

American Academy of Actuaries

Pensions 101

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June 1, 2001



Major Pension Legislation

The Employee Retirement Income Security Act of 1974

(ERISA): This is the basic law covering qualified plans and incorporates both the pertinent Internal Revenue Code provisions and labor law provisions. ERISA is the basic law designed to protect the rights of beneficiaries of employee benefit plans offered by employers, unions, and the like. ERISA imposes various coverage, participation and benefit standards and fiduciary responsibilities on both welfare benefit and retirement plans, and provides enforcement procedures as well. In the retirement area, it also provides the basic standards incorporated into the tax qualification requirements.



Pension Regulation by Government Agencies

Department of Labor (DOL): The non-tax, regulatory and administrative provisions of ERISA are administered by the Department of Labor. The Department issues opinion letters and other pronouncements, and requires certain information forms to be filed.

Internal Revenue Service (IRS): The IRS is charged with primary responsibility for administering, interpreting, and enforcing the Internal Revenue Code. Most retirement plan issues are handled by the Employee Plans group of Tax Exempt and Governmental Entities division of the IRS.



Pension Regulation (cont'd)

Pension Benefit Guaranty Corporation (PBGC): A nonprofit corporation, functioning under the jurisdiction of the Department of Labor, that is responsible for insuring pension benefits.

Department of Treasury: The tax, regulatory and administrative provisions of ERISA are administered by the Department of Treasury. The Department issues regulations and other pronouncements, and requires certain information forms to be filed through the IRS. Note that the Secretary of the Treasury, and not IRS, issues regulations under the Internal Revenue Code.



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 - Establishing, maintaining & enforcing high standards of conduct, qualification and practice.
 - Assisting in the formulation of public policy by providing independent & objective information, analysis & education.



Academy Mission Statement

(continued)

- Representing & advancing the profession & increasing the public's recognition of the profession's value



Pensions 101

Retirement Plan Fundamentals

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June 1, 2001



Basic Types of Retirement Plans

- Defined Benefit Plans



Basic Types of Retirement Plans

- Defined Benefit Plans
- **Defined Contribution Plans**



Basic Types of Retirement Plans

- Defined Benefit Plans
- Defined Contribution Plans
- Hybrid and Combination Plans



Fundamental Retirement Equation

Benefits =



Fundamental Retirement Equation

$$\text{Benefits} = \text{Contributions}$$



Fundamental Retirement Equation

$$\text{Benefits} = \text{Contributions} + \text{Investment Earnings}$$



Fundamental Retirement Equation

$$\begin{aligned} \text{Benefits} &= \\ &\text{Contributions} \\ &+ \text{Investment Earnings} \\ &- \text{Expenses} \end{aligned}$$



Defined Benefit Plans

- Benefit payable in the form of an annuity at retirement



Defined Benefit Plans

- Benefit payable in the form of an annuity at retirement
- Benefits not contingent on investment return on plan assets



Defined Benefit Plans

- Benefit payable in the form of an annuity at retirement
- Benefits not contingent on investment return on plan assets
- Contributions are actuarially determined



Defined Benefit Plans

- Benefit payable in the form of an annuity at retirement
- Benefits not contingent on investment return on plan assets
- Contributions are actuarially determined
- **Employer at risk for investment performance**



Defined Contribution Plans

- Individual accounts for each participant



Defined Contribution Plans

- Individual accounts for each participant
- Contributions determined and allocated based on some formula



Defined Contribution Plans

- Individual accounts for each participant
- Contributions determined and allocated based on some formula
- **Benefits are contingent on investment return on plan assets**



Defined Contribution Plans

- Individual accounts for each participant
- Contributions determined and allocated based on some formula
- Benefits are contingent on investment return on plan assets
- Contributions may be discretionary



Defined Contribution Plans

- Individual accounts for each participant
- Contributions determined and allocated based on some formula
- Benefits are contingent on investment return on plan assets
- Contributions may be discretionary
- **Employees at risk for investment performance**



Fundamental Equation - Defined Benefit Plans

$$\text{Benefits} = \text{Contributions (variable)} + \text{Investment Earnings} - \text{Expenses}$$



Fundamental Equation - Defined Contribution Plans

$$\begin{aligned} \text{Benefits (Variable)} = \\ & \text{Contributions} \\ & + \text{Investment Earnings} \\ & - \text{Expenses} \end{aligned}$$



Plan Provisions Common to All Retirement Plans



Eligibility

- Eligibility - When does an employee becomes a participant in the plan?
- Minimum Age - not greater than 21 (was age 25 prior to 1984)



Eligibility - Continued

- Minimum Service
 - » Up to One Year with deferred vesting
 - » Up to Two Years with immediate vesting
- Prior to 1984, maximum was up to three years



Eligibility - Continued

- Maximum of one year for plans with 401(k) salary deferral arrangements
- Can have different requirements within same plan; for example
 - » None for Salary Deferrals
 - » One Year for Employer Matching



Entry Dates

- Beginning of the plan year (e.g., January 1)
- Twice a year (e.g., January 1 and July 1)
- Quarterly (e.g., 1/1, 4/1, 7/1, 10/1)
- Monthly
- Daily



Entry Dates - Continued

- For one year eligibility, entry must occur within 18 months of employment commencement date



Vesting

- Currently, two statutory schedules:
 - » Less than 3 years -- 0%
 - » 3 years -- 20%
 - » 4 years -- 40%
 - » 5 years -- 60%
 - » 6 years -- 80%
 - » 7 or more years -- 100%



