

Collective Defined Contributions Plans

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ABSTRACT

The long-term shift in the US retirement system from defined benefit pension (DB) plans to retirement saving accounts such as 401(k) plans and IRAs has transferred significant financial risks to workers, many of whom are ill-equipped to handle the contingencies. Collective defined contribution (CDC) plans offer a way to rethink risk sharing. CDCs permit employers to avoid the funding cost and volatility of guaranteed DB benefits while providing savers and retirees DB-like professional investment management and pooling, longevity risk pooling, and lifetime income. To be effective, however, CDC plans need to address issues regarding expectations, equity, transition, and trust. If they can do so successfully, adding particular CDC features to conventional DB plans or 401(k) plans in appropriate circumstances could improve outcomes for workers, retirees, and employers. Looking beyond the conventional, traditional DB and DC plan designs to explore a new, richer, and more nuanced array of risk-sharing and pooling strategies is a welcome development that will help identify more optimal allocations of financial risks and retirement benefits.

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I. Introduction

Over the past four decades, the US retirement system has largely shifted from defined benefit pension (DB) plans to retirement saving accounts within the broader defined contribution (DC) category – mainly 401(k) plans -- and to individual retirement accounts (IRAs). A key factor driving this change is employers’ desire to avoid the risks associated with providing guaranteed pension benefits. This guarantee – a defining feature of DB plans – can entail large funding obligations that can change unpredictably and can wreak havoc on corporate balance sheets and budgets. But the flight from DB plans to 401(k)s and IRAs did not make financial risks disappear; instead, it transferred the risks to individual workers, many of whom are ill-equipped to handle the resulting contingencies.

Collective defined contribution (CDC) plans offer a way to rethink risk sharing between employers and individuals and among savers and retirees. CDCs and other hybrid retirement plan formats combine DB and DC elements in different ways. Variants already exist in several countries, are receiving serious consideration in the United Kingdom, and have counterparts and close parallels in the US.¹

In CDCs, employers avoid the funding volatility and investment risk of DB plans. Although CDCs are technically DC plans, they provide some DB-like features for savers and retirees. Compared to 401(k) plans, which feature individual accounts, participant-directed investing, and typically lump-sum payouts, CDCs provide DB-style pooling of investments,

¹ These variants and hybrid plans include “defined ambition” (rather than defined benefit), “target benefit”, “collective money purchase”, “variable DB”, “variable annuity”, “adjustable pension”, or “shared risk” plans and are discussed below.

professional investment management, and lifetime retirement income. They reduce financial risks for individuals, relative to DC plans, but generally without guaranteed benefits (Millard, Pitt-Watson, and Antonelli, 2021).

In this paper, we examine the opportunities and challenges associated with implementing CDCs in the US. We highlight the advantages of CDC plans as well as several issues that CDC plans must confront, regarding expectations, equity, transition, and trust. We conclude that, under appropriate circumstances and contingent on addressing those issues, adding particular CDC features to a 401(k) or a conventional DB plan can improve outcomes for workers, retirees, and employers. More generally, we emphasize that evaluations of CDCs depend greatly on the answers to two questions: “Compared to what?” (e.g., traditional DB plans or 401(k) plans) and “From whose point of view?” (e.g., employees, retirees, or employers).

Section II compares typical forms of DB and DC plans with a basic type of CDC plan. Section III describes CDCs and similar plan designs in a number of countries, including the US. Section IV discusses the challenges relating to implementing CDC plans. Section V concludes.

II. Typical Retirement Plan Forms

Retirement plans generally come in three main types – DB, DC, and hybrids. In this section, we compare and contrast the typical features of basic DB, DC, and CDC plans, a certain type of hybrid. Table 1 provides summary details.

A. Defined Benefit Plans

In the typical DB plan, eligible workers are automatically covered and do not make contributions. Employers guarantee and pre-fund benefits, make investment choices, and bear the financial risks associated with low asset returns or retirees living longer than anticipated. Benefits are based on employees’ tenure with the company and a measure of average or final

earnings. Benefits are offered and often paid as an annuity with regular (typically monthly) income guaranteed for the lifetime of the retiree and spouse, if any. Many DBs, however, allow participants to forgo this longevity risk protection and opt for a lump sum payment instead. There are numerous qualifications and exceptions to this skeletal description.²

DB plans offer distinct advantages to employees and retirees. Individuals do not need to make decisions about, or face the risks associated with, enrollment, contribution levels, investment allocations, and portfolio rebalancing. The only real decisions a DB participant needs to make are when to retire and start claiming benefits, and the form in which to take them. Age- or service-based incentives in DB plans, reflecting employers' workforce management priorities, are typically strong and can make choices easier. DB participants benefit from having pooled and professionally managed investments that comply with strict fiduciary standards.

