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Living with Defined Contribution Pensions

Remaking Responsibility for Retirement

Edited by
Olivia S. Mitchell and Sylvester J. Schieber

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Chapter 1

Defined Contribution Pensions: New Opportunities, New Risks

Olivia S. Mitchell and Sylvester J. Schieber

Each month the U.S. financial press reports vast sums of money rushing into defined contribution (DC) pensions. Pensions known as 401(k) plans lead the pack: soon the nation's 401(k) pension system will amount to more than $1.5 trillion in assets and will include almost 30 million private sector employees (EBPR 1996). Recent legislation has extended the availability of DC plans to the public sector as well, virtually guaranteeing rapid growth of this pension type for decades to come.

This tremendous appeal of defined contribution plans in the United States is attributable to several factors. For some groups, mainly small and medium-sized employers, there has been a shift away from defined benefit (DB) to DC pensions, a pattern evident in the left panel of Figure 1. After the passage of the Employee Retirement Income Security Act (ERISA) in 1974, the number of DB plans with fewer than 100 participants grew until the early 1980s, then leveled off for a few years, and declined steadily after 1987. The number of DB plans sponsored by larger employers, on the other hand, remained relatively constant over this same period. The right panel of Figure 1 shows that the prevalence of DC plans in larger firms grew significantly over the period, from slightly under 9,000 plans in 1975, to over 39,000 plans almost twenty years later. But the growth by firm size was uneven: while larger companies were adding 30,000 defined contribution plans, small employers were adding nearly 400,000 new plans.

Data on numbers of workers participating in DC plans corroborate these trends. Figure 2 shows the number of participants in private DB and DC plans segmented by plan size. The left panel of that figure reveals that participation in DB plans with under 100 participants has been relatively flat since just after the passage of ERISA: DB participation grew from 1.6

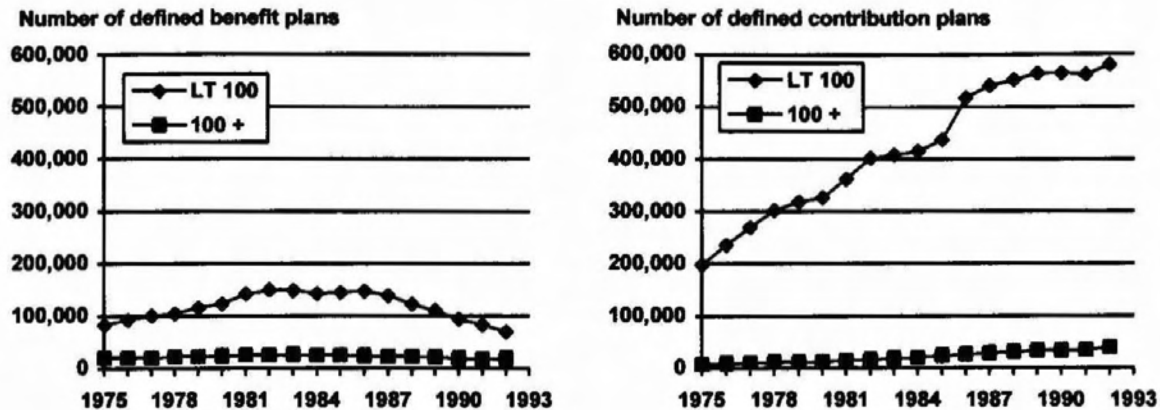
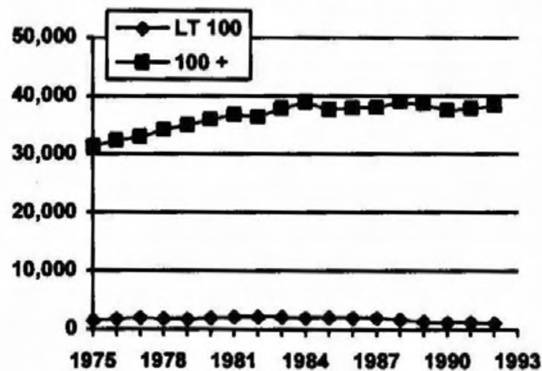


Figure 1. Trend in number of private defined benefit and defined contribution plans, 1975–93. Source: USDOL (1996): 60–61.



