



AMERICAN ACADEMY *of* ACTUARIES

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**Social Security Around the World**  
**Where are the Actuaries?**  
**Session 3: US Perspective**

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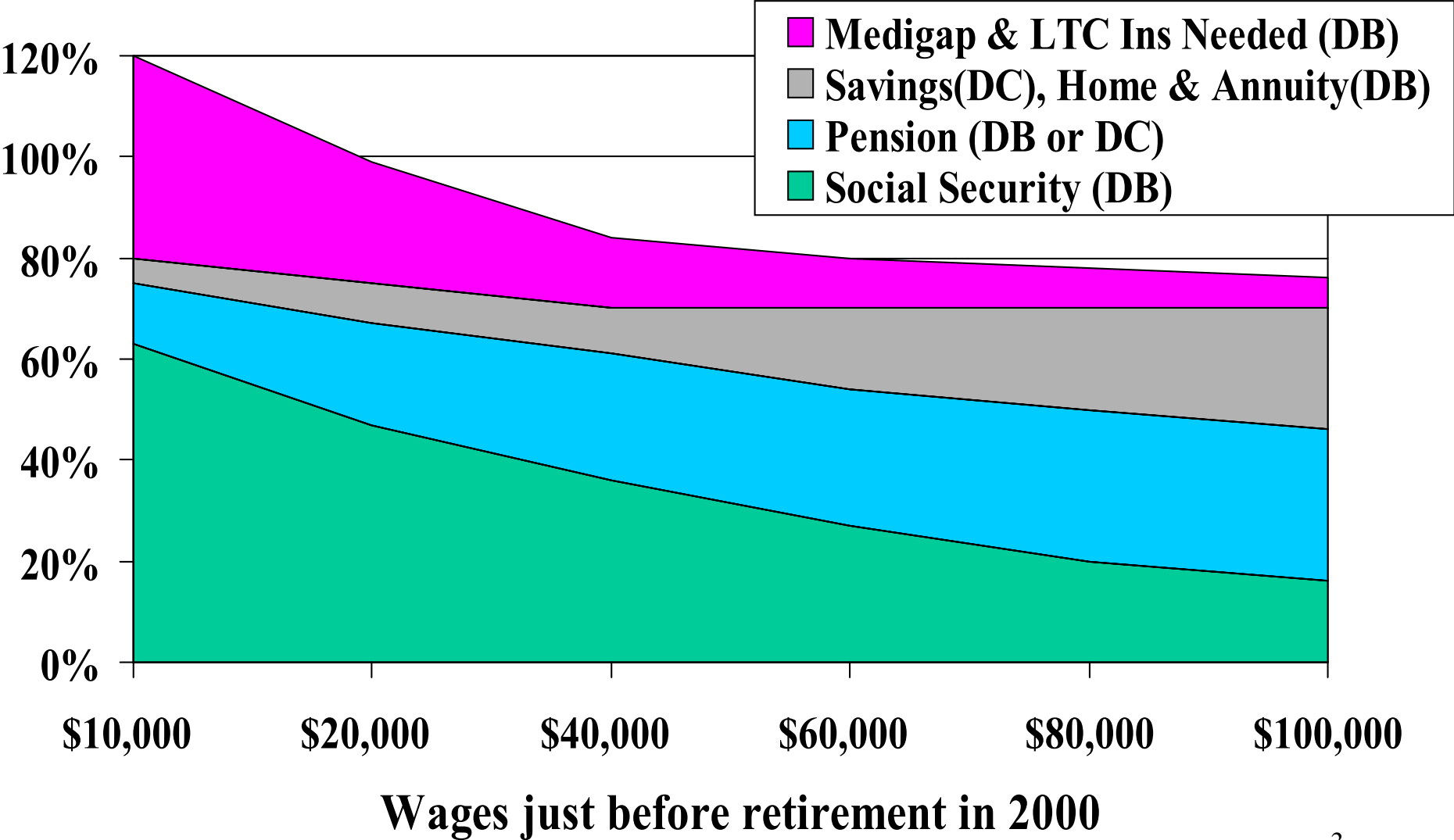
27<sup>th</sup> International Congress of Actuaries  
Cancun, Mexico  
8:30 – 10:00 am  
March 19, 2002

The American Academy of Actuaries is the public policy organization for actuaries of all specialties within the United States. In addition to setting qualification standards and standards of actuarial practice, a major purpose of the Academy is to act as the public information organization for the profession. The Academy is nonpartisan and assists the public policy process through the presentation of clear analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, regulators and congressional staff, comments on proposed federal regulations, and works closely with state officials on issues related to insurance.

# Topics

- US Background
  - Three Legged Stool (or 4 or 5?)
  - Social Security
  - SS Financial Concerns
  - Traditional Fixes
- Proposals to invest in markets
  - 2000 Election (Gore v. Bush)
  - Bush Commission
  - Problems of Individual Accounts and Remedies

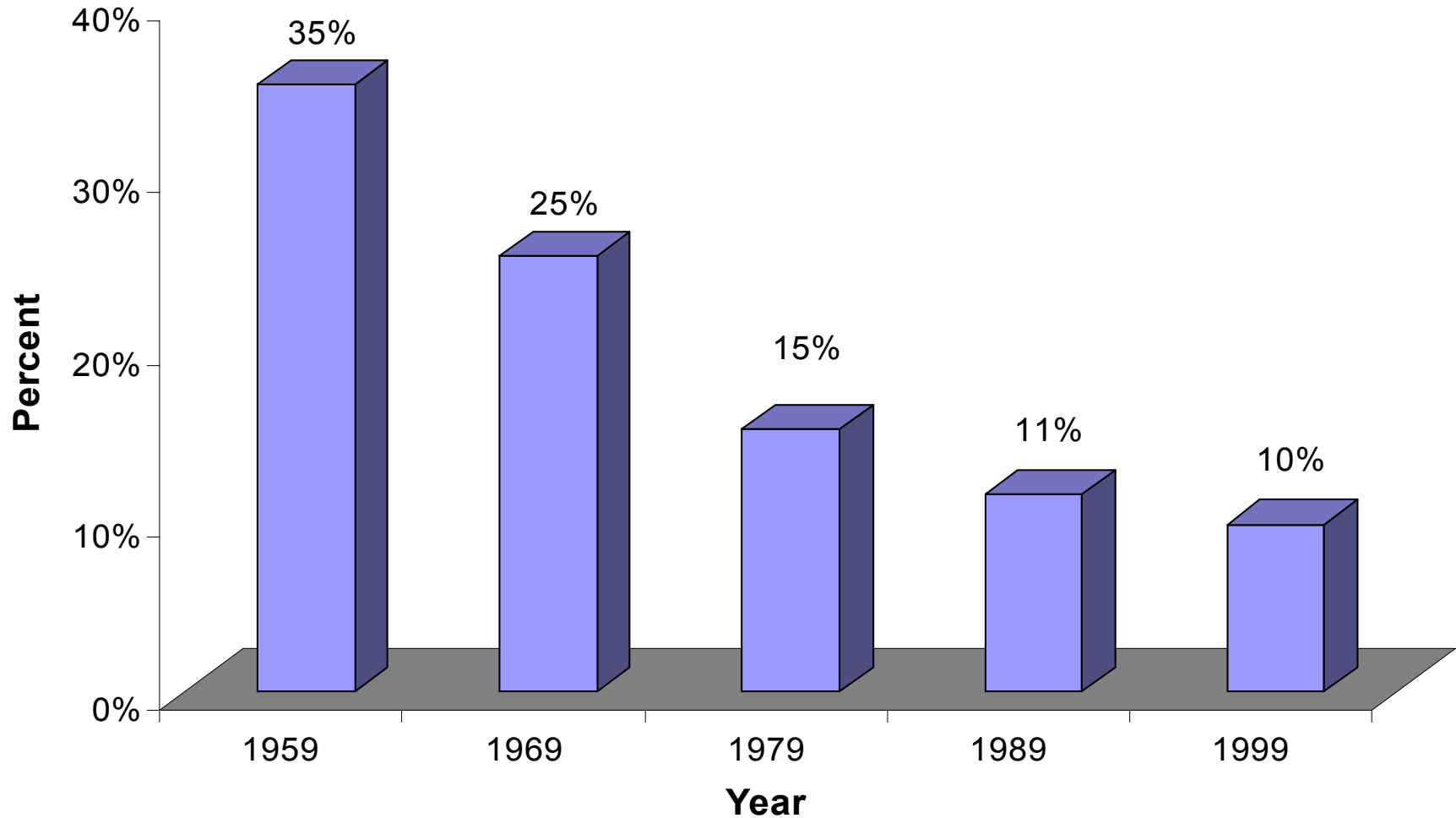
# Components of Retirement Income in the US



# Components

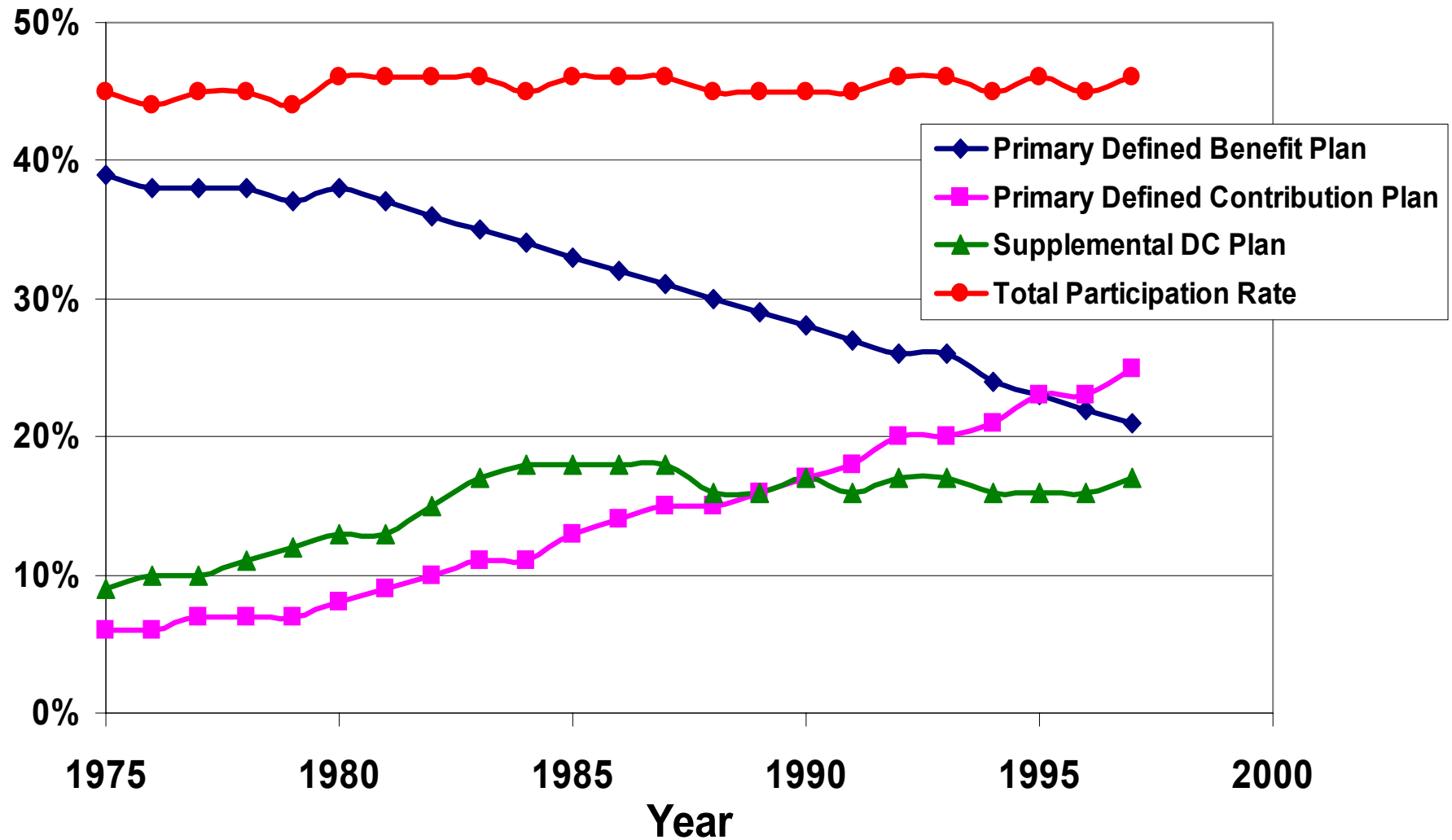
- Social Security (all DB) from federal government - 95% covered
  - Normal Retirement at 65 (moving to 67) for all
  - Earliest Retirement at 62 for all
  - Progressive Benefit (same formula for Disability)
- Pension (DB or DC) from employer - 50% covered
  - Taxes deferred until distributed generally to encourage pensions
  - Can offset tilt in Social Security benefits
- Savings (DC) and Home (DB) from individual
  - Deferred Annuity (rare)
- LTC and Medigap Insurance
  - Rare but improving
- Poverty Programs (Means Tested programs)
  - Many without LTC & Medigap fall on Medicaid, and
  - Supplemental Security Income (SSI)

