



**Retirement Programs**

**Pension Risks – What are they? and Who assumes them?**  
**Commentary of Proposed GASB Pension Standards**

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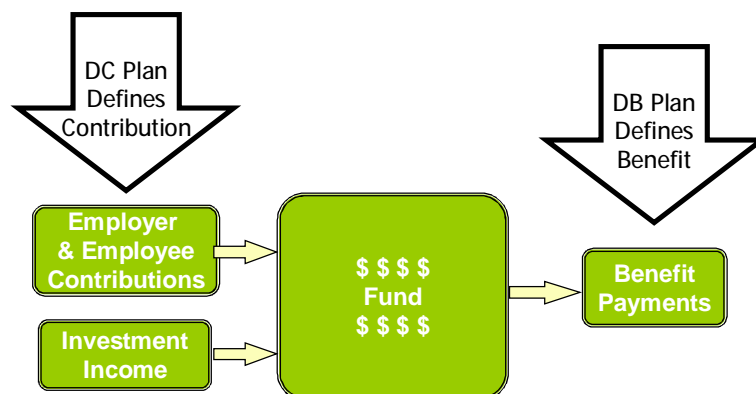
## **Pension Risks**

- n Are certain types of retirement plans riskier than others?
- n Where can, and where should, risk be borne?
- n What are the benefits of pooling risk?
- n How do longevity risk and investment risk interact?
- n What can public policymakers and other stakeholders do to better manage these risks?
- n What changes have been made or are being considered in public plans?
- n Effect of Proposed Pension Accounting Standard.

## Types of Retirement Plans

- n Defined Benefit (DB) Plans
  - Traditional annuity-based formulas
- n Defined Contribution (DC) Plans
  - Profit sharing
  - 401(k)/403(b)/457
  - Other (includes IRAs)
- n Hybrid Plans
  - Account-based formulas (like DC plans)
  - Other hybrids (retirement shares, pension equity)
  - Considered DB plan by IRS since there are guarantees

## Types of Retirement Plans

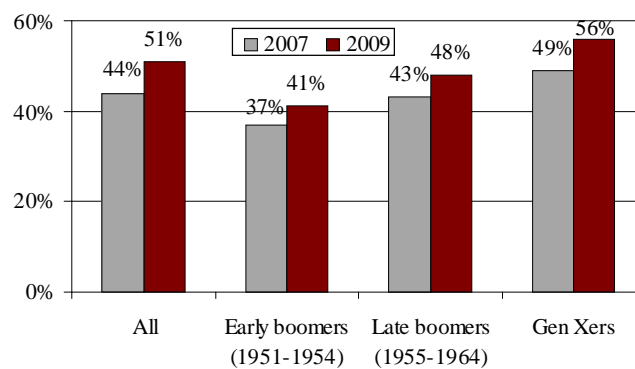


Source: American Academy of Actuaries, April, 2011

## Employee Retirement Needs

- n Primary need – replace disposable income at/after retirement
  - Studies from major consulting firms indicate a range of replacement ratios of 70 percent to 105 percent are sufficient to replace pre-retirement income (depending on inclusion or not of retiree medical and/or COLAs)
  - Consider all sources, including Social Security, employer plans and personal savings
- n Inflation Protection
  - Social Security provides some protection
  - Private plans generally do not
  - Many Public plans do provide some protection

## The Risk of Inadequate Retirement Income



Source: Alicia H. Munnell, Anthony Webb, and Francesca Golub-Sass. 2009. *The National Retirement Risk Index: After the Crash*. Issue in Brief 9-22. Chestnut Hill, MA: Center for Retirement Research at Boston College. Used by permission.  
<http://crr.bc.edu/briefs/the-national-retirement-risk-index-after-the-crash.html>

## Pension Risk

- n Financial retirement risk:
  - Insufficient financial resources at or after retirement
  - Volatility disruptive to retiree budgeting process
  