Vesting - Continued

- » Or
- » Less than 5 years -- 0%
- » 5 or more years -- 100%



Vesting - Top Heavy

- Currently, two statutory schedules:
 - » Less than 2 years -- 0%
 - » 2 years -- 20%
 - » 3 years -- 40%
 - » 4 years -- 60%
 - » 5 years -- 80%
 - » 6 or more years -- 100%



Top Heavy Vesting - Cont'd

- » Or
- » Less than 3 years -- 0%
- » 3 or more years -- 100%



Pre-TRA'86 Vesting

● Original ERISA schedules:

» Less than 5 years	-- 0%
» 5 years	-- 25%
» 6 years	-- 30%
» 7 years	-- 35%
» 8 years	-- 40%
» 9 years	-- 45%
» 10 years	-- 50%
» 11 years	-- 60%
» 12 years	-- 70%
» 13 years	-- 80%
» 14 years	-- 90%
» 15 or more years	-- 100%



Pre-TRA'86 Vesting - Cont'd

» OR

» Less than 10 years -- 0%

» 10 or more years -- 100%

» OR

» 100% on Account Balance in third prior year (three year class schedule)



Pre-TRA'86 Vesting - Cont'd

● IRS small plan schedule (Pre-1984)

- » Less than 4 years -- 0%
- » 4 years -- 40%
- » 5 years -- 45%
- » 6 years -- 50%
- » 7 years -- 60%
- » 8 years -- 70%
- » 9 years -- 80%
- » 10 years -- 90%
- » 11 or more years -- 100%



Retirement

- Normal Retirement Age
 - » Not later than
 - **age 65 or**
 - **5th anniversary of plan participation**
- Early Retirement Age
 - » None Required
 - » Any combination of age, service or participation prior to NRA



Compensation

- **For 2001, maximum compensation for plan purposes is \$170,000**
- **Prior to 1994, the limit was \$235,840 as indexed from \$200,000 in 1989**
- **Prior to 1989, the limit applied only to key employees in top heavy plans**



Ancillary Benefits

- **Retirement plans are designed to primarily provide benefits at retirement**
 - » Normal Retirement or
 - » Early Retirement
- **Ancillary Benefits include**
 - » Death Benefits
 - » Disability Benefits
 - » Benefits at pre-retirement termination of employment



Defined Contribution Plans



Defined Contribution Plans

- Profit Sharing Plan
- Stock Bonus Plan
- Money Purchase Pension Plan
- Target Benefit Pension Plan
- Thrift Savings Plan
- Employee Stock Ownership Plan



Defined Contribution Plans

- **What about “401(k) Plans”?**
- Actually, there is no such plan, even though you hear the term frequently.
- 401(k) cash or deferred arrangements (CODA) or 401(k) salary deferral arrangements are part of a profit sharing plan.



Defined Contribution Plans

- Profit Sharing Plans

- » Employer contributions are discretionary
- » Maximum total contribution - 15% of all eligible plan compensation (includes employer discretionary contributions, employer matching contributions and employee salary deferrals)



Defined Contribution Plans

- Profit Sharing Plans

- » Contributions are allocated based on

- Compensation
- Compensation and Compensation above some percentage of the FICA Wage Base (Permitted Disparity)
- Units based on Compensation and Service
- Age and Compensation (Age-Based)
- Group and Compensation (New Comparability or Cross Tested)



Defined Contribution Plans

- Profit Sharing Plans

- » Contributions are allocated based on

- **Salary Deferrals from Employees ***
- **Matching of Salary Deferrals by Employer**

- ***Salary Deferrals are limited to \$10,500 for 2001**
- ***Salary Deferral limit from TRA'86 was \$7,000**
- ***Prior to TRA'86, no special limit on salary deferrals**



Defined Contribution Plans

- Money Purchase Pension Plans
 - » Employer contributions are obligatory
 - » Maximum total contribution - 25% of all eligible plan compensation



Defined Contribution Plans

- Money Purchase Pension Plans
 - » Contributions are allocated based on
 - Compensation
 - Compensation and Compensation above some percentage of the FICA Wage Base (Permitted Disparity)
 - Units based on Compensation and Service
 - Projected Benefit at Retirement (Target Benefit Pension Plan)



Defined Contribution Plans

- **Limit for Maximum Annual Additions**
 - » **all contributions and forfeitures allocated annually to a participant's account**
 - » **Lesser of**
 - » **25% of eligible compensation**
 - » **or**
 - » **\$35,000 for 2001**



Defined Benefit Plans



Defined Benefit Plans

- Traditional Defined Benefit Plans
 - » Fixed Benefit
 - **Excess Benefit**
 - **Offset Benefit**
 - » Unit Benefit
 - **Excess Benefit**
 - **Offset Benefit**
 - » Flat Benefit



Defined Benefit Plans

- Hybrid or Nontraditional Plans
 - » Floor Offset Benefit
 - » Cash Balance Benefit
 - » Pension Equity Benefit



Defined Benefit Plans

- Benefits are based on a formula that must be definitely determinable
- Benefits are paid in the form of an annuity at Normal Retirement Age
- Benefits may be based on compensation, final average compensation, career average compensation and/or service



Defined Benefit Plans

- A typical unit benefit formula might be
 - » 2% of final average compensation multiplied by years of service, payable for life beginning at normal retirement (age 65)
 - » where final average compensation is the average of highest three consecutive years of compensation



Defined Benefit Plans

- A typical fixed benefit formula might be
 - » 50% of final average compensation reduced by 1/25th for less than 25 years of service at retirement, payable for life beginning at normal retirement (age 65)
 - » where final average compensation is the average of highest five consecutive years of compensation



Defined Benefit Plans

- A typical flat benefit formula might be
 - » \$20 per month for each year of service at retirement, payable for life beginning at normal retirement (age 65)



Defined Benefit Plans

- Limitation on Benefits
 - » lesser of
 - » 100% of highest three consecutive years of compensation
 - » or
 - » \$140,000 per year payable for life beginning at Social Security Normal Retirement Age (65 to 67)



Defined Benefit Plans

- Benefit Payment Options
 - » Normal Form of Annuity (life only)
 - » Qualified Joint and Survivor Annuity
 - » 10-Year Certain and Life Annuity
 - » Lump Sum Distribution



Pensions 101

What Benefits will you get from ERS/CSRS?

