RETIREMENT INCOME INSTITUTE
Alliance for Lifetime Income

Who Should Read This Insight:
Employer retirement plan administrators, financial professionals

Institute Research Agenda Topic:
Optimizing annuities in retirement portfolios.

Definitions of **bolded key terms** are at the end of this article.

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Authors, Titles and Publication Dates of the Articles Addressed in the Insight
Yelei Gu, David Kausch, Kristen Moore, and Virginia Young. 2017. "Balancing Income and Bequest Goals in a DB/DC Hybrid Pension Plan." Journal of Retirement 4 (3): 51–62. https://jor.pm-research.com/content/4/3/51.abstract

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Insight: DEFINED-BENEFIT/DEFINED-CONTRIBUTION HYBRID PENSION PLANS: HELPING RETIREES SUCCEED IN THEIR RETIREMENT GOALS

IDEAS IN THE INSIGHT YOU CAN PUT INTO ACTION

Many individuals have two goals when planning for retirement: (1) an annual fixed income to maintain a desirable lifestyle during retirement, and (2) some wealth left over at death to bequeath to family, friends, and charities. Individuals who participate in an employer's defined-benefit plan have a greater potential for finding success with the retirement income goal, and individuals who participate in an employer's defined-contribution plan have a greater potential for finding success with the bequest goal. Yelei Gu, David Kausch, Kristen Moore, and Virginia Young's article supports the commonsense assumption that individuals who participate in an employer's hybrid defined-benefit/defined-contribution plan have the best opportunity to succeed at both goals.

PRINCIPAL INSIGHTS

People have two main goals when saving for retirement: first, an annual fixed income to maintain a desirable lifestyle during retirement; and second, some wealth left over at death to bequeath to family, friends, and charities. Most people presumably have both goals. However, when choosing an investment strategy while working (the **accumulation phase**) and a distribution strategy during retirement (the **decumulation phase**), there is usually a trade-off, such as the need to use less income during life in order to leave a larger bequest.

Although there are many financial products and methods for accumulating wealth, this article focuses on those employees who participate in a retirement plan sponsored by their employers. Employers can promise and deliver retirement benefits through either a **defined-benefit (DB) plan** or a **defined-contribution (DC) plan**. Some employers offer hybrid retirement programs that are designed to combine the advantages of each type of plan, such as the **floor-offset plan**.

Some research shows that DB plans can provide guaranteed income for life, but cannot provide the potential for bequests (other than possibly an incidental death benefit). Other research shows that DC plans can provide the potential for wealth accumulation, but a bequest can be available at death only if the employee has not depleted his or her account balance before death. There is very limited research showing the actual or expected outcomes for employees who participate in DB/DC hybrid pension plans.

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In their article, Gu et al. set out to measure the chances that a retiree will have a successful lifetime income strategy during retirement along with a successful bequest strategy; they define the first strategy as one that minimizes the probability of lifetime ruin, and the second strategy as one that avoids inadequate DC assets remaining at death to fulfil their bequest goals. The authors want to bridge and advance the existing literature, and they use their article to address the questions of how much income security is forfeited when individuals focus more on wealth accumulation, and vice versa.

The authors investigate the range of potential successes and failures for a hypothetical 27-year-old employee who will work for the same employer until retirement at age 67. The hypothetical employer offers a comprehensive floor-offset plan. The employee projects a need of about $127,000 in annual income during retirement, which is about 70 percent of his or her final salary. The employee's other goal is to accumulate enough wealth to leave either of two bequests: $100,000 or $500,000.

The authors use mathematical modeling to run 7,500 simulations for a hypothetical man and 7,500 simulations for a hypothetical woman for each of the following one-time irrevocable choices that the employee must make:

1. The employee might decide to contribute exclusively to the DB plan during the accumulation phase. For each year of retirement, the employee would receive the full $127,000 annual distribution from the DB plan. There would be no substantial bequest at death.

2. The employee might decide to contribute 75 percent to the DB plan and 25 percent to the DC plan during the accumulation phase. For each year of retirement, the employee would receive $95,250 (75 percent of the $127,000) as an annual distribution from the DB plan and would withdraw $31,750 (25 percent of the $127,000) from the DC plan. Any balance remaining in the DC plan at death would be the bequest.