## Poverty Rates For Those Age 65 and Over



Social Security (along with SSI, Pensions, etc.) decreased the percent of elderly below the poverty level. The poverty threshold (for people over 65) is currently about \$8,000 per person (~\$10,000 for a couple). The thresholds increase with CPI-U (which is subject to criticism).  
Source: CPS (Current Population Survey) and ferret.census.gov

# Participation Rates in Pension Plans

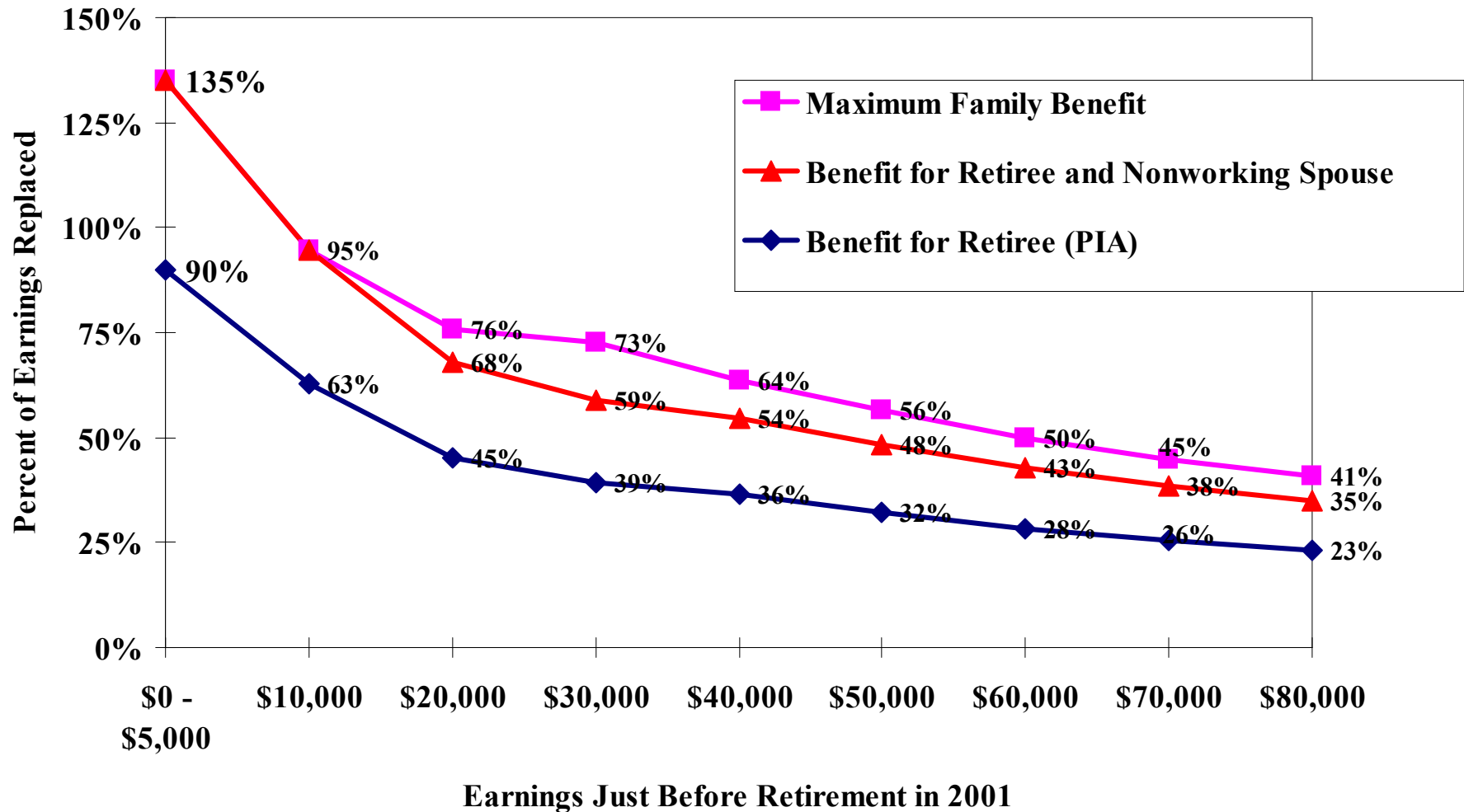


Source: Workers from BLS statistics includes employed (FT & PT) and unemployed wage and salary workers. Coverage from DOL/PWBA/OPR's Abstract of Form 5500 data (Spring 2001). For workers in DB & DC, the DB is primary unless name indicates it is supplemental or PS only.

# Social Security Benefits

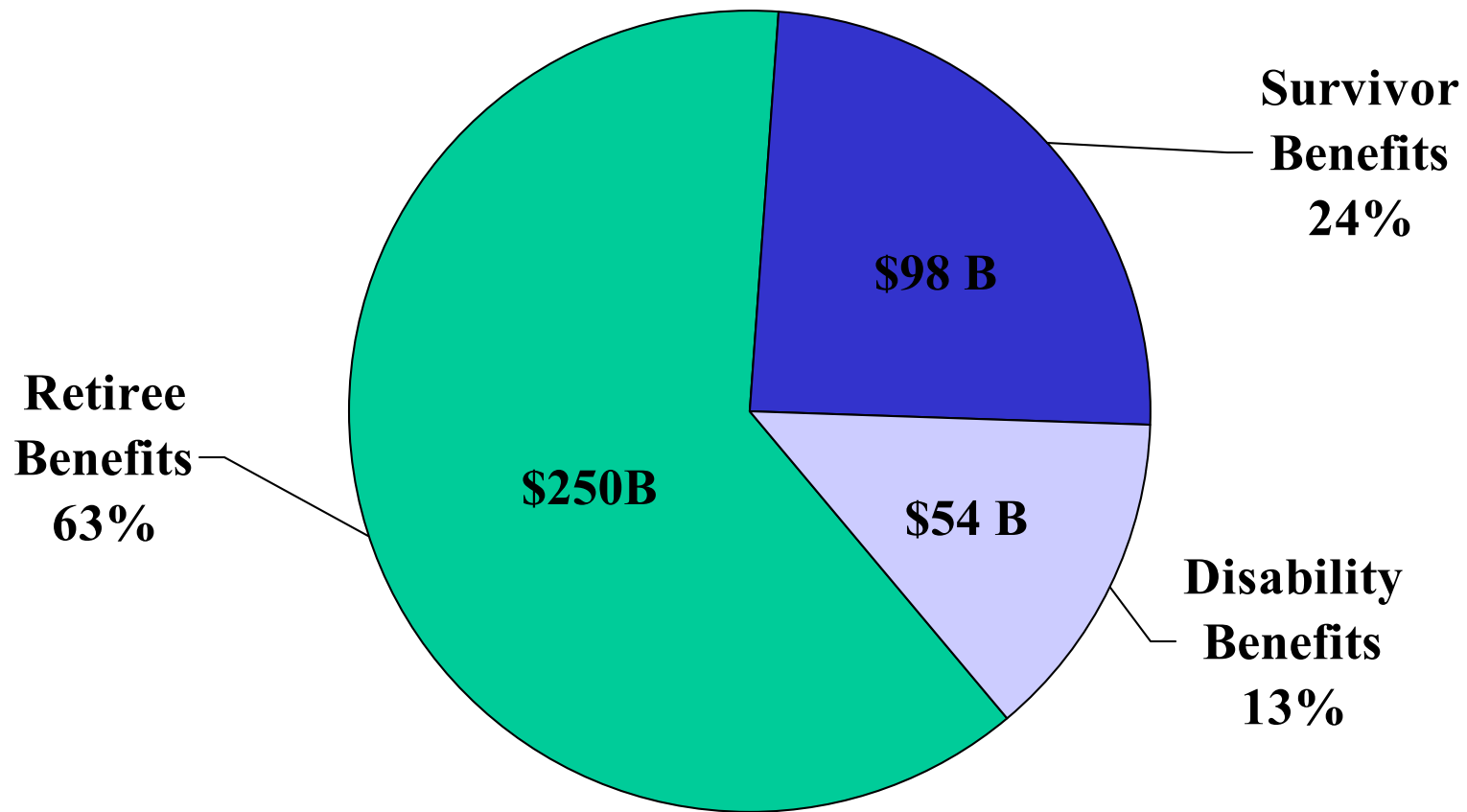
Year of Birth	Normal Retirement Age	The benefit payable at NRA and at disability retirement = the Primary Insurance Amount (PIA)
1937 & earlier	65	= 90% x AIME up to \$592 + 32% x next \$2,975 of AIME (for 2002) + 15% x AIME over \$3,567 Increase bend points by average wages each year Use formula in year eligible (age 62 for old age benefits).
1938	65 2/12	
1939	65 4/12	
1940	65 6/12	
1941	65 8/12	
1942	65 10/12	
1943 – 1954	66	
1955	66 2/12	
1956	66 4/12	
1957	66 6/12	
1958	66 8/12	
1959	66 10/12	Benefits are increased each year after eligibility by inflation using the Consumer Price Index (CPI-W)
1960 & later	67	Multiply PIA by age factors from below:
<b>Normal Retirement Age (NRA) = Age for full benefits. 62 is earliest age for benefits</b>		
<b><u>Reductions for retiring earlier than NRA are as follows:</u></b> <b>6 2/3% for each year before NRA (up to 3 years), plus</b> <b>5% for each year more than 2 years</b>		
<b>If you work after NRA, your benefit is increased by up to 8% per year.</b>		

## Social Security Replacement Ratios for Retiree & Family



Each dependent (spouse > 65, divorced spouse > 65, and minor child - any age if disabled before 22) gets 50% of PIA. Generally each survivor (child and mother caring for child) gets 75% (spouse gets 100% if over 65; less if disabled and over 50) up to Maximum Family Benefit