Ron Gebhardtsbauer

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American Academy of Actuaries

June 1, 2001



Items To Cover

- Describe DB and DC in terms of your plans
 - » Federal Employee Retirement System (FERS)
 - » Federal Thrift Savings Plan (TSP)
 - » Social Security (SS)
 - » Red comment where different than Private Sector
- Show benefit for sample Congressional employee
 - » Hired at 27 and retire at age 57



FERS: Congressional Employees

Defined Benefit Plan

1.7 % x (Congressional service up to 20 years) x High 3
+ 1 % x all other service x High 3

High 3 = Highest 3 year average pay (continuous service)



FERS: Congressional Employees

● Reductions for survivor benefit

- » 10% of benefit Generous if spouse is real young
- » Unless participant and spouse waive
 - If waived, spouse will lose FEHB (federal employee health benefits)
- » Spouse gets 50% of unreduced benefit
 - Plus SS supplement until age 60
 - Or 25% continuation (for 5% reduction to your benefit)
- » Benefit available to non-spouses too (if you are reasonably healthy)
 - But with larger reductions (based on age difference)
 - Same reductions as CSRS for non-spouses
- » Benefits stop upon remarriage before age 55 Rare



FERS: Congressional Employees

● Retirement Eligibility Ages

» Voluntary & Involuntary same as CSRS

- Age 62 & 5 years
- Age 60 & 20 years
- Age 55 & 30 years

» Except, Minimum Retirement Age (MRA) replaces age 55

- MRA gradually increases from 55 (born before 1948) to 57 (born after 1969)

» Also can retire at MRA & 10 years

- Benefits reduced by 5% for each year before age 62
- 5% is typical for private plans that have reductions



FERS: Congressional Employees

- COLA = CPI – 1%, but only after age 62
 - » If CPI < 3%, then COLA = lesser of 2% and CPI
 - » Disabled & Survivors get COLA before 62 also
 - Disability retirees getting 60% formula, don't get COLA in 1st year

Not common in private sector, common in public sector



FERS: Congressional Employees

- Vested after 5 years
 - » (1) Benefit deferred to age 62 (or other retirement eligibility dates from prior slide)
 - No Social Security Supplement
 - » (2) Or you can get refund of contributions
 - Can't apply until 31 days after termination
 - You must notify your spouse (private sector requires spousal consent)
 - Interest on your contributions will be refunded if service >1 year
 - ERISA requires interest no matter what
 - You lose your FERS service and can't get it back
- If service < 5 years, you can only get refund



TSP: Congressional Employees

- Thrift Savings Plan
- Agency contribution depends on your contribution amt
 - » 1% of pay automatic (Congressional employees vested in 2 years)
 - » 100% match on your contribution up to first 3% of pay (Vested immediately)
 - » 50% match on the next 2% of pay (Vested immediately)
 - » 0% match thereafter
 - » Maximum = 5% of pay (reached when you put in 5%)
 - » Private sector:
 - More common: 50% of your contribution up to first 6% of pay
 - 3% of pay maximum



Employer Match

Your Contribution	TSP match	Typical in Private Sector
0% of your pay	1% of your pay	0% of your pay
1%	2%	0.5%
2%	3%	1.0%
3%	4%	1.5%
4%	4.5%	2.0%
5%	5%	2.5%
6% & up	5%	3.0%



TSP: Congressional Employees

- Your contributions are pre-tax
 - » Suppose you contribute 5% of your pay
 - » Government matches with 5% of your pay
 - » Your taxes go down 0.75% of your pay, if you are in 15% tax bracket
 - » Your taxes go down 1.4% of your pay, if you are in 28% tax bracket
 - Thus, your net pay only goes down 3.6% of pay
 - And you have 10% of pay saved
- Your maximum pre-tax contribution = \$10,500 (2001)
 - » Not more than 11% of pay in 2001 Same in Private Sector
 - Increases by 1% each year until 2006, when eliminated
 - Illegal in Private Sector



Suppose you make \$40,000/yr

And you contribute 5% of pay	\$2,000
You get government match	\$2,000
Your taxes go down 1.4% of pay*	\$560
Your net pay check goes down	\$1,440
Your savings is up	\$4,000
Free Lunch (But it's taxable later. Hopefully you'll be in a lower tax bracket?)	\$2,560

* Assumes you are in the 28% tax bracket



TSP: Congressional Employees

- Loans available *Common in private sector 401(k)s*
 - » Employees with at least \$1,000 in their account can borrow
 - » But your total loans can not be more than the **smaller of:**
 - **Your contributions plus interest on them**
 - \$50,000
 - The greater of $\frac{1}{2}$ your vested account balance or **\$10,000**
 - » You must pay back over 4 years (15 years if for your primary residence)
 - » You can pay interest at the G fund rate in effect on date of loan
 - Your payments go to your account
 - But you lose what you might have earned in the C fund
 - Interest is not tax deductible
 - » Outstanding loan balances at separation of employment must be paid back in full or they are treated as a distribution
 - Subject to income tax and 10% excise tax

