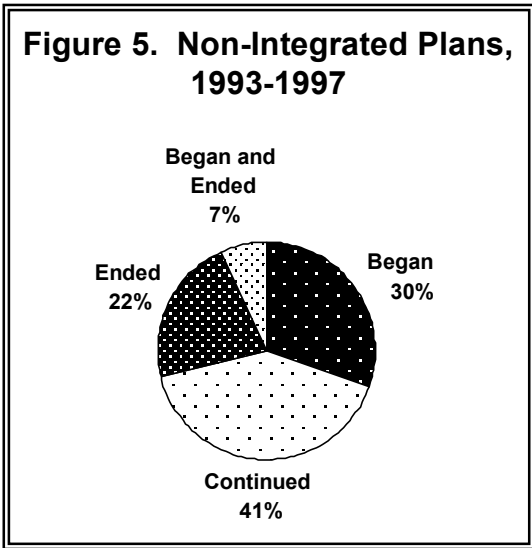
The pension system and the presence of defined contribution plans in the pension system is increasing as the number of plans created every year exceeds the number of plans terminated. Defined benefit plans are not so fortunate. More than twice as many of these plans were terminated as created during this period. On the other hand, almost half of all defined benefit plans are quite stable and continue from year to year.

Overview of Integrated Plans, 1993-1997

Whether or not a plan was integrated did not seem to have much relevance for its experience during this period. Integrated and non-integrated plans look very much alike in terms of the percentages of plans there were terminated and created. Figures 4 and 5 depict the experience of both types of plans during 1993-1997. Integrated plans seem slightly more stable than non-integrated plans in that 46%, or 5% more than non-integrated plans, experienced no change during this period. Among non-



integrated plans, that 5% difference is accounted for by the fact that 2% more plans were



created, 1% more were terminated, and 2% more were created and terminated than was the case for integrated plans.

These differences, however, are trivial and have little significance. The more interesting finding is that the patterns exhibited by both types of plans and the private pension system as a whole, as

depicted in Figure 1, are so similar. Some 40% of plans appear to be quite stable and continued from year to year during this period. The private pension system grew during these years because about 10% more plans were created than terminated during this period. . In this regard, integrated plans are no different from other plans.

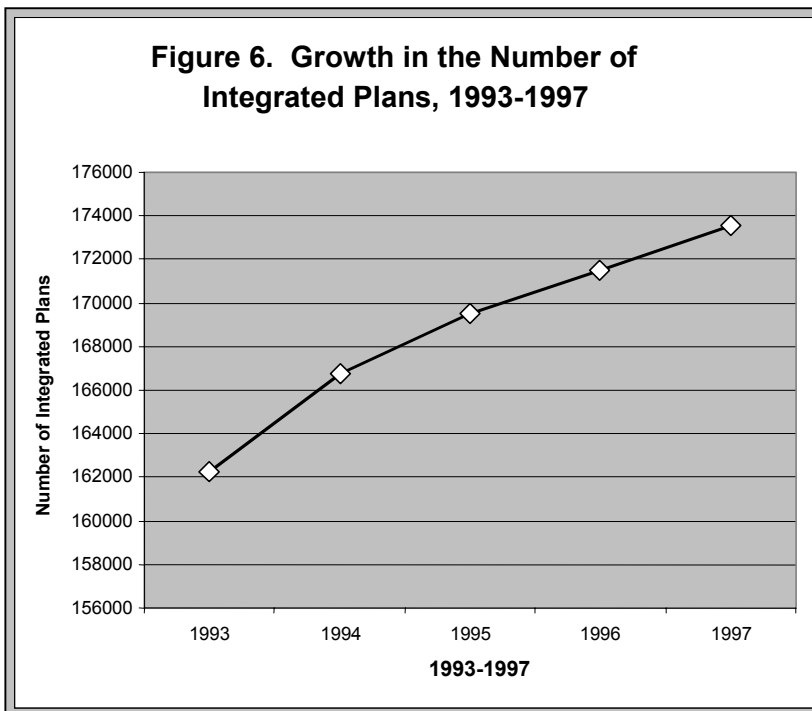


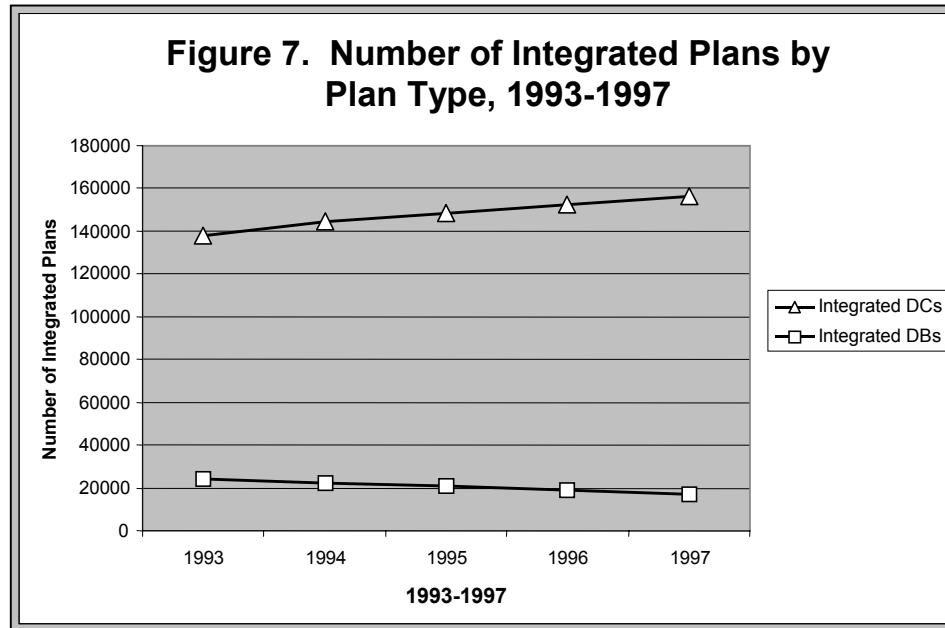
Figure 6 illustrates the numbers of integrated plans in each year from 1993-1997. The number of integrated plans grew along with the private pension during the 1993-1997 period. As Figure 6 indicates, the number of integrated

plans increased from about 162,000 in 1993 to almost 174,000 in 1997, a growth rate of about 7% during this period. That rate compares favorably to a 9% growth rate experienced by non-integrated plans. Non-integrated plans grew from about 500,000 plans in 1993 to about 550,000 in 1997. In each year, integrated plans accounted for a remarkably steady 24% of all plans. This indicates that the use of integrated plans by employers is a stable feature of the private pension system. As the private pension system grows, integrated plans grow with it and represent a relatively constant proportion of all plans. Expressed somewhat differently, almost one out of every four plans in any given year is likely to be an integrated plan.