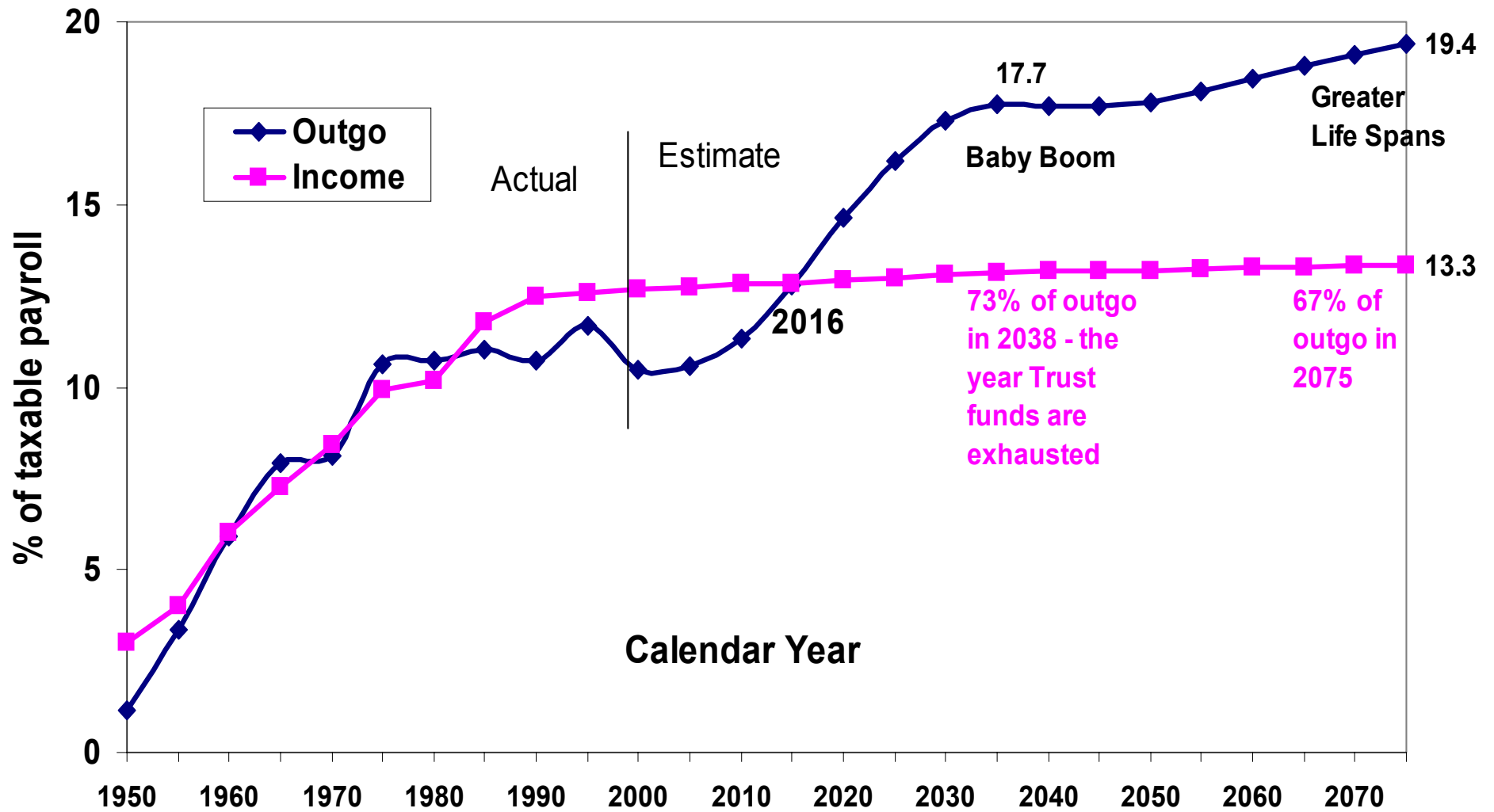
# Social Security Benefits Paid in 2000



**Total Benefits Paid = \$402 Billion**

# Social Security Income & Outgo

## Intermediate Assumptions



Source: 2001 SSA trustees report Table IV.B1.

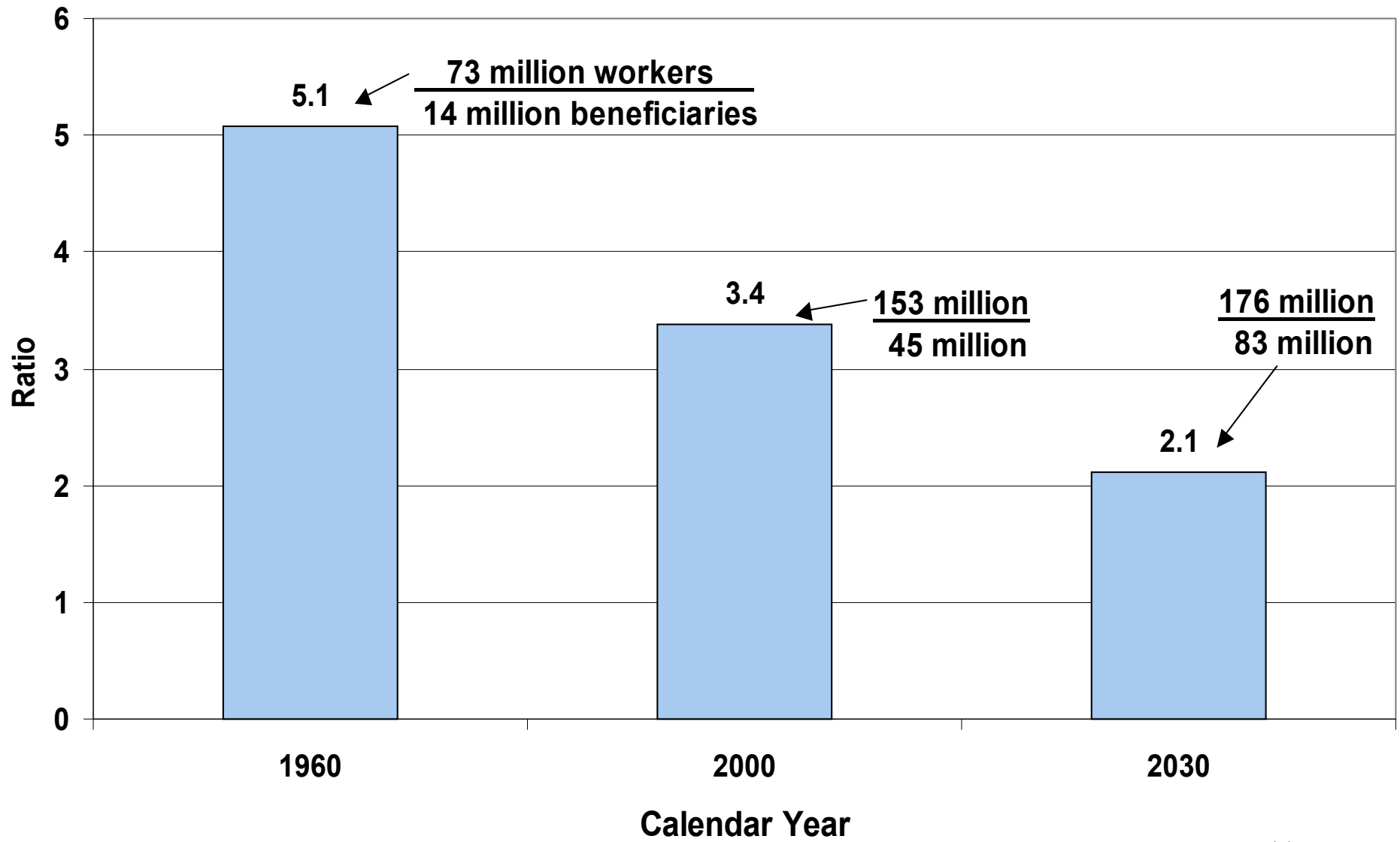
The ultimate outgo under low and high cost assumptions are 14% & 28%.

The 2016 date is 2012 and 2020 under the high and low cost assumptions. It's 2025, if interest is included.

75 yr actuarial balance = -1.86, -4.95, & 0.43 for the intermediate, high, & low cost assumptions, Table IV.B5.

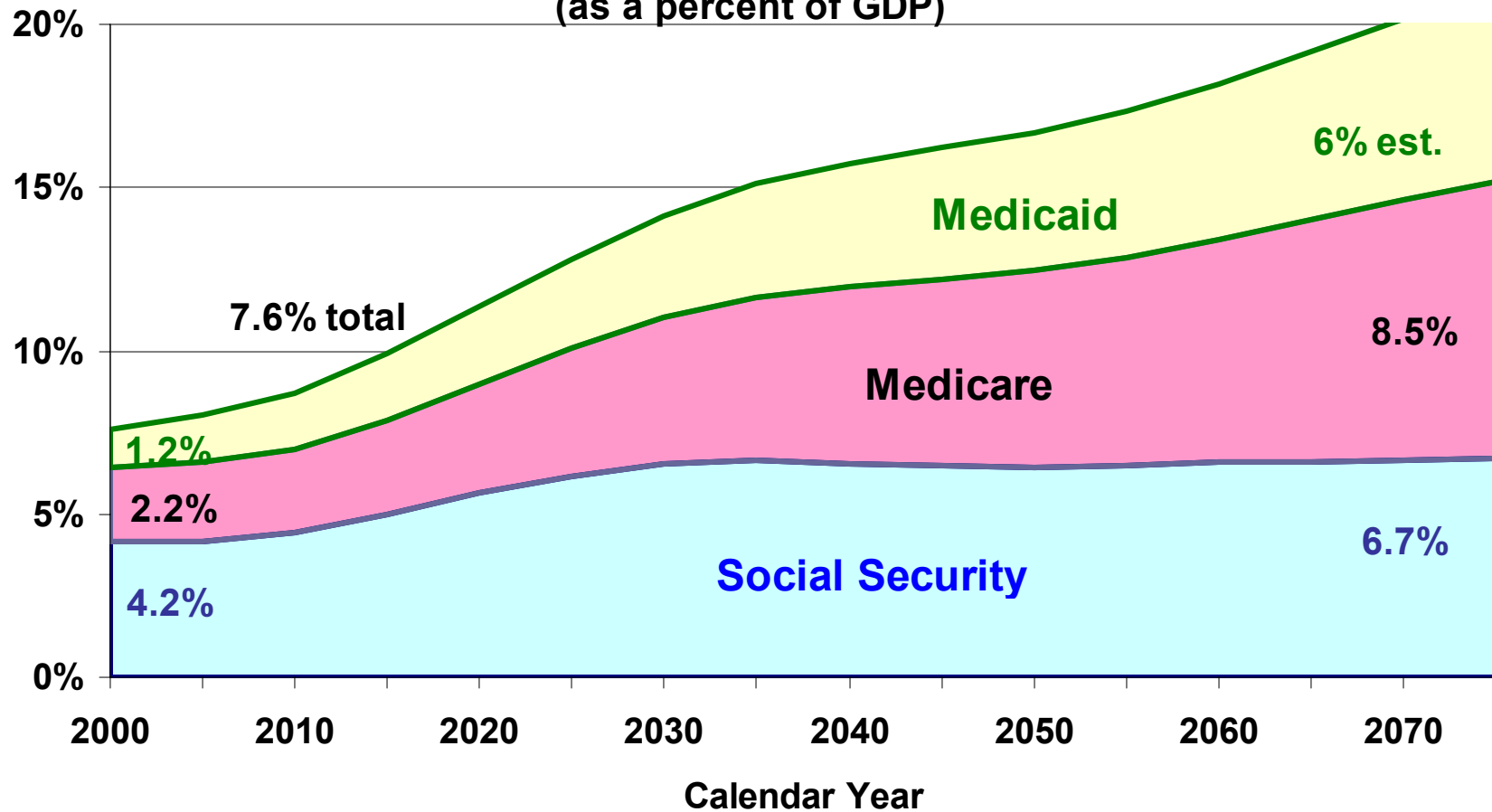
1999 Tech Panel's assumptions increased intermediate 75 yr deficit by 0.5%, a 3% change in total costs.

