AMERICAN ACADEMY *of* ACTUARIES

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


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27th International Congress of Actuaries

Cancun, Mexico

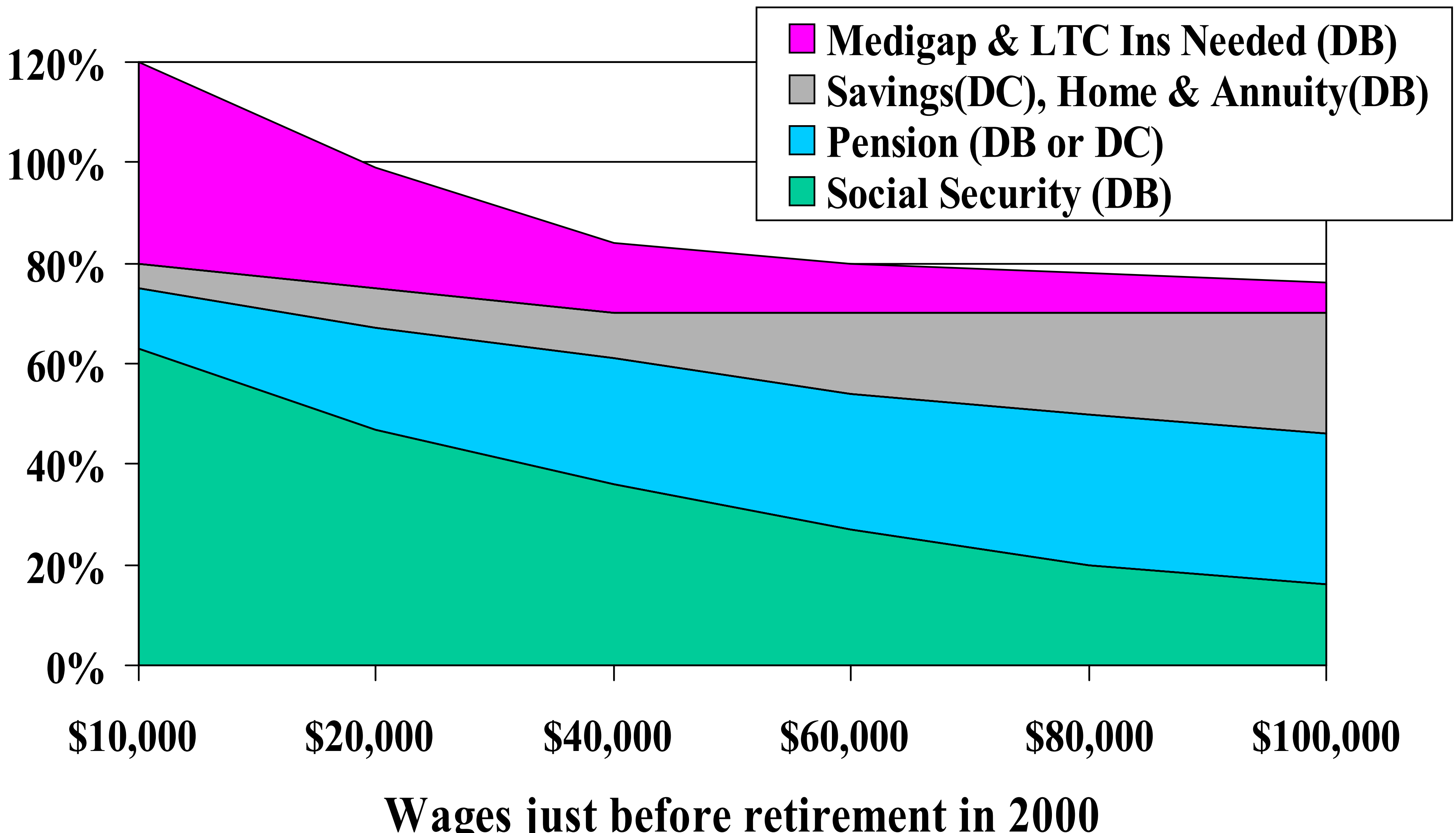
8:30 – 10:00 am

March 19, 2002

