

Variable annuities: A retirement plan design with less contribution volatility



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Many pension plans, including multiemployer plans, have had their funded status deteriorate due to the difficult and volatile investment markets of recent years. Many multiemployer pension plans have had to increase contributions and reduce benefits. For some plans, this has made collective bargaining more difficult, reduced participant pay increases, and caused some employers to struggle to stay competitive. This has left many trustees wondering if there is a more sustainable and less volatile way to provide participants with lifelong benefits.

One alternative to consider is changing the pension plan so that future accruals are paid in the form of variable annuities. Much like changing to a defined contribution (DC) plan, changing to a variable annuity plan shifts the plan's investment risk for future benefit accruals to the participants. Variable annuity plans have the following advantages over DC plans:

- Participants will still receive benefits for the rest of their lives (they will not outlive their benefit).
- Professional investment management and longevity pooling are expected to lead to larger monthly benefits.

In a variable annuity plan design, the investment risk for future benefit accruals is moved from the plan sponsor to the participants by changing benefits to match the actual investment returns of the trust. In good times, participants share directly in the gains and the pension benefits will increase to at least partially offset inflation. In bad times, participants share directly in the losses and the pension benefits will decrease to match investment returns. However, participants are still provided with lifelong income. Variable annuity retirement benefits are generally larger than the DC retirement benefits provided by the same contribution due to professional investment management and the pooling of longevity experience. Variable annuity plan participants receive lifelong monthly pension benefits that increase their overall financial security. While DC plan participants can purchase annuities at retirement, guaranteeing lifelong income, very few do so, which puts them at risk of outliving their assets. Many of us have focused on the "guaranteed benefits" of DB plans for a long time. It may be time to change our focus to "lifelong" benefits, where the exact dollar amount is not guaranteed, but participants are assured that they will not outlive their benefits and some inflation protection may be provided instead.

WHAT IS A VARIABLE ANNUITY PLAN?

In general, a variable annuity plan is a defined benefit pension plan where benefits change based on the return of the plan's assets. Although they have been around for a long time, variable annuity plans are not common. Perhaps this design has been less appealing in the past because it does not guarantee that participants' monthly pension benefits will not decrease. However, these guarantees are getting harder for employers to provide, as evidenced by the move of many single-employer-sponsored plans to defined contribution arrangements. With Revenue Ruling 185, 1953-2, the IRS confirmed in 1953 that a plan "which provides benefits that vary with the increase or decrease in the market value of the assets from which such benefits are payable" satisfies the Internal Revenue Code's requirement that defined benefit plans provide "definitely determinable benefits."

In a variable annuity plan design, the plan establishes a conservative assumed investment return (AIR), or hurdle rate. If the plan's investment returns equal the hurdle rate, the plan functions exactly like a traditional DB plan. However, if the plan's investments earn more or less than the hurdle rate in a plan year, all benefits earned in prior years are adjusted up or down by the difference between the actual investment return and the hurdle rate.

Figure 1 on page 2 demonstrates how variable annuity plan benefits might accumulate based on returns from an actual multiemployer plan over the last decade. This example assumes the plan changed benefit accruals to a variable annuity form at the beginning of 2002, and established a hurdle rate of 4%. The participant earned \$30 per month of retirement benefit each year; the benefits earned each year could be based on a formula similar to your plan's current formula. The difference from a traditional DB plan is that benefits are changed by the amount that actual annual investment returns of the trust differ from 4%.

Figure 1 shows that the trust earned 16.5% in 2003 instead of the assumed 4.0%. This means the assets are $116.5 / 104.0 = 112.0\%$ of what was expected. As a result, benefits earned in prior years will be increased by 12.0%. The participant's \$30.00 accrual at the beginning of the year will be increased to $\$30.00 \times 112.0\% = \33.60 at the end of the year. In good years the participant gets the advantages of the high returns; in bad years the plan's funding is protected by reductions in earned benefits.

