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## Chapter 10

# **The Portfolio Pension Plan: An Alternative Model for Retirement Security**

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*Richard C. Shea, Robert S. Newman, and Jonathan P. Goldberg*

This chapter describes a proposed new defined benefit (DB) pension design known as a *portfolio pension plan*. This design falls within a larger category of so-called ‘shared risk’ pension plans. In the United States, shared risk pension plans address a need created by the limitations of existing retirement plan designs. An alternative is needed because DB plans to date have concentrated risk on plan sponsors in a way that makes them financially unsustainable in many, if not most, circumstances. Moreover, existing defined contribution (DC) retirement plans impose risk on employees in a way that is challenging for most individuals to manage. In the past, many employers shared risk with employees by providing *both* a DB and a DC plan.<sup>1</sup> Nevertheless, this chapter argues that a new model can provide an alternative that better serves employers and employees in the United States.<sup>2</sup>

### **The Shared Risk Pension**

Shared risk pensions offer a design that is more sustainable for employers than existing DB plans, yet they also provide greater retirement security for employees than stand-alone DC plans. Rather than concentrating risk on either employers or employees, shared risk pension plans (as their name implies) allocate risk across the parties. Done right, these new designs promise to allocate risk more efficiently, in a way that delivers both greater sustainability *and* improved retirement security.

A portfolio pension plan accomplishes this result by allocating a significant portion of the investment risk to employees and leaving the remaining investment risk and the longevity risk with the employer.<sup>3</sup> Under this model, employee benefits are expressed in the form of account balances, which are adjusted up or down in response to investment performance. At the same time, the employer guarantees a cumulative minimum rate of return of at least 0 percent (in effect, a minimum benefit that protects principal) as well

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as retiree payments in the form of life annuities. Above these minimums, employers are free to allocate more risk to themselves by offering additional investment guarantees (such as a higher minimum rate of return) or by subsidizing benefit distributions to employees and their beneficiaries.

In contrast to most existing DC plans, the portfolio pension plan does not require or permit employees to contribute to the plan or to direct their investments. Instead, the employer makes all contributions (which could be in lieu of employer contributions to a DC plan), and the plan manages all investments in employee accounts. Such investment management is designed to automatically adjust the level of investment risk the employee bears to his or her changing circumstances over time, in accordance with modern portfolio theory (hence the name ‘portfolio’ pension plan). A fundamental principle of the portfolio pension plan is that (1) employees are not asked to bear investment risk, unless the risk is appropriate to their individual circumstances, and (2) they are not asked to bear the additional responsibility of managing the investments in their accounts—a critical responsibility that most lack the financial acumen and time to handle.

### Background

In the United States, we have moved from a world in which most significant retirement risks were borne by employers offering DB plans, to a world in which DC-covered employees must bear these risks largely on their own.<sup>4</sup> Yet the conventional assumption that an employer who provides access to a retirement plan must assume either all or none of the significant risks associated with retirement benefits has become dysfunctional. Specifically, many employers have concluded that they are no longer willing or able to bear the risks associated with providing retirement benefits through DB plans.<sup>5</sup> Nevertheless, many individuals are ill-equipped to assume those risks on their own, as they must in DC plans.<sup>6</sup> As a result, employers face fewer options to move individuals reliably from active employment to retirement, just as employees are becoming increasingly pessimistic about their ability to provide for a secure retirement on their own.<sup>7</sup>

### Risk allocation in traditional DB pensions

The traditional DB plan promises workers that the employer will provide a specified level of retirement income benefit. Accordingly, an employer’s funding obligations to the plan hinge on how well the plan’s assets perform in the investment markets.<sup>8</sup> In turn, the DB plan’s investment experience depends on two factors: actual investment performance to date, and expected investment performance in the future.

