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The Declining Role of Private Defined Benefit Pension Plans: Who is Affected, and How

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The Declining Role of Private Defined Benefit Pension Plans: Who is Affected, and How

Abstract

This chapter analyzes the impact of future freezes among corporate defined benefit (DB) pension plans. We simulate the impact on expected future pension wealth by assuming all existing private DB plans immediately freeze accruals for new employees. While this indicates the potential reduction in retirement wealth attributable to such plans, it does not recognize that sponsors freezing accruals may increase employer contributions to existing defined contribution (DC) plans or establish new DC plans. Using an empirical distribution of enhanced contributions to DC plans from sponsors freezing their DB plans, we simulate the nominal annuity that could be purchased at retirement age from these enhanced contributions. We then back out the net pension loss experienced by employees in the future.

Disciplines

Economics

Comments

The published version of this Working Paper may be found in the 2010 publication: *Reorienting Retirement Risk Management*.

Reorienting Retirement Risk Management

EDITED BY

Robert L. Clark
and Olivia S. Mitchell

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Chapter 7

The Declining Role of Private Defined Benefit Pension Plans: Who Is Affected, and How

Craig Copeland and Jack VanDerhei

The policy debate over retirement security has focused in part on whether retirees will have sufficient pension income. As defined benefit (DB) pension sponsors continue to freeze accruals for new and/or current employees, they often substitute either new or enhanced defined contribution (DC) plans in their place. The question is whether the total *expected* retirement income from the combination of the frozen DB and any new/additional 401(k) balances will equal or exceed what employees had anticipated receiving from the original DB plan, had it continued without modifications.

What it might take to indemnify an employee for such a freeze is the subject of this chapter. Because workers affected by a DB pension freeze vary according to age, salary, and job tenure, as well as the DB and DC plan provisions and formulas and the economic assumptions used to estimate the effects of a pension freeze, there is no simple answer. Prior studies have indicated how patterns might vary by age and job tenure: older, longer-tenured workers tend to be affected by a pension freeze from the *current* plan sponsor more than younger workers, because they have less time remaining in their working careers in a 401(k) plan to offset the accrual loss from the pension freeze (VanDerhei 2006).

In what follows, we first discuss data on the fraction of Americans aged 65 and older receiving annuity income flows from an employer pension. We also mention how pension income flows vary across various demographic characteristics and characteristics of the employers providing the plans. Next we build on newly available information to examine the financial impact of pension freezes upon the employee population. Of key relevance is the need for information on what improvements, if any, tend to be made to DC plans when DB plans are frozen. We draw on VanDerhei (2007) for this data and the Employee Benefits Research Institution/Education and Research Fund (EBRI/ERF) Retirement Security Project Model to assess the impact of pension freezes on future private DB plan accruals.

To summarize findings, we show that benefits as a fraction of preretirement pay would decline by an annual 0.5–2.1 percentage points, depending on the retiree's age and sex. Yet some employees, almost one-third of those under age 35, could do better at retirement due to enhanced DC contributions.

Trends in pension benefits for Americans aged 65 and older

DB pensions have traditionally paid retirees periodic lifetime incomes, or annuities.¹ In the US Census Bureau's Current Population Survey, the percentage of Americans aged 65 and older that reported having a pension and/or annuity income was 24 percent in 1974, and it rose to almost 38 percent in 1992 (Figure 7.1).² The fraction subsequently fell to 34 percent by 2007. In other words, less than 40 percent of Americans aged 65 and older have ever received pension and/or annuity income. Even among those with income in the top two quintiles, no more than 62 percent receive pension incomes in the most recent years of the data (2006–7). Furthermore, the peak year appears to have been already reached almost 15 years ago.