Integration, 1993-1997: Defined Benefit versus Defined Contribution Plans

Number of Integrated Plans

The steady growth rate observed in integrated plans during this period is somewhat deceptive. That rate masks substantial changes in the number of integrated defined benefit and defined contribution plans. Figure 7 illustrates the difference in the number of integrated defined benefit and defined contribution plans from 1993 to 1997. Again, integrated plans behaved very much like their non-integrated counterparts. As Figure 7 indicates, the number of integrated defined benefit plans fell by about 29% during this period, from some 24,000 plans in 1993 to only about 17,000 plans in 1997. Figures for non-integrated defined benefit plans are comparable although the decline of these plans was less severe. Non-integrated defined benefit plans decreased by only 23% from about 60,000 plans in 1993 to 46,000 plans in 1997. As a percentage of all defined benefit plans, however, integrated defined benefit plans decreased only slightly from 29% in



1993 to 27% in 1997 once defined benefit plans added to the private pension system during these years are taken into account.

In contrast, the percentage of integrated defined contribution plans held steady at 24% during this period. But because the number of defined contribution plans increased during this period, so did the number of integrated defined contribution plans. In 1993, there were about 138,000 integrated defined contribution plans. By 1997, that number had increased 13% to 156,000. Non-integrated defined contribution plans increased by slightly less than 14% from some 440,000 in 1993 to 500,000 in 1997.

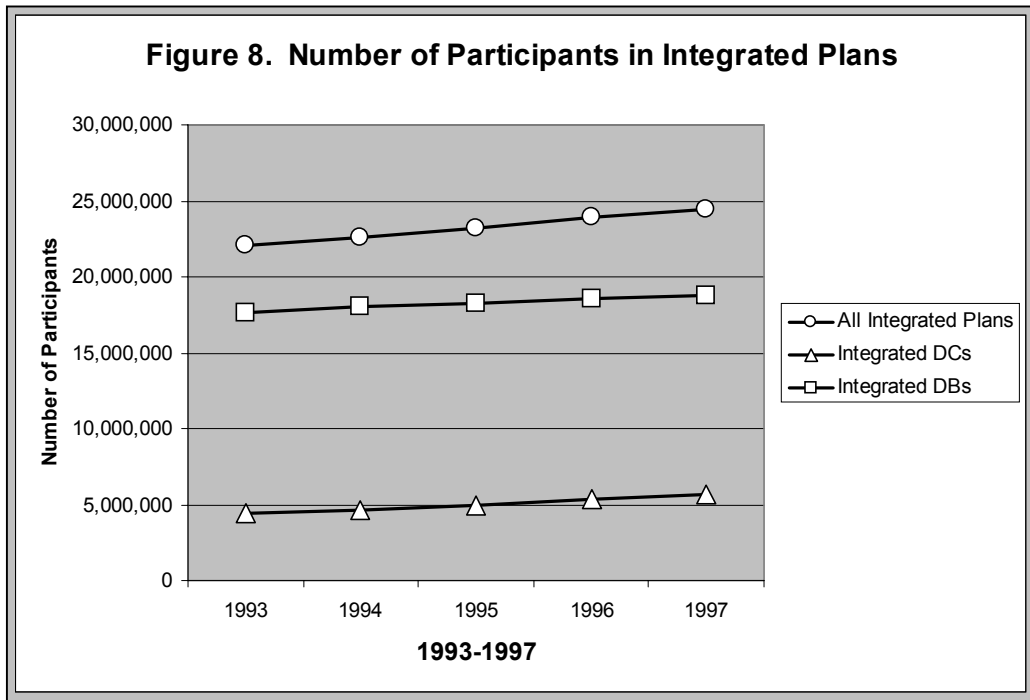
During these years, then, integrated defined benefit plans participated in the well-documented decline in such plans and at a higher rate than non-integrated plans. Integrated defined contribution plans also participated in the general increase in such plans but at the same rate as non-integrated plans. This again illustrates that integrated plans are not a peculiar set of plans in the private pension system. Instead, they shared

the experience of their non-integrated counterparts during this period and exhibited very similar patterns of change.

Number of Participants in Integrated Plans

Although the number of integrated plans provides some estimate of the significance of plan integration in the private pension system, it does not provide a complete picture. Because many plans are small, this measure may exaggerate the importance of integrated plans. One alternative indicator is the number of participants in integrated plans. Because of constraints in the data, the available definition of “participant” covers more than just current employees.⁷ It generally includes all individuals who are entitled to a benefit under the plan so retired employees and beneficiaries of deceased employees entitled to a benefit, among other categories, are reflected in the number of participants in a given plan. In practice, the term participant is almost synonymous with current employees in defined contribution plans because most former employees take their benefits with them when they leave. Defined benefit plans, on the other hand, usually require participants to attain retirement age before paying out benefits that then continue for many years. So the number of participants in these plans will include former employees who are waiting for benefits as well as retirees who are receiving them.

This analysis indicates that the number of participants in integrated plans grew along with the number of integrated plans during this period. Figure 8 illustrates the growth in participant counts in integrated plans during 1993-1997. It indicates, first, that the number of participants in integrated plans increased in this period grew by about 11% from some 22,000,000 participants in 1993 to over 24,000,000 in 1997. This growth rate



is about half that of non-integrated plans which increased by about 20% during these years from some 66,000,000 participants in 1993 to 79,000,000 participants in 1997.

It is very important to remember that there is significant double counting in these numbers. Many employees participate in more than one plan, and the Form 5500 data provide no means of correcting for this. In general, it is rare for an employee to participate in more than one defined benefit plan with the same employer but very common to participate in more than one defined contribution plan. In addition, an employee will usually participate in only one integrated plan. Even if an employer sponsors multiple integrated plans, tax rules will limit the amount by which any employee's cumulative benefit across all plans can be integrated. So many employers prefer to restrict integration to a single plan to avoid the administrative burden of complying with this limit. It seems reasonable to assume, then, that the reported numbers for participation in defined benefit plans, whether or not integrated, should be prone to much less double counting than the numbers for defined contribution plans. It also seems likely, given the cumulative limits on integration across plans, that the reported numbers