# 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

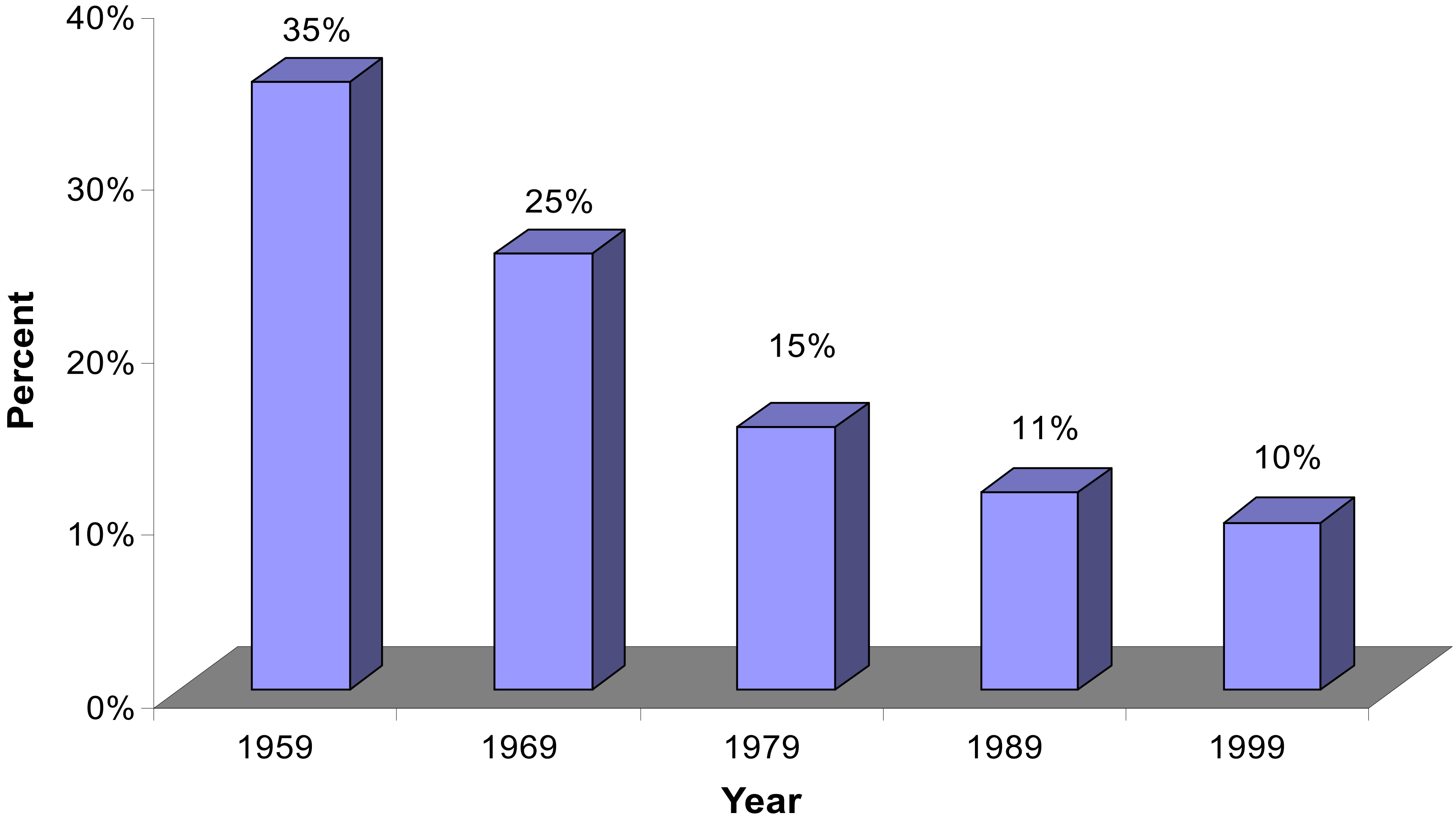
# Components of Retirement Income in the US



# 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)

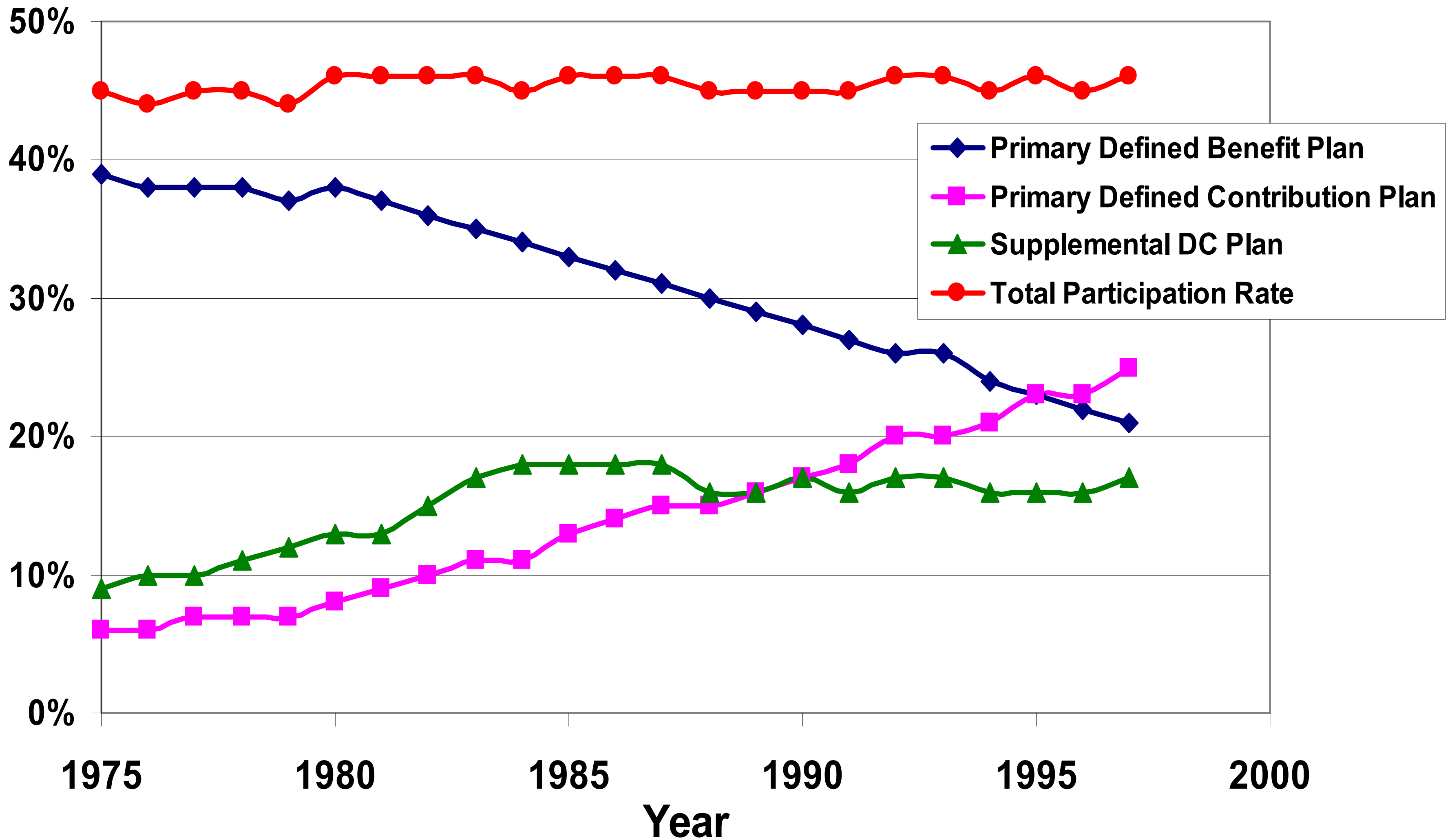
# Poverty Rates For Those Age 65 and Over