# Workers per Beneficiary



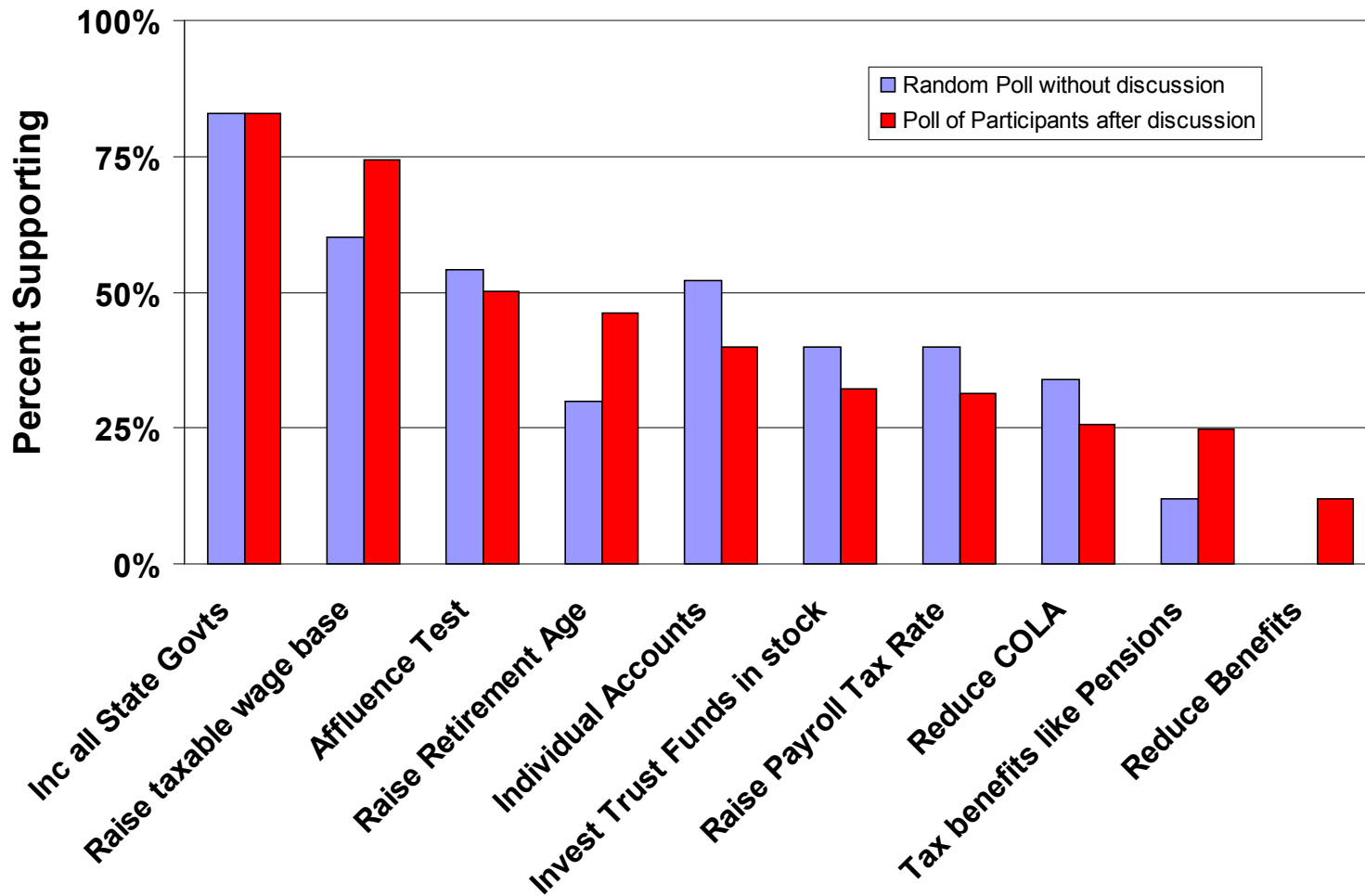
The number of workers supporting beneficiaries decreases dramatically due to baby boomers & longer lifespans.  
Source: 2001 SSA Trustees' Report, Table IV.B2

## Total Costs of Social Security, Medicare, & Medicaid (as a percent of GDP)



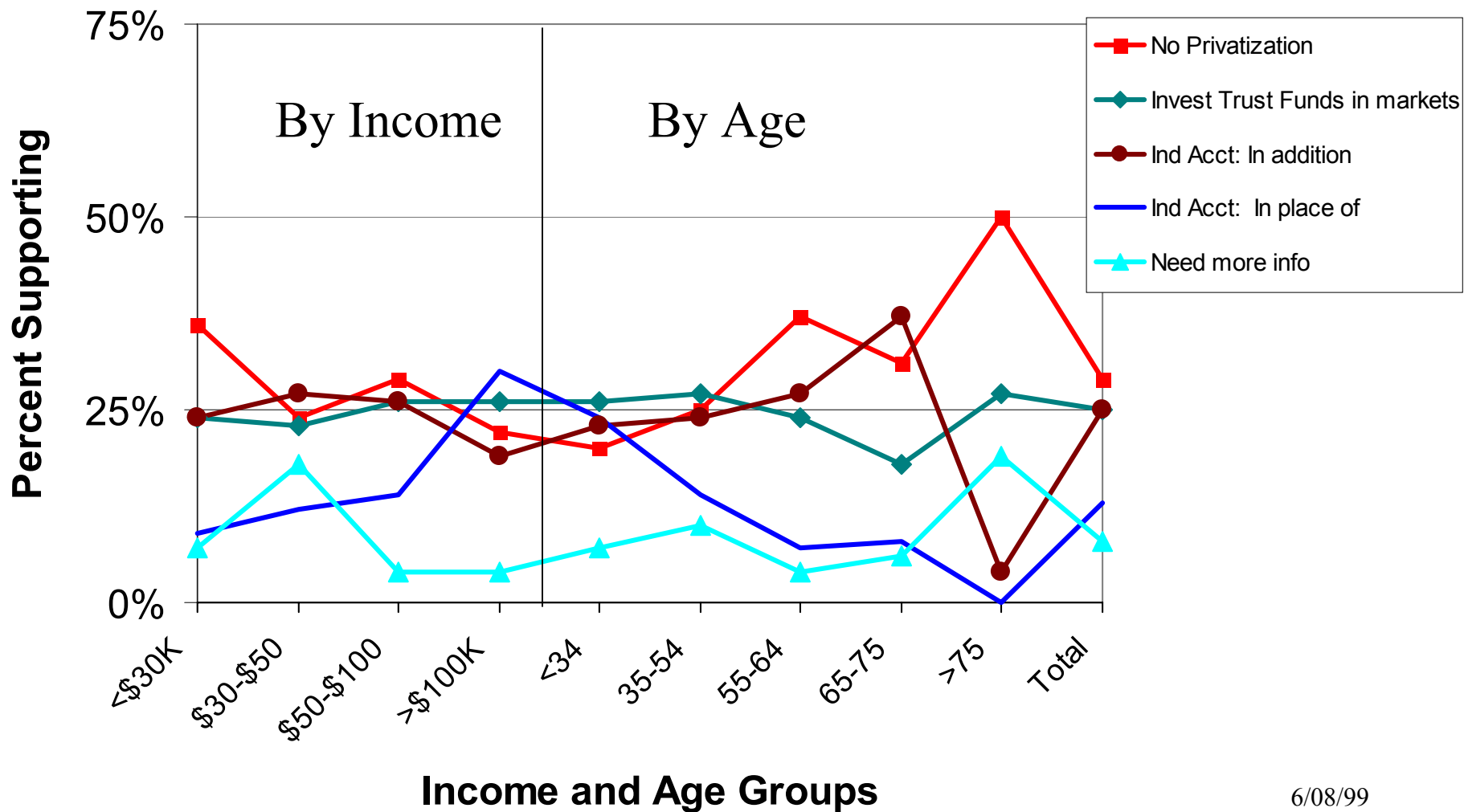
Sources: 2001 OASDI Table VI.E5, Medicare Table III.B1; and Medicaid from CBO 10/2000 report (estimates after 2040 based on Medicare growth). In 2000, they are half of non-interest government expenses. Total costs more than double (Medicare almost quadruples, surpassing SS in 2056). If estimates are accurate, federal taxes will not be able to remain around 20% of GDP. Taxes will have to rise or government programs will have to shrink.

## Ranking Options for Social Security Reform



Source: Americans Discuss Social Security forums across country and Nationwide Poll:  
funded by Pew Charitable Trusts - Spring 1998.

## Ranking Privatization Options at 6/98 ADSS Forum in Phoenix



6/08/99

Note: It's unclear what people want in the privatization area, except for older people who clearly don't want privatization.

# Gore

- SS surpluses in lockbox
  - Pays off debt in 12 years (lowers interest rates)
  - What do we do with surpluses then?
    - Invest surplus in state bonds, govt. agencies
    - Invest TFs in private sector?
  - Some said we'd never pay off debt
- Give interest savings to Social Security
  - In 2011, it's \$120 billion
  - After 2015, it's \$250 billion
  - Trust Funds solvent until 2054
- More fixes needed: left to Congress
- Add-on contribution ok (if subsidized), No carve outs<sup>15</sup>

# Gore

- Problems with General Revenue Financing
  - Reduces fiscal discipline (tax increases needed for improvements)
  - Separate tax is more transparent
  - Hurts presumption of entitlement
  - Will there be General Revenue?
  - Increases National Debt
- Others suggest General Revenue is ok
  - Govt., Employer, Employee should each pay 1/3
  - Govt. should pay for past and/or current subsidies
  - Bush and Archer are proposing it too

# Bush's Guiding Principles

- Voluntary Personal Retirement Accounts
  - Individually controlled, with standards for safety
  - For retirement or inheritance
- No benefit cuts for retirees or near-retirees (More cuts for young)
- SS funds dedicated to SS (Lockbox)
- SS payroll taxes must not be increased (Will have to cut benefits)
- No Trust Fund investments in private sector
- Preserve SS survivor and disability components

# Video

- American Academy of Actuaries Oct 2000 press conference
- “Neither candidate had a complete proposal to fix Social Security’s financial problems”
- Gore cited it in his speeches that day
- We were lead story: every national news program that night
- Had legs: Candidates asked about our statements for a week
- Social Security issues affected election results

# SS Commission – Model 1

- Voluntary Accounts (if 55 or under in 2002)
  - 2% of earnings goes to account starting 2004
  - SS offset = J&2/3S annuity from contributions accumulated at 3½% real interest
  - Thus, SS earns ½% more than Treasury bonds
  - Worker will do better **if** returns exceed 3½% real
- No other changes in Social Security
- Social Security still out of balance

# SS Commission – Model 1

- Voluntary Accounts
  - Invested in government bonds until following year
    - Due to lag in reporting names & individual amts to govt. (W2s & 1040's)
  - Then, in something like Federal TSP to keep fees low
    - Five funds from small and large caps to government bonds
    - Centralized system until accounts exceed, say, \$5,000
  - Then, worker chooses where invested & govt. sends bulk check
  - No leakage allowed pre-retirement
    - Except, heir of single person can get lump sums
  - Annuities (or gradual withdrawals) required up to poverty level
    - Fixed Annuities (using Treasury rates)
    - Variable Annuities (using private sector returns)

# SS Commission – Model 1

- If contribution from current payroll tax
  - Makes key dates sooner: fund needs \$ starting in 2030's
  - Increases actuarial deficit by **.32%** of covered payroll
- If from General Revenues
  - Decreases actuarial deficit by **.90%**
- But actuarial balance/deficit doesn't reflect:
  - Additional general revenues needed (**\$0.7 T** in next 10 yrs)
  - IA assets or offset (government asset) in 2076
- US Debt in 2075 is **\$0.6 Trillion** higher **2001 pv \$**
  - But workers have **\$1.1 Trillion** more in assets
  - **\$0.9 Trillion** belongs to US in offsets