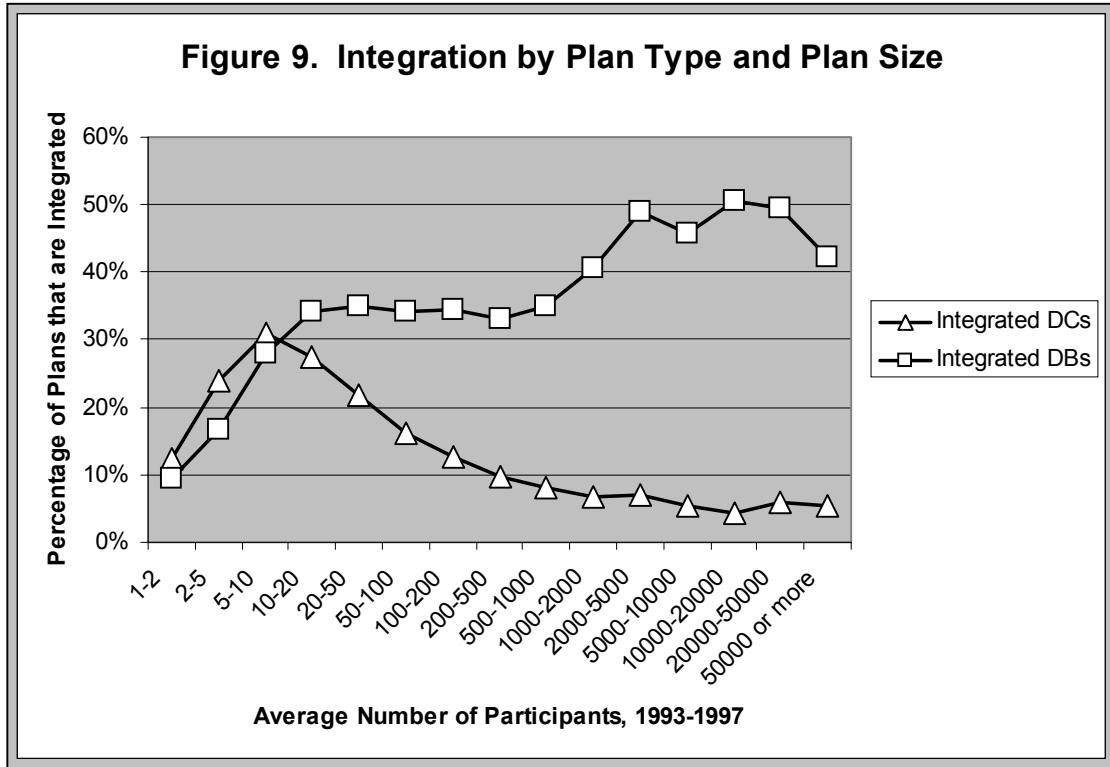
for participation in integrated defined contribution plans are relatively reliable. The numbers for participation in non-integrated defined contribution plans, however, are clearly exaggerated but it is impossible to estimate by how much.

Figure 8 also indicates that, although there are far more integrated defined contribution plans than defined benefit plans, the majority of participants in integrated plans are in defined benefit plans. But participation in integrated defined contribution plans is growing rapidly. In 1993, there were about 4,400,000 participants in integrated defined contribution plans. By 1997, there were 5,600,000, an increase of about 29% during that period. Integrated defined benefit plans have about 4 times more participants. In 1993, there were almost 18,000,000 participants in integrated defined benefit plans but, by 1997, that number had increased by only about 1,000,000 participants, an increase of some 6%.

Because the double counting problem makes any conclusions about participation rates in integrated and non-integrated defined contribution plans suspect, the most that can be safely said is that integrated defined contribution plans probably represent *at a minimum* some 10% of all defined contribution plan participants. In 1993, there were 41,000,000 participants in non-integrated defined contribution plans, and that number increased to about 54,000,000 in 1997. The story with respect to defined benefit plans is different. In 1993, there were 24,600,000 participants in non-integrated defined benefit plans, and that number increased to only 24,800,000 by 1997. This rate of increase parallels that of integrated defined benefit plans. As a result, integrated defined benefit plans represented about 42% of all participants in defined benefit plans throughout this period.

Integration by Plan Type and Size

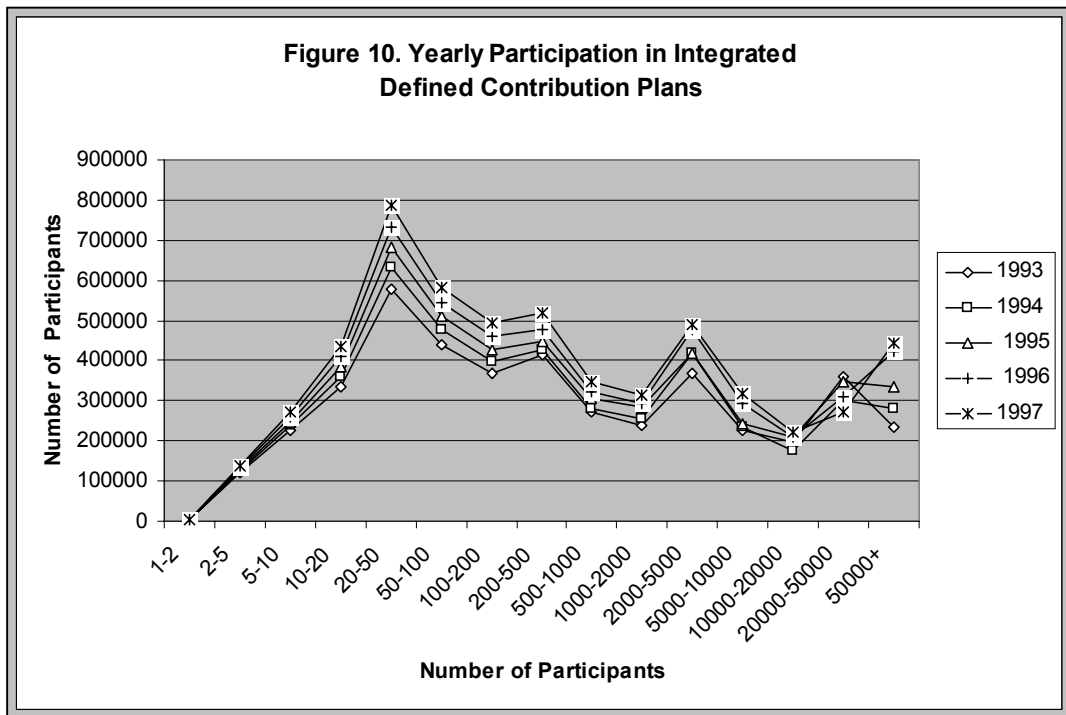
One of the reasons why there are more integrated defined contribution plans but



integrated defined benefit plans have many more participants is that integrated defined contribution plans tend to be small. Figure 9 illustrates the percent of plans that are integrated by type and size of the plan, determined by using each plan's average number of participants during this five-year period. It indicates that there is a bimodal distribution of integrated defined benefit and defined contribution plans in terms of plan size. Participants in integrated defined contribution plans are concentrated in small plans, and about 75% of integrated defined contribution plans have fewer than 20 participants. Less than 10% of defined contribution plans with more than 200 participants are integrated. Defined benefit plans exhibit a very different trend. They closely resemble integrated defined contribution plans among the smallest plans. As the size of the plan

increases, however, so does the percent of integrated plans. Once defined benefit plans have more than 2,000 participants they represent about 45-50% of all such plans. The very largest plans, those with more than 50,000 participants, are slightly less likely (42%) to be integrated but there are only a few (128) such plans.

