Part 3 - Variable Annuity Plans

This is another type of defined benefit plan that provides lifetime income to the participants of the plan. Some have called these hybrid plans but they are not considered hybrid plans under the IRS regulations. In some cases, if the hurdle rate is set low enough, the plans are subject to some of the hybrid plan regulations – but this is not always the case. While these plans have been around for a long time, they have not been widely adopted until recently. The increased attention to these plans has been driven by their ability to mitigate risks and share risks between the contributing employer and the covered participants.

In this type of plan, the accrued benefit will increase or decrease based on the investment performance of the plan. This paper will discuss the mechanics of how this plan works as well as the pros and cons of the plan design. We will also discuss a variety of plan options that can be used to tweak the performance of the plan as well as control the level of risk and who is primarily responsible for the underlying risks.

First, we will need to define a few additional terms for our discussion of these variable annuity pension plans.

- Adjustment Period – typically the benefits are adjusted annually and for our discussion here we will focus on an annual adjustment. At the end we will discuss the effect of adjusting the benefits more frequently
- Investment Return – the actual investment return in the pension plan for the given Adjustment Period
- Hurdle Rate – the expected investment return of the plan. Typically this rate has been set between 3.0% and 6.0%. Note, if this rate is set below 5.0% special rules will apply to the plan and the plan will require faster vesting of the accrued benefits.

How does the plan adjust benefits

At the end of each Adjustment Period, the actual return of the pension fund is compared to the Hurdle Rate. Let's look at an example where the plan has a return of 7.0% with a Hurdle Rate of 5.0%. We adjust the accrued benefits for everyone by 1.9%

$$[(1 + \text{Investment Return}) / (1 + \text{Hurdle Rate}) - 1] =$$

$$[1.07 / 1.05 - 1] = 1.019 - 1 = 1.9\%$$

Since the plan's Investment Return exceeded the Hurdle Rate, everyone gets an increase in the accrued benefit. However, in cases where the Investment Return is less than the Hurdle Rate, everyone will get a decrease in their benefit.

In this next example, we look at what happens if a plan earns 1% compared to a Hurdle Rate of 5%. In this case, we reduce everyone's benefit by 3.8%

$$[(1 + \text{Investment Return}) / (1 + \text{Hurdle Rate}) - 1] =$$

$$[1.01 / 1.05 - 1] = 0.962 - 1 = 3.8\%$$

If you recall from our previous paper, the basic equation for pension finance is:

$$\text{Contributions} + \text{Investment Income} = \text{Benefits} + \text{Expenses}$$

In the traditional defined benefit plan, all the risk associated with investment income was passed to the employers in the form of increased or decreased contributions. This makes financial planning for employers difficult since the contribution volatility is linked directly to the investment volatility.

In this plan, we have shifted the investment volatility to the benefits. This will help stabilize the contributions to the plan making it easier for the companies to budget their costs of running the company.

Why adopt this type of plan?

There are several advantages provided by this type of pension plan. Firstly, as we noted, the plan provides contributing employers with greater stability in the level of contributions needed to support the plan. While employees take on more investment risk, they continue to receive lifetime income at a lower cost than purchasing an annuity through an insurance carrier. Additionally, the participants' benefits receive some inflation protection through future benefit increases.

If you already have a DB plan and are considering a change, this type of plan should be considered. Changing from one type of DB plan to another maintains the accrual pattern and will not significantly change the way benefits are earned. In comparison, as we previously discussed, a change to a DC plan will shift the benefit value to younger participants and mid-career individuals will be impacted to a greater extent.

The plan can also assist with workforce management. Providing lifetime benefits will help to attract and retain talent. Additionally, since participants will know they have lifetime income they will feel more confident in their decision to retire which will help control the possibility of an aging workforce.

Considerations

When setting up this type of plan there are several additional factors to consider and model to ensure that the plan is performing as intended. It is essential to perform long-range projections when establishing a new plan to ensure that, as the plan matures, it can still provide the benefit promise without additional funding pressure due to the plan's maturity.

Adjustment Period refers to the amount of time that passes between each benefit adjustment. Typically, this is done annually to keep administrative costs down. Some people have stated an advantage of these plans is the ability to always remain fully funded. While these plans mitigate much of the investment risk, they cannot guarantee full funding. Theoretically, you could set up a plan that adjusts benefits every month, but practically this cannot be done as you would not be able to collect the asset information at the end of the month and adjust all retiree payments the following day.

If the Adjustment Period is set to one year, as is typical, there may be some issues. For example, if you want to adjust the benefits on January 1 of each year you need to have the actual plan return as of December 31. However, in most cases, the December 31 assets will not be known until a week or two into January, therefore, you are not be able to adjust the benefits as of January 1. If assets are invested in illiquid investments, it may take even longer to get the information needed to calculate the actual investment return.

To overcome this issue, some plans use a one-year lag in adjusting the benefits. This means you calculate the actual return for the period January 1, 2021 – December 31, 2021. You then compare against the Hurdle Rate to determine the adjustment factor. This adjustment factor would be used to adjust benefits effective January 1, 2023. By doing this you have sufficient time to perform the calculation and administer the change in benefits. However, the longer the lag period, the more risk you take on. In the scenario we just described, a variable plan likely had a good investment return in 2021 and a bad return in 2022. When 2023 comes around, even though the assets are down at the end of 2022, benefits are increased in 2023 due to the good returns in 2021. The result is an increase in benefits at a time when the plan may not be able to afford it putting pressure on the plan's funded status.

Investment Return is ultimately based on the investment policy set by the trustees of the pension plan. The amount of investment risk taken by the plan will determine its long-term operation. The trustees should expect the plan's actual investment return to beat the Hurdle Rate more often than not; otherwise, the plan may misrepresent the benefit promise to the participants. When setting up the investment portfolio, it is important to consider how easy it will be to get the assets valued as this will directly impact the benefits for the participants. Investing in real property may not be prudent as it takes time to get a building valued and there may be different opinions on the value of the property.