- n **Investment**—Volatility of investment return; loss of capital
- n **Longevity**—Living longer than planned
- n **Inflation**—Fixed income = Less purchasing power over time
- n **Expenses**—Unpredictable spending needs
- n **Interest Rate**—At time of annuitization
  - Lower rates increases cost of pensions

Source: American Academy of Actuaries, April, 2011

## DB vs DC: Who Bears the Risk?

	DB	DC
n Poor investment return	Employer	Individual
n Retirement Age	Employer/Employee	Individual
n Long life in retirement	Employer*	Individual
n Unpredictable expenses	Individual	Individual
n High inflation—pre-retirement	Employer	Individual
n High inflation—post-retirement	Individual**	Individual

- Under DB, poor investment returns could be an employee risk if DB plan is a variable annuity plan.
- Under DC, the individual could hedge bad investment returns, longer than planned for life in retirement, and high inflation post-retirement by purchasing a combination of fixed and variable annuity products.
- Individuals can hedge high inflation risk if appropriate investment options are offered.

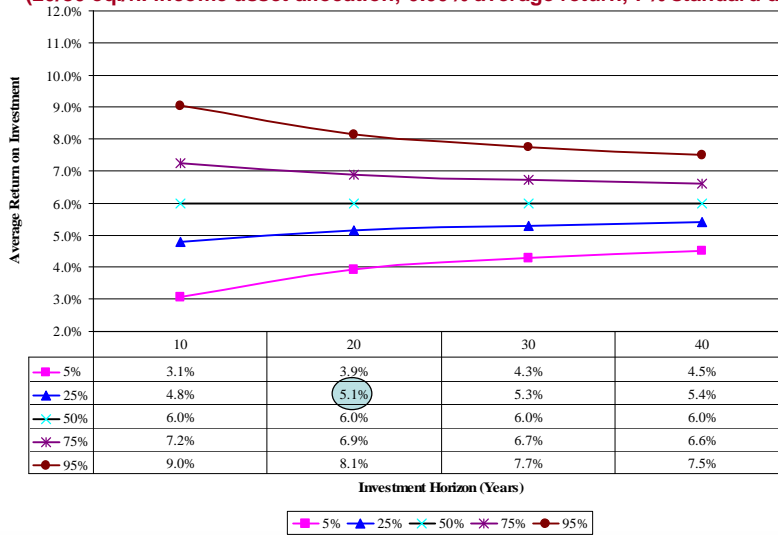
\* Dependent upon plan design \*\* unless COLA's are provided.

## Investment Risks

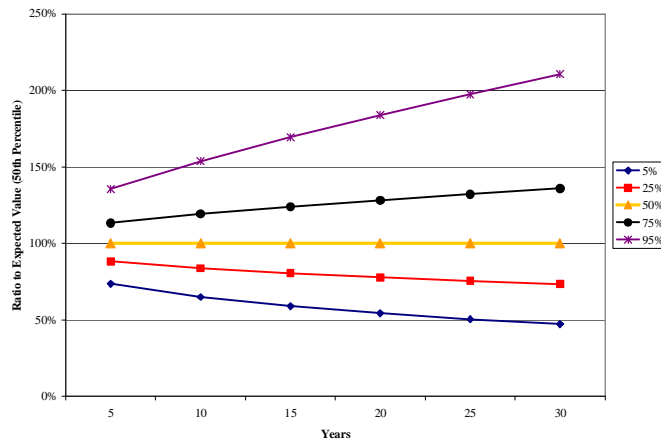
- n Retirees – shorter time horizon
- n It is difficult to make up for investment losses near or after retirement
- n Investment earnings do fluctuate

## Need to be Conservative when withdrawing Funds from a Retirement Fund

(20/80 eq./fi. income asset allocation; 6.00% average return, 7% standard deviation)



## Investment Risks (Sample Investment Mix)



Given the short time horizon for the investment drawdown, individual retirees cannot afford to assume they will earn the "expected" return.