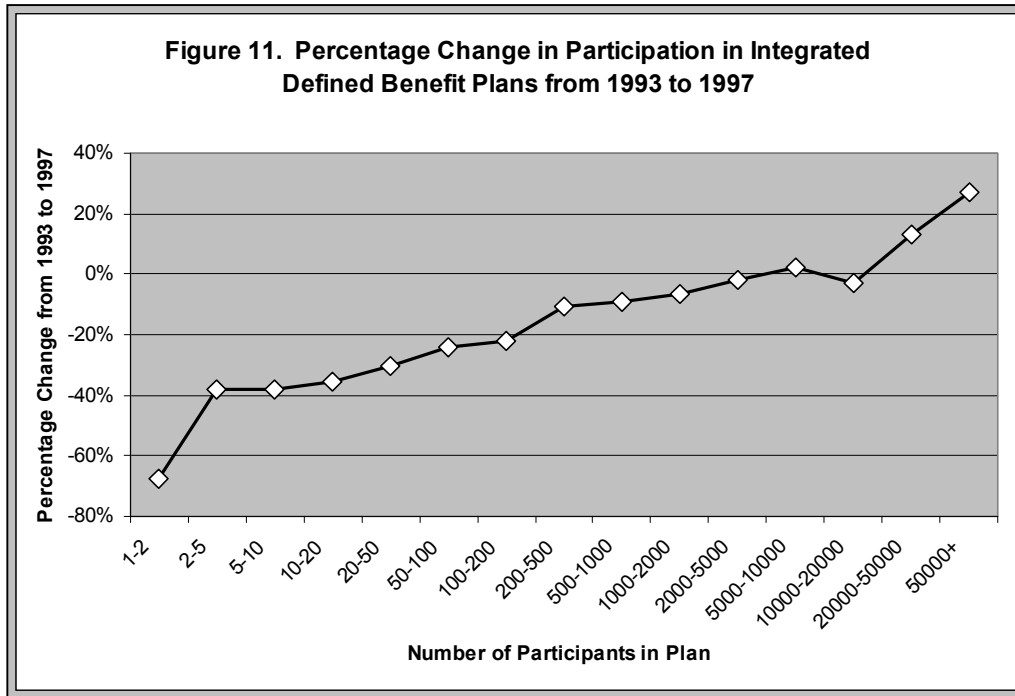
When participation is examined on a year-to-year basis rather than an average basis, the pattern of participation by plan size among integrated defined contribution plans is



interesting. Figure 10 illustrates the number of participants in integrated defined contribution plans in each year. In almost every plan size, the number of participants increased uniformly each year during this period. For example, the number of participants in each plan category with between 10 and 200 participants increased by over 30% between 1993 and 1997. Similar rates of increase are found in some larger plans as well. Plans with between 1,000 and 5,000 participants also increased by over 30% while plans with between 5,000 and 10,000 had the greatest percentage increase, 40%, during

this period. The largest plan size, plans with more than 50,000 participants, had the highest percentage increase during this period. There are, however, only 4 plans in this category so this change has little significance.

Integrated defined benefit plans exhibit a very different pattern during these years. Figure 11 depicts the percentage change in participation in each plan category between



1993 and 1997. It indicates that small integrated defined benefit plans such as those with between 1 and 50 participants experienced the greatest decrease in number of participants. As plan sizes increase, the decline in the number of participants also decreases. Plans with between 500 and 5,000 participants incur only single digit losses. Only the largest plans, those with more than 20,000 participants, experience any increase in participation, and there are so few plans in these categories that this increase has little significance. The pattern of decreased participation among integrated defined benefit plans is consistent with the experience of all defined benefit plans during this period

which saw a continued decline in the number of defined benefit plans, particularly those with relatively few participants.

Employer Funding

Another indicator of the significance of integration in the private pension system is the financial standing of integrated plans, and one measure of that standing is the amount of contributions made each year. The Form 5500 data require plans filing the full Form 5500 and the Form 5500C, but not the Form 5500R, to disclose the amount of contributions made each year by employers and employees separately. Because only employer contributions can be integrated, these data can provide at least some estimate of the relative amounts contributed by employers every year. These amounts are also some indication of the relative “generosity” of employers who sponsor integrated versus non-integrated plans.

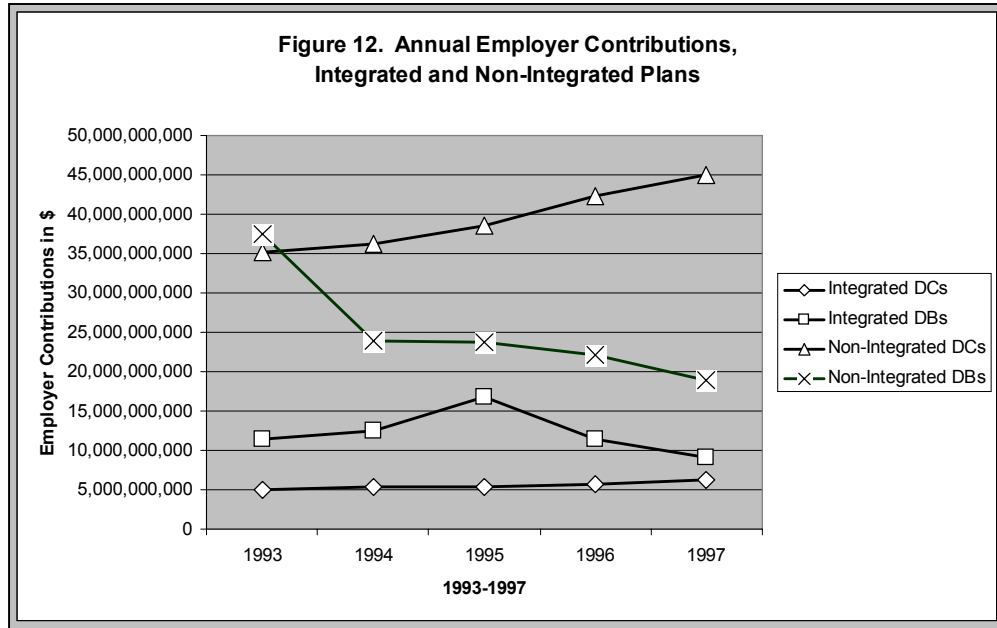
The data do, however, have some systematic problems. They do not include full information on employer contributions to plans with fewer than 100 participants on an annual basis. These plans were required to file a Form 5500C in the year they began, every third year thereafter, and in the year they terminated. Based on the number of Form 5500Cs and Form 5500Rs actually filed during this period, only 45% of plans with less than 100 participants provide data on employer contributions in each year. So the data presented below are based only upon a sub-sample of the plans in the dataset.