Nevertheless, DBs have their drawbacks. Even when most widely used, they tended to exclude broad swaths of the labor force. Because their benefit formulas tend to accumulate benefits on a "back-loaded" basis, DB plans provide significantly smaller benefits to those, including many women, with interrupted careers or with frequent job changes and are generally less portable. Private-sector DB plans, and to a lesser degree government DB plans, often leave retirees exposed to inflation risk. DB participants may also be exposed to some underfunding risk, although mitigated to a great extent by PBGC pension benefit guarantees. For employers, DB sponsorship can entail costly and potentially volatile pre-funding requirements, has a significant regulatory burden, and is seen as complex and underappreciated by employees.

² For example: Private-sector employees seldom contribute to their DB plans, although they often bear the cost of contributions by receiving lower wages. State and local government plans (where DB remains prevalent) usually require employee as well as employer contributions. Although employers bear the financial risk, most DB plan benefits are insured by the Pension Benefit Guaranty Corporation (PBGC) in the event of employer insolvency with unfunded plan benefits.

These drawbacks, combined with several other trends, led to a steady decline in DB plans. First, the unionized sector and the manufacturing sector – where the DB presence was substantial – have steadily shrunk. Second, women’s labor force participation rose. Third, DB costs rose as the ratio of retirees to active workers increased over time.

B. Defined Contribution Plans

A DC plan maintains an individual account for each participant that sets the participant’s benefit as the balance resulting from cumulative participant and employer contributions – allocated to individual accounts based on a stated allocation formula – net of withdrawals and adjusted for the account’s investment experience. The employee bears all investment risk. The prevalent DC plan design in the US is the 401(k) plan.

In 401(k) plans, employers do not face risks related to asset returns, inflation, or retiree longevity, and typically face low funding costs – often under 3 percent of payroll – compared to DB plans. In addition, 401(k) employer matches of employee contributions tend to be relatively predictable and can be reduced or suspended in a bad economic climate, thus avoiding funding volatility. Finally, 401(k) plans are simpler to administer than DBs.

Participants also seem to like 401(k)s. For many workers, the appeal of owning growing account balances seems to outweigh the less tangible, long-term promise of DB post-retirement income. Also, 401(k)s are more accessible and portable than DBs during times of hardship and job changes.

Over time, as 401(k)s became the primary retirement for more and more people in the United States, traditional 401(k)s evolved to more recent versions with automated features. Automatic provisions essentially re-insert some DB-like features into 401(k)s. In a fully automated 401(k), workers are automatically enrolled, their contributions automatically escalate

over time, their accounts are automatically invested in reasonable ways, and their accounts are rolled over upon job changes. Participants in an automated 401(k) have full control over these decisions and can override the automatic settings if they so choose – the rules are defaults not mandates. But participants do not have to make these choices if they do not want to.

Although they benefit from professionally determined investment options, 401(k) participants don't benefit from the diversification gains from additional pooling available in DBs, often face retail pricing of fees, and still bear the full risk of uncertain asset returns. In addition, 401(k) plans usually receive smaller employer contributions and pay lump sums, potentially jeopardizing participants' ability to generate sufficient retirement income and protect themselves from longevity risk. These shortcomings provide opportunities for plans like CDCs to maintain the benefits of automated 401(k)s and address their weaknesses.

C. Collective Defined Contribution Plans

CDC plans aim to share financial risks in ways that emphasize the strengths and minimize the drawbacks of DBs and DCs. CDC plans come in many variants; in this section, we focus on a typical CDC plan to highlight the differences with standard DB and DC plans. In Section IV we discuss the variety of hybrid plans in the U.S. and other countries that include somewhat similar features.

As in DC plans, it is common for both plan sponsors and/or participating employees to contribute to a CDC. As in a DB plan, employees generally do not have full 401(k)-style individual accounts (where the benefit is framed as an account balance resulting from contributions (less withdrawals) and individual investment returns); however, participants might be seen as having individual accounts in the narrower sense that certain individual data, such as contributions by and on behalf of individual workers, are tracked and reported to them. The contributions of an employer's (or an industry's) work force are pooled and professionally

managed. The fund managers target future annual benefit levels, but benefit amounts are not guaranteed.