Figure 1 shows that after nine years the amount of the benefit accrued in 2002 is \$33.63, which is larger than the \$30 the participant started with, even with the low returns of 2008 and 2011. By contrast, the benefit earned in 2007 is worth less than \$30 as of January 1, 2012.

It is important to note that retired participants are subject to these adjustments, and some retirees could see their benefits decrease below their initial retirement benefit in periods of poor investment return. For example, based on the investment experience in the previous example, a participant who retires at 1/1/2003 with a \$1,000 monthly benefit would experience significant year to year benefit volatility. The original \$1,000 monthly benefit would have increased to about \$1,358 at 1/1/2008 followed by a sharp reduction to about \$966 at 1/1/2009. The same benefit would have recovered to about \$1,121 by 1/1/2012. However, timing of retirement is significant. A participant who retires at 1/1/2008 with a \$1,000 monthly benefit would see it decline to about \$711 at 1/1/2009. The same benefit would only have recovered to about \$825 by 1/1/2012. This indicates that if a variable annuity plan is adopted, methods that dampen the volatility of retiree benefits are worth considering. One such method would be to give retirees the option to have their benefit based on a portfolio with lower expected volatility and a lower expected return. Providing this option would in turn require retiree education so that participants are aware of the potential impact of their decisions.

POTENTIAL INFLATION PROTECTION BY REDISTRIBUTING BENEFITS OVER TIME

One of the most significant risks to a member's retirement security is the potential loss of purchasing power due to inflation. Over the last 86 years, inflation has averaged 3.0%, and inflation is expected to continue to greatly reduce the purchasing power of any benefit that does not increase over time. Figure 2 shows the impact of inflation over 30 years at different inflation rates on a traditional DB benefit. The purchasing power of a \$1,000 benefit is reduced to \$552 at a 2% inflation rate, \$412 at a 3% inflation rate, and \$308 at a 4% inflation rate over 30 years. Variable annuity plans, however, are designed to mitigate this risk.

For example, if a hurdle rate of 4% is used in a variable annuity plan and the plan's investment return is 7% per year, then benefits are expected to increase by very close to 3% per year (approximately 7% over 4%). However, benefit increases cost money. For example, a \$1,000 benefit with 3% annual increases costs more than a \$1,000

Figure 1: Illustration of How Variable Annuity Plan Benefits Increase

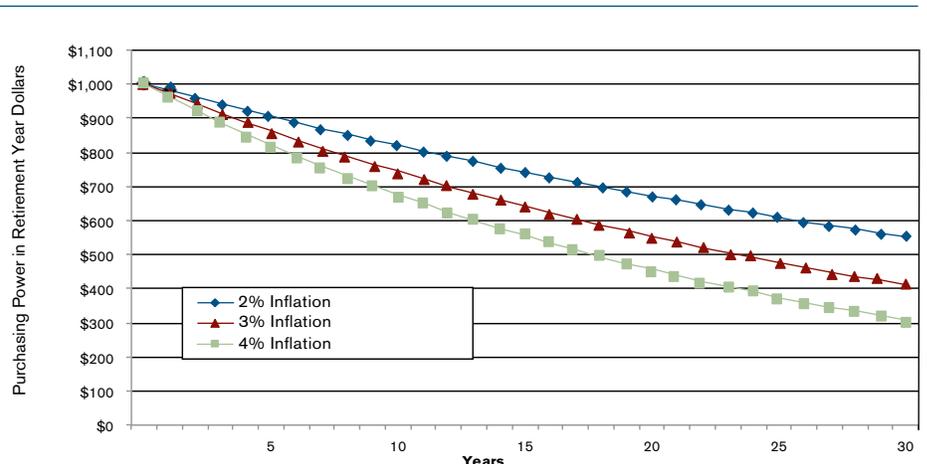
	2003	2004	2005	2006	2007	2008	2009	2010	2011
Investment Return (I)	16.5%	8.8%	6.8%	11.5%	9.5%	-26.1%	15.5%	13.7%	-0.6%
Hurdle Rate (H)	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Increase (Decrease)*	12.0%	4.6%	2.7%	7.2%	5.3%	-28.9%	11.1%	9.3%	-4.4%

