

# Pension Risk and Your Retirement

## Understanding Retirement Risk and Overcoming Challenges through Public Policy Options

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- Provides objective technical expertise to policymakers and regulators on pension and Social Security issues.



# Agenda for Today's Briefing

- Overview of pension plans
- Current coverage and general trends
- Retirement risk: Not having enough retirement income
- Pooled risk versus individual risk
- Key questions
  - Where can pension risk be borne?
  - Where should pension risk be borne?
  - Are certain pension plans riskier than others?
  - How can risk be mitigated or shared?

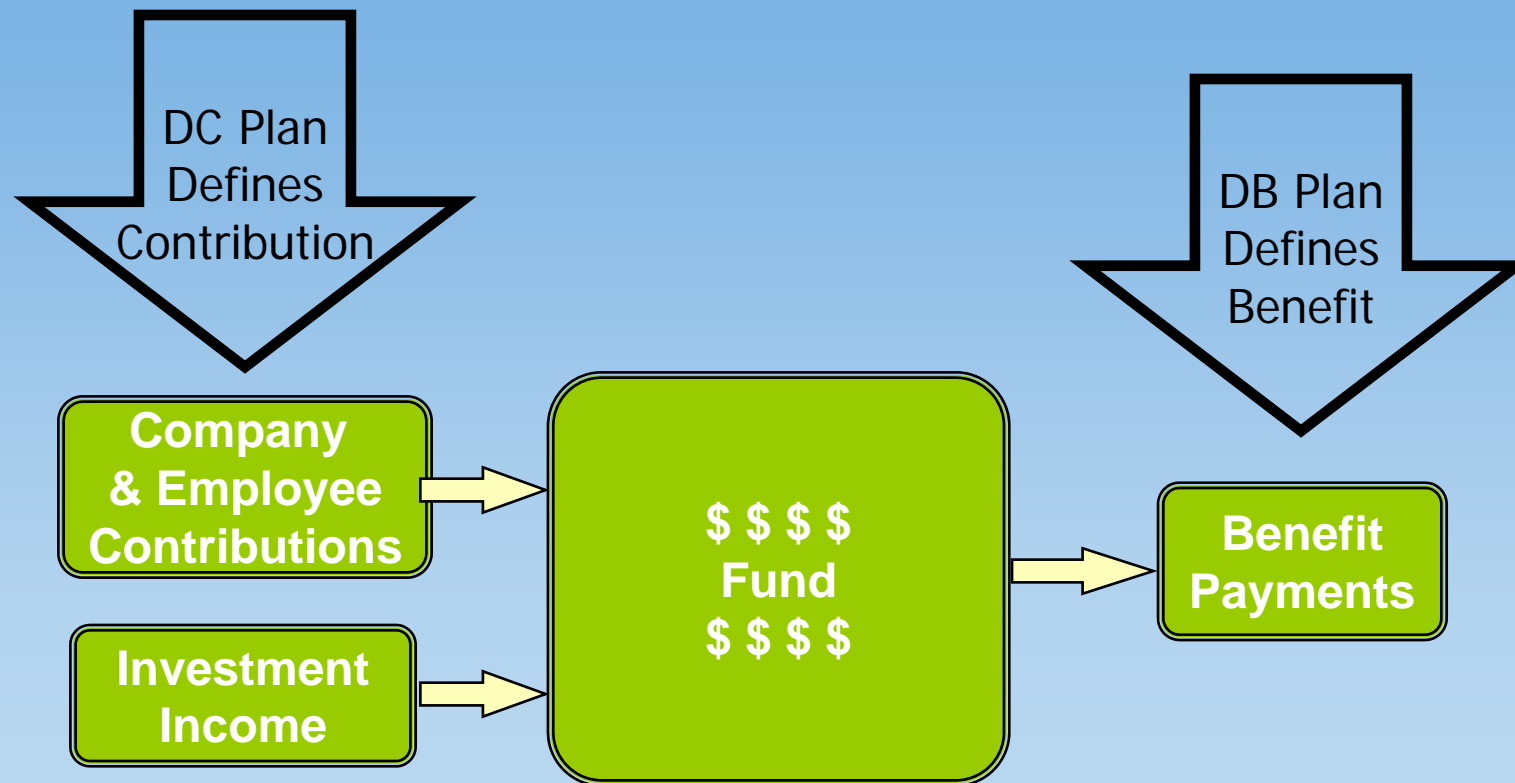


# Types of Retirement Plans

- **Defined Benefit (DB) Plans**
  - Traditional annuity-based formulas
  - Account-based formulas (like DC plans)
  - Other hybrids (retirement shares, pension equity)
  