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 |
|---|---|---|
| 1937 & earlier | 65 | = the Primary Insurance Amount (PIA)<br>= 90% x AIME up to \$592<br>+ 32% x next \$2,975 of AIME (for 2002)<br>+ 15% x AIME over \$3,567<br>Increase bend points by average wages each year<br>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 | AIME = Average Indexed Monthly Earnings<br>Of your highest 35 years of covered earnings<br>Indexed by average wages up to 2 years before eligibility (age 60 for old age benefits) |
| 1955 | 66 2/12 | |
| 1956 | 66 4/12 | |
| 1957 | 66 6/12 | |
| 1958 | 66 8/12 | Benefits are increased each year after eligibility by inflation using the Consumer Price Index (CPI-W) |
| 1959 | 66 10/12 | |
| 1960 & later | 67 | Multiply PIA by age factors from below: |

Normal Retirement Age (NRA) = Age for full benefits.  62 is earliest age for benefits

Reductions for retiring earlier than NRA are as follows:

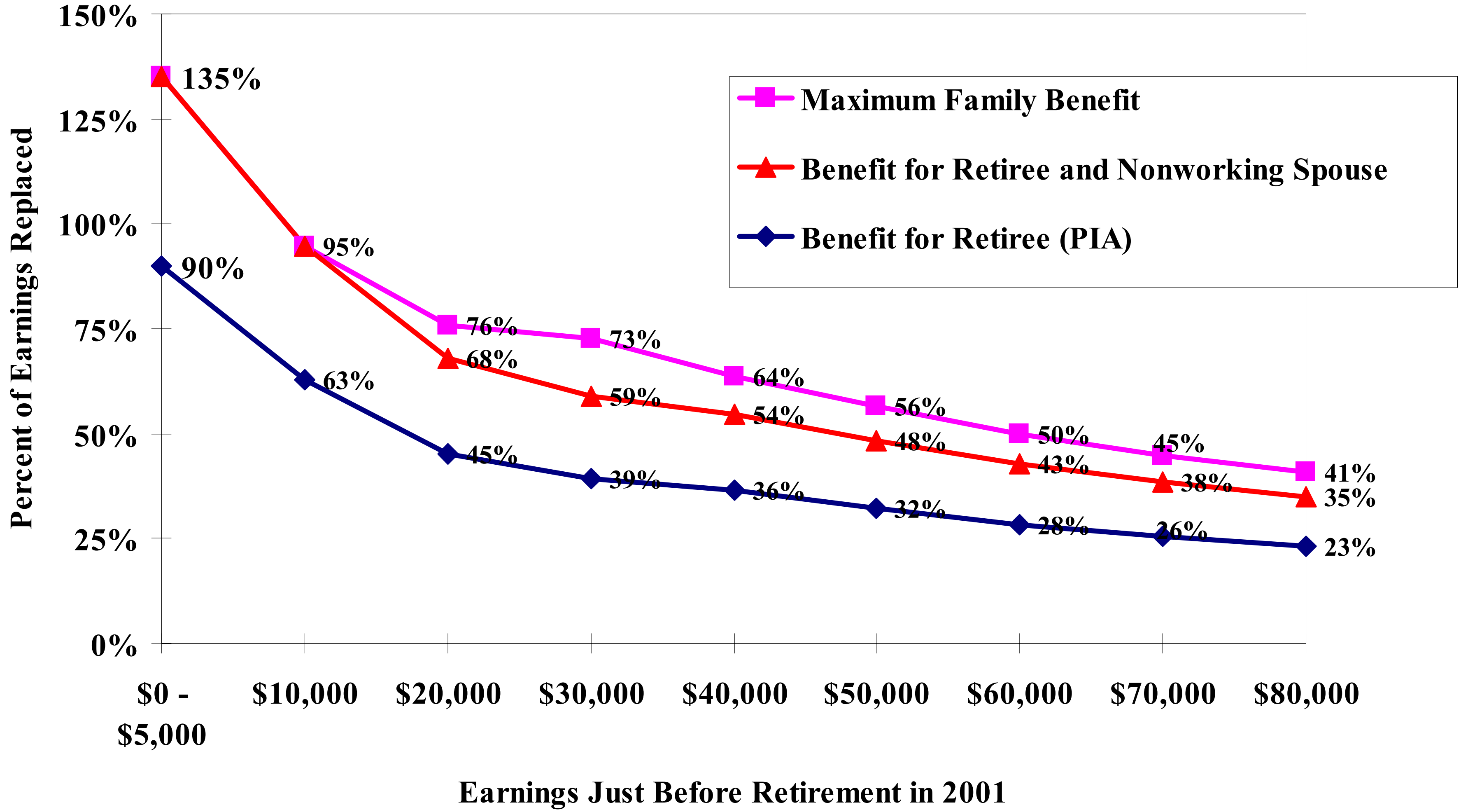
6 2/3% for each year before NRA (up to 3 years), plus