Year of Accrual	1/1/2003	1/1/2004	1/1/2005	1/1/2006	1/1/2007	1/1/2008	1/1/2009	1/1/2010	1/1/2011	1/1/2012
2002	30.00	33.60	35.15	36.09	38.69	40.74	28.97	32.18	35.18	33.63
2003		30.00	31.38	32.23	34.55	36.38	25.87	28.74	31.41	30.03
2004			30.00	30.81	33.03	34.78	24.73	27.47	30.03	28.71
2005				30.00	32.16	33.86	24.08	26.75	29.24	27.95
2006					30.00	31.59	22.46	24.95	27.27	26.07
2007						30.00	21.33	23.70	25.90	24.76
2008							30.00	33.33	36.46	34.83
2009								30.00	32.79	31.35
2010									30.00	28.68
2011										30.00
Total	30.00	63.90	96.53	129.13	168.43	207.36	177.43	227.12	278.25	296.00

*Calculated as (1+I)/(1+H)-1. All benefits earned in prior years will be increased or decreased by this amount.

benefit with no annual increases. Figure 3 shows that, assuming 7% investment earnings, a flat \$1,000 benefit with no increase (traditional DB benefit) is approximately equivalent in value to an \$834 initial variable annuity with a 5% hurdle rate or a \$754 initial variable annuity with a 4% hurdle rate. However, if actual returns are 7%, all three will be paying about the same benefit after 10 years, which is where the lines in Figure 3 cross. At an inflation rate of 3%, each benefit provides a purchasing power in year 10 that is about the same as \$744 was at retirement. The flat benefit retained 74% of original purchasing power. However, the variable annuity plan with a 4% hurdle retained 99% of original purchasing power. This demonstrates that the variable annuity benefits are better at keeping up with inflation than traditional flat DB benefits. Beyond 10 years, the dollar amounts of the variable annuity benefits are larger than the flat benefit. At year 30, the variable annuity with a 4% hurdle rate has purchasing power equal to 97% percent, whereas the flat benefit has only 41% of the original purchasing power.

Figure 2: Loss of Purchasing Power over 30 Years



Note that, although not shown, the initial 4% hurdle benefit of \$754 is projected to have grown in non-inflation-adjusted dollars to \$1,002 after 10 years and \$1,769 after 30 years while the flat benefit is still \$1,000. The variable annuity benefits may provide more financial security in retirement than a traditional DB plan by mitigating the effects of inflation.

Since variable benefit increases are expected to be positive in some years and negative in other years, reality will not be as smooth as Figures 2 and 3 imply. Figure 4 shows the actual experience in non-inflation-adjusted dollars that an actual variable annuity plan with a 4% hurdle rate experienced from 1961 to 2011. Figure 4 shows that to keep up with inflation, \$1 of monthly benefit would have had to increase to more than \$7 of monthly benefit over this 40-year period. In fact, for this plan, one dollar of monthly benefit did keep up with inflation and increased to more than \$8 over the 40-year period. However, the variable benefit would have lagged inflation during the 1970s and 1980s due to the high inflation and low returns of the 1970s. There is no guarantee on how much inflation protection (if any) will be provided in a variable annuity plan. It will depend on whether trust assets outperform the hurdle rate.

TRADITIONAL DEFINED BENEFIT PLANS, DEFINED CONTRIBUTION PLANS, AND LIFELONG BENEFITS

Defined benefit plans have many advantages over defined contribution plans. They pay guaranteed lifetime benefits. They can pay larger benefits for the same dollar of contribution because the investments are professionally managed and longevity experience is pooled. They reward long-service participants, help participants to plan for retirement, and can aid in workforce management by providing older participants the opportunity to retire with lifelong benefits. Unfortunately, defined benefit costs can be volatile. This can interfere with bargaining and make it difficult to stay competitive with employers who are not in the plan.