Hurdle Rate is a key factor in determining how the benefits will be impacted by actual investment returns. It is important for the trustees to select an appropriate Hurdle Rate which requires an understanding of how the benefits change based on different rates.

When setting the Hurdle Rate, it is best to understand how the extreme ends of the spectrum will impact benefits. Note, the IRS does not allow the Hurdle Rate to be less than 3.0% and if the Hurdle Rate is less than 5.0% then the plan will be required to provide faster vesting.

If the Hurdle Rate is set at a very low rate, the plan will be expected to give benefit increases more often as it will be easier for the plan to earn more than the Hurdle Rate. In addition, the

initial benefits earned in the plan will be lower. As these lower initial accruals will get more future increases through investment returns, the plan ultimately benefits younger workers.

Conversely, setting the Hurdle Rate at a higher rate will yield higher initial benefits and more benefit decreases as it will be harder for the plan to earn more than the Hurdle Rate. This will benefit older workers.

Another consideration for setting the Hurdle Rate is long-term inflation protection. An added feature of variable annuity plans is the ability to provide some inflation protection in the benefits as future benefits are adjusted for investment returns. In traditional DB plans, the benefit earned is payable for life with no adjustments. After being retired for 20+ years, the purchasing power of these benefits declines. In a variable annuity plan, if the plan yields a reasonable investment, then future benefit increases will help protect the retirees' benefits from declining too much due to inflation.

Options for Variable Annuity Pension Plans

Adjusting retiree benefits – do you want to adjust retiree benefits or provide retirees with a fixed benefit for life? Retirees are on a fixed income and may not be able to handle a significant drop in their monthly benefit due to a market drop. If retiree benefits are not adjusted then there is no inflation protection for their benefits. Balancing these two issues can be a difficult problem, and one solution is to set up a Reserve account to help protect retirees. Note, if the retiree benefit locks in at retirement with no future adjustments, a good investment year can drive excess retirements as individuals who are near retirement can take advantage of the market and lock in a higher retirement benefit for life.

Reserve Account - is additional money stored in the pension fund for the purpose of protecting retiree benefits from a decline in benefits. The plan may target a funding ratio of 110% - 120% (or even higher) to ensure that retirees' benefits do not drop in the event of a market decline.

When setting up a Reserve account, it is important to understand that this money could be used to increase benefit accruals but is being set aside. The trustees must balance the issue of providing higher initial benefits which are subject to a decline or a lower benefit with some investment protection. They must also be aware that no full protection can be given and even if there is a Reserve account, in some situations the market drop may be too significant and the retiree benefits will be adjusted down.

If the trustees decide to set up a Reserve account, stochastic modeling should be done so that trustees understand what level of protection is provided by the reserve. This modeling should forecast far enough into the future to ensure that Reserve account is still viable when the plan matures. If a short-term projection is performed for a new plan with few retirees, the results would show a relatively small Reserve account would be adequate since the active population is significantly greater than the retiree population. However, when the plan matures and has more retirees than actives, it may be harder to protect the retiree benefits.

Cap on benefit adjustments – the plan can also provide for a Cap on increases to benefits. If this is done the excess assets can be used to fund a Reserve account rather than relying solely on extra contributions to fund a Reserve account.

Adjustment period – should this be done annually or more frequently? The more often adjustments are performed the better the assets will track the liability. However, more frequent adjustments also increase administrative costs. In addition to the frequency, any lag period that is needed to ensure assets are valued properly and the investment return can be accurately developed must be addressed.

Minimum benefit – some plans provide a minimum benefit so retirees know they will always receive this minimum benefit no matter what the market conditions are. This will help them understand the worst-case scenario and they can plan for retirement accordingly.

Other risks – you can see from this discussion that the Variable Annuity plan does a good job of mitigating investment risk but other risks still need to be addressed. Future changes in the workforce can impact the cost of the program and should be reviewed annually with the trustees to understand if the workforce is aging and what other benefit programs will be impacted by demographic changes.

Mortality is a pooled risk in DB plans and is reasonably well managed. Actuarial valuation systems have been improved to incorporate future mortality improvements so the underlying mortality risk is much less.

Regulatory Risk

If you work with public sector or multiemployer plans the funding rules are clear and you simply value the plan using the hurdle rate as the valuation rate.

If you work with single employer pension plans there is no clarity as to how these plans should be valued. Mathematically it makes sense to value the plan using the hurdle rate as you would with other plans. However, in the single-employer world, the IRS and PBGC require the liability to be valued using interest rates they produce and there is no clarity on how this should be done with variable benefits.

Without this clarification, a plan can be developed and valued in one manner and believing the plan is well funded. If, after a number of years, the IRS and PBGC clarify their regulations on how these plans should be valued, the plan sponsor may be surprised that the liability is higher than expected under the regulations and could be surprised with increased cash funding costs and PBGC premiums.

In addition, the Financial Accounting Standards Board has also not addressed how these new plans should be valued for purposes of reporting the liability on corporate financial statements.

Summary

We have seen how this plan works and how it mitigates investment risk within the pension plan. Plan features like Caps, Reserves and minimum benefits can be used to balance the risk between participants and employers.

We have also learned that while it has been stated that these plans eliminate investment risk and are always fully funded, this is simply not the case. It is possible to do so on a theoretical basis, but in practice, such a plan could not be administered.

Contact Us

If you have any questions or comments regarding this paper, please feel free to reach out to Richard Hudson at RHudson@factuarial.com or 212-395-9555 x117. We would love to hear about other real-life issues and use them to add to our information and share with the public.