5% for each year more than 2 years

If you work after NRA, your benefit is increased by up to 8% per year.

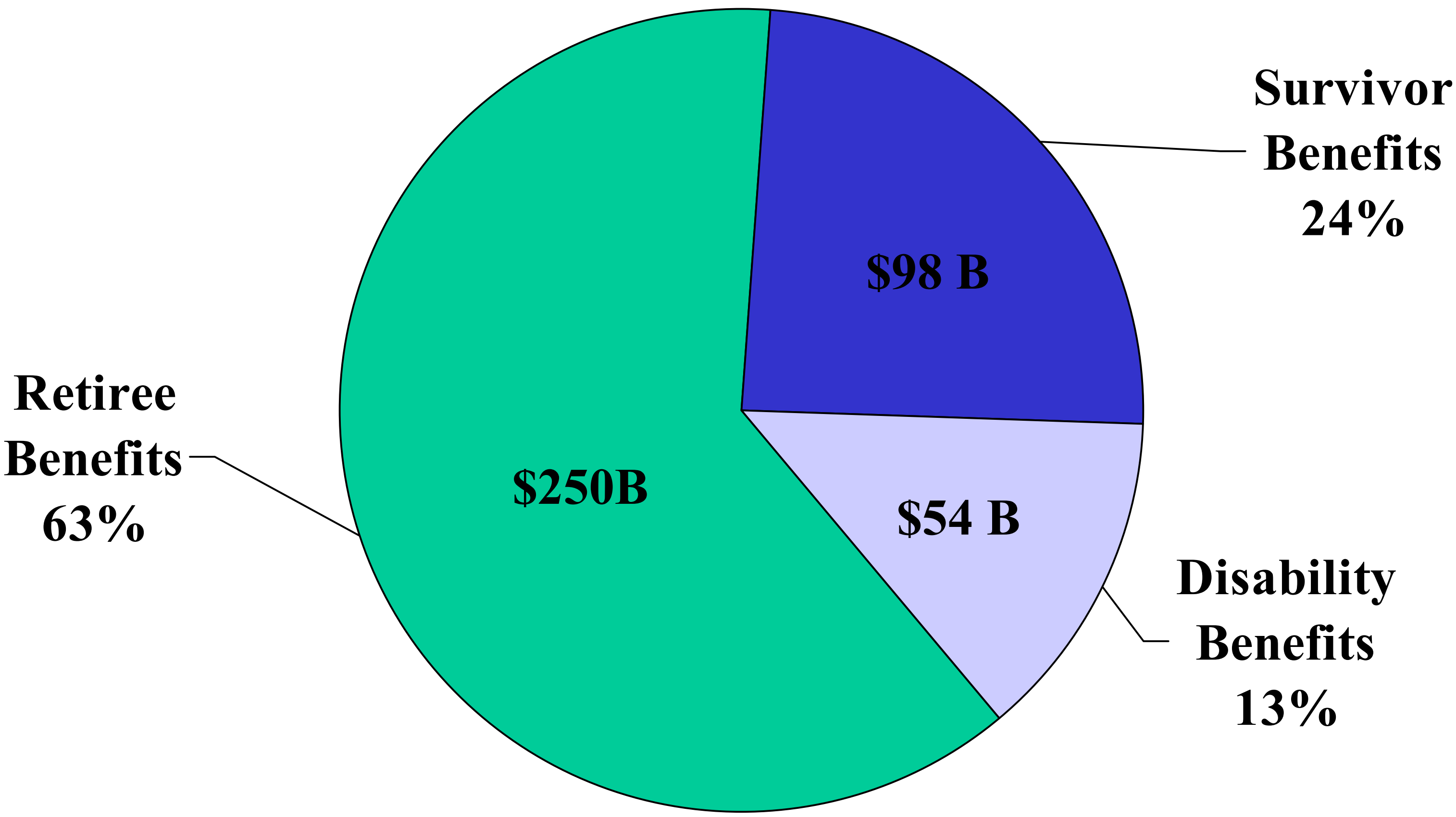