A similar question is asked in the Census Bureau's Survey of Income and Program Participation (SIPP), where we see that 35 percent of Americans aged 65 and older had pension and/or annuity income from their former employers in 2006 (Table 7.1). If we also include this income from spouse's former employers, the fraction rises to 44 percent. These fractions have fallen below prior surveys (36 and 44 percent in 1998 while 38 and 46 percent in 2003). Younger retirees (aged 65–69) were less likely to have this type of income with 32 percent in 2006, versus 36 percent or more for those aged 70 and older. Men and the better educated were also more likely to have pension income, while White and Black Americans aged 65 and older were also more likely to have pension income than Hispanic Americans. For those with pension and/or annuity income, the median amount was about \$9,700 in 2006, up from \$9,100 in 2003 (all in 2006 dollars). For those aged 65–69 receiving pension income, the median annual benefit was about \$12,100, higher than \$10,300 for those aged 70–74 and \$9,600 for those aged 75–79. Those with a college or postgraduate degree received pensions worth significantly more, \$17,300 and \$21,600, respectively.

A unique feature of the SIPP data is that it asks retirees questions about characteristics of the employers from which they retired along with their earnings prior to retirement, so that some conclusions can be drawn about the likelihood of receiving pension income from specific types of employers. For those aged 65 and older who had worked for pay for at least 5 years

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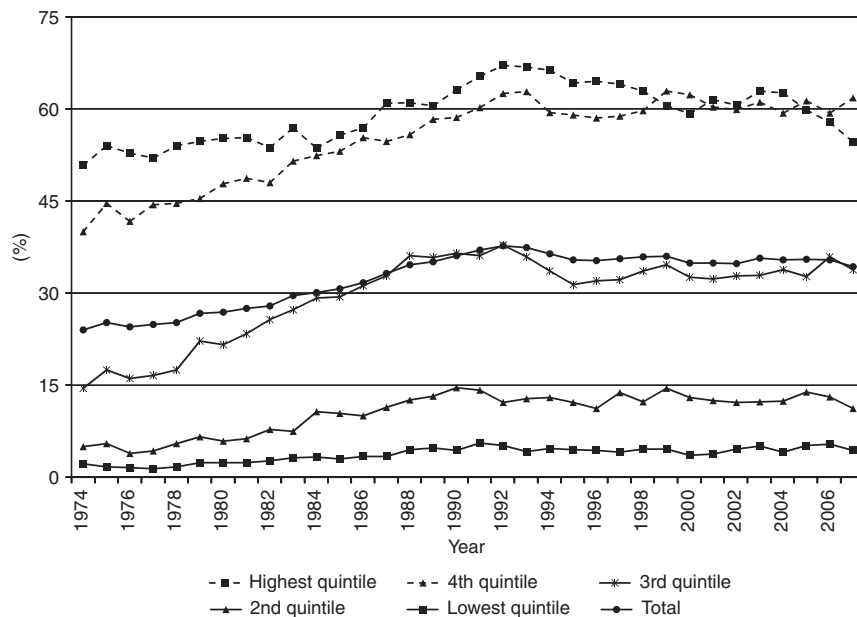


Figure 7.1 Percentage of Americans aged 65 or older with pension and annuity income, by income quintile; 1974–2007. *Source:* EBRI (2009).

before retiring, 52 percent received pension and/or annuity income in 2006 (Table 7.2), down from 55 percent in 2003. Those who had worked for larger firms, were covered by a union and were in the public sector, had longer job tenure, and earned more were more likely to have pension income. For instance, a retiree aged 65 and older who had worked at a larger firm (100 or more employees) had a median annual amount of \$10,700 versus \$7,000 or less for retirees from smaller firms. Public-sector retirees had significantly higher pension incomes (\$15,600 versus \$6,800) than those retiring from private-sector jobs. It must be noted that in some cases, public-sector retirees received no Social Security income, whereas private-sector retirees did.

The lesson, then, is for the last 30 years in America, at most 40 percent of the elderly received pension and/or annuity income from an employer. Even those who retired from a job after 20 or more years with an employer, fewer than two-thirds, had pension income in 2006. Furthermore, the median pension income received by former private-sector workers was relatively low, under \$7,000 per year in 2006. While this benefit was valuable to those receiving it, it was unlikely to free older Americans of financial concern.