Numbers assume 67% participate

# SS Commission

- Decrease Benefits
  - Raise Retirement Ages
  - Reduce COLA
  - Cut Benefits (increased tilt, with min)
  - Increase initial benefits by CPI only (w min)
  - Increase # yrs in wage average
  - Greater adjustment for early & late retirement
- Increase Taxes
  - Increase Tax Rate
  - Increase wages subject to Tax
  - Tax SS benefits more
  - Redirect taxes back to OASDI
  - Include rest of State & Local govt.
  - General Revenue
- Increase Investment Returns
  - Trust Funds
  - Individual Accounts

Model 2	Model 3
	<b>By formula</b>
	<b>Yes</b>
<b>Yes</b>	
	<b>Yes</b>
<b>No</b>	<b>IA 1% add on</b>
	<b>Sort of</b>
	<b>Sort of</b>
<b>Yes</b>	<b>Yes</b>
<b>No</b>	<b>No</b>
<b>Yes</b>	<b>Yes</b> 22

- From Additional Contributions, SS, & General Revenue (borrowing)

# SS Commission – Model 2

- Initial benefit increases by inflation only (starting in 2009) Kasich
  - Not wage index. Cuts benefits by 1%/year
    - Every 70 yrs: SS benefits cut in half
    - 2078: High income person: 20% replacement rate 610%
  - Similar to increasing NRA by 2 months per year
    - Except it reduces survivor & disability benefits too
  - Makes system solvent
    - But sensitive to real wage growth
    - CPI > Wage Growth in bad times (e.g. 1970s & 80's) hurts budget
- 40% larger benefit for low earners (phase in 2009 - 2018)
  - Phased out from Minimum Wage to twice Minimum Wage
  - Phased in from 20 years to 30 years of work
    - Years needed proportionately reduced if disabled or die before age 62
  - Benefit is level as enhancement phases out near 2 x min wage
  - Will high replacement rates for disableds in 2018 (at wages under \$15,000) discourage recovery?

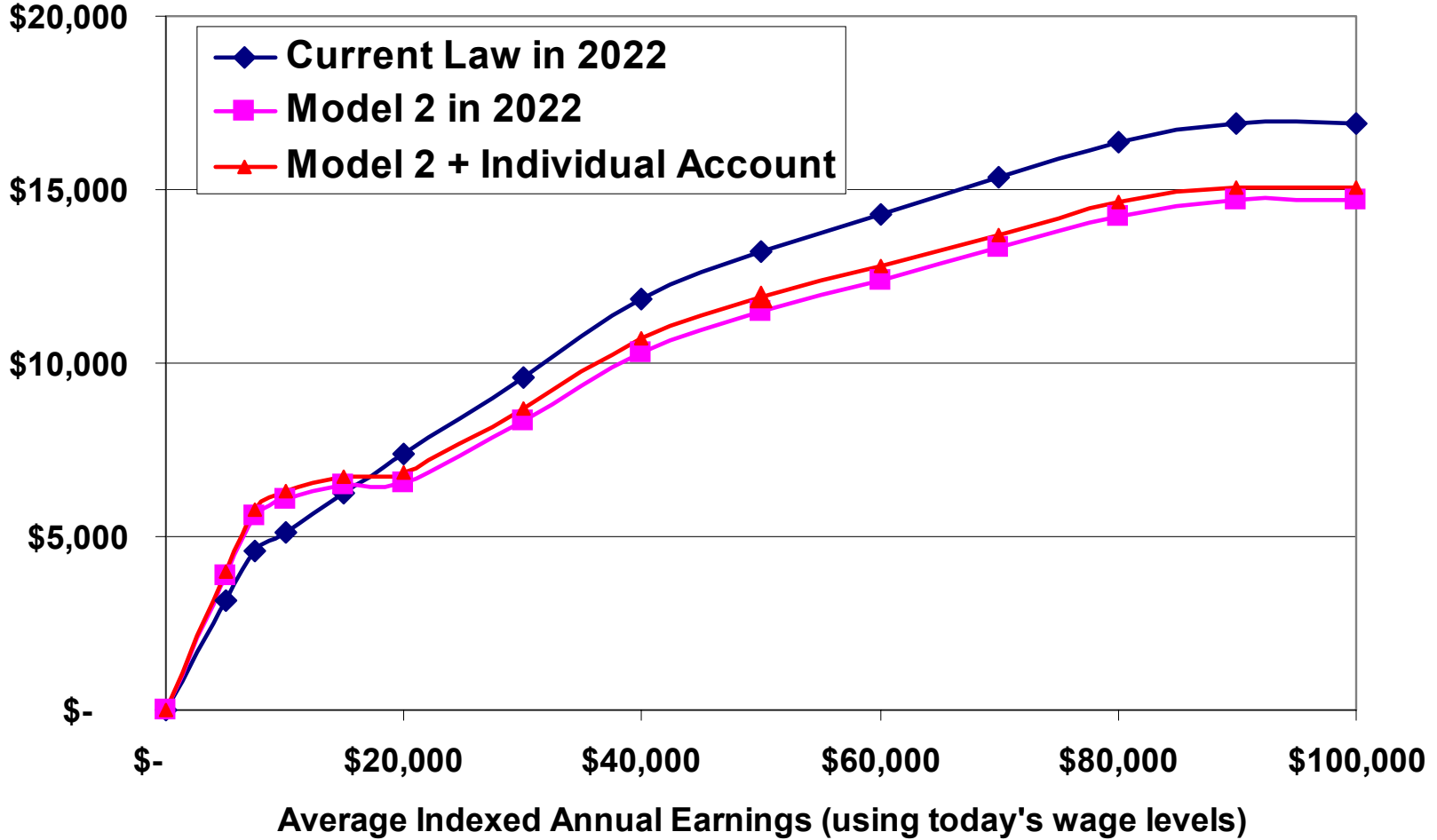
# SS Commission – Model 2

- Increase survivor benefit to 75% of joint benefit
  - Not greater than average PIA starting 2009
- Progressive voluntary accounts starting in 2004
  - 4% of pay up to \$1,000 (redirect from payroll tax)
  - If born before 1946
  - Invested as in Model 1
  - PSA offset uses contributions with 2% real return
  - Slight alternative = Treasury rate - 1%
    - Worker guaranteed a better benefit if invested in Treasuries

# SS Commission – Model 2

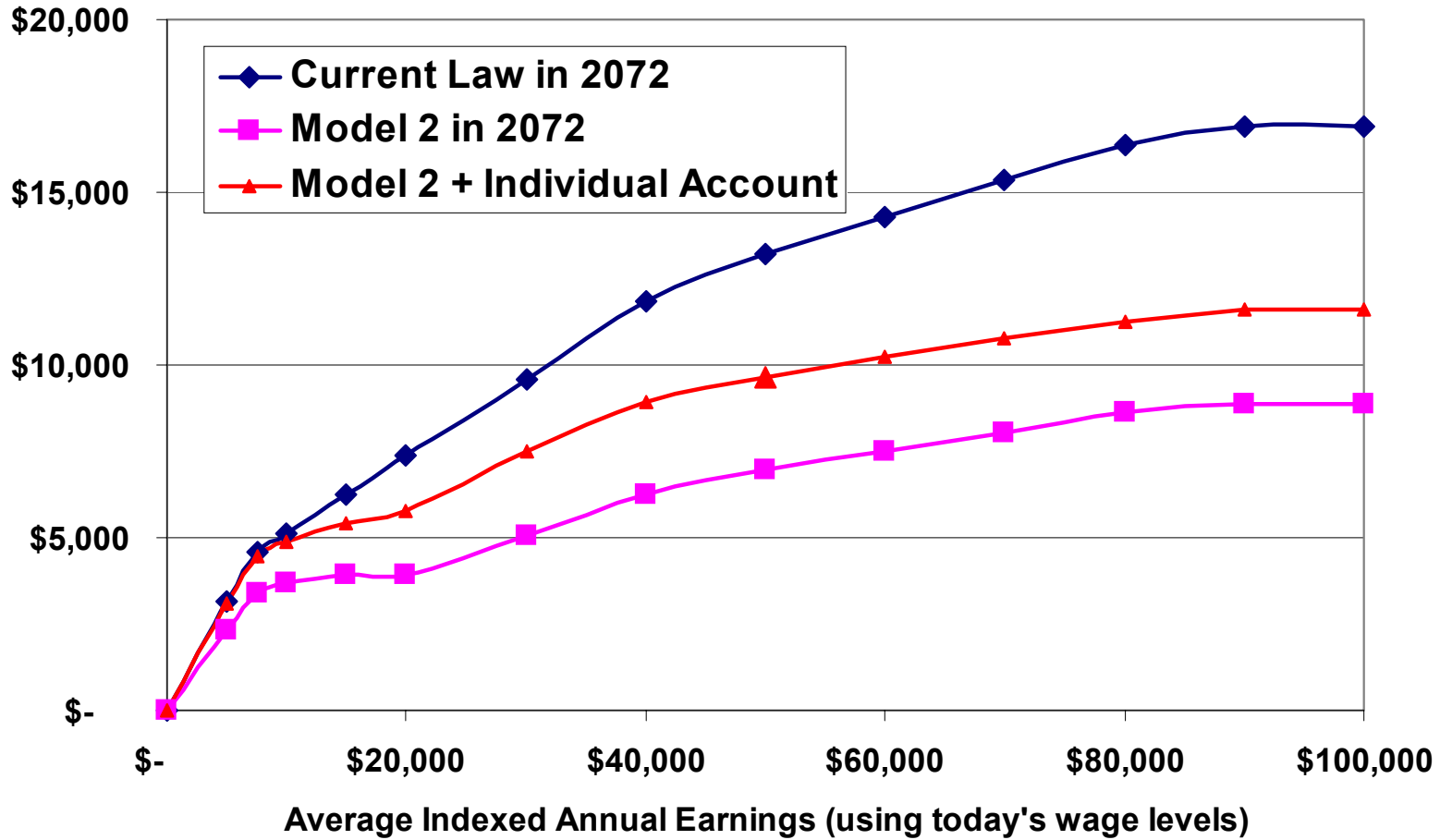
- General Revenue as needed to keep  $FR > 100\%$
- Reductions to unified budget until 2048 (if 100% participation)
  - Even if no surplus in those years
- Total US Debt lower in 2061 & thereafter
  - By \$1.4T in 2075 + \$1.1T asset

# Social Security Benefits at 62



Note Model 2 benefits between \$15K and \$20K around 2020, if worked over 30 years. 26  
Are disability benefits around 2020 for low income workers so high as to discourage work?