# Social Security Replacement Ratios

## 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

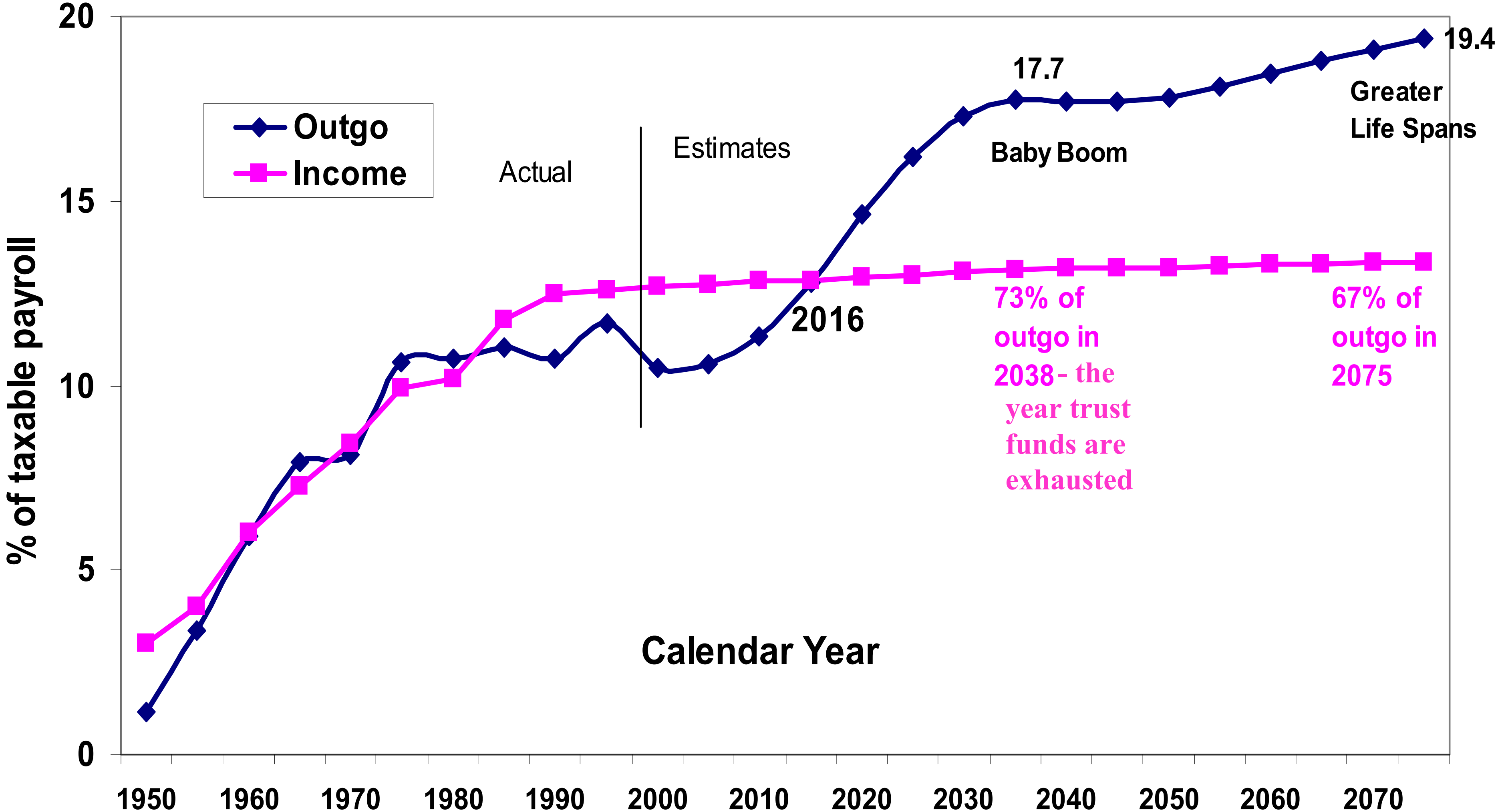
# Social Security Benefits
## Paid in 2000




