Variable Annuity Pension Plans: A Balanced Approach to Retirement Risk

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Introduction

- **DB Plan Sponsors:**
  - Do you have pension volatility blues?

- **DC Plan Sponsors:**
  - Are you struggling with the difficulties of 401(k) plans?
Introduction

- Senator Harkin reports on America’s retirement readiness:

$6.6 Trillion Retirement Deficit

>50%

<$10,000
Introduction

- 2012 Aon Hewitt Survey of HR Professionals:

  - Employees Will Have Sufficient Retirement Assets: 4%
  - Employees Will Take Accountability for Retirement Success: 10%
  - Employees Will Be Able to Manage Income in Retirement: 18%
Today’s Agenda

- Retirement risks
- Variable Annuity Pension Plan (VAPP) Basics
  » Benefit examples
  » Pros and cons
  » Funding, FASB, PBGC premiums
  » Inflation protection
- VAPPS with benefit stabilization
- Plan feature comparison
- Transition considerations
Retirement Risks

- Retirement is a risky business: promising retirement security in a future we can’t predict
  - Investment markets have been more volatile than predicted
  - Bond yields are at near historic lows
  - People are living longer than anticipated
  - What’s next?

- Four main retirement risks: these are timeless
  - Investment Risk
  - Interest Rate Risk
  - Longevity Risk
  - Inflation Risk
Retirement Risks

Investment Risk

- The risk that assets will decline due to losses in the investment markets

Example

Results
- Large volatility in asset balances from year to year
- DB benefit promises that are difficult to fund
- DC balances that reduce retirement security
Retirement Risks

Interest Rate Risk

- The risk that the price of bond type instruments will change (because interest rates change)

Example

Results

- Annuity purchase prices are very high now
- Bond rates and bond purchase prices vary from year to year
Retirement Risks

Longevity Risk

- The risk associated with not knowing how long you will live
- Example
  - This risk is borne alone for a participant with a 401(k)
  - A pension plan pools this risk across all plan participants
    - Pooled longevity risk is relatively easy to manage
Retirement Risks

Inflation Risk

- The risk associated with loss of purchasing power over time

- Example

  » Over the last 86 years, inflation has averaged 3%
Retirement Risks
Traditional Defined Benefit Plan

- Plan Sponsor bears **most** of the risks
Retirement Risks
Defined Contribution Plan

- Plan Sponsor bears **none** of the risks
- Participants bear **all** of the risks
Retirement Risks

Variable Annuity Pension Plan (VAPP)

- Risks are shared

Longevity risk

Investment risk

Plan Sponsor

Participants

VAPP Balances Risk

Inflation and interest rate risks
(significantly reduced)
# Traditional Plan Strengths

<table>
<thead>
<tr>
<th>Traditional DB</th>
<th>Traditional DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longevity pooling</td>
<td>Portable benefits</td>
</tr>
<tr>
<td>Lifelong income</td>
<td>Predictable employer cost</td>
</tr>
<tr>
<td>Bigger benefits to long service employees</td>
<td>Participants enjoy the market upside</td>
</tr>
<tr>
<td>Professional asset management</td>
<td>Provides vehicle for employee savings</td>
</tr>
<tr>
<td>Increased preference by younger workers</td>
<td>No concern with plan maturity</td>
</tr>
</tbody>
</table>
Variable Annuity Pension Plan

VAPP

- Lifelong Income
- Longevity Pooling
- Predictable Employer Cost
- Expected Inflation Protection
- Professional Asset Management
- Eliminate Maturity Concern
VAPP Basics

Variable annuity pension plans (VAPPs) have controllable employer costs, like DC plans AND provide employees lifelong retirement income, like DB plans.

- VAPP—Variable Annuity Pension Plan
- Currently legal, has been legal since 1953
- Plans with this design
  - Major League Baseball has a plan that is part VAPP and part more traditional DB
  - Aerospace Employees’ Retirement Plan
  - There are others, they are hard to track (no flag on Schedule SB)
  - Most are single employer plans
VAPP Basics

- Career average or flat dollar type accumulation
- “Hurdle Rate”, usually set between 3% - 5%

- Earned benefits fluctuate annually based on actual investment return of the plan
- Keeps assets and liabilities in balance by adjusting liabilities

If the return = hurdle rate, there is no change to the monthly accrued benefit.
VAPP Basics
Active Benefit Example

- 2% career average VAPP
- 2014 Pay: $60,000
  » $3,000 per year pay increases
- 2014 accrual: 2% x $60,000/12 = $100 per month
- 2015 accrual: 2% x $63,000/12 = $105 per month
- “Hurdle Rate” = 4%
## VAPP Basics

### Active Benefit Example

<table>
<thead>
<tr>
<th>Plan Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Return (I)</td>
<td>10.2%</td>
<td>2.9%</td>
<td>-8.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Hurdle Rate (H)</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Benefit Increase (Decrease)*</td>
<td>6.0%</td>
<td>-1.1%</td>
<td>-12.2%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