For plan sponsors, CDCs avoid volatile funding costs by accepting fixed employer contributions correcting this drawback of DB plans. For workers, CDCs (a) pay benefits in the form of periodic retirement income (rather than lump sums), (b) pool longevity risk across participants; and (c) provide pooled, professional investing, correcting these weaknesses of most DC plans.

Paying benefits in the form of periodic income – such as an annuity – and pooling longevity risk helps people balance the risks associated with either over-consuming early in retirement, thereby risking running out of funds later, or under-consuming early in retirement, thereby risking having a lower standard-of-living than necessary. This pooling also enables people to confidently save for an average life expectancy rather than needing to save for an extremely long one. In addition, CDC plans’ pooling of investment and longevity risk and lack of guarantee of benefit amounts enables them to provide lifetime retirement income in-house; they have the option but not the necessity of purchasing commercial annuities. As a result, they can pay income while avoiding the regulatory, marketing, and profit-margin costs of commercial annuities.

Pooled, professional investing reduces administrative fees relative to account balances. It increases participants’ access to a wider range of asset classes, including those that might offer an illiquidity premium, which are harder for an individual to invest in. It also helps spread a number of risks over time and across workers, including smoothing routine asset volatility and the sequence-of-return risk and timing risk associated with having to liquidate assets at a certain point. Some CDC plans, for example, use reserve funds accumulated from surplus returns in

good times to buffer losses during down markets. Finally, professional investing helps workers avoid “amateur” mistakes – such as overinvesting in the employer’s stock or failing to rebalance.

For employers, one drawback of CDCs, relative to a DC, is the inability to reduce or suspend contributions in an adverse economic climate. For workers, the key drawback is that benefit levels are not guaranteed: employees bear the investment risk, in the form of potential benefit cuts or increased employee contributions if the plan is doing poorly.

In addition to pooling among individuals and smoothing over time, these risks have been partially addressed using a “defined ambition” (DA) design that distinguishes “base” and “ancillary” benefits. Base benefits are not guaranteed but expected to be paid even under very conservative financial assumptions. “Ancillary” benefits – such as cost-of-living adjustments or basing benefits on final pay rather than less generous career average pay – are more explicitly contingent on the plan’s financial condition; if benefits need to be reduced, they will be cut first.

Is this simply a pyrrhic victory for workers, though, as it reduces “risk” by reducing expected benefits? The key question, we would suggest, is, “Compared to what?” Compared to a 401(k) plan without investment or longevity risk pooling or lifetime income, for example, a CDC design would likely benefit participants. And compared to an unsustainable DB plan, a CDC strategy can establish a systematic, orderly process that helps workers and retirees manage uncertainty, set reasonable expectations, and plan for retirement. It is calculated to work in a more professional, fair, and predictable fashion than ad hoc decisions to cut or suspend benefits made under pressure by plan management or politicians in politically charged circumstances.

III. Experience with CDCs and Related Plan Designs

CDC-type and related hybrid pension plans around the world exhibit an array of features. Understanding how these plans work can help inform discussion of policy reforms in the U.S

(Doonan and Wiley, 2021).

A. Other Countries³

Netherlands. The Netherlands has undertaken the largest and most sustained effort to implement a CDC or DA system on a national basis. The Dutch experience over the past two decades shows how CDC plans can be implemented at scale and how various challenges and complexities arise and can be addressed.⁴

Employee participation is mandatory; employers must participate unless they can offer a better plan. Both employers and employees make contributions. Dutch occupational-level plans, covering about 80 percent of the workforce, are collectively bargained, extensively regulated, and professionally managed.

The plans usually target benefits based on an employee's career average wage, but the actual benefits depend on the plan's financial status and therefore are not guaranteed. Participants bear all investment risk through a combination of potential benefit cuts and increased employee contributions. To help manage this risk, when the plan's funding ratio falls below certain benchmarks, it must create a multi-year recovery program that includes employee contribution increases and/or temporary limits or elimination of COLAs, or even cuts in nominal benefits. However, when benefit cuts actually had to be made several years after the 2008-09 financial crisis, they came as an unwelcome surprise to many participants. Those risks had not been adequately communicated or understood, and trust in the system declined.

A key feature of the Dutch DA system has been uniform accruals. Each participant,

³ In addition to the CDC initiatives described below, Denmark also has implemented similar plan designs.