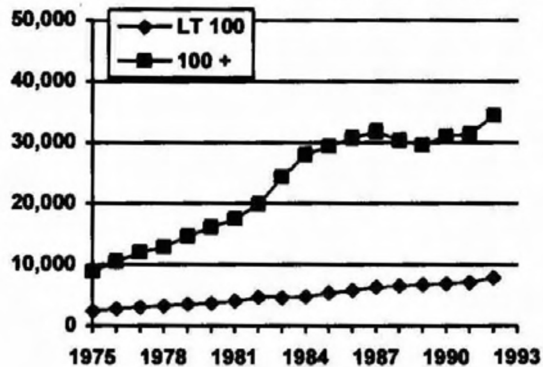


Figure 2. Trend in number of participants in private defined benefit and defined contribution plans, 1975–93. Source: USDOL (1996): 63–64.

million participants in 1975 to 2.2 million participants in 1982, but then declined to 1.1 million participants by a decade later—below coverage levels twenty years previously. Participation in larger DB plans grew significantly during the first decade after the passage of ERISA, but has remained relatively constant since then. By contrast, the right panel of Figure 2 depicts more positive trends for DC plans. Among both larger and smaller plans, the last 15 to 20 years have seen significant growth in the numbers of DC-covered participants. Among smaller employers, a DC plan is often the only retirement accumulation vehicle offered. Among larger employers, DC plans are often supplemental in nature, augmenting the benefits being provided through traditional DB arrangements.

What are the challenges and opportunities that this DC pension revolution offers? In this volume we take stock of theoretical and empirical benefits and costs that arise in the DC arena, and we outline some new concerns as well. This discussion is of critical importance to a wide range of audiences including potential savers as well as those interested in helping them save—employers and money managers, policymakers concerned with the health of national retirement income systems, regulators charged with fashioning a healthy financial system, and members of the next generation of taxpayers, who are vulnerable to bear the burden of any shortfalls incurred in retirement savings.

Reasons for Defined Contribution Retirement Plan Growth

There are several reasons that defined contribution plans have grown so quickly in the United States and around the world. Probably most importantly, both plan sponsors and plan participants perceive the DC plan as "flexible." Employees with a DC plan generally contribute a fraction of their pay; this fraction is often self-determined and sometimes has an employer match (the match typically depending on the employee's contribution level). Employees also usually have some say over how these contributions are to be invested during the accumulation phase.

This flexibility is well illustrated by recent U.S. Department of Labor data on medium and large private sector firms. As Table 1 shows, the modal number of investment options permitted in a defined contribution plan is about four, with a quarter of plan participants eligible for five or more. In defined benefit plans, by contrast, the plan participant is promised a retirement benefit payout, but has no control over his or her plan investments during the worklife. For example, about half of all DC plan participants can take employer pension contributions when they leave their firms, and employees remaining on the job are often able to borrow against their account balances (Table 2). Also the accounts may

TABLE 1 Savings and Thrift Plans: Trends in Investment Choices for Full-Time Participants

	Employee contributions (%)		*Employer contributions (%)*	
	1991	*1993*	*1991*	*1993*
Employees permitted to choose investments	62	86	91	58
Number of choices				
2	10	12	14	7
3	20	21	29	13
4	16	30	26	17
5	14	15	18	13
6		3		3
7+		6		5
Not determinable	3	7	5	7
Types of investments allowed				
Common stock fund	56	68	79	49
Company stock	22	43	46	49
Long term interest bearing securities	29	42	40	28
Diversified stock & bond fund	17	42	24	33
Government securities	21	23	30	14
Guaranteed investment contracts	43	43	65	30
Money market funds	27	26	35	20
Certificates of deposit	1	1	2	1
Other	4	6	4	1
Not determinable	3	3	4	3

Source: USDOL (1991–93).
Note: Data exclude supplemental pension plans. Sums may not equal totals because of rounding.

be withdrawn (albeit with a tax penalty) in the event of a hardship, often defined as the purchase of a house, high healthcare bills, or college expenses. Loans for workers who are currently employed at the pension-sponsoring firm are virtually unheard of in traditional DB pension plans.

Flexibility at retirement also is appealing to many DC plan participants. One issue is that participants can decide how much to take in a lump sum versus how much to annuitize. Almost all participants in pension plans surveyed are able to take some or all of their funds in a lump sum (Table 3); half may access their money in installments if desired; and fewer than one-third of DC plan participants may convert their pension funds to lifetime annuities. This wide range of options contrasts with the typical pattern in DB plans, where benefits commonly must be paid in the form of a life annuity.