## Social Security Benefits at 62



By 2077, SS benefits are cut in half (except at low wages). Small accounts (\$1,000/ year max) won't fill the hole, but the total benefit will often exceed what Social Security could pay with current financing. <sup>27</sup>

# SS Commission – Model 3

- Reduces SS benefits to keep within SS income similar to Kolbe-Stenholm
  - Longevity-Indexed Benefits (1/2 % per year reduction in PIA)
  - Increases tilt in benefit formula
  - Larger actuarial factors to encourage work after age 62
  - Increases survivor benefits to 75% of joint benefit  $\dot{Y}$  avg. PIA  
Starting 2009
  - Uses general revenue as if 86% of earnings taxed thru increase in WB and taxes on benefits all went to OASDI
- Progressive Voluntary Accounts (Add-On with match)
  - Subsidized voluntary contribution = 1% of pay
  - Match = 2.5% of earnings up to \$1,000 (if full contribution made)
    - PIA Offset: Match with 2.5% real return
  - General revenue as needed to keep Fund Ratio > 100% (2030-60)
- Affects people born 1947 and later (55 in 2002)

# SS Commission – Model 3

- Progressive Voluntary Accounts starting in 2004
  - If age 55 or under in 2002
  - 1% of earnings voluntary contribution
    - Must pay it in full in order to get any match
    - Progressive subsidy from general revenue thru refundable tax credit
  - Match = 2.5% of earnings up to \$1,000 to Voluntary Account
    - \$1,000 is wage indexed after 2002
    - SS benefit offset by match accumulated at 2.5% real and converted to J&2/3S inflation-indexed annuity
      - Thus match isn't free money - Less incentive to pay in.
      - Some workers get subsidy on contribution, but 1% contribution could have been invested in 401(k) tax deferred with IRC section 25B tax credit match (Gore)
      - Slight alternative on offset uses Treasury rate - .5%: Worker wins if invested in Treasuries, but not much since 50bp gain is offset by 30 bp expenses = 20bp
  - Invested as in Model 1

## SS Commission – Model 3

- Reduce benefit formula to reflect longer life spans
  - Multiply PIA by .995 successively each year after 2008
  - Similar to indexing NRD 1 month/year
    - Except that it cuts disabled retirees too
    - Keeps  $\dot{e}_{\text{NRA}}$  constant in the future at about 20 years of benefits
  - About half the expected effect of CPI-indexing
  - Reduces PIA by 6% in 2020 and 27% in 2070
  - Similar to increasing NRD to about age 71 by 2070

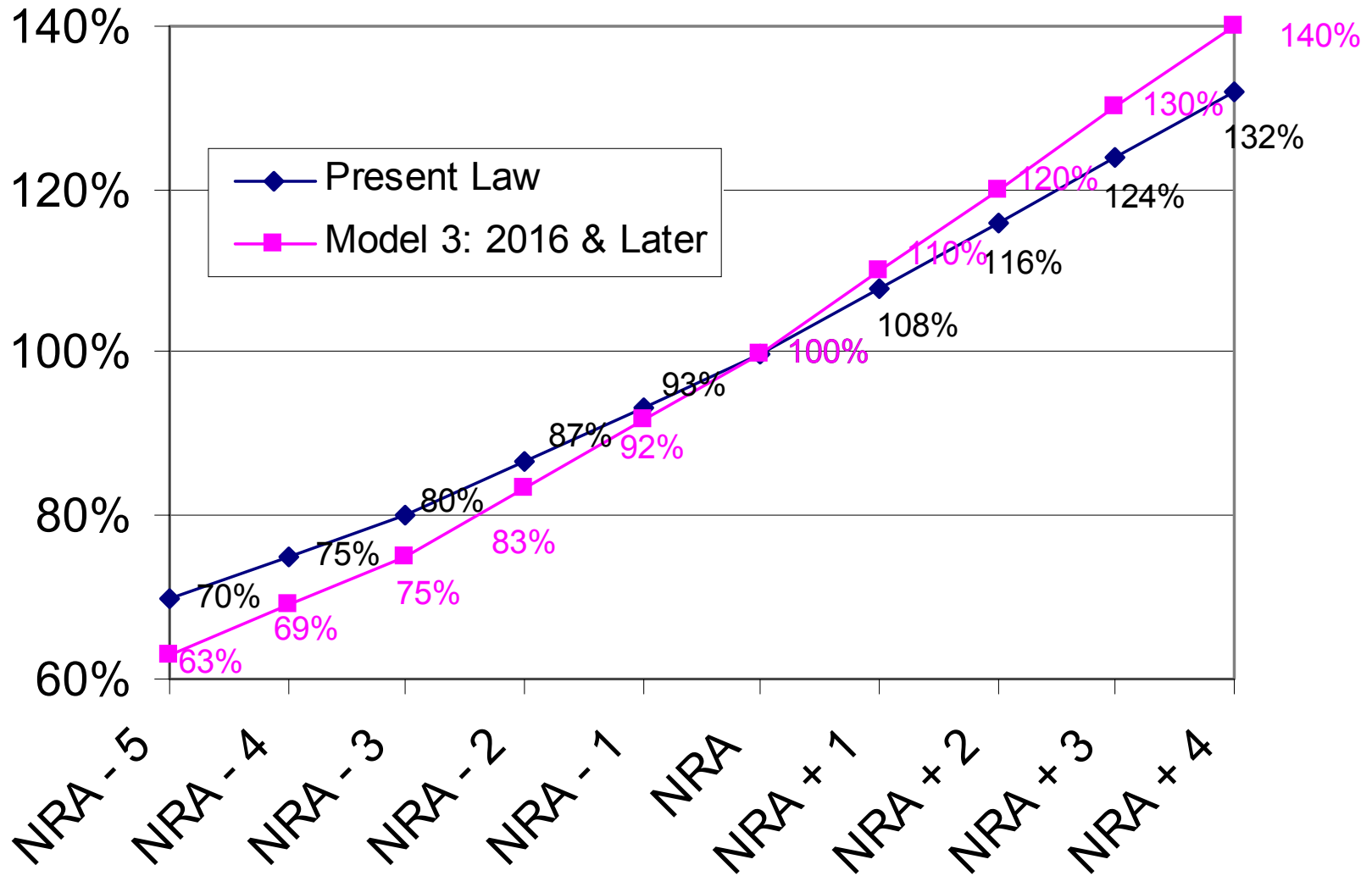
# SS Commission – Model 3

- Gradually reduce benefits for high earners
  - Reduce 15% factor to 10% from 2009 to 2028 by .25% per year
- Gradually enhance benefit level for low earners
  - Increase PIA by 12% (phased in from 2009 to 2018)
    - Phased out from Minimum Wage to Average Wage
    - Phased in from 20 years to 30 years of work
    - Increased to 18% (phased in from 30 to 40 years of work)
      - Years proportionately reduced if die or disabled before 62
  - Benefit reaches poverty level by 2018 for minimum wage earner
    - Increases by wages thereafter (poverty level only increases by inflation)
- All changes apply to disableds and survivors too
  - Keeps integration of benefits
  - Otherwise, it would encourage more people to apply for disability

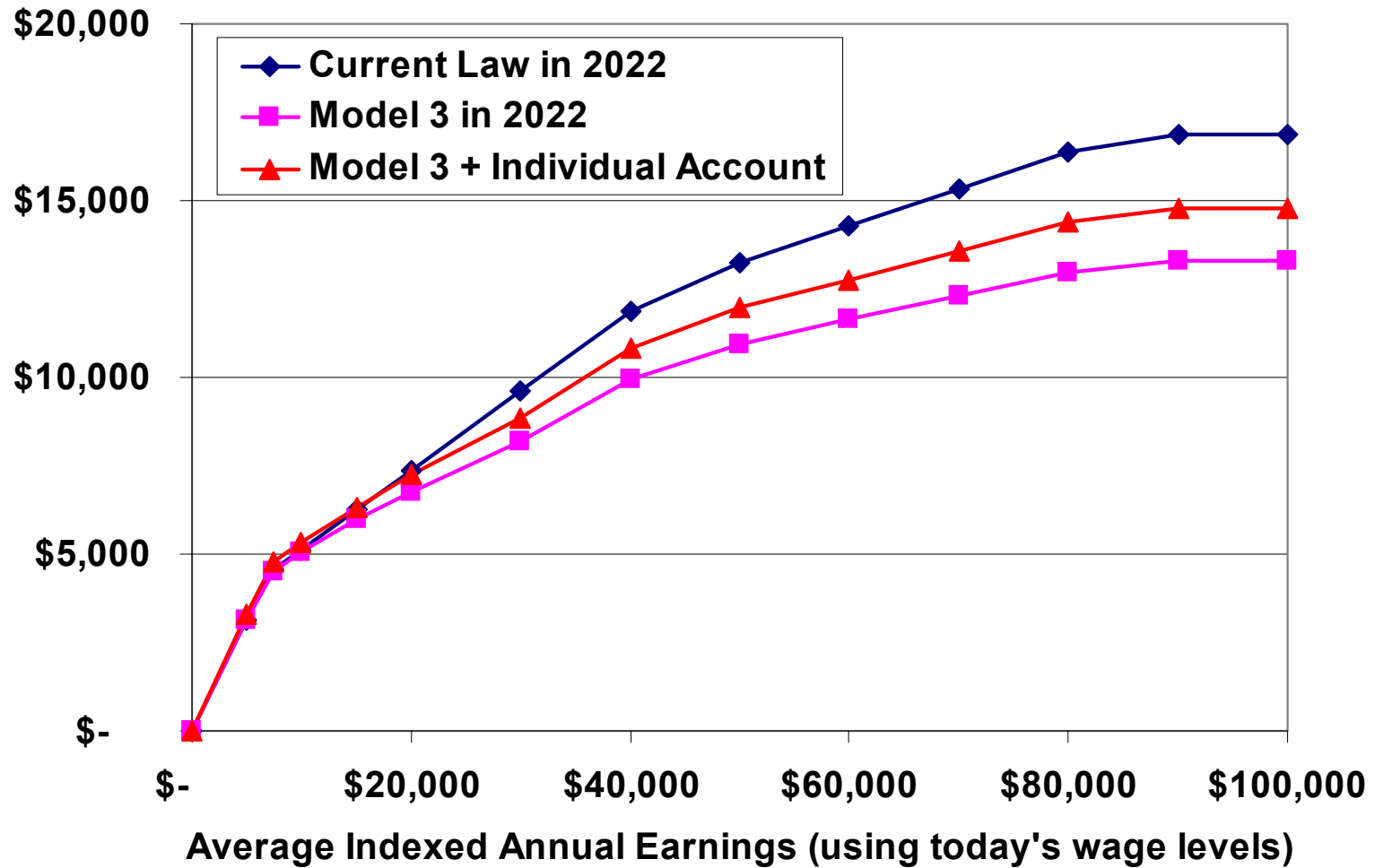
# SS Commission – Model 3

- Larger actuarial adjustments for early & late ret.
  - To encourage work
    - Because PIA doesn't increase much after 62 currently
  - 25% reduction for first 3 years early (currently 20%)
    - 30% reduction for dependent spouses (currently 25%)
  - 6% reduction for prior 2 years early (currently 5%)
  - Thus, 5 years early gets a 37% reduction ( $=.63 \times \text{PIA}$ )
  - Increase ultimate Delayed Retirement Credit
    - From 8% to 10%: increases by .5% every 2 years until 2016
  - No increase in 35 years of wages used