⁴ This summary is based on Bovenberg, Mehlkopf, and Nijman(2014), Gérard (2019), Van Popta and Steenbeek (2021), and Westerhout, Ponds, and Zwanevald (2021).

regardless of age, accrues the same benefit rights at the same contribution rate. From an actuarial perspective, this means that younger participants pay more than they should and thus subsidize older participants, who pay less than they should, yet protecting retirees from current cuts in their ongoing pension payments tends to have greater political urgency than the need to adequately fund pensions for those whose retirement is decades in the future. If the plan continues perpetually, and there is always an ample supply of younger workers to support older ones, these intergenerational inequities will even out over each worker's lifetime. But this points up a key vulnerability: the sustainability of the Dutch DA system and CDC plans like it assumes mandatory participation, especially among younger workers, and perpetual existence of the system.

The Dutch CDC/DA system has been controversial. In 2020, after years of debate about intergenerational inequities, complexity, and participant perceptions and disappointed expectations, the Dutch government proposed reforms. These reforms reportedly are strongly supported by the “social partners”, including labor and employers, and are generally expected to become law (Hoekert, 2021).

The “New Pension Contract” would retain several key elements of the current system – including mandatory participation; monthly lifetime income without a guarantee of the exact amount; and collective, professional asset management without direction from individual employees. But it would make changes that move it closer to a DC model. The uniform accrual and contribution system would be replaced by an “actuarially fair” system. Benefit rights would no longer be accrued; instead, the accrual or accounting system would be based on units of value in accounts. The funding ratio would cease to be a metric: instead, a reserve fund would be mandated to hedge against poor financial performance. Collective investment returns would be

allocated differentially to participants based on a predefined set of rules. New options would be available for benefit payments, including a lump sum of up to 10 percent of retirement assets.

The history of the Dutch CDC program illustrates that CDCs have both advantages and potential pitfalls and may help explain why one commenter opined that a “CDC” actually stood for “Complicated DC” plan (Lundbergh, 2021).

Canada The Canadian experience highlights the “compared to what” question noted above. After the financial crisis of 2008-09, there was significant fear in the Canadian province of New Brunswick that public-sector DB plans no longer appeared to be politically or financially viable. Faced with that reality, CDC plans were seen as the preferable alternative to a pure DC approach.⁵ As a result, several underfunded public and private-sector DB plans in Canada moved or are moving to a new “shared risk” program somewhat similar to the Netherlands’ DA approach. The Canadian “shared risk” model prescribes funding and risk management goals (including financial stress tests and projected funding ratios) with pre-determined cuts or increases in benefit payouts and increases or reductions in employer and employee contributions as well as changes in asset allocations in response to changes in the plan’s financial condition. The plans maintain an employer guarantee of “base benefits,” defined using career average salary. The difference between benefits based on career average wages and final wages, together with post-retirement cost-of-living increases, are classified as ancillary benefits that are not guaranteed but would be provided depending on the plan’s financial condition.

⁵ From a 2013 government report, “Many in the public complained openly about the generosity of these [DB] schemes and the fact that they have to pay extra taxes to cover pension deficits for benefits that they cannot afford for themselves” (Government of New Brunswick, 2013, page 7). Further, a background report on pension reform from the New Brunswick government stated that, financially, “many [DB] plans as they presently exist are not sustainable in the long term.” (Government of New Brunswick, 2012, page 1). See also Munnell and Sass (2013).

United Kingdom The United Kingdom is considering CDC plans, also known there as “Collective Money Purchase” (CMP) plans.⁶ Subject to extensive regulatory oversight to ensure financial soundness and appropriate plan design, U.K. employers and employees would contribute to a fund that is professionally managed. Payouts would be targeted to a specific benefit level but, to make employer costs predictable, would not be guaranteed and would depend on the plan’s financial status. CDC plan benefits would be expected to be designed to generally increase over time to keep up with inflation, although they would not be required to match inflation every year. In addition, the value of a participant’s expected benefits over time would be required to at least equal the contributions made by or for the participant.

This framework appears to draw lessons from the Dutch experience, addressing concerns about intergenerational equity by seeking to prevent excessive cross-subsidization (in either direction) between new participants and long-time participants and thus between past and future benefit accruals. For similar reasons, benefit changes must be universal, with any cuts generally smoothed over three years.

B. The United States

The United States has a variety of hybrid plan designs, both actual and proposed. This section describes these plans, organizing them into three categories: longstanding DC plan designs that have collective features; recently developed plan designs that are more DB-like with CDC features; and approaches that use separate DB and DC plans.