Recent research on the largest pension plan covering university re-

TABLE 2 Trends in Provisions for Withdrawal of Employer Contributions Prior to Retirement, Disability, or Termination of Employment: Savings and Thrift Plans

	Full-time participants (%)						
Type of formula	*1985*	*1986*	*1988*[†]	*1988*	*1989*	*1991*	*1993*
No withdrawals permitted	20	18	29	28	29	50	51
Withdrawals permitted	80	82	71	72	71	50	47
For any reason	61	56	42	41	37	24	29
No penalty	30	19	15	14	17	16	NA
Some penalty	30	37	26	25	18	8	NA
For hardship reasons*	19	26	29	30	34	26	18
No penalty	14	21	21	22	27	17	NA
Some penalty	3	5	6	7	7	7	NA

Source: USDOL (1985–93) and unpublished data from the BLS for 1988† figures. The EBS sampling frame changed in 1988 to include smaller firms and more industries than before, so data for 1988 on are not precisely comparable with previous years' tabulations.

*Commonly expressed hardship reasons include purchase or repair of primary residence, death or illness in the family, education of an immediate family member, or sudden uninsured loss.

†In a few cases the Bureau of Labor Statistics tabulated 1988 results using a sampling frame similar to that employed in previous years. For comparability purposes these figures have been presented, where available, under columns headed "1988," whereas tabulations from 1988 on employ the new, larger survey sampling frame.

Note: Data exclude supplemental pension plans. Sums may not equal totals because of rounding. NA means data not available.

TABLE 3 Trends in Method of Distribution of Account at Retirement: Savings and Thrift Plans

	Full-time participants (%)					
*Type of distribution**	*1985*	*1986*	*1988*	*1989*	*1991*	*1993*
Cash distribution	99	99	97	97	99	99
Lifetime annuity	29	25	25	28	30	30
Installments	59	52	49	52	52	48
Lump sum	99	98	95	96	99	98
Stock distribution	—	1	1	1	NA	NA

Source: USDOL (1985–93). The EBS sampling frame changed in 1988 to include smaller firms and more industries than before, so data for 1988 on are not precisely comparable with previous years' tabulations.

*Many plans offer more than one form of cash distribution, so sums of individual items exceed total.

Note: Data exclude supplemental pension plans. Sums may not equal totals because of rounding. NA means data not available, and "—" means less than 0.5 percent.

TABLE 4 Trends in Employer Contributions in Savings and Thrift Plans

	Full-time participants (%)					
Employer matching contributions*	*1985*	*1986*	*1988*	*1989*	*1991*	*1993*
Fraction of salary						
≤ 5%	12	28	35	36	39	40
6%	52	54	47	47	43	46
≥ 7%	14	11	11	12	11	15
Specified dollar amount/other	9	7	5	4	3	—

Source: USDOL (1985–93). The EBS sampling frame changed in 1988 to include smaller firms and more industries than before, so data for 1988 on are not precisely comparable with previous years' tabulations.
*Employees may contribute a percentage of salary up to a maximum; ceilings on employer matching contributions are generally lower.
Note: Data exclude supplemental pension plans. Sums may not equal totals because of rounding. "—" means less than 0.5 percent.

search and teaching faculty (the TIAA-CREF plan) suggests that patterns of retirement payouts are changing in important ways over time, with rising demand for 10- and 20-year certain payout periods (Hammond, this volume). In general, then, employees with DC plans find appealing the degree of leeway they have over the amount of money paid in, the investment options during the build-up phase, and the way the funds may be paid out.

A different appeal of DC plans is the fact that employers are able to target their matching contributions to reward specific behaviors and specific types of employees. A typical DC pension design has the employer depositing up to 5 percent of an employee's pay into the DC pension if that worker contributes the maximum allowed (Table 4). However, if an employee chooses not to contribute, or contributes less than the maximum allowed, the company will generally contribute less as well. The same pattern is evident with company contributions to profit-sharing plans, where payments are increasingly determined by participants' contributions, rather than by pay levels (Table 5). This approach is probably designed to allow the employer to effectively pay more to those workers willing to save more—a practice explained by Richard Ippolito (this volume) as making sense when saving behavior signals greater productivity potential. Having the match feature in the pension plan allows more productive employees to be rewarded accordingly.