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To reflect expected future investment performance, and to ensure that the plan has sufficient assets to provide promised benefits, financial accounting and regulatory funding rules, in effect, require the plan's promised benefits to be discounted to the present using an interest rate reflective of future risk-adjusted investment expectations.<sup>9</sup> Changes in the investment environment thus affect not only past investment performance reflected in the value of plan assets, but also expectations about future investment performance reflected in the interest rate used to discount promised benefits to present value. As a result, changes in the investment environment cause important shifts in the spread between the value of the plan's assets and the present value of its promised benefits. When the present value of benefits exceeds the value of plan assets, the plan is underfunded, and the employer is expected to make up the shortfall (sooner or later). Here we refer to the risk that plan asset values will not keep up with the present value of promised benefits as 'investment' risk.

Furthermore, when benefits are promised for the lifetime of retirees, the liabilities of the plan depend on how long the retirees are anticipated to live. The risk that retirees might live longer than expected is known as 'longevity' risk. In a DB plan, this risk is measured at the plan level over the entire plan population, rather than at the level of the individual retiree.

Investment risk can cause substantial swings in employers' funding obligations, as plan assets and plan benefits are periodically revalued and compared to one another. Longevity risk tends to be perceived as slower to change, absent major unexpected improvements in cohort life expectancy. Under US regulation, DB plan financial accounting and regulatory funding rules generally require the value of plan assets and plan benefits to be remeasured and compared annually, and thereafter reflected in the company's financial statements and regulatory funding requirements. The potential for dramatic swings in these obligations (stemming largely from investment risk) has led many employers to reduce their exposure to traditional DB plans. As a result, DC plans have become the design alternative most employers turn to.

### **Risk allocation in DC plans**

DC plans, and especially participant-directed pensions such as 401(k) plans, place both investment and longevity risks squarely on employees' shoulders as individuals. The retirement income individuals receive from these types of plans depends on several factors. First, employees may fail to contribute, or save enough. Second, after contributions are made, individuals' investment choices determine returns earned on the savings over the work life, which generate the assets used to provide retirement payouts. Third, the timing of

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retirement can significantly affect the value of individuals' DC accumulations. A disability or early retirement, for example, can curtail individuals' ability to save as well as to time retirement to favorable market conditions.

Fourth, retirees must also manage their accounts to provide retirement income for their own and perhaps their partner's lifetime. Not knowing how long one is going to live poses a challenge difficult for any one individual (or couple) to bear. Whereas the DB model pools longevity risk across the employee and retiree group, the DC plan does not offer protection against such longevity risk.

While many people may be able to determine their own retirement plans, risk tolerance, and health conditions, investment expertise is not widespread. Indeed many individuals would find it challenging to assume the investment risk of managing their own retirement savings, and the longevity risk of planning retirement distributions over their own unpredictable lifespans.<sup>10</sup>

### Reducing Risk by Sharing it

Plan design options that better share risk between employers and employees would enhance the retirement system in the US for several reasons. First, such options offer a middle ground between the polar extremes of allocating all significant risks to either employers or employees. Second, while many employers may not wish to bear all the risks imposed on them by traditional DB plans, they may still be willing and able to bear some of those risks. Third, employees may be willing to share investment risk with employers in a way that would relieve the plan sponsor of dramatic swings in financial liability. For instance, an employer could still guarantee some minimum retirement benefit, giving participants the chance to share in investment upside returns with reduced risk on the downside. Additionally, the investment risk could be professionally managed and tailored to workers' investment horizons and tolerance for risk. This would obviate the need for each participant to develop investment expertise.

Fourth, such risk sharing would permit diversification across a large group by having employers retain it, sharing it collectively among participants, or some combination of these two approaches. And fifth, by allocating each risk to the party best able to bear or diversify it (i.e. to the least cost avoider—see Coase 1960; Calabresi 1970) in a way that minimizes moral hazard and adverse selection, risk sharing would enhance the retirement system's efficiency.

### The Portfolio Pension Plan

The Portfolio Pension Plan ('PPP') is a DB plan modeled on the cash balance plan design. A cash balance plan is a DB plan that promises a



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benefit based on the balance in a hypothetical account. Each year, a participant's account is credited with an amount typically based on the participant's pay (while the participant remains employed), and the balance in the account is credited with interest (regardless of whether the employee remains employed), typically at a rate based on the current yield on US Treasuries. In contrast, each employee's account balance in a PPP is adjusted over time based on the return on an investment portfolio tailored to the employee's expressed preferences and changing circumstances.