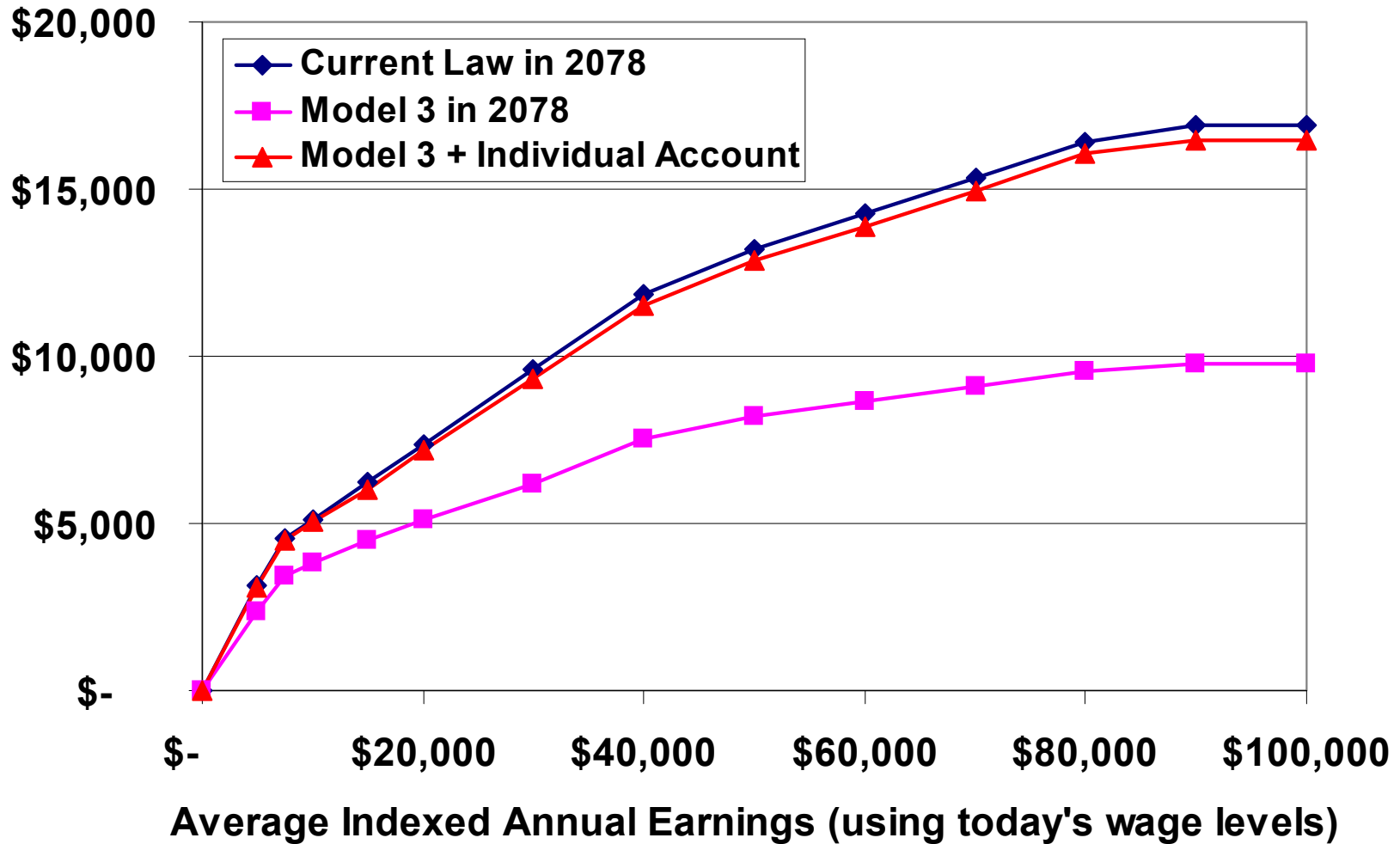
## Benefit Adjustment Factors for Age At Retirement



## Social Security Benefits at Age 62



## Social Security Benefits at Age 62



Individual Account fills the gap more than in Model 2, due to 1% add on contribution, but more of benefit is subject to market risk.

# SS Commission – Model 3

- Transfers from General Revenue as if
  - Wage Base raised faster to keep 86% of wages taxed
  - Redirect all taxes on SS benefits from HI to OASDI
- More general revenues as needed to keep FR > 100%
  - About 2028 to 2057
- Increases survivor benefits to 75% of joint benefit
  - Not larger than average PIA x age factor
  - Marrying someone at deathbed, increases benefit
    - If both earned same amount: 100% increases to 150% of PIA

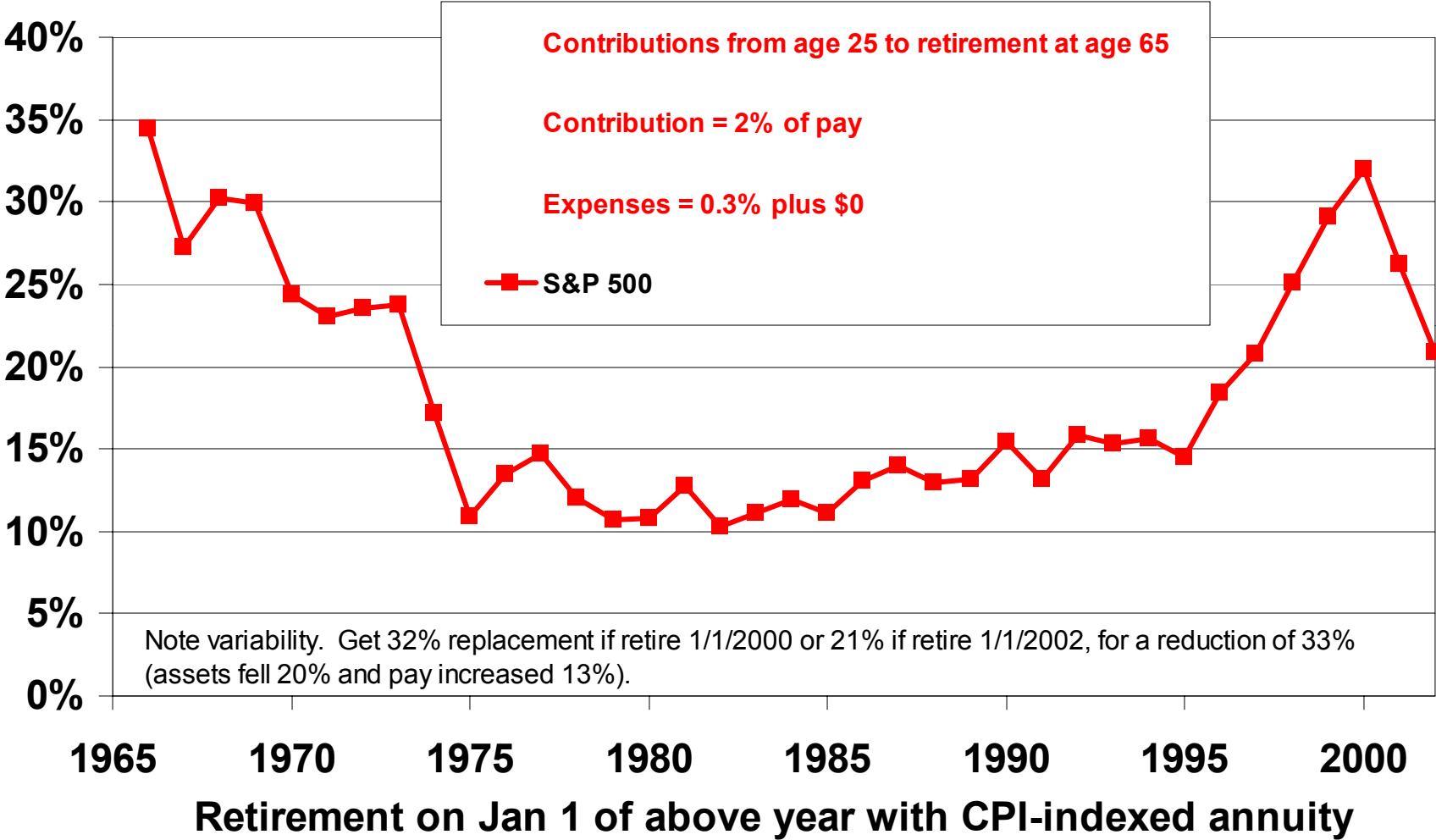
# SS Commission – Model 3

- SS Cash Deficits begin sooner – around 2011
- Takes from unified budget until 2041 (if 67% participation)
  - Even if no surplus
- Total US Debt lower in 2054 & thereafter
- US debt lower by \$1.4 T in 2075 2001 pv \$
  - Workers have \$1.6 T more assets in 2075
  - \$0.9 T of which reduces future SS benefits

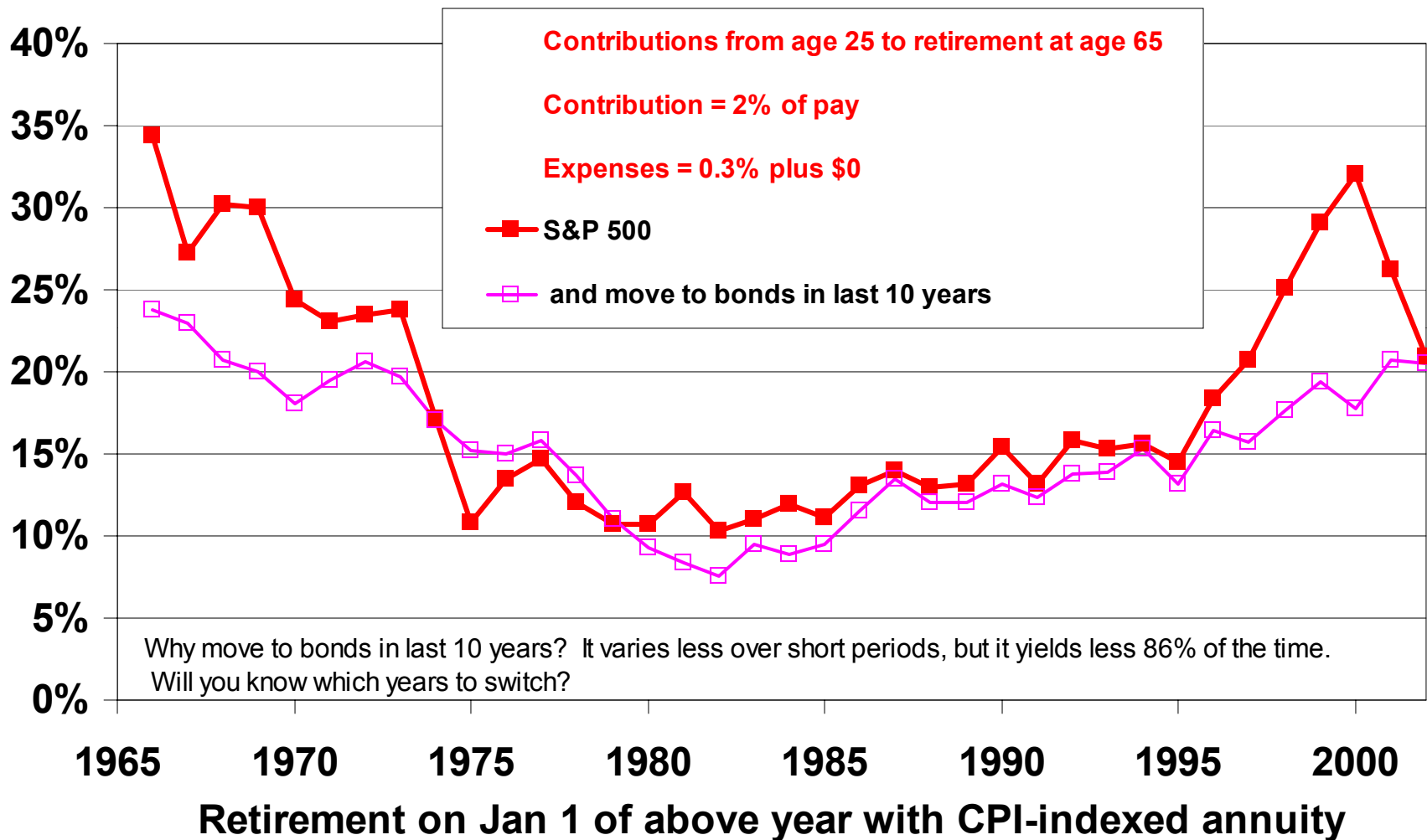
# Choice – Pros & Cons

- Choice politically easier, but has concerns
  - Lower income people less likely to participate
  - People will worry about making right choice
  - Will government be a fiduciary in that choice?
  - Will people sue if they do worse/didn't understand?
  - Will Congress be pushed into guaranteeing you won't do worse if you participate in Individual Account?
  - If benefit formula changes, people will want new choice (retroactive?) and/or both formulas have to change.