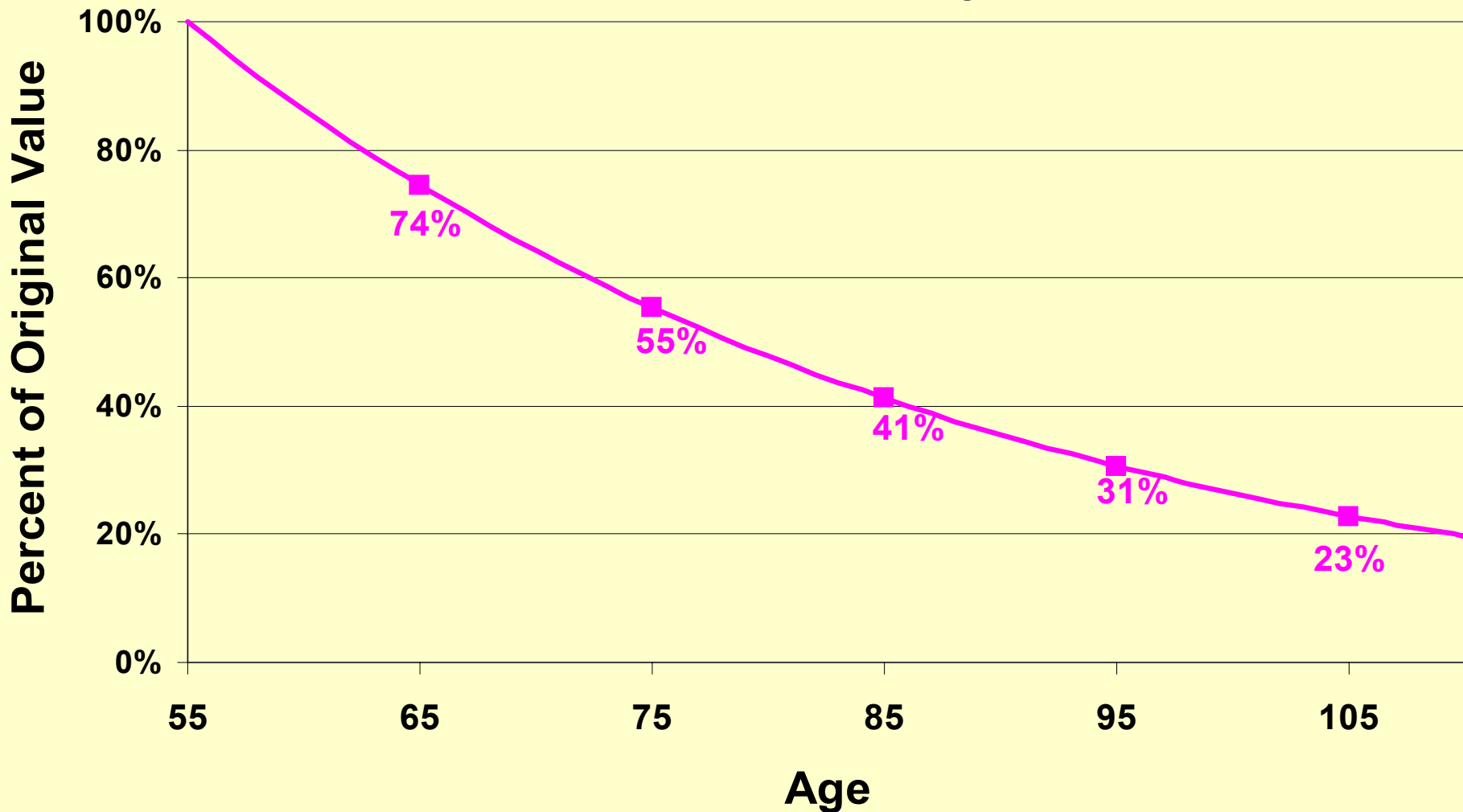


TSP: Congressional Employees

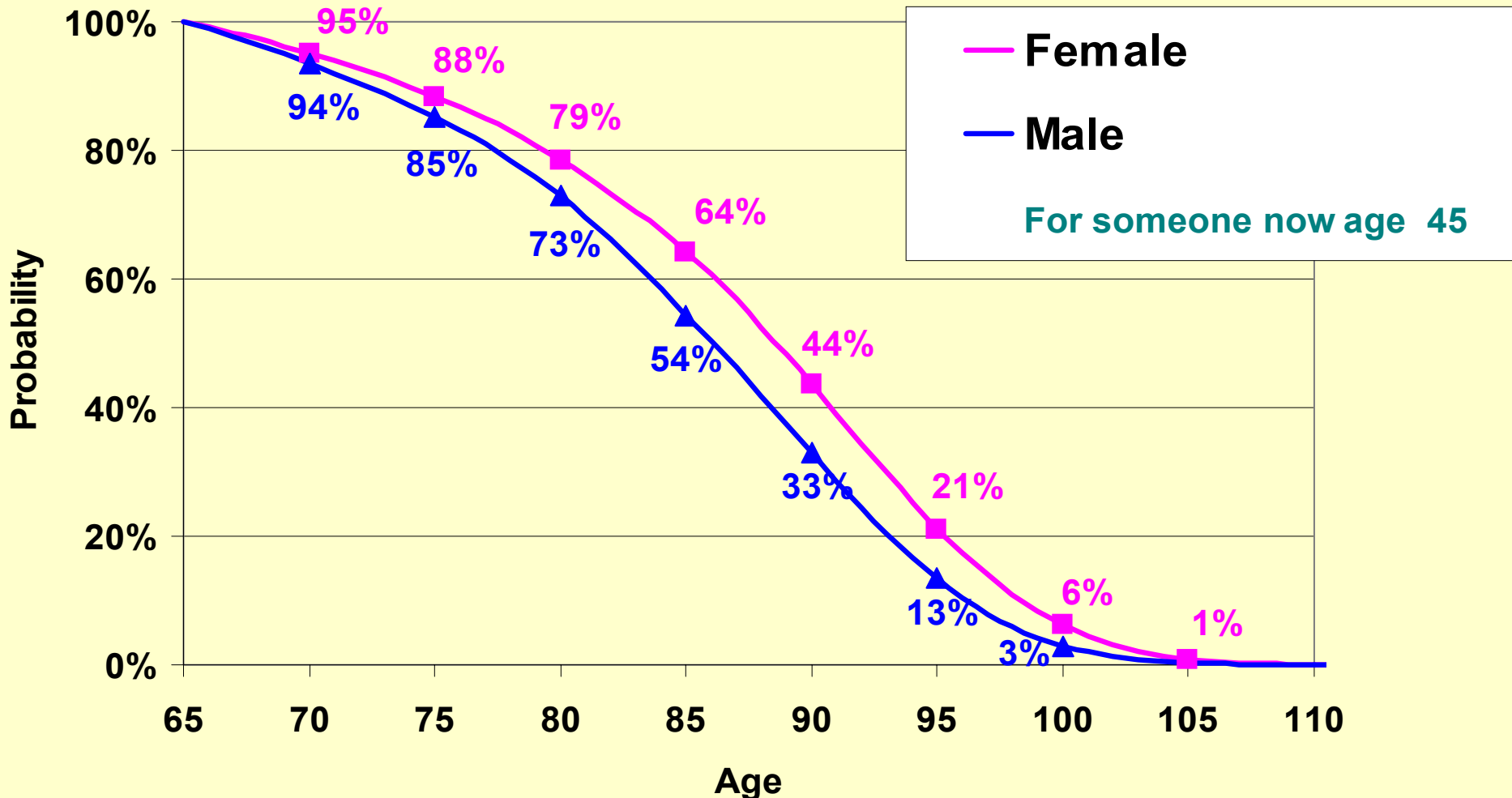
- Withdrawals/Distributions available on separation
 - » Lump sum
 - » Life Annuity (with COLA = CPI not greater than 3%, if desired)
 - \$100,000 buys about \$10,000/year for life at age 65
 - Indexed annuity reduces 1st check by 25% (Usually can't get in private plan)
 - \$100,000 buys about \$8,000/year for life at age 57
 - Indexed annuity reduces 1st check by 30%
 - » Period certain annuity
 - » Must commence by April 1 of CY following 70 ½
 - » Automatic lump sum if under \$3,500
 - Changing to \$200 next year
 - Now \$5,000 in private sector



Purchasing Power If Inflation Is 3% each year



Probability of Living From Age 65 to Specified Age



1994 Group Annuity Mortality table without loading, with full projection
 Ron Gebhardt, American Academy of Actuaries

Inflation protection is important at the oldest ages. About 21% of women reach age 95.



COLAs

CPI	FERS COLA	TSP COLA
-1%	0%	0%
0%	0%	0%
1%	1%	1%
2%	2%	2%
3%	2%	3%
4%	3%	3%
5%	4%	3%
10%	9%	3%
15%	14%	3%



Sample Congressional Employee

- Single employee
- Age 27 at hire
- Age 57 at retirement
 - » 30 years of work in federal government (10 Congressional)
 - » Pay followed national wage growth + average federal pay increases
- Contributes 3% pay to TSP
- Chooses indexed annuity