Defined contribution plans have very stable costs. However, participants run the risk of outliving their investments unless an annuity is purchased. Also, on average, DC participants earn lower returns than defined benefit plans. Consequently, the same benefit is generally more expensive to finance.

Figure 3: Purchasing Power for Benefits of Equivalent Value Assuming 3% Inflation and 7% Investment Returns

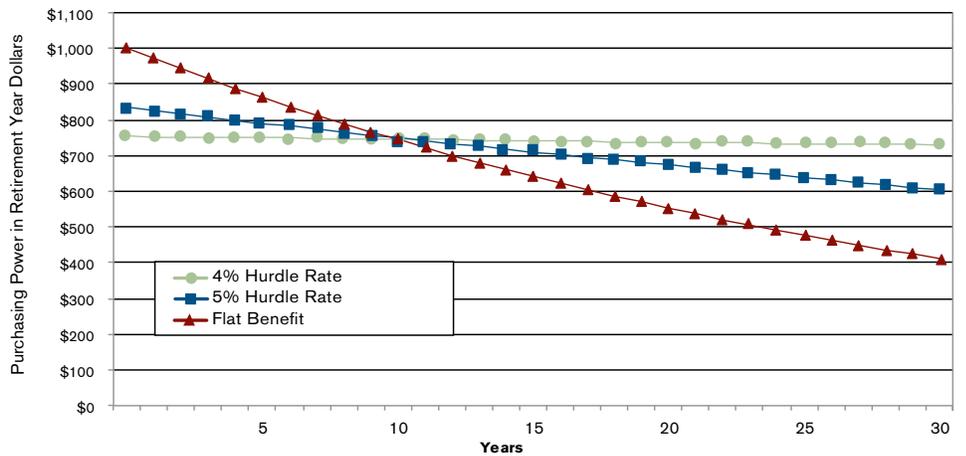


Figure 4: Diversified Variable Units Compared to Inflation from 1961-2011

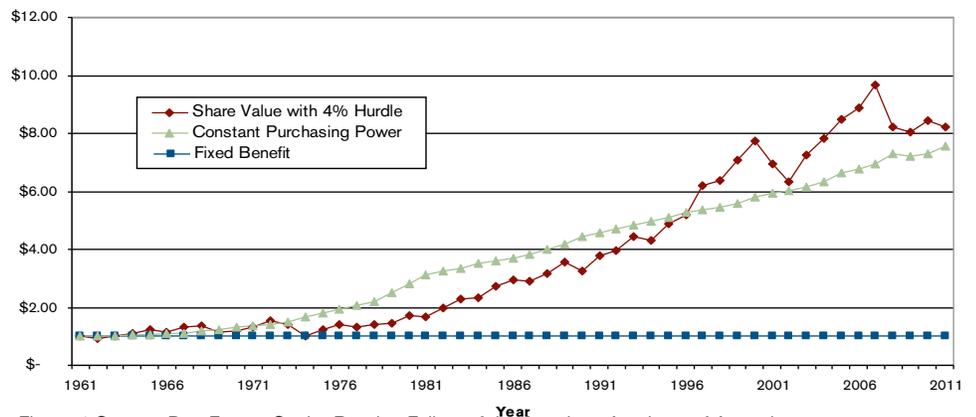


Figure 4 Source: Don Fuerst, Senior Pension Fellow of the American Academy of Actuaries

Figure 5: Comparisons

	Defined Benefit	Defined Contribution	Variable Annuity
Guaranteed benefit never decreases by law	Yes		
Lifelong income	Yes		Yes
Professional investment management and longevity pooling may provide larger benefits	Yes		Yes
Supports retention and retirement planning	Yes		Yes
More valuable accruals for older participants	Yes		Yes
Stable cost		Yes	Yes
Prevents investment losses from harming bargaining and ability to compete		Yes	Yes
Designed to provide inflation protection			Yes