There are several other important biases in the data. The first relates to defined contribution plans, which can be composed of several components. For example, an employer may sponsor a profit-sharing plan with an integrated formula that also includes a 401(k) component with an employer match. The employer will aggregate the amount

of the profit-sharing contribution with the amount of the match and report it all as an employer contribution on the relevant Form 5500. The 5500 data provide no means of estimating how much of that employer contribution is made according to an integrated formula and how much is not. Therefore, the numbers reported below for integrated defined contribution plans probably over-estimate the amount of employer contributions made to integrated profit-sharing plans with a 401(k) component. The second bias relates to defined benefit plans. Employer contributions to these plans in any year depend on the funded status of the particular plan. If plan demographics or the investment performance of plan assets change, the amount an employer must contribute can be very different from year to year. Therefore, using contributions to gauge the relative wealth of a defined benefit plan in a given year is not a particularly reliable measure but the data do not provide more appropriate measures. On the other hand, the numbers for defined benefit plans, both integrated and non-integrated, are a more reliable measure of employer contributions than is the case for defined contribution plans.

Figure 12 illustrates the amount of employer contributions made each year between 1993 and 1997 to defined benefit and defined contribution plans according to whether they were integrated or non-integrated plans. Given the problems associated with these data in defined contribution plans, it is important not to over-emphasize the apparent differences between integrated and non-integrated plans in the actual dollar amounts reported. A more reliable comparison is the relative difference between them because it is likely that any bias in the data affects both types of plans similarly.. In Figure 12, it is apparent that both types of defined contribution plans exhibited the same general upward trend of increasing employer contributions during these years. The growth in employer

contributions to non-integrated defined contribution plans outpaced that of integrated defined contribution plans during these years. They received about 7 times (about \$35 billion versus \$5 billion) in 1993 the amount of contributions as integrated defined



contribution plans and that number increased to over 8 times (\$48 billion versus \$6 billion) in 1997.

Defined benefit plans exhibit a very different pattern of declining amounts of employer contributions during these years.⁸ With the exception of 1995, the primary difference is that the magnitude of the difference between integrated and non-integrated defined benefit plans is much smaller and fell over time. Non-integrated defined benefit plans received about 3.5 times (\$37 billion versus \$11 billion) the amount of contributions in 1993 but just over 2 times (\$19 billion versus \$9 billion) in 1997.

During preliminary analyses, one additional interesting but tentative finding emerged with regard to employer contributions. Using data from the sub-sample of Form 5500 and Form 5500C filers that provide information on actual employer contributions, it

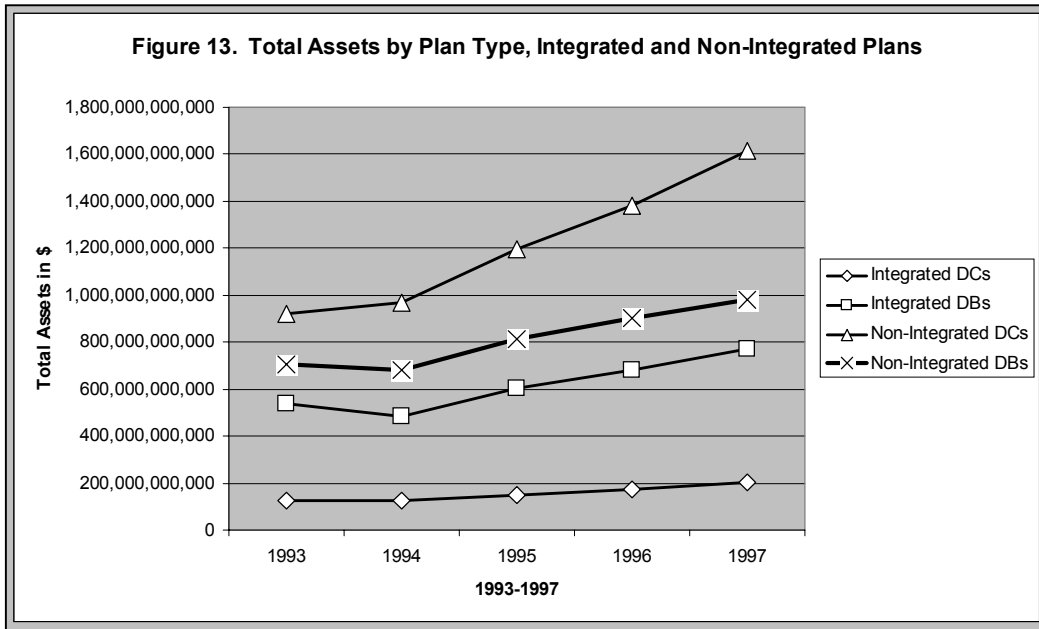
appeared that the ratio of the amount of employer contributions to the number of plan participants was different in defined contribution and defined benefit plans. These analyses indicated that while integrated defined contribution plans comprised only about 9% of the participants in all defined contribution plans they received about 13% of the employer contributions. The opposite trend was observed in integrated defined benefit plans. They comprised about 41% of participants in all defined benefit plans but received on average only about 24% of the contributions. The analysis was expanded to include imputed data from Form 5500R files in each year, and the same results were obtained.⁹

The meaning of this finding is unclear. It may be that integrated defined benefit plans which tend to be large are used by employers to provide far less generous benefits. On the other hand, it may just be that these plans are older and are better funded so they have a reduced need for additional contributions. They may also be shrinking in terms of their number of participants who are active employees accruing additional benefits so their funding requirements are less. It may also be that integrated defined contribution plans which tend to be smaller are found in companies that can afford to make large contributions. These companies may choose to integrate their plans so a larger proportion of that contribution goes to higher-paid employees. The Form 5500 data, however, provide so little information about employer characteristics that it is difficult to account for this difference between the types of plans.