Economists generally agree that employers' costs associated with the sponsorship of retirement plans are part of the total cost of labor. That is, an employer must pay the worker his or her marginal value to the firm, whether in the form of cash or deferred compensation. Richard Ippolito

TABLE 5 Trends in Provision of Deferred Profit Sharing Plans

	Full-time participants (%)				
Type of formula	*1986*	*1988*	*1989*	*1991*	*1993*
Employer contributions					
Based on stated formula	59	55	60	52	40
Fixed % of profits	NA	16	10	10	9
Variable % of profits	NA	12	18	24	32
Other formulas	NA	27	33	17	
No formula	41	45	40	48	60
Allocation of profits to employees					
Equally to all	1	1	1	2	7
Based on earnings	61	74	64	52	52
Based on earnings and service	10	12	9	13	11
Based on participants' contributions	—	—	—	12	19
Other	8	13	26	21	11
Loans from employees' accounts					
Permitted	25	32	19	27	23
Not permitted	75	68	81	73	77

Source: USDOL (1985–93). The EBS sampling frame changed in 1988 to include smaller firms and more industries than before, so data for 1988 on are not precisely comparable with previous years' tabulations.
Note: Data exclude supplemental pension plans. Sums may not equal totals because of rounding. "—" means less than 0.5 percent.

argues that this translates into differential economic rewards for different workers when the company offers a defined contribution pension plan with matching options. In particular, some workers, particularly the very present-oriented (or "high discounters" in Ippolito's terminology), do not participate in a voluntary contributory defined contribution plan even though they forgo the value of the tax benefit or employer match accorded such contributions. This is sensible when the company feels that the high discounter may not be workers that such firms wish to compensate highly in the first place—perhaps because they exhibit behaviors associated with relatively low marginal productivity or perhaps because they impose relatively high maintenance costs on the company.[1]

One of the issues that Ippolito leaves unexplored is whether or not high discounters could, under some circumstances, be converted into low discounters. Other writers in this volume show that improvements in financial education could go a long way to encouraging greater saving on the part of workers (Bernheim, this volume). Likewise, increased employer matching of employee contributions in 401(k) plans and more intense communications programs can increase levels of participation in

voluntary contributory programs (Clark and Schieber, this volume). This research, then, suggests that some workers are high discounters simply because they are ignorant of the long-term costs that short-term consumption decisions may imply. Of course other younger, lower-wage workers may lack the wherewithal to save, which remains a challenge for the economy as a whole.

An additional explanation for DC plans' popularity is that they are often perceived as less expensive than the defined benefit alternative. Data from the U.S. Department of Labor show that joint employer/employee contribution rates in DC plans are widely variable, ranging in practice from 1 to 16 percent of pay (Table 5). Obviously it is possible to design DB plans that would mimic these cost ranges, so it is not necessarily the case that DC plans are less expensive to operate. On the other hand, administrative costs associated with DC plans are generally lower than those of DB plans, making a given dollar of contribution go farther toward retirement payments. For instance, in 1996, annual administrative expenses in 1996 were $287 per participant in small DC plans while similar-sized DB costs exceeded $600 per participant (Hustead, this volume). For a large DC pension plan, administrative costs were approximately $49, and for DB plans they were $68 per year in 1996. (These cost data exclude investment management fees, but include mandatory government insurance premiums for the defined benefit pension plans.) Edwin Hustead's analysis in this volume shows that the cost of administering defined benefit plans rose steadily during the 1980s, both in absolute terms and in relation to the cost of administering a defined contribution plan as a result of various legislative and regulatory measures adopted during that time. These increases in per capita administration costs were much more significant for smaller defined benefit plans than for larger ones. In addition to increasing administrative costs, the value of the tax advantages accorded the sponsors of many small defined benefit plans were substantially eroded during the 1980s. For many smaller defined benefit plans, the economic value of continuing them was simply not worth the cost of so doing.

As a factor explaining their rising popularity over time, proponents of DC plans have often pointed out that these plans are less risky than the DB plan alternative. For instance, in the United States, DC plan assets are owned by plan participants and held in trust, leaving little potential for loss in the event of corporate sponsor bankruptcy. By contrast, a defined benefit plan could find itself with assets inadequate to meet promised obligations, the condition known as underfunding. In the United States, at least, DB plan underfunding risk is partially covered by a government insurance group, the Pension Benefit Guaranty Corporation, though at a nontrivial premium cost noted above. In other countries, underfunding

risk is handled in different ways (Bodie, Mitchell, and Turner, 1997) and in any event this risk arises only in the DB pension plan scenario, not in the DC environment.

Do Defined Contribution Plans Offer Reasons for Concern?