**Total Benefits Paid = $402 Billion**

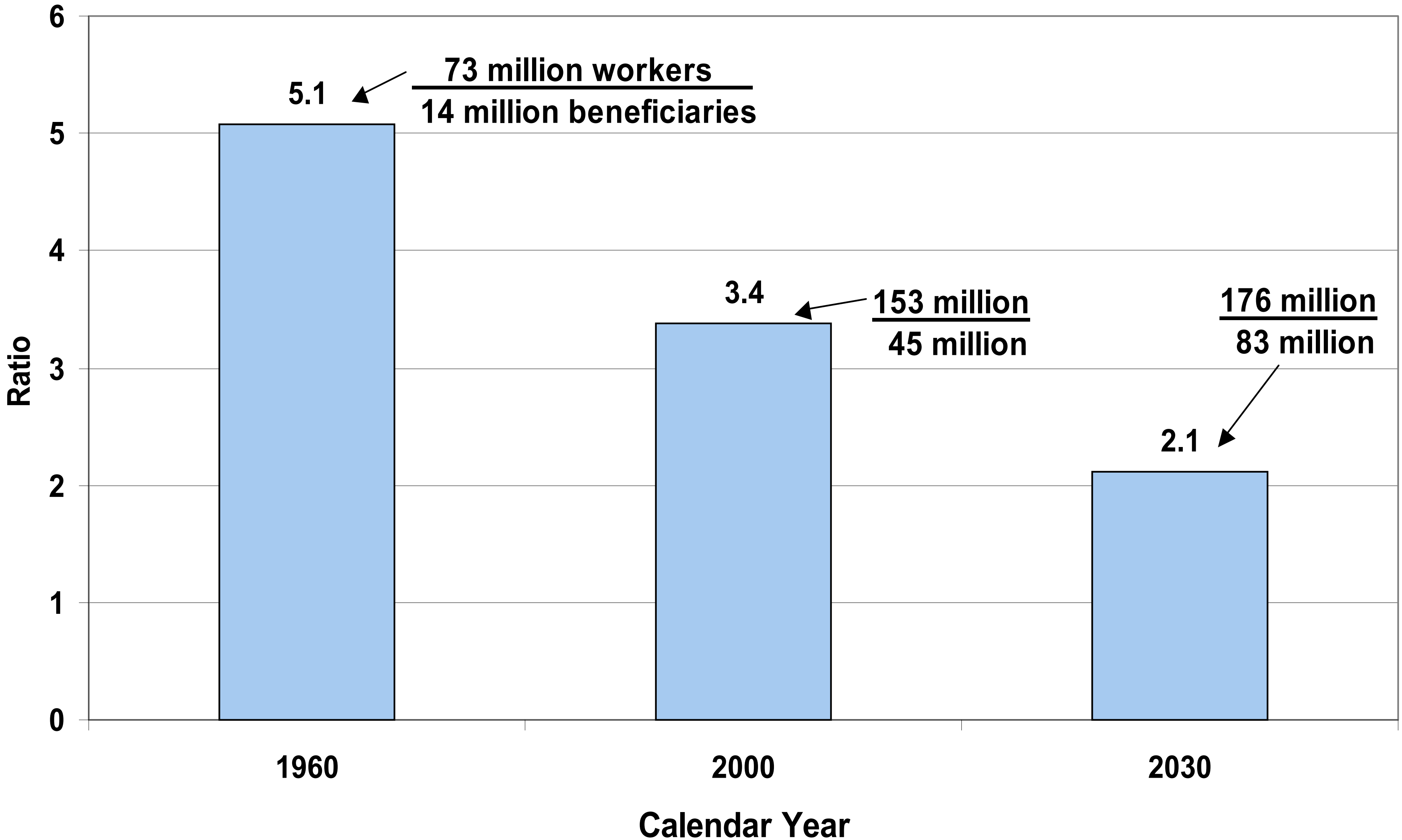
# Social Security Income & Outgo

## 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.

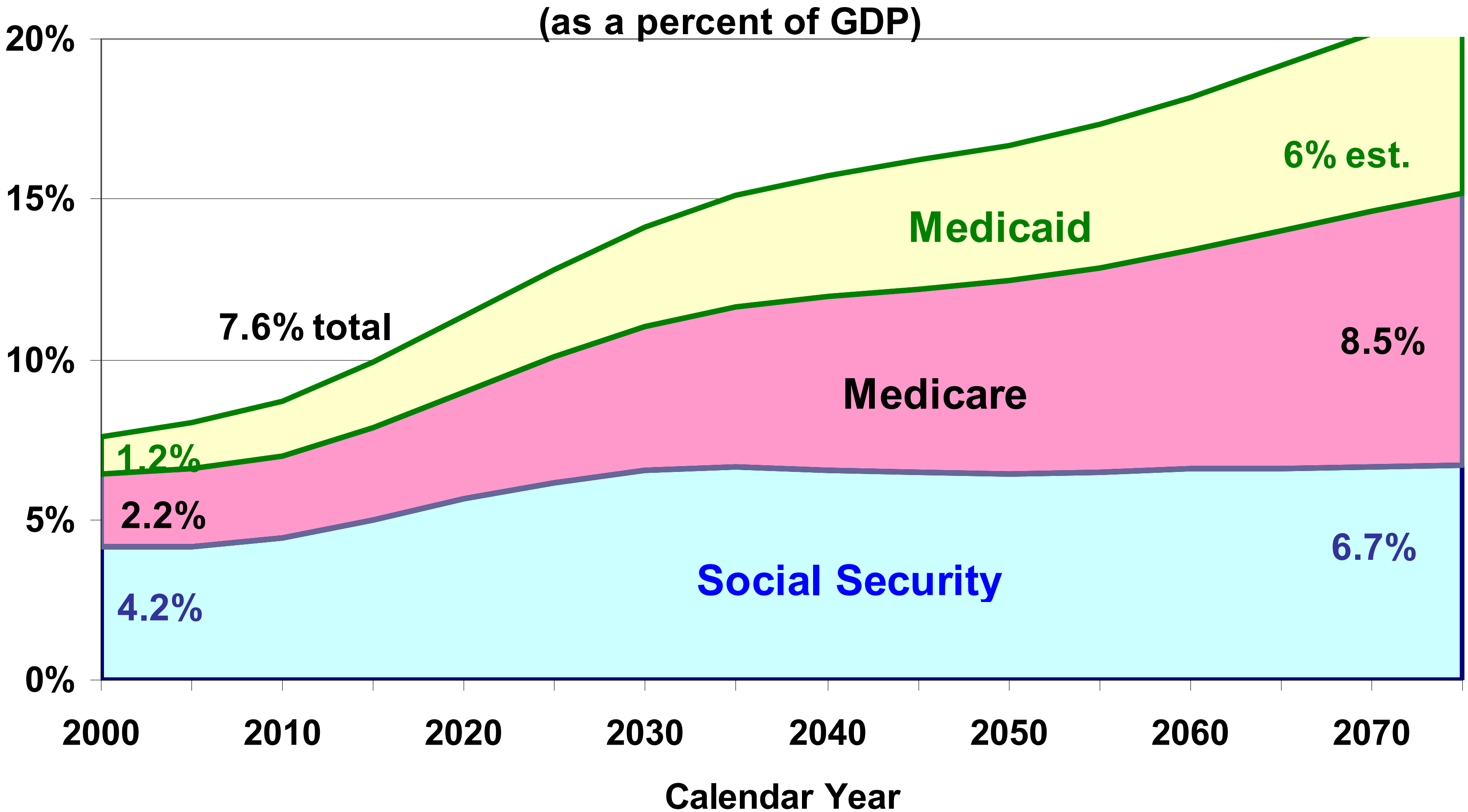