TABLE 7.1 Characteristics of Americans aged 65 or older with pension income by demographic characteristics: 1998, 2003, and 2006

	1998			2003			2006			
	Pension income from			Pension income from			Pension income from			
	Number (M)	Own former employer (%)	Own/ spouse's former employer (%) amount ^a (\$)	Number (M)	Own former employer (%)	Own/ spouse's former employer (%) amount ^a (\$)	Number (M)	Own former employer (%)	Own/ spouse's former employer (%) amount ^a (\$)	
Total	32.2	36.0	44.3	34.1	37.6	45.6	35.4	35.4	43.5	9,696
Age										
65-69	9.4	35.3	41.7	9.6	37.7	42.7	10.2	32.1	37.0	12,144
70-74	8.6	38.3	45.5	8.5	39.0	45.5	8.4	36.6	43.7	10,320
75-79	6.9	36.8	47.6	7.4	36.2	46.3	7.2	37.9	47.0	9,600
80 or older	7.3	33.6	42.9	8.7	37.2	48.2	9.6	36.0	47.6	7,200
Sex										
Male	13.6	53.2	56.0	14.4	54.0	57.0	15.1	48.4	52.7	12,000
Female	18.6	23.5	35.7	19.6	25.5	37.3	20.3	25.7	36.6	6,384
Race/ethnicity										
White	27.0	37.8	46.6	28.2	39.3	47.9	28.7	36.6	45.3	9,804
Black	2.6	33.5	39.5	2.7	34.4	41.2	2.9	35.4	41.2	8,004
Hispanic	1.6	22.0	25.5	2.0	24.4	28.6	2.2	23.6	29.3	7,800
Other	0.9	17.5	22.0	1.1	25.9	28.9	1.5	29.6	33.9	12,000
Education										
No high school	11.0	27.9	35.3	9.3	26.5	34.5	5.5	21.8	28.4	4,908

(continued)

TABLE 7.1 (Continued)

	1998						2003						2006					
	Pension income from			Pension income from			Pension income from			Pension income from			Pension income from			Pension income from		
	Number (M)	Own/ former employer (%)	Own/ spouse's former employer (%)	Median yearly pension income amount ^a (\$)	Number (M)	Own/ former employer (%)	Own/ spouse's former employer (%)	Median yearly pension income amount ^a (\$)	Number (M)	Own/ former employer (%)	Own/ spouse's former employer (%)	Median yearly pension income amount ^a (\$)	Number (M)	Own/ former employer (%)	Own/ spouse's former employer (%)	Median yearly pension income amount ^a (\$)		
High school degree	10.7	35.2	44.3	6,136	11.4	35.5	45.2	7,389	13.9	31.9	40.9	7,056						
Some college	6.1	39.8	48.9	8,420	7.5	40.4	48.7	9,439	9.5	39.0	47.6	9,720						
College degree	2.6	47.4	54.9	11,097	3.6	51.2	55.1	13,055	3.8	44.9	52.3	17,268						
Postgraduate degree	1.8	62.2	67.8	15,666	2.3	62.3	67.6	18,329	2.7	55.1	61.2	21,600						
Marital Status																		
Married	17.2	40.7	44.0	7,833	19.4	42.3	45.5	10,183	19.2	38.4	42.2	11,592						
Widowed	10.9	28.4	46.2	5,222	10.8	28.5	46.7	7,102	11.1	31.0	48.4	7,128						
Divorced/ separated	2.6	35.3	39.0	8,003	2.9	37.2	41.7	8,159	3.7	32.5	36.7	9,612						
Never married	1.5	39.3	41.9	7,833	1.1	43.8	47.4	7,833	1.5	36.0	39.8	8,700						

^a All pension amounts in 2006 dollars.

Source: Derived from Employee Benefit Research Institute estimates of the 1996, 2001, and 2004 Survey of Income and Program Participation (SIPP) Topical Module 7; see text.