- **Defined Contribution (DC) Plans**
  - Profit sharing
  - 401(k)/403(b)/457
  - Other (includes IRAs)



# Types of Retirement Plans



# 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/ebbl0044.pdf>.  
[http://www.bls.gov/opub/perspectives/program\\_perspectives\\_vol2\\_issue3.pdf](http://www.bls.gov/opub/perspectives/program_perspectives_vol2_issue3.pdf)



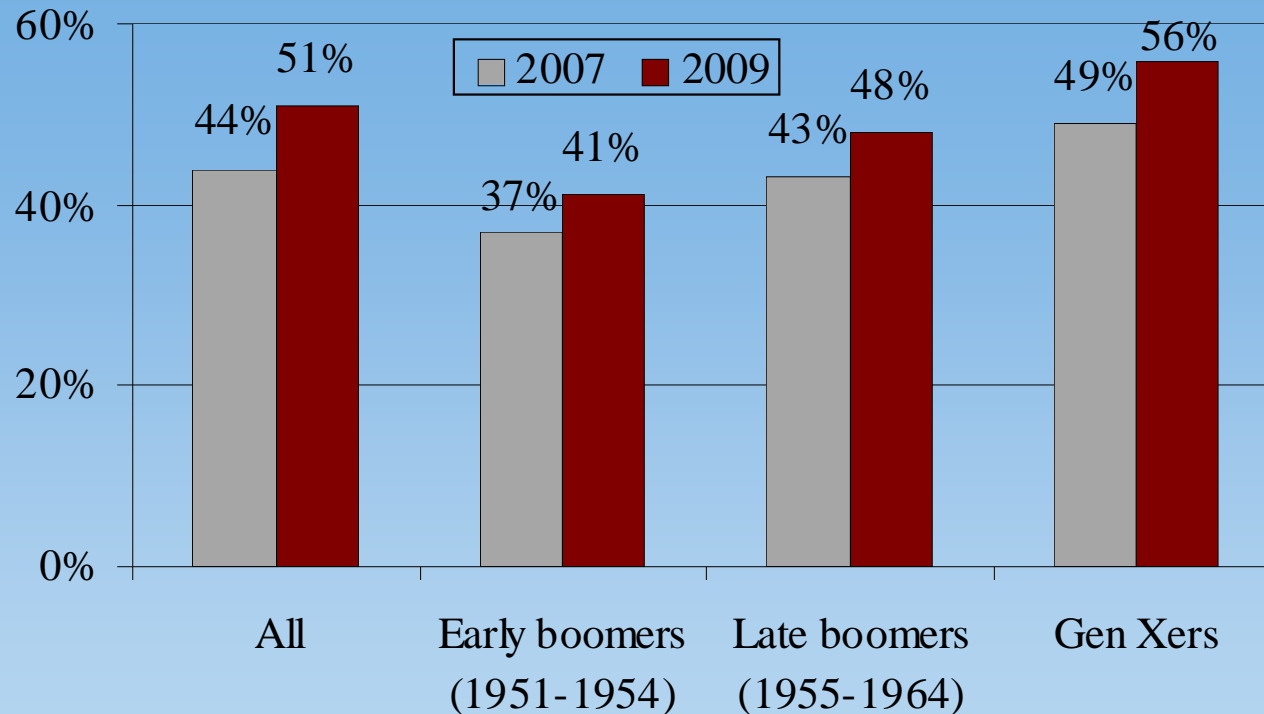
# Employee Retirement Needs

- Primary need – replace disposable income at/after retirement
  - Studies from major consulting firms indicate a range of replacement ratios of 70 percent to 100 percent (depending on inclusion or not of retiree medical and/or COLAs) are sufficient to replace pre-retirement income
  - Fairly constant across most pay levels
  - Consider all sources, including Social Security, employer plans and personal savings
- Inflation Protection
  - Social Security provides some protection
  - Private plans generally do not