1. Traditional DC-Like Plan Designs with Collective Features

Money purchase pension plans were originally used as an alternative to DB plans to limit employers’ cost and potential liability. Money purchase plans are typically funded by employer

⁶ Summary based on Department for Work & Pensions (2021), Thurley and McInnes (2021), and Eagle, Jadav, and Fadayel (2020).

contributions, usually made annually and based on a fixed formula (such as 10 percent of salary). Investments are pooled, professionally managed, and allocated to each participant's individual account. Benefits are based on account balances, including both contributions and earnings, so participants bear the investment risk. The default form of payouts must be an annuity, although the plans can also offer other payout alternatives.

Target benefit plans are a variant of money purchase plans that closely resembles a CDC. Unlike other money purchase plans, target benefit plans define a participant's benefits as a targeted, not a guaranteed, amount. The target benefit is the basis for determining how much the employer should contribute based on reasonable actuarial assumptions (instead of contributing a fixed percentage of payroll). Since participants' actual benefits are still determined by the contributions and earnings allocated to their individual account, they still bear the investment risk. This plan design traditionally has not been widely used in the U.S., although various CDC designs in the US and abroad are now referred to as "target benefit plans".

Profit-sharing plans are more flexible and subject to fewer requirements. Instead of defining required annual employer contributions, profit-sharing plans allow employer contributions to be discretionary, and payouts need not be offered as an annuity. Profit-sharing plans can include pooling and professional direction of investments, but instead often incorporate 401(k) arrangements allowing employees to direct their own investments.

Both profit-sharing and money purchase plans (including target benefit plans) traditionally provide meaningful nonmatching employer contributions, such as 7 or 10 percent of salary, as would some other CDC-type plans. It may be no accident that these traditional plan types, like private-sector DB plans, have been largely succeeded by 401(k)s and IRAs in the U.S., a change that reduces employers' costs and risks. Employers have little incentive to offer

such larger contributions if employees show equal or greater appreciation for an un-pooled 401(k) with smaller employer contributions.

During the 1990s and thereafter, a large share of U.S. DB pension plan sponsors converted to a DB-DC hybrid known as a cash balance pension, and some employers adopted new cash balance plans. The cash balance plan is presented to participants essentially as if it were a DC plan, but it is actually a DB with both employer-guaranteed benefits and PBGC insurance. Each participant has an individual account, but the accounts are notional and are credited with employer contributions equal to a specified percentage of the employee's pay that "grow" at a pre-determined interest rate. The employer guarantee of benefits is effectively limited to the benefit produced by the notional employer contributions and interest credits. The actual employer contributions are invested on a plan-wide, pooled basis, and not directed by employees. Cash balance plans are required to offer lifetime annuity income as the default form of payout, but many participants elect lump sum payouts instead.

The cash balance experience illustrates the transition risks associated with converting a traditional DB plan to a hybrid format. For years, the conversions engendered litigation and bitter controversy because they unexpectedly deprived mid-career DB participants of their anticipated major increases in late-career benefit accruals provided by traditional, back-loaded DB plans.

2. DB-Like Variable Benefit Plans, including Proposed Composites

Recent years have seen significant experimentation with hybrid plans, especially in the U.S. collectively bargained and state and local government sectors (including, in particular, Maine and South Dakota). The objective is to manage the shift from traditional DB plans to a plan design that shares risks with participants in a more collective manner than the individualized

401(k). Labor unions have been particularly creative in developing and advocating for hybrid pension plan designs that are sponsored and funded by employers, sometimes have employee contributions, define targeted benefits in a DB-like manner, invest collectively and professionally without employee involvement, and pool longevity risk to provide lifetime retirement income. Like defined ambition and CDC plans, these variable benefit plans protect employers from potentially volatile funding obligations. Although they have DB-like benefit formulas, some do not guarantee benefits, while others include both a base guaranteed DB component and a variable component.

The “Variable DB” plan design developed by the United Food and Commercial Workers (UFCW), for example, combines traditional DB and CDC designs by guaranteeing a DB benefit as a base amount and providing a potentially higher benefit depending on investment performance of the pension fund. Investment risk is shared: employers bear the underfunding risk up to the base benefit amount while employees bear the risk that the variable benefit will not exceed the base benefit. The plan seeks to limit the employer’s DB funding cost and volatility by designing the guaranteed benefit to be manageable in amount and by prescribing conservative funding rules to minimize the risk of underfunding that base benefit.⁷