## Timing Risk

**Convert your 457 or IRA into an annuity.**

**Assume:**

A \$1,000,000 account balance on January 1, 2008

- Invested 60/40 in equities (S&P 500/Lehman Aggregate)

n An individual retires on January 1, 2008 and purchases an annuity

- Annual Benefit = \$92,800

n An individual retires on January 1, 2009 and purchases an annuity

- Annual Benefit = \$68,700

**26 percent reduction in lifetime income,  
a \$24,100 benefit decrease,  
due to 1 year delay in retirement**

Source: American Academy of Actuaries, April, 2011

**Longevity Risk**  
**Effect of Improving Mortality Rates**

<b>Age 65 in 2010</b>			
	Percent Living to age 85	Percent Living to age 90	Percent Living to age 95
Male	50%	27%	9%
Female	58%	37%	17%

<b>Age 65 in 2030</b>			
	Percent Living to age 85	Percent Living to age 90	Percent Living to age 95
Male	57%	34%	13%
Female	62%	41%	20%

Source: RP-2000 Table, combined white and blue collar, combined actives and annuitants, with full projected generational mortality improvements.

**Drawing Down Retirement Nest Egg**  
**Too Quickly**

Withdraw initial amount at age 65 and then increase it each year by inflation (3.0 percent)

- n Constant Annual Return of 4.50 percent
- n Annual Inflation of 3.00 percent

<i>Initial Withdrawal</i> <small>(Percent of Initial Balance)</small>	<i>Age to which funds will last</i>
8%	79
6%	84
5%	89
4%	96
3%	111

## Combined Investment and Withdrawal Risks (Sample Asset Mix)

	Initial Withdrawal / Annual Increase	At 4.5% return, money lasts until age	At 5.75% return, money lasts until age	Likelihood* of Running out of Money by			
				Age 75	Age 85	Age 90	Age 95
A	4%/3.0%	96	106	0%	0%	4%	14%
B	5%/3.0%	89	94	0%	6%	27%	51%
C	6%/3.5%	83	86	0%	39%	75%	91%

\* Assuming a 50/50 asset allocation. Expected return on equities: 7.00 percent, fixed income: 4.50 percent, net expected return: 5.75 percent.

Both equity and fixed income returns assume market returns less 0.50 percent in expenses.

Values shown are based on theoretical returns and are intended to show the likelihood one will run out of money if too much is withdrawn, too quickly. Actual results will be based on the actual returns during a particular person's retirement years.

## Benefits of Pooling Risk

- n An employee needs to assume the "worst case"
  - Low returns and long life.
- n An employer can assume the "average case" in determining the funding requirements.

## Summary of Risks

- n **Investment**—Volatility in investment returns, loss of capital
- n **Longevity**—Living longer, drawing down savings too quickly
- n **Inflation**—Erodes purchasing power
- n **Expenses**—Unpredictable spending needs
- n **Interest Rate**—Annuitizing when rates are low

## Effect of Risks on Retirement Plans

- n **Are certain types of retirement plans riskier than others?**
  - All types of plans have the same risks. The difference is who assumes them.
  - Example, if in my 401(k) I loose money, I will need to increase my contributions or delay my retirement or accept more risk.
- n **Where can, and where should, pension risk be borne?**
  - Employers are more able to assume long-term risks than Employees.
- n **How do longevity risk and investment risk interact?**
  - For a DC plan, employee assumes both. To maintain an adequate retirement income, substantial contributions are required if there is poor investment performance and/or longer life.
- n **What is the best way to efficiently pool the risks?**
  - DB plans
  - Annuitization

### **What can public policymakers and other stakeholders do to better manage these risks?**

- n Encourage greater savings throughout a lifetime
- n Discourage lump sums distributions—encourage annuitization
- n Discourage leakage—mandate rollovers
- n Encourage pooling and lifetime income arrangements
  - Pension Plans
  - Annuitization
  - Rollovers
- n Recognize that the most elderly of retirees may not be capable of managing investment accounts and scheduled drawdown of funds
- n Federal Government should raise age 70.5 by at least 5 years.
- n States should adopt minimum funding standards.