As summarized in Figure 5, variable annuity plans share many of the advantages of both defined benefit and defined contribution plans. There is one notable exception: Variable annuity plans shift the focus from a specific benefit guaranteed for life to lifelong income. It is not the presence of a “lifelong” benefit that is causing contribution difficulty for some traditional defined benefit plan sponsors and active participants, it is the guarantee of a specific dollar amount of benefits regardless of plan experience. Unlike traditional defined benefit plans, variable annuity plans change benefits to match experience. Unlike defined contribution plans, variable annuity plans make sure that participants receive benefits for the rest of their lives. It could also be argued that traditional defined benefit plans do not provide a guaranteed benefit in real dollars since the future impact of inflation is unknown. To the extent that variable annuity plans offset inflation, they may provide more retirement security. Generally, older participants are less impacted by a conversion from a traditional defined benefit plan to a variable annuity plan than by a conversion to a defined contribution plan because the benefit accruals for both traditional defined benefit plans and variable annuity plans are generally more valuable for older participants.

CHOOSING A HURDLE RATE AND BENEFITS EARNED BEFORE CONVERSION

There are several considerations to be aware of when choosing a variable annuity plan’s hurdle rate:

- As shown in Figure 3, a lower hurdle rate will provide a smaller initial benefit with more potential inflation protection, while a higher hurdle rate will provide a larger initial benefit with less potential inflation protection.
- Hurdle rates below 3% are not allowed.
- A hurdle rate of less than 5% will result in the plan being subject to statutory hybrid plan rules, including three-year vesting and certain plan conversion rules.

It may be simplest in conversion to make no changes to benefits that have already been earned, and to pay them only as fixed monthly benefits. However, participants can be given the option at retirement to convert their prior accrued benefits into variable annuities with smaller initial payments and the potential for future increases.

CURRENT FUNDING PROBLEMS ARE NOT ELIMINATED

Changing from a traditional defined benefit to a variable annuity plan or a defined contribution plan does nothing to reduce existing unfunded liability on benefits earned under the old formula. The same assets accumulated to date still have to fund the same benefits promised in the past. The same future contributions to pay for unfunded benefits accrued to date are still needed. Contributions plus investment earnings must still provide for benefits plus expenses. The difference in both cases is that investment risk is contained. There is no investment risk added for benefits earned in the future. In a variable annuity plan, there will still be risk for mortality, retirement, termination, and disability experience, but these are not nearly as significant as investment risk and they too can be minimized with careful plan design. As the defined benefits already

earned are slowly paid out, investment risk to the plan will diminish, but this can take a long time. Risk may be decreased more rapidly if at some point annuities are purchased or bond portfolios are set up to match prior promised benefit payments, but both of these strategies are very expensive in the current fixed income market.

CONCLUSION

If you are considering a change from a defined benefit (DB) plan to a defined contribution (DC) plan, or if you are looking for ways to modify your current DB plan design to improve sustainability and reduce contribution volatility, the variable annuity plan is one possible solution. The variable annuity plan changes the focus from guaranteed benefits to lifelong benefits, where the exact dollar amount is not guaranteed, but participants are assured that they will not outlive their benefits and the possibility of some inflation protection is provided instead. Variable annuity plans provide plan sponsors a lower risk alternative to traditional DB plans but retain many of the advantages of DB plans while capturing contribution stability similar to a DC plan design.

Since these plans are not common, there will be significant implementation issues, including but not limited to transition decisions, selection of the hurdle rate, asset allocation decisions, and the calculation of withdrawal liability. Furthermore, since these plans are not common, plan counsel will need to examine all legal aspects closely, and additional communications will be required to help participants understand how the plans work.

Defined benefit plans continue to have significant advantages compared to other retirement plan designs for participants of multiemployer plans. However, the past decade’s investment volatility has highlighted some weaknesses of the traditional DB plan design. Variable annuity plans address some of these weaknesses, including reassigning of investment risk. If you are considering changes to your current pension plan design, variable annuity plans provide one alternative to consider.

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