Total Plan Assets

A final indicator of the significance of integrated plans is the financial status of such plans as measured by their total assets during the 1993-1997 period. The terms “assets” for this purpose means the value of all assets held in each plan at the end of every plan

year. Figure 13 illustrates the assets held in integrated and non-integrated plans each year



between 1993 and 1997. Between 1993 and 1997, the assets for all types of plans increased significantly by almost 60% from \$2.3 trillion to \$3.6 trillion. The assets held in non-integrated defined contribution plans increased the most as their value grew about 75% from \$900 billion in 1993 to \$1.6 trillion in 1997. The assets held in integrated defined contribution plan assets are much smaller, only about 13% of those held in non-integrated defined contribution plans. The value of these assets, however, also grew significantly, increasing from about \$126 billion in 1993 to \$205 billion in 1997, a 63% increase. The assets of integrated and non-integrated defined benefit plans have a much smaller spread, and the assets in integrated defined benefit plans are the equivalent of 42% of those held in non-integrated defined benefit plans. During this period, the assets of integrated defined benefit plans increased by some 44% from \$536 billion in 1993 to \$774 billion in 1997. Assets in non-integrated defined benefit plans increased by the smallest amount, 40%, from \$700 billion in 1993 to \$983 billion in 1997.

Other Plan Characteristics

The analysis revealed several other variables, with industry classification and union status being the most interesting, which provide more information about integrated plans. All plans are required to indicate the SSIC classification of the plan sponsor on their Form 5500 each year. The largest number of all plans designated SSIC classification 8, which covers the healthcare industry and the professions. Some 52% of integrated defined contribution plans were in this category as were 24% of integrated defined benefit plans. SSIC classification 5, which covers retail industries, was the second largest category and represented between 12-14% of integrated and non-integrated plans. Union status also provided some interesting data that distinguish integrated from non-integrated plans. Analysis of these data indicates that union plans are far less likely to be integrated. Only 5% of union defined contribution plans and 14% of union defined benefit plans were integrated. Among non-union plans, the comparable percentages are 23% and 29%, respectively.

Predicting Plan Integration

In an effort to test what factors influence the use of plan integration, a series of logistic regressions were performed on a number of variables in the dataset. The dataset is not rich in information about the characteristics of employers who sponsor plans but it does provide some limited data about their corporate structure and the industry in which they operate. There is also information about whether a plan is a union plan, when it was created and how many low- and high-paid current employees there are in the plan as well as in the company (or related companies) as a whole.

Table 2. Regression Variables

Name	Definition
Union	Plan is a union plan
DB5	DB has more than 5 participants
DB10	DB has more than 10 participants
DB1000	DB has more than 1000 participants
DC2-50	DC has between 2 and 50 participants
NewDB	DB was created 1993-1997
NewDC	DC was created 1993-1997
EndedDB	DB was terminated 1993-1997
EndedDC	DC was terminated 1993-1997
SIC5DB	DB in retail industries company
SIC5DC	DC in retail industries company
SIC8DB	DB in healthcare or professional services company
SIC8DC	DC in healthcare or professional services company
Low	Plan has a high percentage of low-paid employees
High	Plan has a high percentage of high-paid employees
Single	Employer is a single company
Group	Employer is part of a controlled group of companies
Early	Plan was created before 1983
Mid80s	Plan was created in the mid-1980s
DyingDB	DB has less than 75% active employees

Table 2 describes the final set of variables used in the regression described below, and each variable is coded “1” if the defined characteristic is present and “0” if it is not. The variables indicate if the plan is a union plan, when it was created, its size, the industry code (SSIC) of the plan sponsor, its concentration of high- and low-paid employees, whether the plan sponsor was a single company or part of a controlled group, and the concentration of active employees. In general, these variables were selected to explore the following hypotheses about plan integration, namely, that integration is less likely if the plan (1) is a union plan or (2) has a high percentage of low-paid workers and more likely if it is a plan (1) is in the retail or healthcare industries or the professions, (2) is part of a controlled group of companies, or (3) if a defined benefit plan, has a low percentage of active employees.

The results of the regression indicate that this set of variables is not a strong

predictor of whether any given plan is an integrated plan. Largely because the dataset contains so many observations, all the variables were statistically significant, but as a set they had low predictive power. The coefficients produced by the regression, however, can be used to indicate the probability of a plan's being integrated, given the observed values of the individual variables for that plan. Table 3 provides the regression coefficients and standard errors of each of the variables listed in Table 2

For example, a plan that is a defined benefit plan (that is, DB5, DB10 and DB1000 all equal "1") has a 38% probability of being integrated. That probability changes when additional variables (each equaling "1") are added one at a time as follows. The probability of being an integrated defined benefit plan rises to about 45% if it is also either an SSIC classification 8 or an SSIC classification 5 plan.

Table 3. Regression Results		
Variable	Beta	Standard Error
Union	-1.38	0.03
DB5	0.94	0.02
DB10	0.55	0.02
DB1000	0.65	0.03
DC2-50	0.81	0.01
NewDB	-0.03	0.02
NewDC	-0.03	0.01
EndedDB	0.38	0.02
EndedDC	-0.07	0.01
SIC5DB	0.27	0.02
SIC5DC	0.19	0.01
SIC8DB	0.26	0.02
SIC8DC	0.59	0.01
Low	-0.12	0.04
High	0.47	0.01
Single	0.47	0.02
Group	0.61	0.02
Early	0.02	0.01
Mid80s	0.14	0.01
DyingDB	0.01	0.02
Constant	-2.62	0.02

If it is a plan with a high percentage of low-paid workers, its probability of being integrated falls to 35% but rises to 50% if it has a high percentage of high-paid workers. Its integration probability also rises to 50% if it is a plan sponsored by a single employer and increases slightly more to 53% if the sponsor is part of a controlled group. But if it is a union plan, its probability of being integrated is only 13%. In addition, the probability of being an integrated defined benefit plan with a combination of an SSIC 8 classification, a high percentage of both high-paid workers and non-active participants

and included in a controlled group is 72%. If, instead of being just a “dying” plan, the plan actually terminated between 1993 and 1997 and had the other previously-stated characteristics its integration probability rises to 78%. In either case, its probability of being integrated decreases by some 30% if the plan is a union plan.

Alternatively, if a plan is a defined contribution plan with between 2 and 50 participants (DC2-50 equals “1”), its probability of being an integrated plan is just 14%. By changing one additional variable at a time, its probability of being integrated plan rises to about 18% if it is also either an SSIC classification 8 or an SSIC classification 5 plan. If it is a plan with a high percentage of low-paid workers, its probability of being integrated falls to 13% but rises to 21% if it has a high percentage of high-paid workers. Its integration probability also rises to 21% if it is a plan sponsored by a single employer and increases slightly more to 23% if the sponsor is part of a controlled group. But if it is a union plan, its probability of being integrated is only 4%. The probability of being an integrated defined contribution plan in combination with having an SSIC 8 classification and a high percentage of both high-paid workers while included in a controlled group is 39%. If it is also a relatively “old” plan, that is, created in the mid-1980s, in addition to the variables described above, its integration probability rises to 42%. In either case, its probability of being integrated decreases by some 30% if the plan is a union plan.