# Workers per Beneficiary




The number of workers supporting beneficiaries decreases dramatically due to baby boomers & longer lifespans.

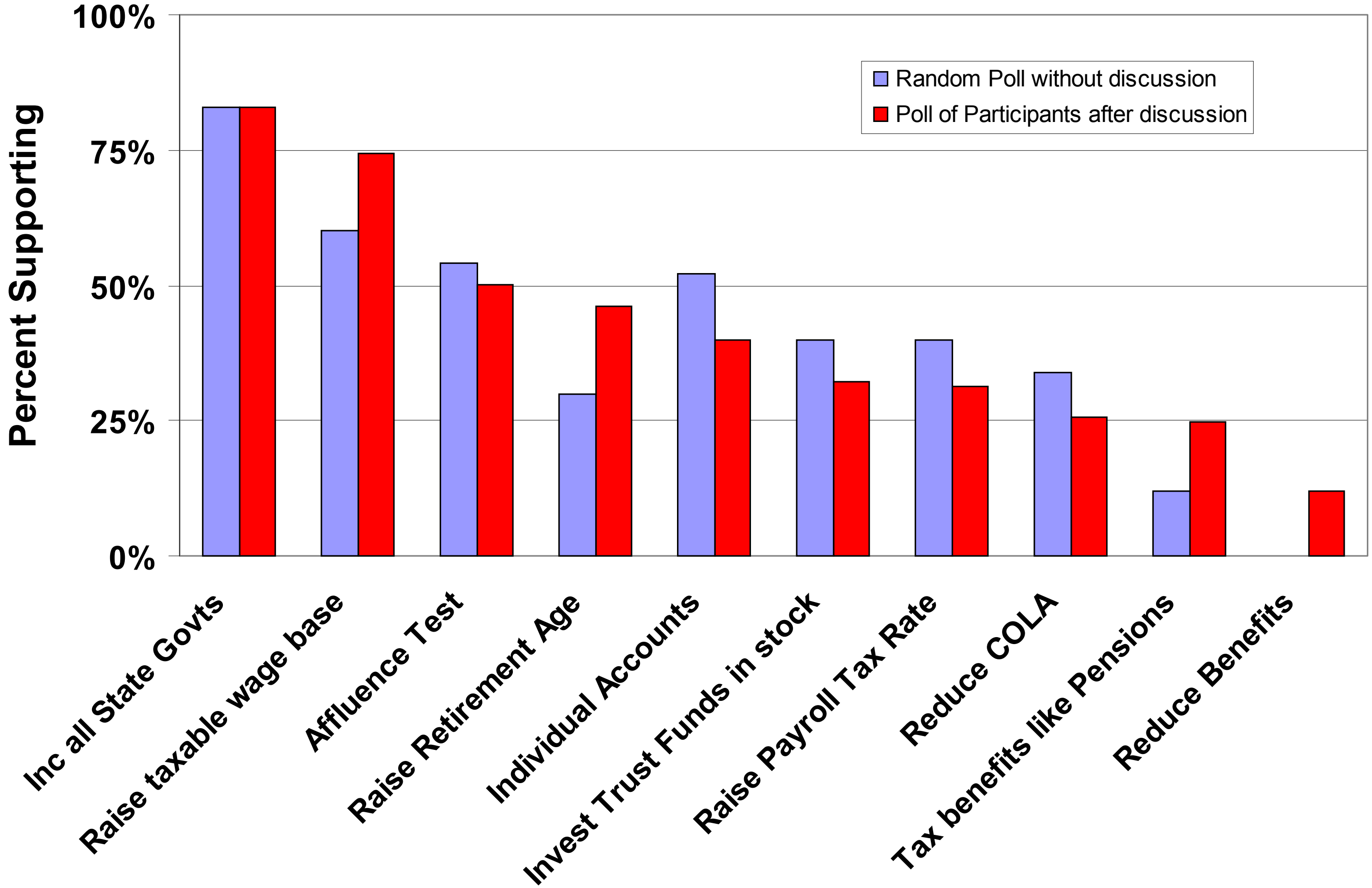
Source: 2001 SSA Trustees' Report, Table IV.B2