# 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](http://crr.bc.edu/briefs/the_national_retirement_risk_index_after_the_crash.html)



# Retirement Risk

- A financial definition of retirement success:
  - “Sufficient assets to continue the worker’s pre-retirement standard of living”
- Financial retirement risk:
  - Insufficient financial resources
  - Volatility disruptive to retiree budgeting process
- **Investment**—Volatility of investment return; loss of capital
- **Longevity**—Living longer than planned for
- **Inflation**—Fixed income = Less purchasing power over time
- **Expenses**—Unpredictable spending needs
- **Interest Rate**—At time of annuitization



# DB vs DC: Who Bears the Risk?

	<b>DB</b>	<b>DC</b>
■ <u>Poor investment return</u>	Employer*	Individual
■ <u>Retirement Age</u>	Employer/Employee	Individual
■ <u>Long life in retirement</u>	Employer**	Individual
■ <u>Unpredictable expenses</u>	Individual	Individual
■ <u>High inflation—pre-retirement</u>	Employer	Individual
■ <u>High inflation—post-retirement</u>	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.

\* Typically

\*\* Dependent upon plan design

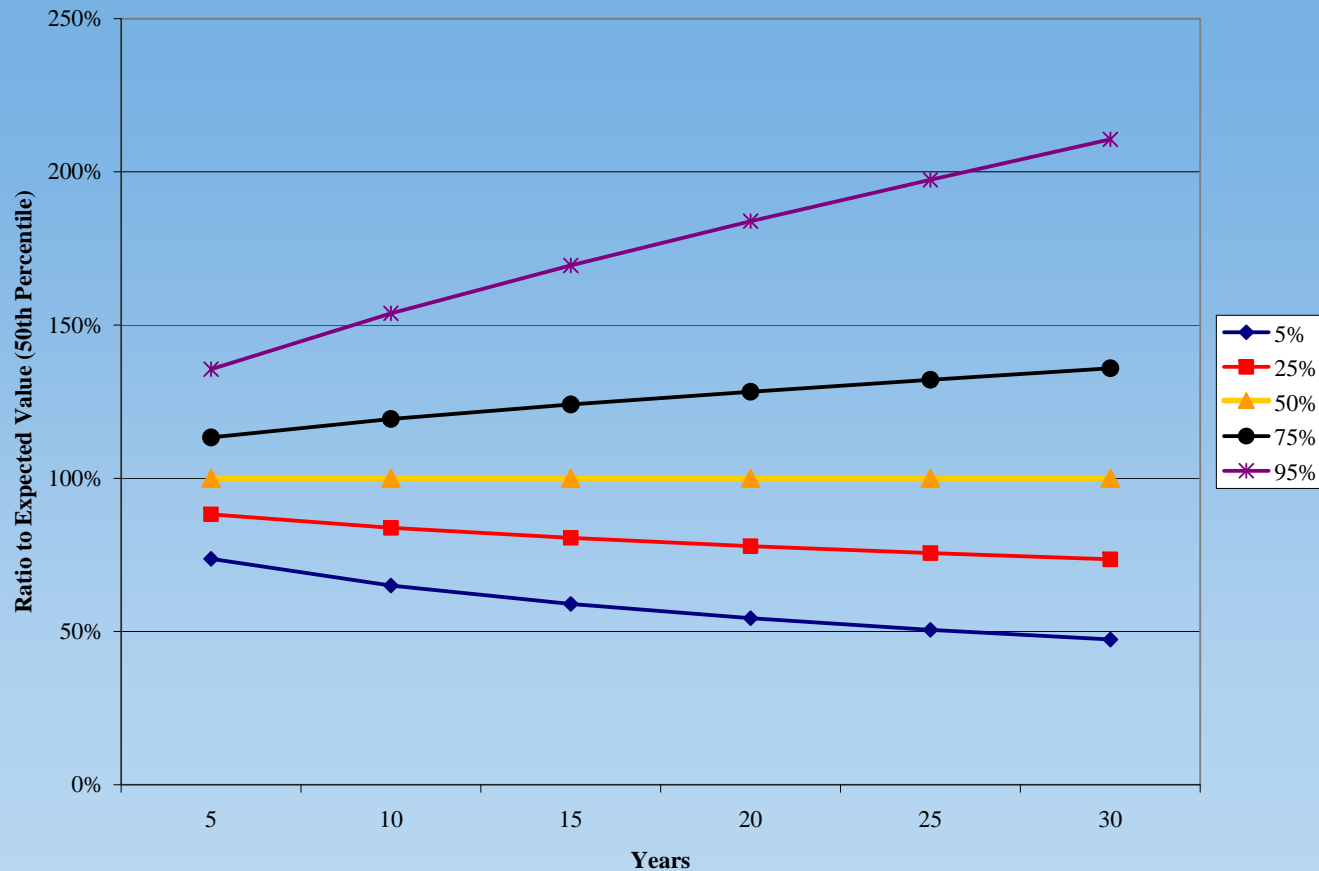


# Investment Risks

- The time horizon for retirees is shorter than for active workers.
- It is difficult to make up for investment losses near or after retirement.
- Investment earnings do fluctuate—While a given asset mix may have an expected rate of return, results can be volatile. For example, if negative returns occur shortly after retirement while money is being drawn from the account, it may be impossible to fully recover.



# 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

## **Assume:**

- A \$1,000,000 account balance on January 1, 2008
  - Invested 60/40 in equities (S&P 500/Lehman Aggregate)
- An individual retires on January 1, 2008 and purchases an annuity
  - Annual Benefit = \$92,800
- 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**



# Longevity Risk

## Effect of Improving Mortality Rates

### Age 65 in 2010

	Percent Living to age 85	Percent Living to age 90	Percent Living to age 95
Male	50%	27%	9%
Female	58%	37%	17%

### Age 65 in 2030

	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)

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

<i>Initial Withdrawal</i> <i>(Percent of Initial Balance)</i>	<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 that will run out of money by age 75*	Likelihood that will run out of money by age 85*	Likelihood that will run out of money by age 90*	Likelihood that will run out of money by 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.