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TABLE 7.2 Characteristics of Americans age 65 or older who have worked for pay with pension income and median pension income amounts, by individual's former employer characteristics: 2003 and 2006

	2003			2006		
	Number (M)	Pension income from own former employer (%)	Median yearly pension income amount ^a (\$)	Number (M)	Pension income from own former employer (%)	Median yearly pension income amount ^a (\$)
Total	23.2	55.2	9,073	24.0	52.2	9,696
Employer size						
<10	3.4	20.1	6,319	3.8	18.6	6,564
10–24	1.4	31.5	6,841	1.5	27.7	7,020
25–49	1.3	38.2	6,501	1.1	35.0	6,840
50–99	1.0	38.3	6,319	1.2	43.5	6,000
≥100	16.1	67.0	9,295	16.4	64.0	10,680
Union status						
Covered	6.2	77.1	8,747	6.3	75.7	10,584
Nonunion	17.0	52.8	9,138	17.7	43.9	9,360
Class of worker						
Private	15.7	50.4	6,984	16.2	47.1	6,840
Self-employed	1.6	21.8	7,180	1.7	14.0	8,952
Public	5.9	79.0	13,055	6.1	76.6	15,600
Tenure on last job (years)						
<5	1.0	22.4	5,104	1.1	19.0	6,600
5–9	2.8	28.5	4,974	2.5	25.5	3,960
10–19	5.7	46.5	5,209	6.0	45.5	5,160
≥20	13.7	66.9	10,666	14.4	62.2	12,000
Earnings prior to retirement (2006 \$)						
<10,000	2.8	27.8	4,543	3.2	29.9	5,160
10,000–19,999	3.4	43.4	5,483	2.9	35.0	5,352
20,000–29,999	3.3	50.2	5,222	3.3	45.9	6,048
30,000–49,999	5.7	61.3	8,668	5.1	56.5	8,652
≥50,000	8.0	67.8	13,054	9.6	64.6	12,600

^a All pension amounts in 2006 dollars.

Source: Derived from Employee Benefit Research Institute estimates of the 2001 and 2004 Survey of Income and Program Participation (SIPP) Topical Module 7; see text.

128 Craig Copeland and Jack VanDerhei**Pension freezes and DB accruals**

The news media has recently focused on the supposedly ‘new’ phenomenon of pension freezes among private DB plan sponsors for current or new workers. In fact, however, this practice has been around for some time, part of the long-term decline of ‘traditional’ DB pension plans in the United States. What is unusual, of late, is the fact that many large employers have recently announced pension freezes.

Naturally, pension plan freezes will affect some workers negatively, but it is not obvious which workers are most affected nor to what degree they are affected. This is because of the unique characteristics and terms of each pension plan and each freeze, as well as the age and characteristics of the affected workers.³ The literature documenting the evolution from DB to DC retirement plans in the last 20 years is replete with studies analyzing the change in the relative composition of plans and participants;⁴ however, very few have focused on the sizeable number of large plan sponsors that have had *both* DB and DC plans in place, at least since the advent of the 401(k) plan in the early 1980s.⁵ For these sponsors, the primary decision in many cases is not whether to retain *both* forms of retirement plan, but how to manage the liabilities of each in terms of future accruals or contributions. Recognizing certain legal⁶ and/or financial constraints, including the inability to terminate an underfunded pension plan (with the exception of certain sponsors satisfying the bankruptcy conditions necessary to trigger pension insurance coverage by the Pension Benefit Guaranty Corporation) and the imposition of a 20 or 50 percent excise tax on the recoupment of excess assets in the case of a reversion (VanDerhei 1989), the best choice for many firms may be to gradually reduce the relative value of the DB plan in the future by the imposition of a pension freeze.

Retirement program changes after the Pension Protection Act

After the enactment of the Pension Protection Act (PPA) of 2006 (VanDerhei 2007), the Employee Benefit Research Institute (EBRI) and Mercer fielded a survey designed to elicit information on retirement program changes. Employers that sponsored DB pension plans were asked to complete the survey. This survey was distributed in 2007 making it likely that plan sponsors would have time and information to do a cost/benefit analysis of possible plan modifications and/or investment changes. Survey respondents were asked to indicate what changes they had made, or expected to make, to their DC plans. One-third of the DB sponsors expected to make an increase in employer matching contributions, and 21 percent expected to make an

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increase in nonmatching employer contributions. A total of 43 percent of the DB sponsors indicated that they would increase employer contributions.