The regression results largely confirm the hypotheses about plan integration. Union status substantially decreases the likelihood that a plan is integrated and having a high percentage of low-paid workers decreases it slightly. A plan is also more likely to be integrated if its sponsor is in the retail or healthcare industries or the professions and is part of a controlled group of companies. If the plan is a defined benefit plan, having a

low percentage of active employees or actually terminating raises the likelihood of being an integrated plan.

The regression analysis indicates that, at least with respect to these variables, it is easier to account for integration among defined benefit than defined contribution plans. Integration in defined contribution plans remains a puzzle. With the exception of union status, the regression variables are so much weaker for defined contribution than defined benefit plans that, as a set, they fail to account for even a 50% likelihood of plan integration. Obviously, there is much more to be learned about plan integration among defined contribution plans. It may be that there is much more variability among integrated defined contribution plans, given that there are so many more plans and so many plans are quite small, than among defined benefit plans. In any event, more research on integrated defined contribution plans is warranted because they are the future of plan integration. As a practical matter, it would be particularly helpful to have more data on the employers who sponsor integrated plans, their reasons for choosing an integrated plan and the characteristics of their workforces in addition to more comprehensive information about all the plans they sponsor.

CONCLUSIONS

Integration with Social Security is a persistent and stable feature of the private pension system. One out of every four plans is an integrated plan, and the number of integrated plans increased by 7% between 1993 and 1997. Integrated plans exhibit very similar rates of plan creation and termination to those of non-integrated plans. The number of participants in all integrated plans grew by 11% during this period to 24,000,000 by 1997. Integrated plans are most commonly found in the healthcare

industry and the professions (SSIC classification 8) and also in retail industries (SSIC classification 5). Union plans are far less likely to be integrated than other plans.

There are far fewer integrated defined benefit than integrated defined contribution plans, but slightly less than one out of every three defined benefit plans is an integrated plan. As measured by the number of participants on an annual basis, integration in defined benefit plans does not appear to be decreasing. These plans represented about 42% of participants in all defined benefit plans each year. Integrated defined benefit plans have about 4 times as many participants as integrated defined contribution plans but they grew only modestly in participation (6%) between 1993 and 1997 to about 19,000,000 participants. Integrated defined benefit plans tend to be large and represent almost half of all plans with 2,000 or more participants. Integration will increasingly be a large plan phenomenon in the defined benefit world because the observed decline in the number and participation rates of small integrated defined benefit plans is expected to continue. Although there are fewer integrated defined benefit plans, the surviving plans seem to be financially stable. Their assets grew to \$774 billion by 1997, equivalent to about 42% of the assets in non-integrated defined benefit plans. Annual employer contributions, however, fell from \$11 billion in 1993 to \$9 billion in 1997, but they increased as a proportion of the employer contribution to non-integrated defined benefit plans from 30% in 1993 to 50% in 1997.

Integrated defined contribution plans represent the wave of the future for integrated plans. Integration in such plans is not rare. As measured by the number of plans, about one in four of all defined contribution plans is integrated, and their numbers increased at the same rate (14%) as non-integrated defined contribution plans from 1993

to 1997. As measured by the number of participants, some 5,600,000 people participated in an integrated defined contribution plan by 1997. It is difficult to estimate the proportion of defined contribution plans that are integrated with any rigor. Neither the number of plans nor the number of participants is an accurate measure; the first is biased by the various ways different plan types can be combined and the second is subject to double counting. It is evident, however, that integrated defined contribution plans tend to be small with 75% having fewer than 20 participants. Even so, the number of participants in integrated defined contribution plans of all sizes increased in every year from 1993-1997. Moreover, by 1997, the amount of annual employer contributions increased to about \$6 billion, and the total assets held in such plans was about \$205 billion, a 63% increase over 1993 values.

Regression analyses of several key variables were reasonably successful in accounting for integration in defined benefits. The likelihood of integration in such plans is related to not being a union plan or having a high percentage of low-paid employees in the plan. It is also related to being a plan in the healthcare industry, the professions or the retail trade, to having a high percentage of high-paid employees in the plan, to being sponsored by a controlled group of corporations, and to having a large percentage of former employees in the plan. The regression results for defined contribution plans were similar but much weaker.

Additional research will be required to broaden our understanding of integration in defined contribution plans. Such research will require, at a minimum, more data on the employers who sponsor integrated plans, their reasons for choosing an integrated plan and the characteristics of their workforces in addition to more comprehensive information

about all the plans they sponsor. Learning more about integration in defined contribution plans is important beyond the integration context. Defined contribution plan integration seems to be an important characteristic of very small plans. This suggests that integration may make plan sponsorship more attractive to small employers. Because this is the employer group where pension coverage issues are most acute, more research could contribute to an enhanced understanding of the dynamics of pension coverage. Finally, learning more about integration in defined contribution plans is both relevant and critical to the debate over Social Security reform. The primary effect of plan integration is to make low-paid workers even more dependent on Social Security for retirement income, and responsible proposals for reform will need to take that consequence into consideration.

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APPENDIX A

Definitions of Key Classification Variables

When viewed over a period of several years, the data present a number of problems of consistency. Some plans report that they are a welfare plan in one year and a pension plan in the next. Others declare that they are integrated in some but not all years. Some are confused about whether they are a defined benefit plan or a defined contribution plan from year to year. In order to handle some of these inconsistencies, a number of classification variables were created and are explained below.

Type of Plan: This variable categorizes plans into “defined benefit” or “defined contribution” plans. A plan is treated as a defined benefit plan if it filed a Schedule B in any year in which it filed a Form 5500 or reported that it was a defined benefit plan in at least 50% of the years in which it filed a Form 5500.

Integrated Plan: This variable categorizes plans into “integrated” or “non-integrated” plans. A plan is treated as an integrated plan if it reported that it was an integrated plan in at least 50% of the years in which it filed a Form 5500.

Plan History: This variable categorizes plans as “new”, “continuing”, “ended” or “began and ended” during the years 1993-1997. A plan was treated as “new” if it either did not file a form in 1993 or it filed a form in 1993 indicating that it was a new plan. A plan was treated as “ended” if it did not file a form in 1997 or reported in 1997 that it was filing its final report. A plan was treated as “began and ended” if it satisfied the criteria for being both a new and an ended plan. Plans that never indicated they were beginning or ending plans were treated as “continuing” plans. Plans whose history could not be determined were treated as missing data in this variable.