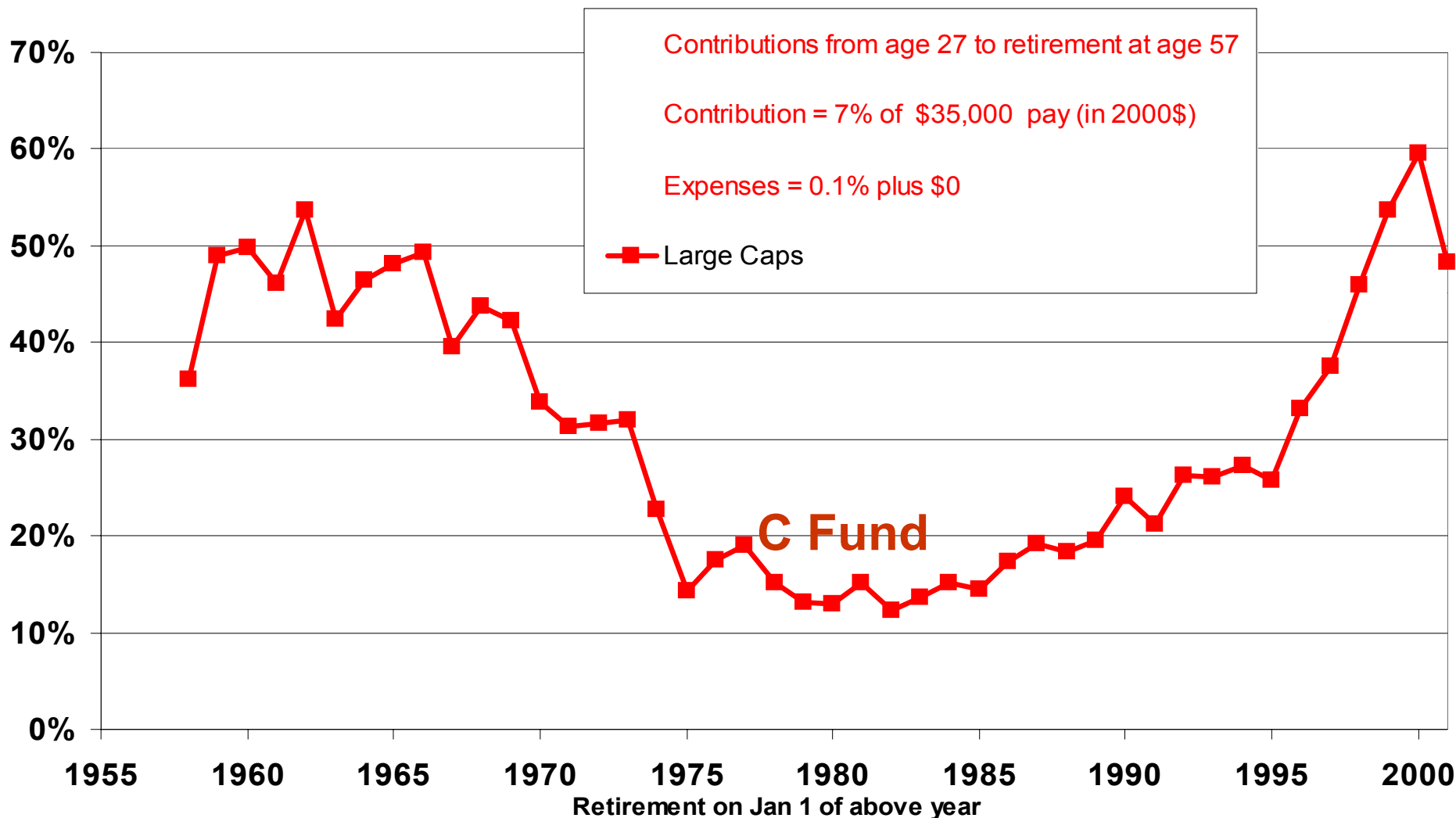


Sample Congressional Employee

- FERS annuity = 37% of High 3 average pay
 - » $10 \times 1.7\% + 20 \times 1\% = 37\%$
 - » COLA = CPI - 1% (unless CPI < 3%)
- TSP benefit can vary a lot depending on markets
- Social Security benefit depends on pay history



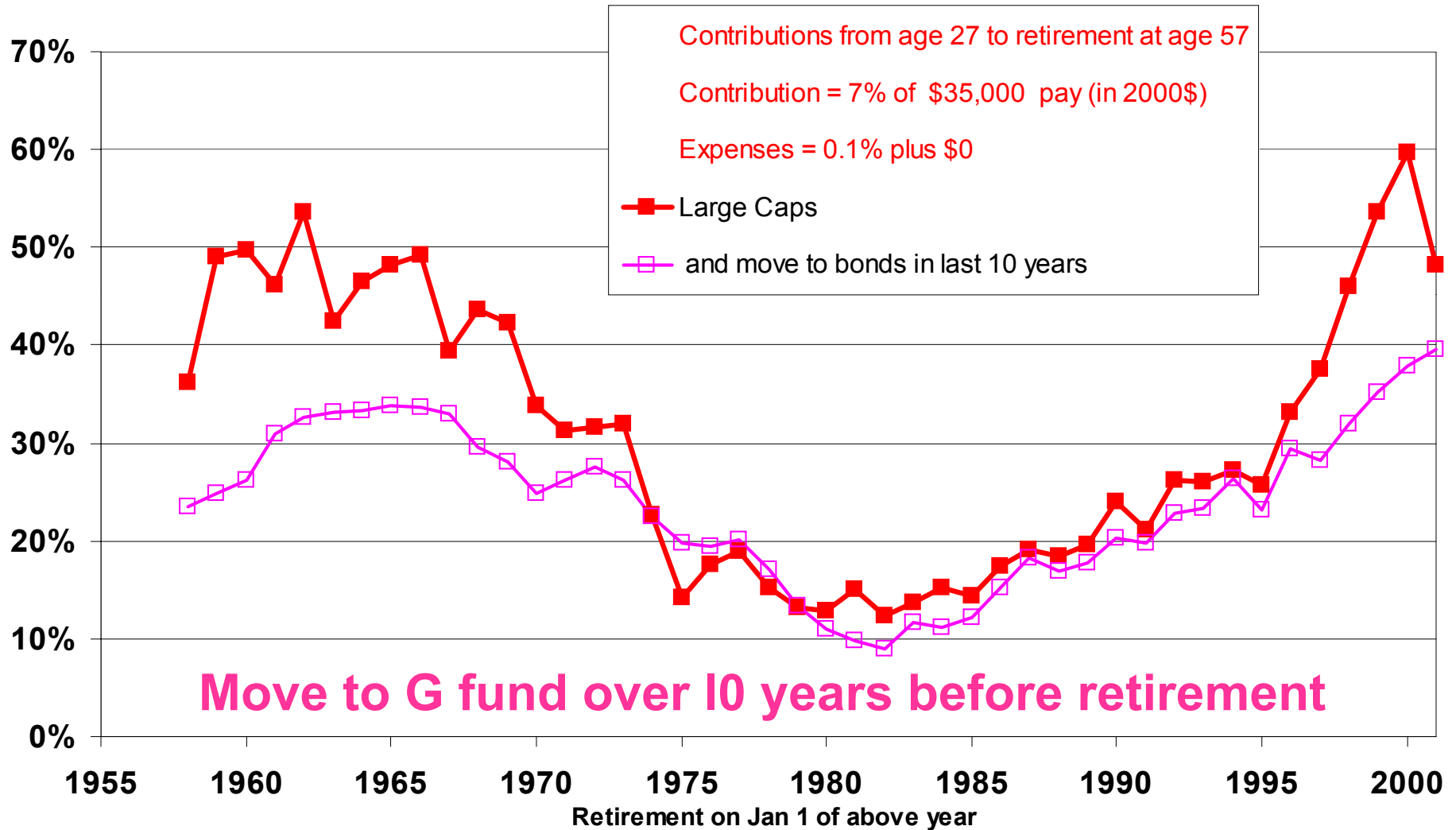
Chart I - Replacement Rates from Qualified Savings (using Historical Yields from Ibbotsen)