# Summary of Risks

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



# Pooled / Non-pooled Risk

Risk pooling is a way to manage some retirement risks. Defined Benefit plans (without lump sums distributions) pool the longevity risk, avoid the withdrawal and leakage risks, and shift the investment risk to the plan sponsor. Annuity contracts can accomplish some of the same things. Social Security is a DB system with inflation protection.



# How Pooled versus Non-Pooled Risk Addresses Longevity

- Pooled risk
  - Spread risk over a group of individuals
  - Group can plan collectively for average outcome
- Non-pooled risk
  - Individual bears entire risk

## An Illustrative Example

- 1,000 Individuals Retire at Age 65
- Annual Living Expense = \$20,000
- Longevity
  - 25 percent die at age 70—each needs \$100,000
  - 50 percent die at age 80—each needs \$300,000
  - 25 percent die at age 90—each needs \$500,000

\* For simplicity, no inflation or investment return assumed



# Example: Non-Pooled Risk

- Each individual must plan to survive to age 90 (25 years from age 65 to age 90)
- Assets required for each individual
  - $\$20,000 \times 25 \text{ years} = \$500,000$
- Assets required for entire group
  - $\$500,000 \times 1,000 \text{ individuals} = \$500,000,000$



# Example: Pooled Risk

- Plan saves for collective retirement
  - 250 survive to age 70
    - Assets Required =  $\$20,000 \times 5 \text{ years} \times 250 \text{ individuals}$
  - 500 survive to age 80
    - Assets Required =  $\$20,000 \times 15 \text{ years} \times 500 \text{ individuals}$
  - 250 survive to age 90
    - Assets Required =  $\$20,000 \times 25 \text{ years} \times 250 \text{ individuals}$



# Example: Pooled Risk

- Assets required for entire group
  - \$300 million
  - \$500 million if each individual must provide own income

## Summary:

When factoring in interest and mortality tables, an individual needs 37 percent more money to self-insure against longevity than to pool longevity; 37 percent more money if a lump sum is chosen over an annuity payout option; and the lump sum needs to be 37 percent larger than the annuity value.



# Public Policy Questions

- Are certain types of retirement plans riskier than others?
- What are the risk characteristics of the different types of retirement plans?
- Where can, and where should, pension risk be borne?
- How do longevity risk, investment risk, and retirement risk interact?
- What is the best way to efficiently pool the risks?