### Monthly Benefit

<table>
<thead>
<tr>
<th>Plan Year</th>
<th>Pay</th>
<th>12/31/2014</th>
<th>12/31/2015</th>
<th>12/31/2016</th>
<th>12/31/2017</th>
<th>12/31/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$60,000</td>
<td>$100.00</td>
<td>$106.00</td>
<td>$104.83</td>
<td>$92.04</td>
<td>$101.16</td>
</tr>
<tr>
<td>2015</td>
<td>$63,000</td>
<td>$105.00</td>
<td>$103.85</td>
<td>$91.18</td>
<td>$100.20</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$66,000</td>
<td></td>
<td>$110.00</td>
<td>$96.58</td>
<td>$106.14</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$69,000</td>
<td></td>
<td></td>
<td>$115.00</td>
<td>$126.39</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$72,000</td>
<td></td>
<td></td>
<td></td>
<td>$120.00</td>
<td></td>
</tr>
</tbody>
</table>

| Total Accrued Benefit | $100.00 | $211.00 | $318.68 | $394.80 | $553.89 |
| Sum of Accruals      | $100.00 | $205.00 | $315.00 | $430.00 | $550.00 |

*Calculated as \((1+I)/(1+H) - 1\)
VAPP Pros

- Plan maintains 100% funding
  - Funding not subject to investment risk
  - Liabilities not subject to interest rate risk

- Predictable employer costs
  - Funding: Minimum = Normal Cost
  - PBGC: No Variable Rate Premium
  - FASB
    - Dampened balance sheet volatility
    - If pay related, currently have to use salary scale projection which may cause some underfunding
VAPP Pros

- Longevity pooling
  » Easier for a group to manage
  • Difficult for an individual
  » Mortality
    • Need small funding reserve for experience not matching assumptions
    • Periodically update assumption

- Expected inflation protection
  » Return in excess of the hurdle increases benefits resulting in expected COLA
  » Professional asset management
  » Maintain balanced, diversified portfolio
VAPP Pros

Inflation Protection Expected—Retiree Benefit Example

- 4% hurdle rate, 70% Stocks / 30% bonds from 1926 to 1955
VAPP Pros
Inflation Protection Expected—Retiree Benefit Example

- 4% hurdle rate, 70% Stocks/30% bonds from 1955 to 1984
VAPP Pros

Inflation Protection Expected—Retiree Benefit Example

- 4% hurdle rate, 70% Stocks/30% bonds from 1984 to 2013
VAPP Cons

- Benefits are volatile (see stabilization)
  - Get the good returns with the bad
  - Long term expected growth
  - Potential for short term pain

- Communication difficulties
  - 1990s—easy
  - 2008—hard
  - Can be overcome

- Not common but increasing in number

- Contribution each year like DC—no holiday
Benefit Stabilization

Possible Strategies

- Asset allocation changes
- Plan modifications
  - Floor benefit
  - Fixing retiree benefits
  - Caps on returns to shore benefits up in a down market by protecting high water mark
- There remain questions on how IRS and FASB could treat modifications
Benefit Stabilization

Reserve Building

- One time contribution or a policy
  - More difficult as plan matures

- Limit benefit increases
  - Cap increases at 10% a year (so returns above 14.4% build reserve)
  - Build reserve to desired level
  - Can build reserve in any maturity

- Plan could get overfunded—to reduce overfunding:
  - Increase all benefits
  - Reduce employer contributions
Benefit Stabilization

Reserve Spending

- Protect High Water Mark
- Determined on year by year basis
  - Poor returns in the prior year
  - Reserve used to keep benefit from dropping
  - Only paid if reserve is sufficient
  - Plan not to drop below 100% funded
- Underlying VAPP not changed
  - Paid if reserve runs out
  - Paid if increases above prior high water mark
Benefit Stabilization: Cap and Shore-up

- Cap increases at 10%, limit funded status to 125%, 4% hurdle
  - 70% Stocks / 30% bonds from **1926 to 1955**; 115% funded at 1926
Benefit Stabilization: Cap and Shore-up

- Cap increases at 10%, limit funded status to 125%, 4% hurdle
  - 70% Stocks / 30% bonds from 1955 to 1984; 115% funded at 1955

![Graph showing monthly benefit over time with various scenarios: Flat $1,000, $1,000 adjusted for inflation, 4% Hurdle VAPP ($1,000 Initial Benefit), and Stabilized VAPP Benefit.](image)
Benefit Stabilization: Cap and Shore-up

- Cap increases at 10%, limit funded status to 125%, 4% hurdle
  - 70% Stocks / 30% bonds from 1984 to 2013; 115% funded at 1984
### Plan Feature Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>Defined Benefit</th>
<th>Cash Balance</th>
<th>Defined Contribution</th>
<th>Variable Annuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed benefit never decreases</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifelong income (if no lump sum)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Professional investment management and longevity pooling provide larger benefits</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Supports retention and orderly retirement</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Allocates contributions to long service</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Plan design protects older employees</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Stable cost</td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prevents investment losses and interest rate changes from creating contribution volatility</td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Designed to provide post-retirement inflation protection</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
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</table>
Transition Considerations

- Current plan liabilities
  - May have legacy underfunded liabilities
  - Still need to manage that risk
  - De-risking options

- Could convert the current plan to a VAPP
  - From DC Plans
  - From Traditional DB Plans
Questions?

Plan Sponsor  VAPP Balances Risk  Participants
Resources

- “Asset Driven Liabilities: The Variable Annuity Plan”, Donald Fuerst, Enrolled Actuaries Meeting, Session 103, April 7-10, 2013.
- “The Retirement Crisis and a Plan to Solve It”, by Senator Tom Harkin, July 2012.