Note variability. Get 60% if retire in 2000 or 12% if retire in 1982



Chart II - Replacement Rates from Qualified Savings (using Historical Yields from Ibbotsen)



Why move to bonds in last 10 years? It varies less (4.3 versus 5.0), but it yields less 86% of the time.



Retire @ age 57

Retirement Benefit	Benefit as a % of High 3 pay with economy like the years	
	1944 - 1974	1970 - 2000
FERS benefit	37% 26%	37% 26%
TSP benefit	12% 11%	60% 30%
Social Security (after 62) Supplement (before 62) =15%	<u>+20%</u>	<u>+20%</u>
Total	69%	117%

May need to work more years

You saved too much

Note wide variance in the TSP benefit (depending on economy at retirement). Purchasing power falls lots by age 95, even with partial-CPI COLA. Supplement depends on pay level and stops at age 62, or if you earn more than SS earnings limit.



Retire @ age 57

Retirement Benefit	Benefit (High 3 yr average pay = \$100,000) with economy like the years	
	1944 - 1974	1970 - 2000
FERS benefit	\$37,000	\$37,000
TSP benefit	12,000	60,000
Social Security (after 62) Supplement (before 62) =\$15,000	<u>+20,000</u>	<u>+20,000</u>
Total	\$69,000	\$117,000

May need to work more years

You saved too much

Note wide variance in the TSP benefit (depending on economy at retirement). Purchasing power falls lots by age 95, even with partial-CPI COLA. Supplement depends on pay level and stops at age 62, or if you earn more than SS earnings limit.