Focusing on DB sponsors planning to increase employer contributions to a DC plan, we also asked whether they had closed their DB plan to new hires in the last 2 years. A majority (78 percent) of these sponsors indicated that they would increase employer contributions to the DC plan or planned to do so in the next 2 years (81 percent). Slightly smaller percentages were associated with DB sponsors freezing their plans to all members. Of those that had frozen (would freeze) in the last (next) 2 years, 62 percent (76 percent) indicated they would increase employer DC contributions. This makes it very clear that any serious attempt to model retirement income adequacy for future cohorts of retirees must control for this widespread phenomenon of employers providing new or additional employer contributions to a DC plan. The reason is that many firms seek to at least partially compensate employees for lower DB accruals that they may have expected if the original DB plan had not been closed or frozen.

In the aftermath of PPA, 401(k) plan sponsors must also decide whether to introduce automatic enrollment features. An extensive literature discussed the potential benefits of automatic enrollment on participation rates, especially for young employees and those with low incomes (DiCenzo 2007). But these programs also have a tendency to anchor participants' contribution rates and asset allocation to the defaults chosen by the sponsor (Choi et al. 2005, 2006), and the overall increase in expected account balances from adopting these plans will be a function of employee relative wage levels and employer default decisions (Holden and VanDerhei 2005).

The PPA provided a significant incentive for employers that had not already adopted automatic enrollment to reconsider their decisions.⁷ It is interesting that prior surveys of likely adoption rates in the post-PPA environment have not linked this behavior with sponsor decisions to close or freeze their DB plans. Yet it has been noted that a shift from DB to DC plans (especially 401(k) plans) may increase the variability of retirement income for future cohorts (Samwick and Skinner 2004). At least among the DB pension sponsors that have closed their plan to new hires in the last 2 years or are planning to do so in the next 2 years, VanDerhei (2007) found that a relatively large percentage had already adopted automatic enrollment in their 401(k) plans (and many who had not are considering doing so). Of those that already closed their DB plans to new hires, 59 percent had adopted automatic enrollment features in the 401(k) plan, as opposed to 42 percent of those that had not. Plan sponsors indicating that they will close the DB plan to new hires in the next 2 years have also moved to adopt automatic DC enrollment features (61 percent of the time) versus only 39 percent for those that do not intend to close the plan in the next 2 years.⁸

Impact of freezing new employee DB plan accruals

Next we turn to an analysis of the likely impact of continued trends with respect to DB plan freezes. Building on the work of VanDerhei (2007) and VanDerhei and Copeland (2008) using the EBRI/ERF Retirement Security Projection Model⁹ we simulate the impacts of freezing new employee DB plan accruals. Accordingly, we assume that no current employees are impacted by a DB plan freeze; that is, all DB freezes are assumed to affect new employees only. Each time an employee is simulated to have a job change, the probability that he would be covered by a DB plan is computed based on the assumption that DB plans have not been frozen. The cumulative value of all DB accruals for *new* jobs is determined for each employee under the assumption that no terminated vested benefits are commuted to lump-sum distributions prior to retirement age (which is currently assumed to be age 65 for all employees).¹⁰

We also assume that all private DB plans will be immediately amended so that any new employees will accrue no pension benefits, and any employee selected by the model to otherwise have been eligible for a DB plan (in the absence of a freeze) is assigned a nonelective enhanced¹¹ employer contribution to a DC plan based on the EBRI/Mercer survey described previously. The enhanced employer contributions are accumulated based on age-specific asset allocations derived from year-end 2006 Employee Benefit Research Institute/Investment Company Institute (EBRI/ICI) data (VanDerhei et al. 2008). All simulation results use annual returns data from Ibbotson Associates (2009).¹² At age 65, all accumulated account balances attributed to the enhanced contributions are converted to nominal annuities (for consistency with the DB accruals) using sex-specific annuity purchase prices. Unlike previous applications of the EBRI/ERF model, in this case the module used to simulate cash-out versus rollover behavior for DC balances at job change is effectively turned off for any new jobs. This is likely to overstate the eventual balances attributed to the enhanced contributions, but it allows a consistent comparison to the DB accruals that would have resulted but for the new pension freeze scenario.¹³

The expected reduction in nominal replacement rates if all private DB plans were to freeze accruals for NEW employees immediately appear in Figure 7.2, displayed by sex and age. The average reduction is below 1 percent for young (under age 25) and old (55 and older or 60 and older, depending on sex) employees, and the values peak at slightly over 2 percent for males aged 30–34, and 1.75 percent for females aged 30–34.