Union Plan: This variable categorizes plans into “union” or “non-union” plans. A plan is treated as a union plan if it indicated that it was a collectively-bargained plan at least 50% of the years in which it filed a Form 5500.

Plan Effective Date: In cases where a plan reported different effective dates in different years, this variable assigns an effective date, where a plan reports identical values 75% of the time, equal to the minimum or maximum date, whichever is most common. If this rule can’t be applied and the difference between the minimum and maximum dates is less than 4.5 years, this variable assigns an effective date equal to the minimum date. Cases where neither of these rules could be applied are treated as missing data.

APPENDIX B

Preparation of the Data Set

The data used in this analysis were purchased at a nominal charge from the Department of Labor and included all filings for the full Form 5500 and the Form 5500C/R series for 1993-1997. The data as a whole comprise all required Form 5500 filings and therefore include information about welfare and fringe benefit plans as well as pension plans. The following procedures were used to create the dataset used in this paper from the Department of Labor data:

- plans with plan numbers designated for welfare and fringe benefit plans were deleted;
- plans that had multiple filings in a single year were reviewed and only the filing which provided the most comprehensive information for that year was retained;
- plans that used plan numbers designated for pension plans but claimed they were a welfare plan and provided information on the type of benefits provided were marked as unusable;
- plans that had a single filing or multiple filings in a single year that were nonsensical, e.g., plans that claimed they both began and terminated in a single year, were marked as unusable for that year; and
- multiple plans that provided duplicative data (“multiple-employer-other” pension plans) in a given year were marked so the data appeared only with respect to one plan.

From these data, several classification variables described in Appendix A were created to clarify observed inconsistencies in plan reports from year to year. There were also major problems observed in variables used in year-by-year analyses. In many cases, there were extreme swings in the data reported from year to year or incredible numbers reported in a single year. For example, some plans reported unbelievable changes in the number of participants from year to year. In one case, a plan reported having 9 participants in one year and 20,000,000 the next. One year, another plan reported having 60,000,000 participants or roughly 50% of the entire labor force in its plan. Another plan with less than 100 participants reported having \$45,000 in assets one year and \$932,000,000 the next. Many plans also filed forms that were incorrectly completed by reporting, for example, having paid out negative amounts of benefits in a given year or paid in negative amounts of contributions. Because there were close to 1,000,000 records in the dataset, only minimal cleaning of the variables or individual plan data was feasible. In many cases, given how much a plan can change from year to year because of a merger, spin-off or plan amendment, it would have been impossible to divine what the “right” numbers should have been. All variables, however, were cleaned of the most extreme bad data when they were obvious. The result is by no means a clean dataset but it is a dataset cleaned of its most egregious values.

APPENDIX C

Some Comparisons with Department of Labor Statistics

The Pension and Welfare Benefits Administration (“PWBA”) of the U.S. Department of Labor analyses the Form 5500 data on which this study is based on a year-by-year basis and reports its results in the *Private Pension Plan Bulletin*. The PWBA constructs a sample for analysis that includes all plans that file the full Form 5500 and a 5 percent sample of plans that files the Form 5500C/R series. The PWBA then edits and weights its sample to reflect the universe of plans covering two or more participants. The data analyzed in this study, in contrast, represent all Forms 5500 (both the full Form 5500 and the Form 5500C/R series) and include plans that cover only one individual. The study dataset was constructed using the rules described in Appendix B.

The following tables compare the number of plans represented in the PWBA data and the data analyzed in this study, first as a whole and then by type of plan. They indicate that the two datasets are quite similar. The study dataset includes slightly fewer pension plans as a whole as well as defined contribution plans in the earlier years but by 1996 and 1997 plan numbers are almost identical. The study dataset includes slightly more defined benefit plans and that difference appears to increase every year. Given the differences in how the two datasets were constructed and taking into consideration the immense size of each, the two datasets seem to be quite comparable, at least in terms of the numbers of plans as a whole and the number of defined benefit and defined contribution plans they each contain.

Table C1. Number of Pension Plans in Each Year, 1993-1997			
	Study	PWBA	Study/PWBA
1993	663,607	702,097	95%
1994	676,787	690,344	98%
1995	688,300	693,404	99%
1996	700,690	696,224	101%
1997	722,004	720,041	100%

Table C2. Number of Defined Contribution Plans in Each Year, 1993-1997			
	Study	PWBA	Study/PWBA
1993	579,294	618,501	94%
1994	599,724	615,922	97%
1995	616,100	623,912	99%
1996	633,520	632,566	100%
1997	658,767	660,542	100%

**Table C2. Number of Defined Benefit Plans
in Each Year, 1993-1997**

	Study	PWBA	Study/PWBA
1993	84,313	83,596	101%
1994	77,062	74,422	104 %
1995	72,200	69,492	104%
1996	67,170	63,657	106%
1997	63,237	59,499	106%

ENDNOTES

¹ Data reported in Table 1 are from Bureau of Labor Statistics (2000, 1999a, 1999b), Foster (1997), Mitchell (1999) and Slusher (1998)..

² Internal Revenue Code § 401(a)(4).

³ In a defined contribution plan, the integration level is usually the taxable wage base under Social Security in a given year while “covered compensation” (the average of the taxable wage base for the 35 years up to and including the year in which an employee reaches Social Security retirement age) is typically used in defined benefit plans.

⁴ Treasury Regulation § 1.401(a)(4)-7(a).

⁵ Beginning in 1999, Form 5500 and the Form 5500C/R were redesigned and, in some cases, the information sought was substantially modified.

⁶ The total number of plans in this dataset in existence at any time during this period was 987,570.

⁷ Only plans filing the full Form 5500 are required to provide data on the different types of individuals-current employees, retired employees, etc. in their plans. Plans filing the Form 5500C/R series are only required to give participant totals at the beginning and end of each plan. This analysis uses year-end participant counts for plans filing the Form 5500C/R series and the comparable data for plans filing the full Form 5500.

⁸ The data provide few clues as to why increased employer contributions were made to integrated defined benefit plans in 1995. There are many possible explanations. One is that poor investment performance in prior years required additional contributions by 1995. Another is that there may be some bad data in 1995 that has not yet been discovered.

⁹ In order to impute employer contributions for Form 5500R files, an average per participant contribution amount was calculated in each year from all plans who were (1) “continuing” plans during the five year period and, if a small plan, therefore filed Form 5500Rs on a normal schedule; and (2) who filed a Form 5500 or Form 5500C in that year. That amount was then multiplied by the number of participants in plans filing Form 5500Rs in each year to estimate an amount of employer contribution.