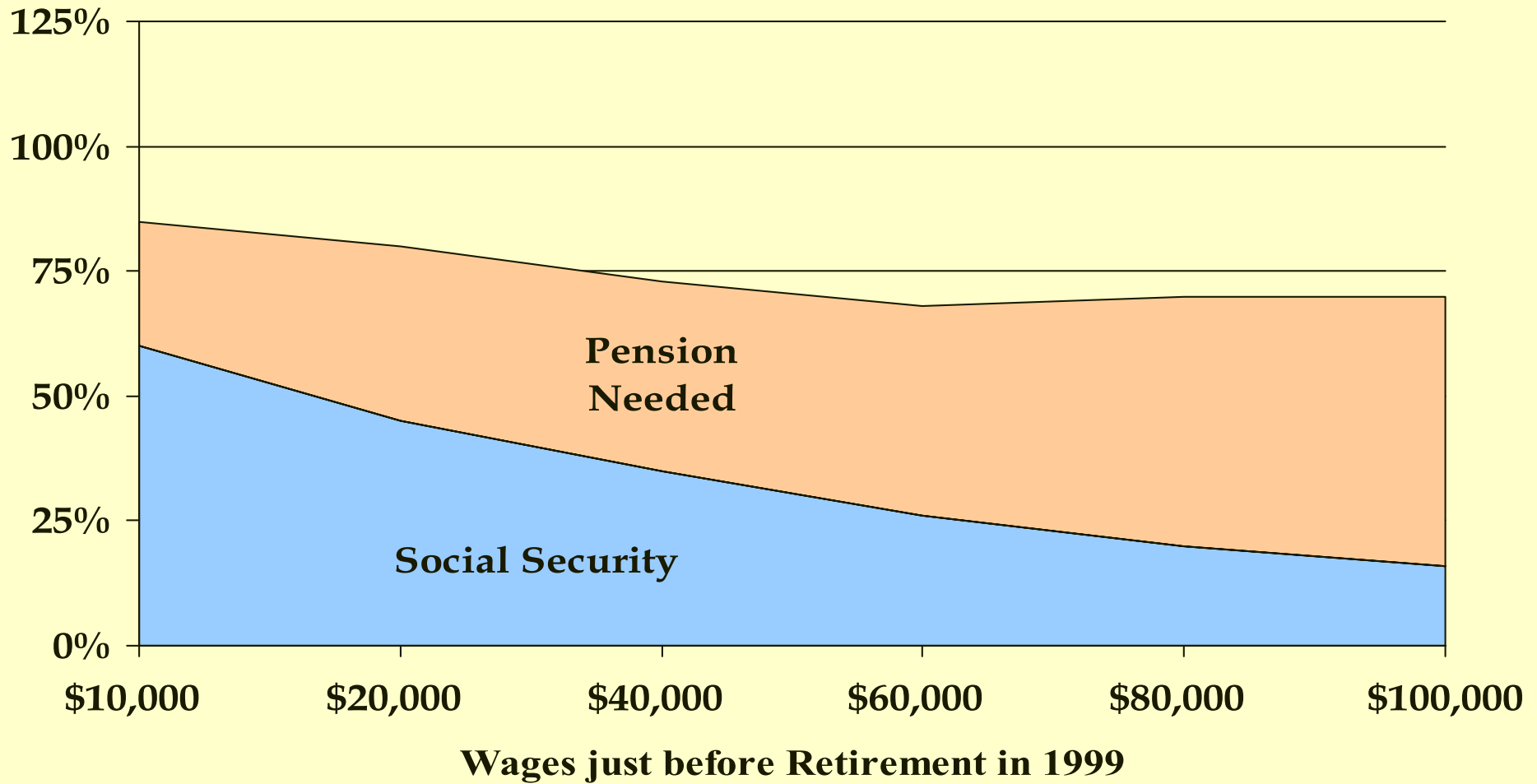
After retiring you needn't pay

Social Security taxes	7.65% of pay
FERS contribution	1.3%
TSP contribution	3%
Work-related expenses	~3 to 7%
Income taxes go down	<u>~5 to 10%</u>
Total reductions	20% to 25% of pay
Amount needed to maintain lifestyle*	75% to 80% replacement

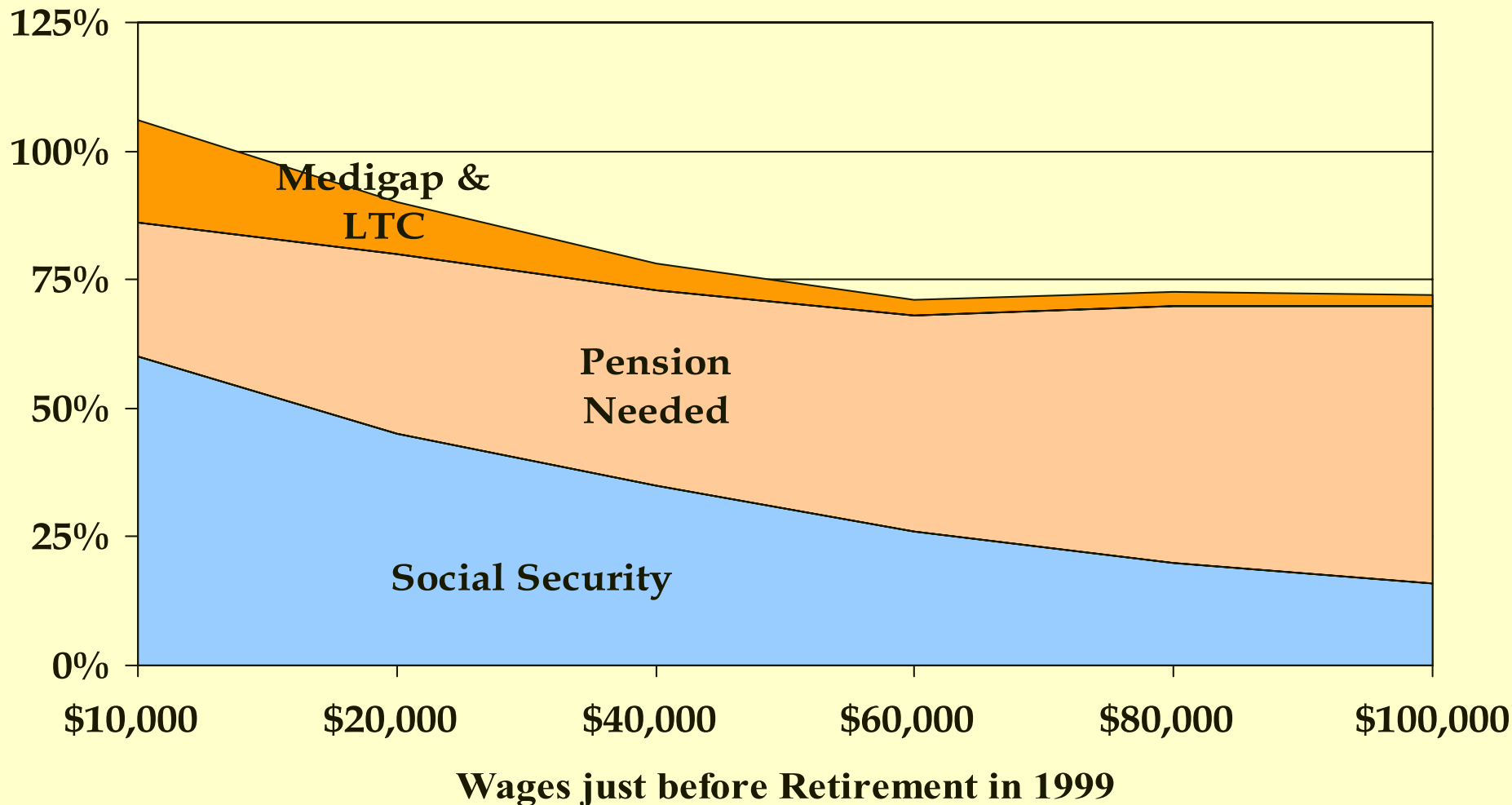
*Assumes employer continues to pay for health care & LTC. It could cost \$4,000/year.



Amounts Needed for 100% Replacement of Spendable Income in Retirement - Single Person



Amounts Needed for 100% Replacement of Spendable Income in Retirement - Single Person



Conclusions

- Pensions are complex
- Congressional benefits are relatively generous
- You can plan on DB amounts for retirement
 - » If you work in federal government until retirement
- DC benefits can vary a lot due to economy
- Benefits can fall behind inflation
 - » You can reduce your risks if you
 - Get indexed annuity to cover expenses (by age 80)
 - Buy LTC insurance



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