The National Coordinating Committee for Multiemployer Plans, a broad-based

⁷ The Variable DB design was developed by a UFCW Union task force that concluded in 2006 that continued DB pensions were unsustainable but rejected a shift to DC because of the extent of the risk that would impose on participants. Participants would ultimately receive the greater of (i) a DB benefit floor of a specified dollar amount per month for each year of service, guaranteed by the PBGC, and (ii) a variable or adjustable benefit that could fluctuate based on investment experience. The DB floor would be determined using conservative interest rates and could be reset periodically as plan demographics changed. Additional investment returns would accrue to the variable portion of the benefit up to a cap, and any higher returns would instead be set aside in a reserve to maintain future floor benefits during market downturns. See Blitzstein (2016). This basic approach, which can be used by multiemployer or single-employer plans, has been adopted thus far by a handful of union plans and by the State of Maine for local government employees. Maine’s plan features employer and employee contributions that vary based on market performance (subject to caps and floors) and variable COLAs.

association of major business, union, and other stakeholder organizations in the multiemployer pension arena, has proposed a hybrid plan solution to multiemployer plan underfunding (Defrehn and Shapiro, 2013).⁸ Proposed legislation, which would authorize so-called “composite” plans in the U.S., passed the House of Representatives in 2020, but was not been taken up by the Senate as it aroused considerable controversy, including strong support and strong opposition within organized labor.⁹

Composite plans would be neither DB nor DC. They would not have individual accounts. Assets would be pooled and professionally invested. Employers would make fixed contributions negotiated between labor and management, and benefits would be determined by the plan formula and paid as a life annuity. Employees would bear the risk that adverse investment experience would necessitate benefit reductions. A composite plan would not be considered fully funded until its projected funded ratio reached 120 percent, and if the plan fell below this benchmark, corrective actions, potentially including benefit reductions, would be required. Under the proposed legislation, the joint union-management board of trustees that manages multiemployer plans would be granted broad powers to provide for benefit reductions, but increased contributions would be required only if agreed to by both management and labor.¹⁰ If a plan was doing well, benefits could be increased only subject to extensive conditions and limitations based on funded ratios and other matters. Because they would not be DB plans, composite plans would not be insured by the PBGC.

The proposal lets current multiemployer DB plans transition to composite plans, with the

⁸ The same report by this organization also included the variable DB plan as another promising, innovative hybrid plan design.

⁹ See GROW Act (2018) and The Heroes Act (2020).

¹⁰ See Internal Revenue Code section 439(a)(2)(B)(i), as proposed to be added by the GROW Act.

original DB remaining as a “legacy plan” that is still PBGC-insured. When employers switch from DB to composite, participants would cease accruing new benefits under the legacy plan and begin accruing new benefits under the composite plan. Employers would be required to continue funding the legacy plan, but at a slower pace, with the goal of eventually achieving a 100 percent funding ratio. The proposed risk shift from employers to employees would also include significant reduction of “withdrawal liability” for employers that choose to stop participating in the multiemployer plan (Topoleski, 2020). One of the reasons the composite proposal has aroused controversy is concern about whether it would unduly weaken funding of the legacy DB plan – another illustration of how new hybrids, including CDCs, can raise significant transition issues and put a premium on effective plan governance.

3. Coordinated DB and DC Plans

Instead of pursuing the best of DB and DC features by combining the two within a single collective DC or hybrid plan, similar results can be achieved by using separate DB and DC plans. These can either be coordinated – for example, by giving participants the greater of the two types of benefits, as in a “floor-offset” plan – or independent, by giving participants the sum of the two. Both the greater-of and the sum-of designs permit pooled professional investment and retirement income with longevity risk pooled among retirees.¹¹ A third option involving DB and DC plans gives employees the choice to participate in either one but not both.

V. Challenges for CDCs

As the discussion above demonstrates, CDC and hybrid plans have made in-roads into pension systems in the US and several other countries. Whether they can expand further depends on resolution of several issues.

¹¹ Another hybrid plan design in the U.S. is the “DB-k” plan that combines a DB plan and a 401(k) arrangement, but these are very rarely used. See IRC section 414(x).

First, can participants understand and accept the partial nature of the benefit guarantee?

The “defined” retirement income features of DB and DC plans are clear: in a DB, a specified monthly dollar amount for life starting at a specified age; in a typical DC, no such guaranteed or targeted monthly retirement income. Participants in a CDC with benefits that are targeted but not guaranteed might eventually develop expectations beyond those that are justified by the plan’s terms. The distinction between defined “ambition” and defined “benefit” is clear in principle, but as a practical matter, may be hard for participants to live with and for plan sponsors to sustain over the longer term -- especially when plan provisions are complex, potentially nuanced, and ultimately subject to the plan management’s exercise of discretion. Especially if investment returns are strong for some years, participants might naturally tune out a plan’s qualifications and caveats and to come to expect and rely on benefits (especially those already in the process of being paid) being at least equal to those that were targeted. Accordingly, the success of CDC plans is heavily dependent on accurate and effective plan communications to shape clear and realistic participant expectations.