The PPP has many characteristics in common with a conventional cash balance plan. It is financed solely by the employer, and over the work life, each employee's balance is credited during employment with pay credits (typically a percentage of current pay). Each participant's accrued benefit is expressed as an account balance. Like a conventional cash balance plan, a PPP provides employees with a minimum guaranteed benefit which is generally equal to the cumulative pay credits in the employee's account accrued over his or her career (or it can be higher, if the employer wishes to provide a more generous guarantee).<sup>11</sup> Additionally, the plan offers at least actuarially equivalent annuities for employees and surviving spouses; and the plan sponsor is permitted to subsidize benefit distributions, to provide, for example, in joint and survivor annuities, disability benefits, death benefits, and plant closing and lay-off benefits. (For this purpose, a subsidized benefit means a benefit that has a greater actuarial value than the employee's current account balance.)

The defining feature of the PPP, and where it differs from a conventional cash balance plan, is how it credits earnings to the notional account balance ('interest credits' in conventional cash balance plans). A conventional cash balance plan provides 'interest credits' which adjust the account for the time value of money until the employee begins receiving benefits under the plan. In a conventional cash balance plan, a single rate is credited for all participants, usually the current yield on a specified government security, such as 30-year Treasury bonds. In a PPP, by contrast, each individual's account balance adjusts based on the return his or her individually-tailored retirement investment portfolio earns. This rate therefore reflects and adjusts to employees' changing circumstances over time.

As a result, employees will likely earn different returns on their accounts. For example, an employee could be placed in a cohort with other participants of like age and risk tolerance. This cohort would then start with an age- and risk-appropriate diversified portfolio that adjusts automatically over time, akin to a properly designed target date fund. As the employees approach retirement, their investment allocations would change accordingly. Taking this approach a step further, the PPP could employ an individual managed account approach, which takes into account additional variables specific to the employee, such as other retirement benefits,

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non-retirement assets, health condition, marital status, expressed risk tolerance, intended retirement date or work phase-down period, and so on. This investment mix could adjust to reflect changes in these variables over time. PPP investments are professionally and automatically managed, so the PPP does not rely on participant direction or education to achieve a balanced portfolio. Although individuals do not bear the burden of allocating investments, they can improve the fit of their investment portfolio to their individual circumstances by voluntarily providing additional information of the types just described.

The PPP also allocates risks between employers and individuals that could advantage both parties. Participants still bear investment risk, but the PPP tailors the level of risk to participants' individual circumstances. Furthermore, the PPP gives participants the ability to participate in the upside potential from taking on investment risk, while still enjoying a minimum benefit guaranteed by employers. And in turn, employers can invest in instruments to hedge against the minimum benefit, so funding volatility from the investment risk employers still retain would be minimized. More importantly, the investment risk and associated funding volatility for employers from sponsoring a PPP would be a tiny fraction of that they currently experience from sponsoring a traditional DB plan, or even a conventional cash balance plan.

Because the PPP plan offers an annuity benefit, employers continue to bear longevity risk. Nevertheless, we believe that the sponsor may be in a better position to assume longevity risk than individual participants. The sponsor can spread the risk across its workforce and retirees, and the plan might have the opportunity to invest in instruments that hedge against changes in mortality (meaning payments are made to the plan if plan participants receiving life annuities live longer than expected). The arrangement also enhances retirement security by avoiding the need for individual retirees to manage distributions and investments based on guesses about their own and partner longevity.<sup>12</sup>

**Conclusion**

Traditional 'all or nothing' approaches to allocating risks can be intelligently rethought. Doing so offers the potential for improving retirement outcomes for both employers and participants, in ways that have seemed impossible under traditional DB and DC plan designs. The portfolio pension plan adapts principles of both DC and DB pensions, seeking to rebalance the allocation of risks in a fresh approach to future retirement plan design.