# Public Policy Recommendations

- Reducing incidence of poverty among the elderly
  - Social Security
  - Medicare
  - Employer and individual retirement savings vehicles
- Encourage saving for retirement
- Promote risk pooling



# What Can Policymakers Do?

- Encourage greater savings throughout a lifetime
- Discourage lump sums distributions—encourage annuitization
- Discourage leakage—mandate rollovers
- Encourage pooling and lifetime income arrangements
  - Pension Plans
  - Annuitization
  - Rollovers
- Recognize that the most elderly of retirees may not be capable of managing investment accounts and scheduled drawdown of funds



# What Can Policymakers Do?

- Liberalize payout (taxation) requirements
  - Encourage lifetime payouts
  - Increase mandatory distribution starting age from 70 ½ (last updated by Congress in 1962) and index
  - Average life expectancy increased approximately 8 years over this period
  - Increase permitted distribution age from 59 ½ (last updated by Congress in 1974) and index
  - Current payout requirement (over life expectancy) requires too rapid a drawdown for too many



# What Can Policymakers Do?

- Allow longevity insurance—fix IRC 401(a)(9)
  - Annuity benefit starting at an advanced age (such as Age 80 or 85)
  - Funded by value of expected post-age 80 or 85 benefits
- Mandate life annuity with 20-year certain and 100% J&S with 20-year certain annuity options in DB Plans
  - Remove behavioral barrier to annuitization
- Prohibit all but de minimus lump sum payout options from DB plans



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# Appendix

## Types of Retirement Plans and Risk Assumption

### Current Plan Assets

Types of Plans	Assets
DB Plans	\$ 2.4 trillion
DC Plans	\$ 3.9 trillion
IRA	\$4.5 trillion



# Retirement Risk : Employee

## DB Plan

Insufficient benefit, either through many short-term jobs or low benefit design

Inflation (presuming benefit is not indexed)

Employer freezes or terminates plan

Outlive assets if lump sum payout is elected

## DC Plan

Insufficient savings (employer might cease contribution; employees may save too little)

Inflation

Investment risk

Outlive assets (life annuities are not typically provided)



# Retirement Risk : Employer

## DB Plan

Investment risk

Participant longevity

Uncertain contribution requirements

## DC Plan

Participants don't accumulate sufficient assets; retire to lower standard of living or stay employed beyond productive period

Fiduciary responsibility for investment choices

Market disruptions lead to workforce transition issues





# Retirement Risk : Society

## DB Plan

Lack of sufficient coverage

Underfunding from failed plans falls to PBGC

Some designs lead to insufficient total benefit accumulation given mobile workforce

Plan sponsor's financial health

## DC Plan

Lack of sufficient coverage; lack of adequate income

Lack of risk pooling leads to inefficient use of capital on macroeconomic basis

Disparate outcomes: Some accumulate more than enough, some less. Participation and investment results are key.

Portability leaks under current regulations (around 3 percent per year)



# Features of Retirement Plans

<b>Other Features</b>	<b>Defined Benefit</b>	<b>Defined Contribution</b>
Payment of expenses	Paid by employer	Most paid by employee
Investment choice	Employer has choice	Employees have choice
Bears the cost of the plan	Employers bear all of the cost	Employees typically bear most of the cost
Guarantee	Benefits are guaranteed: by plan assets, by the employer and finally by the PBGC	Benefits are not guaranteed
Level of contributions	Pooling of risks keeps contributions down	Generally lower overall resulting in lower benefits



# Pre and Post Retirement Risks – Traditional and Nontraditional Plans

<b>Risk Assumption</b>	<b>Defined Benefit</b>	<b>Defined Contribution</b>	<b>Cash Balance</b>	<b>Variable Annuity Plan</b>
Pre-Retirement Inflation	Employer <sup>1</sup>	Employee	Employee	Risk assumed by employee in most cases
Investment Return	Employer	Employee	Employer	Risk assumed by Employee in most cases
Outliving Mortality Table	Employer	Employee	Employee*	Employer
Post-Retirement Investment Return	Employer	Employee	Employee*	Risk assumed by employee in most cases
Post-Retirement Inflation	Employee	Employee	Employee	Employee

<sup>1</sup>Depending on Plan Design

\* Employee Choice