Experience could well shed light on whether, and, if so, how, CDC plan design could mitigate the risk of participant “expectation creep”. For example, in contrast to a purely variable CDC, might a binary CDC structure with a guaranteed DB benefit and a separate variable targeted benefit naturally reinforce accurate participant expectations through a clear and consistent demarcation between the guaranteed and nonguaranteed components (such as a guaranteed benefit versus a targeted but nonguaranteed COLA)?

The risk of “expectation creep” or misunderstanding presents a particular problem in the litigious U.S. market. In recent years, the U.S. plan sponsor community has become shell shocked by widespread litigation challenging retirement plan practices and costs. In this

environment, employers and their counsel can be expected to ask whether the efficiencies of CDCs are worth the risk of setting benefit “targets” that might not be met or well understood by employees. They may fear exposing themselves to class actions claiming that benefit cuts could have been avoided, that employees were not adequately warned that cuts might occur, and that particular cohorts were unfairly disadvantaged by transitions to CDC or other exercises of discretion by CDC plan sponsors. A pure DC model looks clear and simple by comparison, particularly as Americans seem to have less expectation than others that retirement plans should and will provide lifetime income.

Second, can CDC plans be designed to meet intergenerational equity considerations? CDCs need to mediate between different generations of workers, new and old members, and employees versus retirees. Disparities in treatment – actual or perceived, equitable or not – follow from the inevitable changes over time in business cycles, investment returns of various asset classes, interest rates, wage levels, and other factors. These variables affect various plan types and designs. For example, because CDC plans pool contributions and payouts for workers of different ages, fund managers’ decisions at a particular time to increase payouts or increase required employee contributions tend to benefit current retirees (who are receiving payouts but not contributing) at the expense of current workers (who are contributing but not receiving payouts). In addition, as noted above, in a system where each worker contributes the same amount, as in the Netherlands, younger participants pay more than they should – from an actuarial perspective – while older participants pay less. For these and other reasons, CDCs have given rise to inter-generational tensions and challenging sustainability problems.

Third, can transition effects be managed appropriately at the plan level? Where a CDC or variable DB starts as an existing DB plan – as composite plans would – transition is critical. As

noted, conversions of traditional U.S. DBs to hybrid cash balance plans created major transition problems. In addition, the “composite” proposal discussed above, for example, has raised concerns about whether employer funding of participants’ existing DB benefits would be unduly weakened by relaxation of existing funding standards for the DB legacy component while adding a composite component competing for a single pool of assets and funding source. An additional concern is that transitions, such as the cash balance conversions, almost inevitably generate disparities in treatment of participants by age.

Fourth, can transition effects be managed appropriately at the retirement system level? For several reasons, CDCs and similar designs may prove more likely to be adopted as replacements for existing DBs than for 401(k)s. First, employers have already shifted most financial risks associated with retirement plans to employees and retirees through 401(k)s and IRAs. Second, it may be easier to persuade employers with DB plans – who face higher costs and risks – than those with 401(k)s that CDCs can help reduce their costs and risks.

Among employers with 401(k)s, the realistic prospect may be incremental addition of selected collective strategies or features. These might include help in converting account balances to regular income in retirement or partial annuitization; enhanced participant access to lifetime income through managed payout or systematic withdrawal funds; tontine-like mortality credit pooling; or more collective professional investment including the broader use of institutional or collective approaches.¹²

Fifth, is there enough trust and convergence of interests between labor and management to keep CDCs financially sustainable and otherwise protective of participants? On an ongoing

¹² In recent papers, we have explored issues raised by DC plans’ use of commercial annuities, managed payout and systematic withdrawal funds, and tontine-like mortality credit pooling. See Iwry et al. (2019), Iwry et al. (2020), and John et al. (2019).

basis, CDCs' shift of risk from employers to participants and added flexibility to reduce benefits have raised questions about whether they provide too much discretion to make changes adverse to participants without sufficient guard rails or protections. The more adjustments a plan makes or has discretion to make that result in differential treatment in the pursuit of equity among different classes of participant groups, the greater the scope for misunderstanding, disagreement, mistrust, and blame. The actuarial calculations and judgments involved in ensuring CDC financial soundness and sustainability (even with respect to nonguaranteed benefits) are not naturally transparent or easy for nonexperts to understand. These concerns lead directly to a heightened need, in variable and adjustable benefit plans, for sound plan management, governance, and safeguards (Frank 2018 and Ambachtsheer, 2020). The need or authority to exercise discretion in these plan designs calls for a high degree of transparency and honest brokering on the part of plan management and often regulatory authorities and policy makers.