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### Endnotes

1. The past approach of providing employees both a DB and a DC plan no longer works in the growing number of instances where employers have frozen or terminated their DB plans. See GAO 2008: 1–4 (stating that plan sponsors terminated over 61,000 sufficiently funded DB plans between 1990 and 2006 and that an estimated 3.3 million active participants are affected by plan freezes).
2. The pension plan design described in this chapter was first presented in Feb. 2012 at a conference in Washington, DC, hosted by the United States Senate Committee on Health, Education, Labor and Pensions and co-sponsored by the Pension Rights Center, the Urban Institute, and Covington & Burling LLP. The conference brought together senior policymakers from seven federal agencies, six Congressional committees, state and local governments, labor unions, employers, think tanks, retiree advocacy organizations, trade associations, professional actuarial organizations, and academia, as well as members of the press who cover retirement issues. The focus of the conference was on innovative pension plan designs to share and reduce risk, enhance coverage and adequacy, and expand lifetime income options. Excerpts from the conference are available online at <<http://www.pensionrights.org/what-we-do/events/re-imagining-pensions>>. Several of the designs presented at the conference (including the one described in this chapter) have been incorporated into subsequent legislative proposals and regulations. See, for example, 79 Fed. Reg. 56451 & 56463 (Sept. 19, 2014) (final Treasury regulations on hybrid retirement plans).
3. We note that the Employee Retirement Income Security Act (ERISA 1974) gives plan sponsors discretion to establish the actuarial assumptions used to convert employee account balances into annuities, including the ability to specify variable mortality assumptions that are updated periodically to reflect improvements in mortality. To the extent that the plan sponsor takes advantage of the discretion to use such variable mortality assumptions, employees could be said to bear the portion of longevity risk attributable to mortality improvements in the general population (as opposed to the portion of longevity risk attributable to the employee's own actual life span and, if relevant, that of his or her surviving spouse).
4. This shift is seen most dramatically in the replacement of the traditional DB plan by the participant-directed DC plan, as the predominant form of retirement arrangement. See Gale et al. (2005). This chapter focuses principally on tax-qualified retirement plans maintained by private employers in the US. We note, however, that this trend has characterized other nations as well. See Broadbent et al. (2006) at 11–17 (discussing the general shift throughout the OECD from DB to DC plans, with particular emphasis on Australia, Canada, the UK, and the US).
5. Plan sponsors cited the cost of plan contributions (72 percent) and the volatility of plan funding (69 percent) as the primary reasons for freezing DB plans (GAO 2008: 6–7).

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6. ‘The shift away from DB plans to DC plans places significant responsibility on individuals to make appropriate decisions concerning their contributions, their investments and how they will manage their money once they retire so that they will have adequate income to fund their retirement years. Unfortunately, many individuals are simply not prepared to handle these risks and responsibilities’ (American Association of Retirement Persons 2011: 59).
7. The shift from DB to DC plans has had some positive effects in the labor market: traditional DB plans tend to be heavily backloaded economically, whereas DC plans (and other account-based plans like cash balance plans) tend to provide economically level benefit accruals over an employee’s work life (Gale et al. 2005: 53). As a result, many workers fail to accrue significant benefits under a traditional DB model, because they do not remain in their jobs with the DB plan sponsor long enough. By contrast, DC plans (and other account-based plans like cash balance plans) penalize job changing less. The Employee Benefit Research Institute suggests that, as a result of the DB/DC shift, average vested benefits have increased for employees covered by employer-sponsored retirement plans, concluding that vesting rates rose from 24 percent in 1979 to 43 percent in 2012 (Copeland 2013: 1, 3).
8. Conventional cash balance plans (such as those modeled on IRS Notice 96–8, 1996–1 C.B. 359) behave similarly to traditional DB plans in this regard, even though they express retirement benefits in terms of an account balance as opposed to a deferred annuity.
9. See Elliott (2009). For ERISA minimum funding purposes, discount rate based on investment grade corporate bond yield curve, see 26 U.S.C. § 430(h).
10. See n. 5 of this chapter. We do not wish to minimize the considerable strides made recently permitting plan sponsors to structure DC plans as increasingly comprehensive retirement vehicles. Such strides include the advent of participant education and advice, auto-enrollment, auto-escalation, insurance to replace contributions lost due to disability, qualified default investment alternatives, target date funds, individual managed accounts, coordination with Social Security benefits, and various investment management services and insurance products designed to manage investments and payouts (including lifetime income payouts) in retirement. See American Association of Retirement Persons (2009: 115–16 (listing series of improvements to defined contribution system subsequent to the Pension Protection Act of 2006, P.L. 109–280, 120 Stat. 780).
11. See 26 U.S.C § 411(b)(5)(B)(i)(I)&(II) (cash balance plan is required to provide a minimum guaranteed rate of return of at least 0 percent cumulatively and is permitted to provide a more generous ‘reasonable minimum guaranteed rate of return’); see also 26 C.F.R. 1.411(b)(5)-1(d)(2)&(6) (same).
12. One could also imagine that the PPP approach would offer continued investment management services throughout retirement, including the management of payouts to the employee, coordination with payouts from Social Security and