Having explained why DC plans are growing in popularity, we should also note concerns about this trend. One factor is that defined contribution pension plans tend to place a great deal of responsibility on participants' shoulders, more so than in the case of DB pensions. For example, employees offered a DC plan sometimes do not avail themselves of the chance to save in a tax-qualified account (Hinz and Turner, this volume). In addition, people who save more in their DC account may offset these funds with less saving outside their pension account. Nevertheless, empirical studies using nationally representative cross-section data from the United States are hard-pressed to detect a large and statistically significant result confirming this hypothesis (Gale and Milano, this volume).

Failure to participate in a tax-qualified pension plan may be a rational economic decision for workers who are particularly income-constrained. On the other hand, for many, nonparticipation may be due to myopia or lack of information. Data from several large firms show that the amount and quality of pension information provided to participants by the employer has a powerful effect on pension participation rates, in many cases even more potent than additional employer funds spent in matching employee contributions (Clark and Schieber, this volume). Clearly there is more to be learned about how to interest workers covered by a pension to actually participate in the plan.

Even when employees do join their company's plan, they are often poorly informed about investment options, a condition that may lead them to make seemingly unwise or irrational portfolio choice decisions. Surveys of average Americans document workers' substantial ignorance about key aspects of financial markets, raising profound questions about how ready workers are to make DC investment choices with lifelong consequences (Bernheim, this volume). One instance where questions are raised is when workers are found to be investing in substantial quantities of employer stock, perhaps under an incentive plan offered by the corporate sponsor. This investment pattern is not, per se, problematic though it suggests that employees may not fully understand the benefits of portfolio diversification. Another study, by Andrea Kusko et al. (this volume), reveals remarkable worker insensitivity to dramatic changes in employer contributions.

A related issue salient in many plan sponsors' minds of late is that of

potential liability if employee investments in a DC plan fail to perform well. This concern has recently resurfaced when a guaranteed investment contract (GIC) was offered as one of several investment options to participants in a large employer's 401(k) pension plan. After the insurance company issuing the GIC filed for bankruptcy, pension plan participants sued the large employer, charging it with having selected an investment option that lost money (Ortelere, this volume). This case and others have prompted the U.S. Department of Labor to issue guidelines regarding pension investments that employers hope will clarify their responsibility toward participants in company-sponsored DC pension plans.

As a result of these issues, pension education is becoming increasingly important to sponsors of DC plans. Participants vary according to the types of information they need and can process regarding investment risk, return, and related issues. Examining alternative approaches to pension education reveals that the way pension information is presented can have a large impact on pension plan members' investment behavior. For example, 401(k) plan participants tend to hold much of their money in bonds, but appear to move funds to equities after learning more about the relative risk and return of alternative portfolios (Vanderhei and Bajtelsmidt, 1997). A related concern is whether unsophisticated investors are likely to overreact when the market falls, manipulating their pension funds to inadvertently lock in short-term losses when a better strategy would be to invest for the long term. Available evidence suggests that mutual fund investors have been rather unresponsive to large downward movements experienced in the market to date, and since many 401(k) pension plans are invested in mutual funds, it seems likely that this pattern will also carry over to the DC environment (Rea and Marcis, this volume).

Several implications flow from increased understanding of how plan participants make decisions about their pensions. One is that industry is growing more aware of how to communicate with employees effectively about their pensions. More forward-looking and technologically advanced firms are exploring the multi-media route, using the Internet and financial-planning software libraries. Other firms use videos and glossy materials, along with around-the-clock toll-free telephone service to answer participant questions and permit changes in investment decisions. As a result, many plan sponsors find their role changing over time as plan participants interact directly with the customer service representative at the pension investment house, rather than channeling pension questions through their corporation's benefits manager (Hurt, this volume). And benefits consulting firms as well as third-party plan administrators are facing new challenges related to delivering better benefits service at the retail level.

The Road Ahead

The rapid growth of defined contribution pension plans in the United States and around the world offers new opportunities and also new risks. As we show in this volume, DC plans serve both participating employees and sponsoring employers. In the process, they are working to educate a new generation of pension savers. This transition process is far from foolproof, however, and diligent oversight is needed to protect retirement assets from unwise investment behavior, premature cash outs, and excessive administrative expenses. This volume illustrates how exciting research advances can be used to inform improved decision making about pension design, particularly for defined contribution plans, in the future.

Note

1. Such a worker also would undervalue the possibility of defined benefit pension at some distant future time, and hence would be unlikely to stay with an employer that is reducing current cash wages for the traditional pension offering.

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