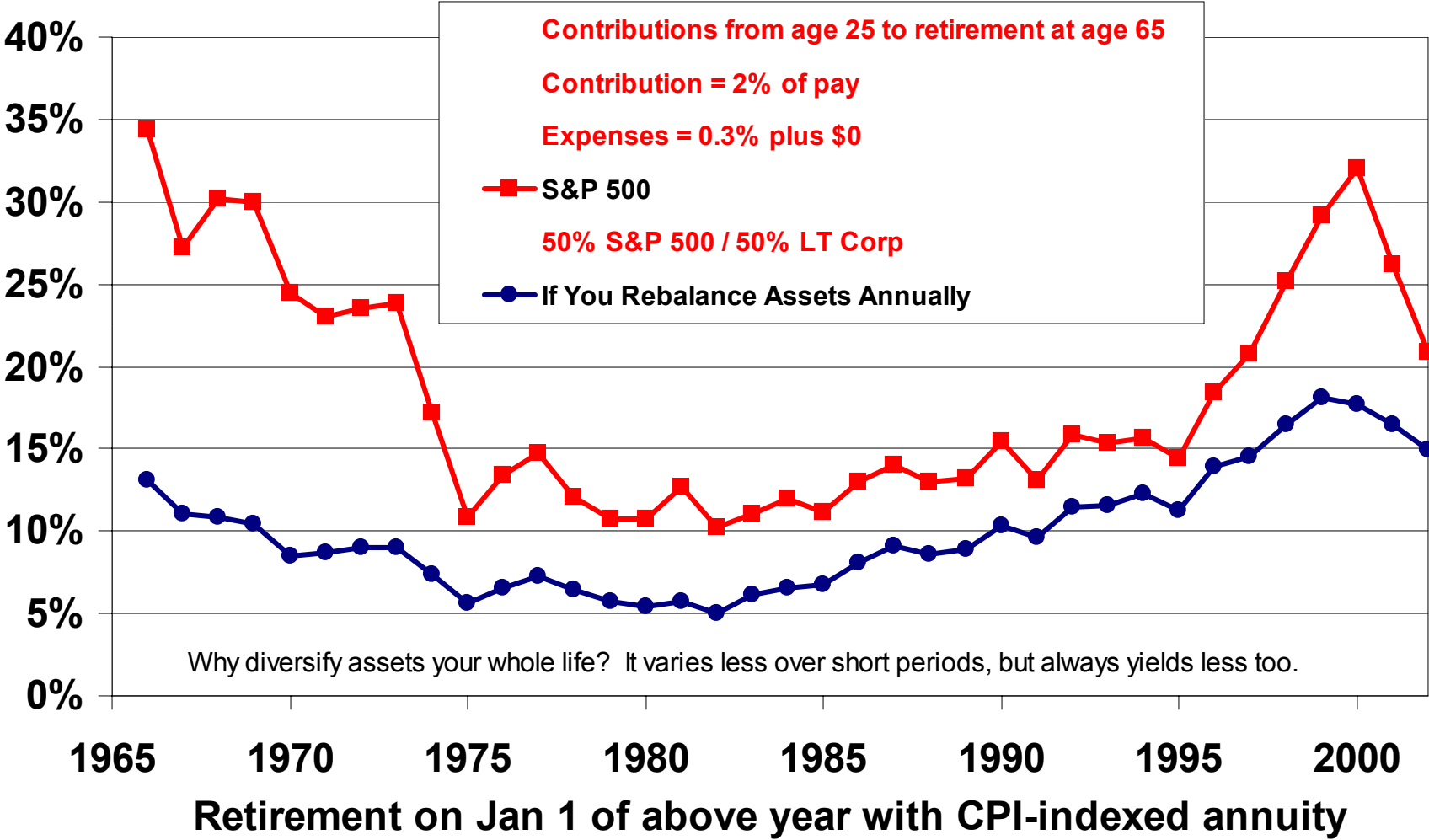
# Replacement Rates from Qualified Savings (using Historical Yields from Ibbotsen)



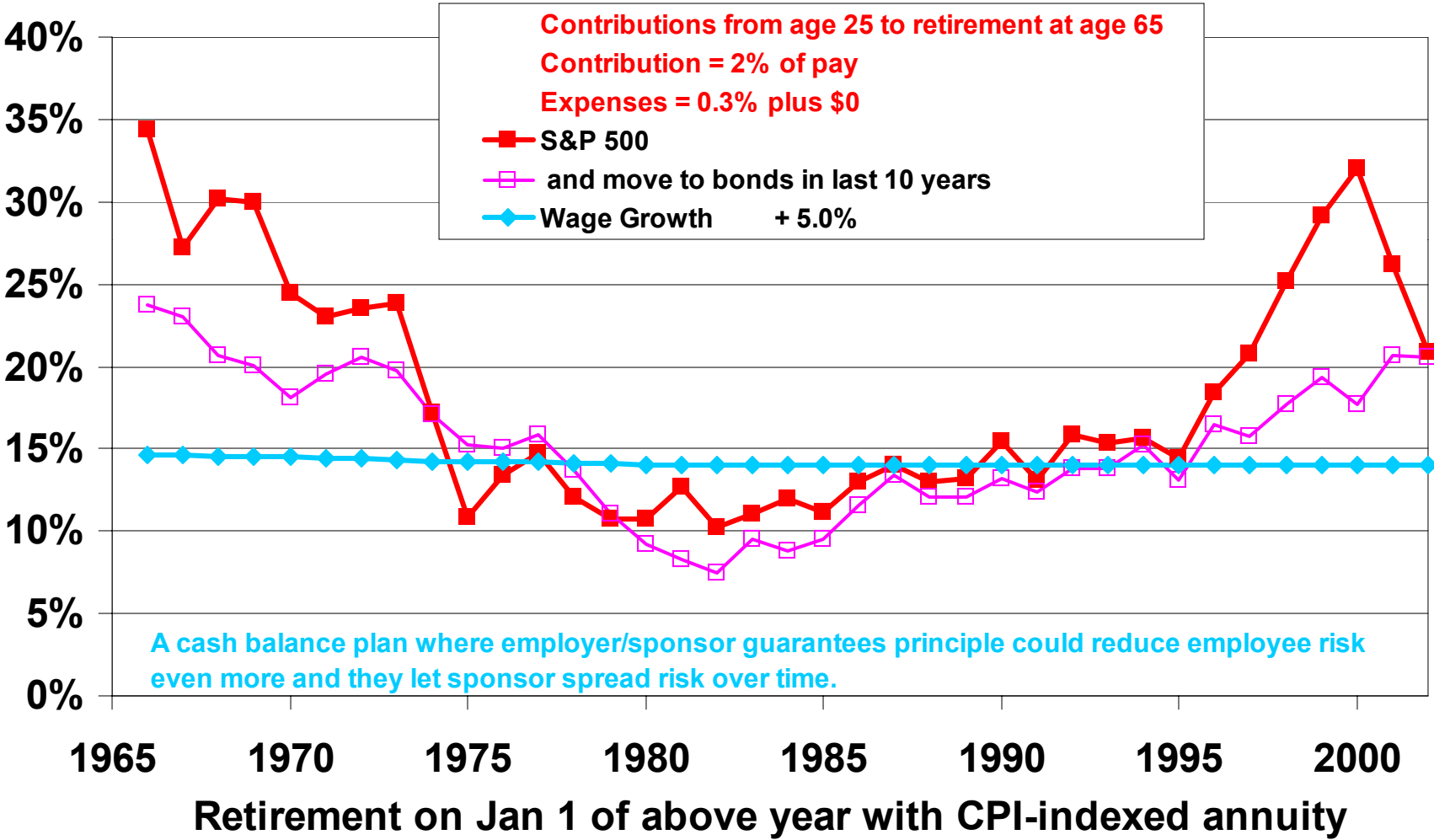
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# Individual Accounts (Problems & Remedies)

- Moving from DB to DC (or Notional DC)
  - Transition costs
    - Greater savings needed for transition
    - Treasury loses money (increasing deficits/taxes)
      - Only in short term if benefit is offset
    - Do IA assets offset public debt?
  - More Risk
    - Unequal benefits among similar people
      - Notional DC could give same smooth return to everyone
    - High Costs
      - Investment costs (20%?) and Annuity costs (15%?)
      - Lower if mandatory, government administration, or due to technology
  - Funded DB could have a higher return (?)
  - But people like having their own account

## Individual Accounts (Problems & Remedies)

- Leakage
  - Require annuities up to minimum
- How handle early death and disability risks?
  - Keep SI and DI programs?
  - Require individual insurance?
- Sales scandals
  - Government clearinghouse
  - Prohibit gifts and visits
- Flat Pillar I benefit unrelated to tax paid
  - Use General Revenue

## Individual Accounts (Problems & Remedies)

- Problems of small employers, PT, & temps
  - Government clearinghouse
- Small accounts, high fees
  - Match or subsidize IA's of low income people
  - But that increases % of their benefit subject to market risk
- Low Coverage rates continue
  - 1/4 to 1/2 of economy is informal and inefficient
- IAs need regulated markets, separate custodians, independent audits, banks separate from government, etc.

# 10 Myths Paper (by Orszag & Stiglitz)

- IA raise national savings
- Rates of Return (RoR) are higher with IA
- Declining RoR in Pillar I reflect fundamental problems
- Equity Investments in Pillar I have no macro effects
- Labor market incentives are better under IA
- DB plans necessarily incent early retirement
- Competition ensures low costs under IA
- Corrupt & inefficient governments provide rationale for IA
- Bailout politics are worse under DB plans
- Pillar I investments always squandered & mismanaged

\* Peter Orszag (Clinton White House economist)

\* Joseph Stiglitz (World Bank Chief Economist)

# Economists' Goals for IA\*

- **Developing Financial Markets**
  - Will individuals be at a disadvantage in immature, corrupt markets?
  - Employer Plans better at developing financial markets than individuals?
  - Is it fair to develop markets with individuals' retirement security?
- **Increase Job Creation**
  - Mandates on small employers hurts job creation
  - Would voluntary be better (for job growth and economy)?
- **Elimination of Moral Hazards**
  - Their Means-tested & Flat Benefits discourage saving & encourage abuse
  - Would progressive Pillar I have less moral hazard?
    - Just tie in benefits better with contributions

\* Economists & policy makers at World Bank/IMF required IA system in order to get assistance

# Economists' Goals for IA\*

- **Contributes to national savings**
  - DB system can increase national savings too, maybe better
    - Paying down US public debt with SS's surplus helped economy
    - DB plan could have less substitution
- **Eliminate “Bad” Redistribution to the rich by going to IA**
  - DB plans can do that too
  - By using indexed career average pay & actuarial ERRF and DRC
- **Better at handling increasing longevity**
  - Indexing NRA can do same thing as updating annuity prices for longer life spans
- **Easier to administer right**
  - A badly run DB plan may be replaced by a badly run DC plan

# Economists' Goals for IA\*

- Reduce poverty among elderly
  - What if IA hurt by high fees and poor/unlucky investments?
  - What if there is lots of leakage?
- More equitable
  - Not for higher income people, if Pillar I is means tested
- More affordable
  - Not if small employers must do IA for their employees
- Less Political Risks
  - Not if market tanks
  - Not if there is lots of leakage
  - Not if small accounts are hurt by large fees

# Economists' Goals for IA\*

- Diversification
  - Allowing foreign investments can hurt country's markets (& help US)
  - Employer DB plan can diversify employee's risks better than IA
  - Then employee is diversified through risk-taking by Government, Employer, and Employee
- Transparency
  - Cash Balance plans and DC plans are clear, but:
    - People only know their cash balance, not the retirement income it will buy
  - Early Retirement Reduction Factors and Indexed Retirement Ages
    - Are clearer than “if I work longer in DC plan, I get a larger benefit”
- Notional DC (similar to our Cash Balance Plans in US)
  - They are really wage-indexed DB plans