3. The employee might decide to contribute 50 percent to each plan during the accumulation phase. For each year of retirement, the employee would receive $63,500 as an annual distribution from the DB plan and would withdraw $63,500 from the DC plan. Any balance remaining in the DC plan at death would be the bequest.

4. The employee might decide to contribute 25 percent to the DB plan and 75 percent to the DC plan during the accumulation phase. For each year of retirement, the employee would receive $31,750 as an annual distribution from the DB plan and would withdraw $95,250 from the DC plan. Any balance remaining in the DC plan at death would be the bequest.

5. The employee might decide to contribute exclusively to the DC plan during the accumulation phase. For each year of retirement, the employee would withdraw $127,000 from the DC plan. Any balance remaining in the DC plan at death would be the bequest.

As a second part of the mathematical modeling, the authors try to determine the sacrifice the employee will need to make during the accumulation phase if the bequest goal is $500,000 rather than $100,000, while still drawing down an annual retirement annuity of $127,000.

This Insight makes a few assumptions that are not stated in the article, but that are apparent to retirement planning professionals. First, although employers can offer this type of floor-offset plan, it is not a common retirement package that American employers actually provide as an employee benefit, regardless of whether their employees want to follow the advice and

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conclusions presented in the article. The Insight assumes the following:

- That the hypothetical employee is adequately educated about all of the risks associated with each decision.
- That the employee consistently makes financially savvy and reasonable decisions over the DC plan account balance throughout the accumulation and decumulation phases.
- That the employee understands how to estimate the retirement income that should accrue in the DB plan and the account balance that should accumulate in the DC plan.
- That the employee can afford the proper salary deferrals each year while working that will fund the anticipated contributions to each plan.
- That the employee can elect to defer a portion of salary and direct part of it to be deposited into the DB plan and the remainder into the DC plan.
- That the total annual retirement annuity of $127,000 will not need to increase during retirement due to the reality of inflation and an erosion of purchasing power.

Additionally, the article assumes that the employer makes contributions to the DB plan only if and when the actual fund earnings are less than the guaranteed investment yield; that the employer does not make any elective or matching contributions into the DC plan; and that the employer can require female employees to contribute more than male employees to accrue that same $127,000 annual retirement annuity that starts in the year of retirement at age 67 because women, on average, will live longer than men.

The authors highlight results through 15 exhibits, and then provide several important insights about successful income and bequest strategies, as well as the optimal trade-off decisions. Their main conclusion is that, for individuals who are similar to their hypothetical employee, the third choice listed above might serve as a good rule of thumb. This scenario provides the best chance for a bequest of $100,000 if a woman dies at age 92 or if a man dies at age 89, although there is still a 10 percent chance either will fail to leave any bequest. If this same individual still wants a $127,000 annual retirement annuity but wants to leave a bequest of $500,000 instead of $100,000, then the mathematical modeling shows that there is a 38 percent chance of failure.

This article's findings support the authors' theory that a hybrid pension plan design, such as a floor-offset plan, can provide an employee with the combined advantages of a DB plan and a DC plan. The authors provide advice for future scholarship in terms of adopting some additional risk variables to enhance their model.

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KEY TERMS ARE SOURCED FROM THE ALLIANCE FOR LIFETIME INCOME'S ANNUITIES LANGUAGE GLOSSARY AND INVESTOPEDIA

accumulation phase: *The period that you are allowing your money the potential to grow. (Some annuities allow you to add more money over time.)*

decumulation phase: *The point you start receiving income from your annuity.*

defined-benefit (DB) plan: *A defined-benefit plan is an employer-sponsored retirement plan where employee benefits are computed using a formula that considers several factors, such as length of employment and salary history.*

defined-contribution (DC) plan: *A defined-contribution plan is an employer-sponsored retirement plan that is typically tax-deferred, like a 401(k) or a 403(b), in which employees contribute a fixed amount or a percentage of their paychecks to an account that is intended to fund their retirements.*

floor-offset plan: *A floor-offset plan allows plan sponsors to take advantage of features in both a defined-benefit and a defined-contribution plan. The two plans work together to provide the high deductions and benefits of a defined-benefit plan for the sponsor while benefiting the sponsor and remaining employees in the defined-contribution plan. The defined-benefit portion of the plan provides a minimum benefit level of income, or floor, in retirement.*

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