Finally, CDCs raise a variety of questions about the tradeoff between pooling and portability when an employee changes jobs well before retirement. For the most part, DC savings are relatively easy to move between employer plans. Moving and consolidating DB benefits easily and without loss of value, however, can be more challenging, and U.S. CDCs are more likely to be DB-like in this respect. If so, when a participant leaves the employ of the plan sponsor, the CDC presumably would disclose their accrued target lifetime retirement benefit as well as the lump sum amount available (which could be a refund of their previous contributions to the plan, with or without interest or earnings) if they cashed out (and thereby forfeited the retirement income benefit). Following the U.S. DB model, if the former employee left the benefit in the plan, retirement income might not become available until they reached an early retirement age such as 55 or 60. If instead they chose the lump sum, they could roll it over tax-

free to another plan or IRA. If a new employee wished to roll over a benefit from another plan into their new employer's CDC, the process would depend on that plan's rules. Those might allow the funds to be allocated to a separate, rollover account within the CDC plan or used to buy service credits in the CDC (which might also be offered as an option for others to convert other retirement savings to additional retirement income from the plan at retirement).

VI. Conclusion

While they face significant issues, CDCs and similar approaches that transcend a strict adherence to traditional DB or 401(k) plan designs can help improve retirement security in appropriate circumstances.

Where a traditional DB plan is well funded by a strong plan sponsor, for example, in the public sector or in collectively bargained settings, CDCs and similar variable designs might provide some helpful flexibility such as adjustable COLAs, but could also unnecessarily add complexity, new kinds of uncertainty, intergenerational equity issues, and potentially unclear expectations for employees and retirees. In the many situations, however, where the driver of change is the DB sponsor's unwillingness or inability to continue bearing costly and volatile investment and funding risks, maintaining an existing DB in its current form may not be an option. When the alternative is a 401(k) plan, a better solution could be either to modify the DB to add CDC features and flexibility or to add CDC features to the 401(k), including more investment pooling and professional investment management, pooling of longevity risk among retirees, and facilitating the payment of retirement income.

A CDC is also an option for an employer that currently offers a 401(k) but wants to provide a retirement benefit with better features without the potential expense of a DB. A CDC could provide both higher benefits and retirement income, rather than forcing new retirees to

either incur the cost of a commercial annuity or determine for themselves how to invest and at what pace to draw down the typical end-of-career 401(k) lump sum payment.

Looking beyond the conventional, traditional DB and DC plan designs to explore a new, richer, and more nuanced array of risk-sharing and pooling strategies is a welcome development that will help identify more optimal allocations of financial risks and retirement benefits.

Table 1: Summary Comparison of Basic DB, 401(k), and CDC Plan Designs

	DB	Regular 401(k)	Auto 401(k)	CDC
Enrollment	Usually no employee initiative required to participate	Eligible employees participate only if they sign up	Eligible employees participate unless they opt out	Usually, no employee initiative required to participate
Contributions	By employers (and in some plans, employees)	By employees (and in most plans, employers)	By employees (and in most plans, employers)	By employers and often employees
Contributions pooled	Yes	Occasionally, but usually not pooled ¹³	Occasionally, but usually not pooled	Yes
Investment	Employers/ financial managers manage on behalf of employees	Employees choose among employer-defined options	Employers set default investment choice, but employees can also choose among employer-defined options	Employers/ financial managers manage on behalf of employees
Allocation of risk	Employer bears investment and longevity risk	Individual participant bears investment and longevity risk	Individual participant bears investment and longevity risk	Employees/ retirees collectively share investment and longevity risk
Determination of benefits	Plan formula specifies guaranteed monthly pension benefit based on pay and service	Benefit depends solely on contributions to participant's individual account +/- investment experience, less withdrawals	Benefit depends solely on contributions to participant's individual account +/- investment experience, less withdrawals	Plan terms determine targeted but nonguaranteed, variable monthly pension benefit
Form of benefits	Lifetime income; often lump sum option	Usually, lump sum	Usually, lump sum	Lifetime income, usually variable
Employer Funding requirements	Yes, because benefit is guaranteed by employer	No but employer might make defined contributions	No but employer might make defined contributions	Not like DB, but employer contributions required based on plan terms

¹³ An exception is 401(k)s that use investment pools instead of mutual funds.

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