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other sources of retirement income, continued exposure to the market to some degree, and the provision of ‘so-called’ longevity annuities, which would start when the retiree reached some pre-specified advanced age (e.g. 85).

## References

- American Association of Retirement Persons (2009). Statement at *Strengthening Worker Retirement Security: Hearing Before the House Committee on Education and Labor*, 111th Cong. Serial 111–13.
- American Association of Retirement Persons (2011). ‘Reduction in Rate of Benefit Accrual Under a Defined Benefit Plan, 26 C.F.R. 1.411(B)(5)-1(2014).’ Statement at *Retirement Security: Challenges Confronting Pension Plan Sponsors, Workers, and Retirees: Hearing Before the Subcommittee on Health, Employment, Labor, and Pensions, House Committee on Education and the Workforce*, 112th Cong. Serial 112–28.
- Broadbent, J., M. Palumbo, and E. Woodman (2006). *The Shift from Defined Benefit to Defined Contribution Pension Plans—Implications for Asset Allocation and Risk Management*, Bank of International Settlements, Working Group on Institutional Investors, Global Savings, and Asset Allocation. Basel: Bank of International Settlements. <<http://www.bis.org/publ/wgpapers/cgfs27broadbent3.pdf>>.
- Calabresi, G. (1970). *The Cost of Accidents: A Legal and Economic Analysis*. New Haven, CT: Yale University Press.
- Coase, R. H. (1960). ‘The Problem of Social Cost.’ *Journal of Law and Economics*, 3(1): 1–44.
- Copeland, C. (2013). *Retirement Plan Participation: Survey of Income and Program Participation (SIPP) Data, 2012*, Notes, 34(8). Washington, DC: Employee Benefit Research Institute.
- Elliott, D. J. (2009). *A Guide to the Pension Benefit Guaranty Corporation*. Washington, DC: Brookings Institute. <[www.brookings.edu/~media/research/files/papers/2009/5/20%20pensions%20elliott/0520\\_pensions\\_elliott.pdf](http://www.brookings.edu/~media/research/files/papers/2009/5/20%20pensions%20elliott/0520_pensions_elliott.pdf)>.
- ERISA (1974). Employee Retirement Income Security Act 1974. P.L. 93–406, 88 Stat. 829.
- Gale, W. G., L. E. Papke, and J. VanDerhei (2005). ‘The Shifting Structure of Private Pensions,’ in W. G. Gale, J. B. Shoven, and M. J. Warshawsky (eds), *The Evolving Pension System*. Washington, DC: Brookings Institution, 55–62.
- United States Government Accountability Office (GAO) (2008). *Defined Benefit Pensions: Plan Freezes Affect Millions of Participants and May Pose Retirement Income Challenges*, GAO-08-817. Washington, DC: GPO.