Source of all except for the last bullet: American Academy of Actuaries, April, 2011

### **What changes have been made or are being considered in public plans?**

- n Raise retirement ages
  - Normal and Early
- n Introduce or increase employee contributions
- n Modify the COLA formula (or eliminate)
- n Modify Average Compensation
  - Limit effect of pay increases on Average Compensation
- n Raise early retirement charges to reflect longer life expectancy
- n Prefund retiree medical plans
- n Sell the public on the economic value of DB plans
- n Convert to DC plans (fully or as an option)

### **What changes have been made or are being considered in public plans?**

- n Increase contributions to insure Unfunded Liability is paid off over a reasonable time.
- n Coordinate assets with plan liabilities to reduce volatility.

### **Proposed GASB Standards**

#### Objectives

- n Improve transparency in financial reporting
- n Enhance decision usefulness of pension information
- n Assist financial report users to assess accountability and inter period equity related to pensions

## Proposed GASB Pension Standards

- n Separates Funding from Expense
  - Similar effect as for current OPEB standards
  - Example: Funding policy might be to fund the normal cost and a payment to amortize the unfunded actuarial accrued liability over 15 years.
- n Changes Annual Required Contribution (ARC)
- n Increases Expense
- n Increases Volatility
- n Increases Disclosures
- n Increases Expense of Preparing Actuarial Valuations and CAFR Audits

## Proposed Standard - Pension Expense

Expense recognition would be immediate for:

- n Pension benefits earned during the reporting period
  - i.e. normal cost
- n Interest cost on the total pension liability
- n Changes in benefit terms that affect the total pension liability
  - vs. current standard of amortization over periods up to 30 years

## Pension Expense – Amortization of Gains/Losses and Assumption Changes

- n **Current Standard** - amortize over a period not to exceed 30 years
- n **Proposed Standard for Changes other than Total Return**
  - Inactive Participants – Immediate Recognition
  - Active Participants - weighted average remaining service periods of active employees
- n **Proposed Standard for Changes in Total Return**
  - Differences between actual and projected earnings on plan investments would be deferred and recognized as pension expense over a five-year, closed period
  - Similar to a Five year asset smoothing method; but is more direct.

## Recommendations – Proposed Standards

- n For smaller organizations
  - Request reduced disclosure
  - Simplified methodology
    - e.g. amortize total changes over 10 years
- n Educate Boards on the advantages of DB plans
- n Establish funding policy that is different from Pension Expense

## Current Coverage Trends

Year	Covered by Any Plan (Percent)	Covered by DB (Percent)	Covered by DC (Percent)
1980	84	84	*
1985	91	80	41
1989	81	63	48
1993	78	56	49
2000	70	36	50
2004	67	34	53
2009	68	32	55

\* - data not available.

Source: Employee Benefit Research Institute, *Data Book*, Chapter 10, Pages 2,3; from National Compensation Survey

<http://www.ebri.org/publications/books/?fa=databook>

## DB Plans (Recent)

Percent of Employees Participating in DB Plans

	Private Plans	State and Local Government Plans
Those who are earning or have earned DB benefits	20%	79%
Frozen/Open	19%/81%	10%/90%
<b>of Frozen Plans</b>		
<b>Soft Freeze</b>	<b>75%</b>	<b>99%</b>
<b>Some not Frozen</b>	<b>6%</b>	<b>0%</b>
<b>Hard Freeze</b>	<b>19%</b>	<b>1%</b>

Source: BLS March 2009 Statistics

<http://www.bls.gov/ncs/ebs/benefits/2009/ebb0044.pdf>

[http://www.bls.gov/opub/perspectives/program\\_perspectives\\_vol2\\_issue3.pdf](http://www.bls.gov/opub/perspectives/program_perspectives_vol2_issue3.pdf)

The opinions expressed herein is solely those of the presenter and not of his firm, the Society of Actuaries or the American Academy of Actuaries or VGFOA.

### Reference

- n “Post-retirement Risks: Changing Needs and Risks”, Society of Actuaries,  
<http://www.soa.org/research/research-projects/pension/research-post-retirement-needs-and-risks.aspx>

Thank you for your interest in this critical topic.

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