While these numbers may seem small, they are computed over a large segment of the population not expected to have a DB accrual from future jobs (this is particularly true of the older employees). Therefore, in Figure 7.3 we display the expected conditional reduction in nominal

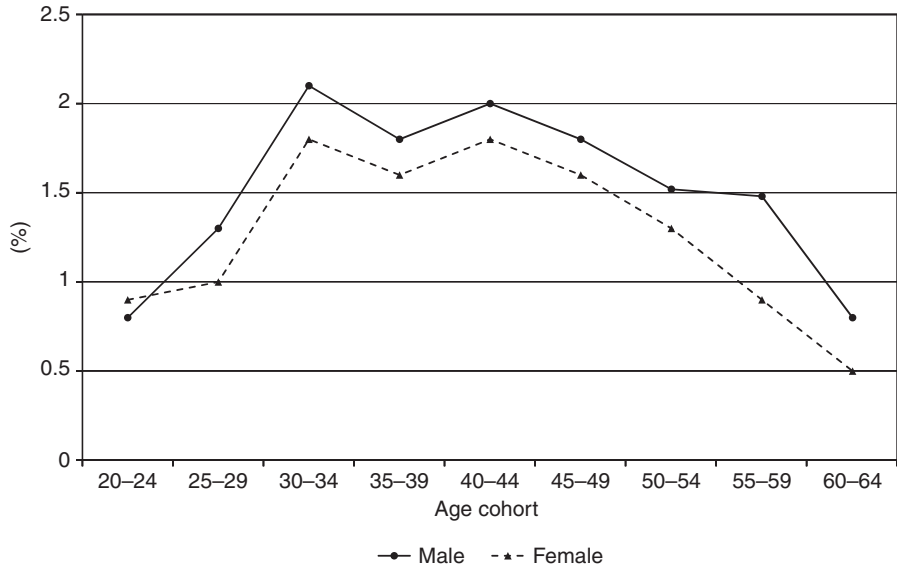


Figure 7.2 Expected reduction in nominal replacement ratios if all private defined benefit (DB) plans were to freeze accruals for new employees immediately, by sex and age. *Source:* Authors' calculations; see text.

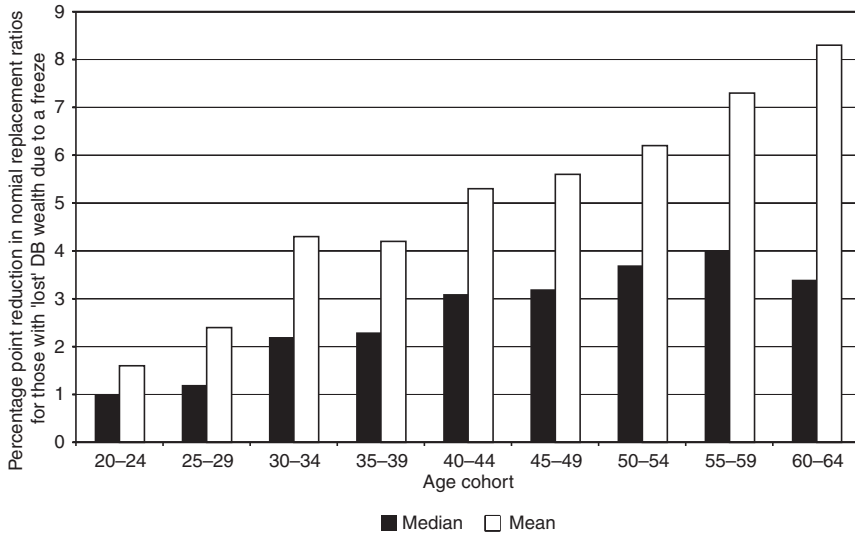


Figure 7.3 Expected conditional reduction in nominal replacement ratios if all private DB plans were to freeze accruals for new employees immediately, by sex and age. *Source:* Authors' calculations; see text.

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replacement rates if all private DB plans were to freeze accruals for new employees immediately. In essence, this filters out anyone lacking a new DB plan from the previous figure. Now the mean reduction in replacement rates is monotonically increasing with age, starting at approximately 1.5 percent for employees currently aged 20–24, and increasing to 8.3 percent for those aged 60–64. The medians are significantly lower than the means, as expected, and increase until they reach 4 percent at age 55–59 and then drop slightly.

Figure 7.4 shows the percentage of those with DB wealth foregone due to the freeze who are expected to have a larger total nominal replacement rate from DC enhanced contributions (if any). As expected, young employees have the highest percentage, with nearly 40 percent of those between 20 and 24 ending up with more retirement wealth from the annuitized account balances from the enhanced contributions than they would have had under the additional DB accruals. This percentage drops to 6 percent for those aged 55–59.

Finally, Figure 7.5 shows the median percentage of compensation required as financial indemnification, in the form of an enhanced contribution, for future years covered by a DC plan in lieu of a frozen DB plan. The majority of employees under age 30 can be financially indemnified with an employer contribution of 6 percent of compensation; by contrast, the number increases to nearly 16 percent for those over 60.

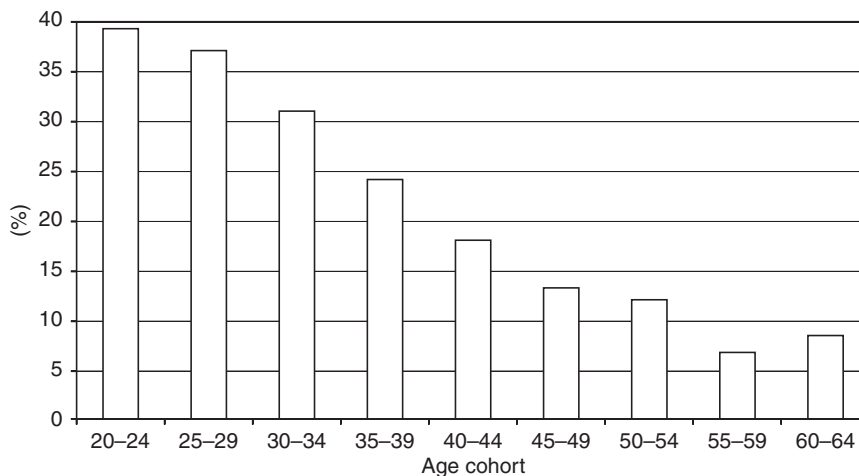


Figure 7.4 Percentage of those with ‘lost’ defined benefit (DB) wealth due to a pension freeze expected to have a larger total nominal replacement rate from the enhanced defined contributions (DC) (if any). *Source:* Authors’ calculations; see text.

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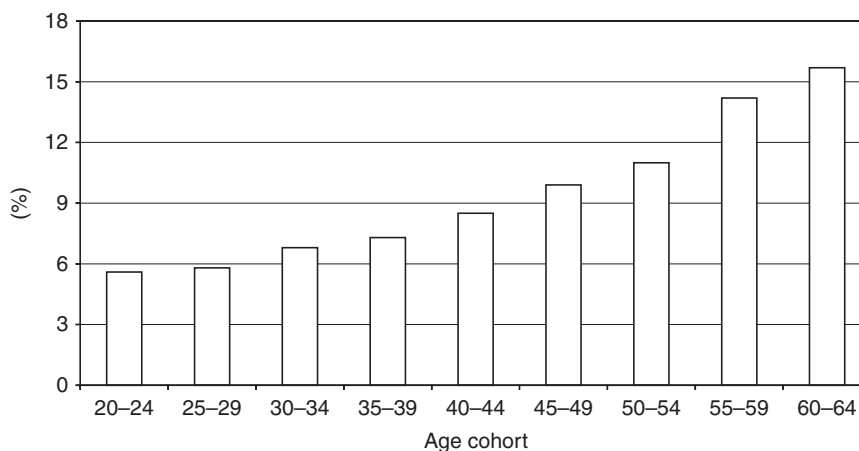


Figure 7.5 Median percentage of compensation required as an enhanced employer contribution for future years covered by a defined contribution (DC) plan in lieu of a frozen defined benefit (DB) plan for financial indemnification. *Source:* Authors' calculations; see text.

Conclusion

This chapter investigated how the role of private DB pension plans has declined since the advent of the Employee Retirement Income Security Act in 1974, by focusing on the falling percentages of Americans aged 65 and older with pension or annuity income. Even including public-sector retirees, Americans with DB plan income never attained 40 percent of the retiree population, and the fraction has receded several percentage points from its highest levels in the early 1990s.

Of course, these historical figures do not reflect the considerable recent activity in DB freezes for new (and sometimes existing) employees since 2006. We have simulated the impact of such freezes on expected future pension wealth for new employees. Looking at this portion of pension wealth provides one estimate of the impact on overall retirement wealth but it is incomplete, since many sponsors either increase employer DC contributions or set up new DC plans. Factoring in these enhanced DC contributions (if any), we estimate the net loss that future employees may experience is small overall, amounting to a 0.5–2 percentage point reduction in replacement rates. Some employees, as many as 30 percent of those aged 35 or younger, may be better off in retirement due to the enhanced contributions.

134 Craig Copeland and Jack VanDerhei**Notes**

- ¹ Nevertheless, even DB plans have increasingly given retirees access to lump sums over time.
- ² This excludes distributions from DC plans or individual retirement accounts; see EBRI (2009).
- ³ VanDerhei (2006) provides a detailed analysis of how pension freezes are likely to impact existing employees as a function of plan type and employee demographics.
- ⁴ For a review of this literature, see Gale, Papke, and VanDerhei (2005).
- ⁵ For an analysis that looks at the cash flow implications, see Olsen and VanDerhei (1997).
- ⁶ Another constraint that may be operative for some sponsors is the legal uncertainty surrounding a conversion to a cash balance plan; see VanDerhei (1999).
- ⁷ The PPA preempts state laws that might affect plans adopting automatic enrollment provisions and provides additional nondiscrimination safe harbor protections for them.
- ⁸ Sponsors that already closed their plans in the last 2 years are excluded from the analysis of those in the ‘next 2 years’ group. An analysis of DB sponsors freezing the plan for all members is less straightforward. While 57 percent of those who froze the DB plan in the last 2 years indicated they had already adopted 401(k) automatic enrollment features, compared with 45 percent of those who had not, the phenomenon is reversed for those planning to freeze the plan in the next 2 years. In that case, only 33 percent of those that plan to freeze their pension have adopted 401(k) automatic enrollment, as opposed to 46 percent of those that do not plan to freeze the plan in the next 2 years. However, 42 percent of those planning to freeze their pension in the next 2 years are currently considering 401(k) automatic enrollment features.
- ⁹ See VanDerhei and Copeland (2003), for a detailed description of the EBRI/ERF Retirement Security Projection Model.
- ¹⁰ Butrica et al. (2009) uses the Model of Income in the Near Term (MINT) to simulate the impact of an accelerated transition from DB to DC pensions on the distribution of retirement income among boomers in a scenario in which employers freeze all remaining private-sector DB plans and a third of all state and local plans over the next 5 years.
- ¹¹ The term ‘enhanced’ includes those with no additional employer contributions to the DC plan (approximately 21 percent of the DB plan sponsors in the survey were in this category—in other words, approximately four out of five plans sponsors in the survey who had frozen or were planning to freeze their DB plans had either increased employer contributions to an existing DC plan or initiated a new one).
- ¹² Time series returns for the years 1926 through 2008 were used for large cap stocks and long-term corporate bonds to simulate the portfolios of all 401(k) participants. Simulated rates of return used a modified version of the method of overlapping periods (Cooley, Hubbard, and Walz 2003; Schlee and Eisinger 2007).

- ¹³ Two additional assumptions are used for this analysis: (a) all DB plans are currently treated as though they were final average pay plans and (b) only private-sector workers are modeled (and if a worker is currently in the private sector, it was assumed he or she would remain there until age 65). The first assumption reflects an upper bound on the expected reductions in future retirement wealth for most cohorts of DB participants (see VanDerhei (2006) for a detailed analysis of the various DB plan types). The second assumption is required as a result of the survey population used to collect the enhanced contribution information in the EBRI/Mercer survey.

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