# Total Costs of Social Security, Medicare, & Medicaid



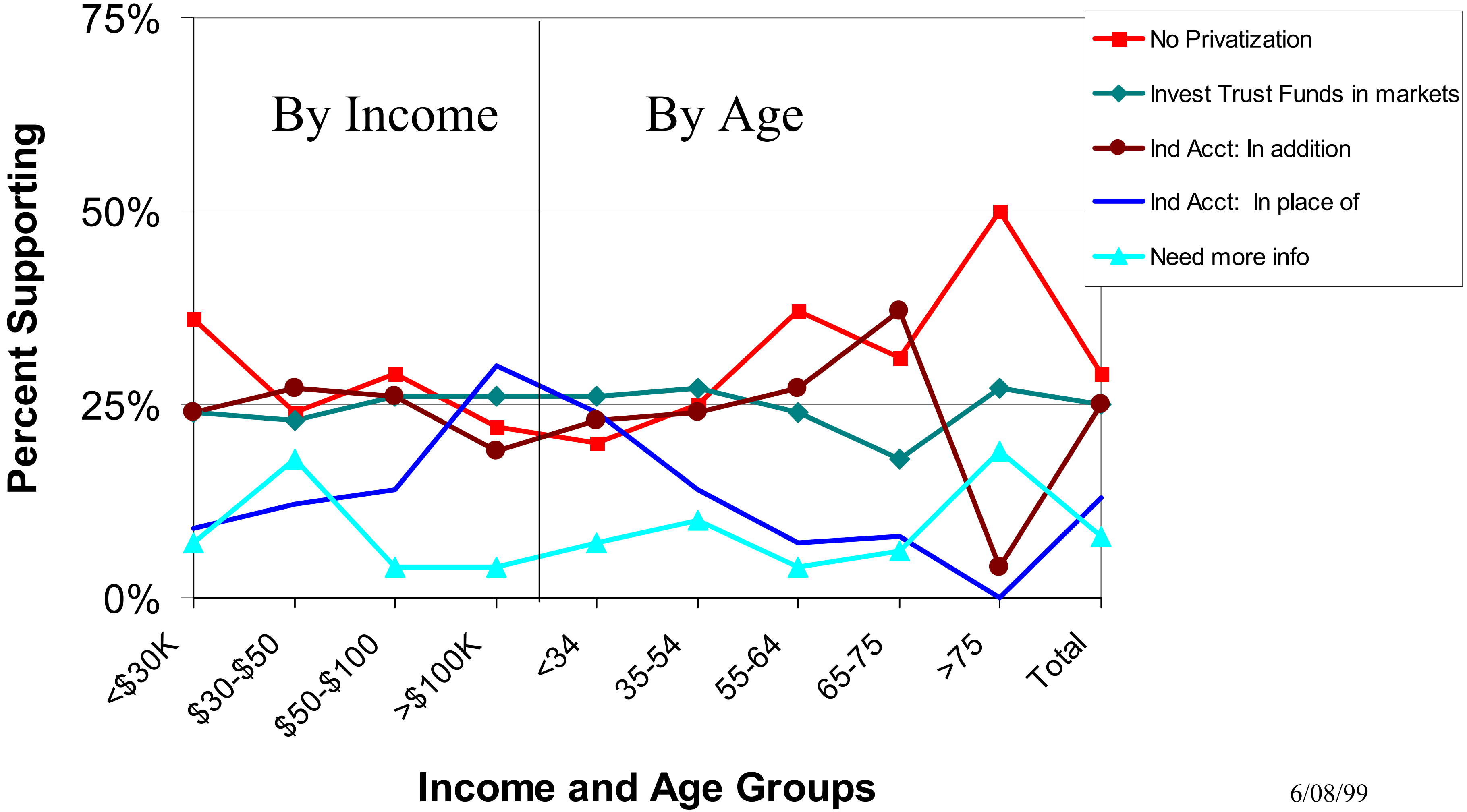

**Sources: 2001 OASDI Table VI.E5, Medicare Table III.B1; and Medicaid from CBO 10/2000 report (estimates after 2040 based on Medicare growth). In 2000, they are half of non-interest government expenses. Total costs more than double (Medicare almost quadruples, surpassing SS in 2056). If estimates are 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

# 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

# Bush Commission

| | Bush 1, 2, or 3 |
|---|---|
| • Decrease Benefits | |
| – Raise Retirement Ages | By formula |
| – Reduce COLA | No |
| – Cut Benefits (increased tilt, with min) | Yes |
| – Increase initial benefits by CPI only (w min) | Yes |
| – Increase # yrs in wage average | No |
| – Greater adjustment for early & late retirement | Yes |
| • Increase Taxes | |
| – Increase Tax Rate | IA 1% add on |
| – Increase wages subject to Tax | Sort of |
| – Tax SS benefits more | No |
| – Redirect taxes back to OASDI | Sort of |
| – Include rest of State & Local govt. | No |
| – General Revenue | Yes |
| • Increase Investment Returns | |
| – Trust Funds | No |
| – Individual Accounts | Yes |

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

# Bush 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

# Bush Commission – Model 1

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

2001 pv $



Numbers assume 67% participate

# Bush 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
    - Proportionately reduced if disabled or die before age 62
  - Benefit decreases as enhancement phases out near 2 x min wage
  - Will high replacement rates for disableds in 2018 (at wages under $15,000) discourage recovery?

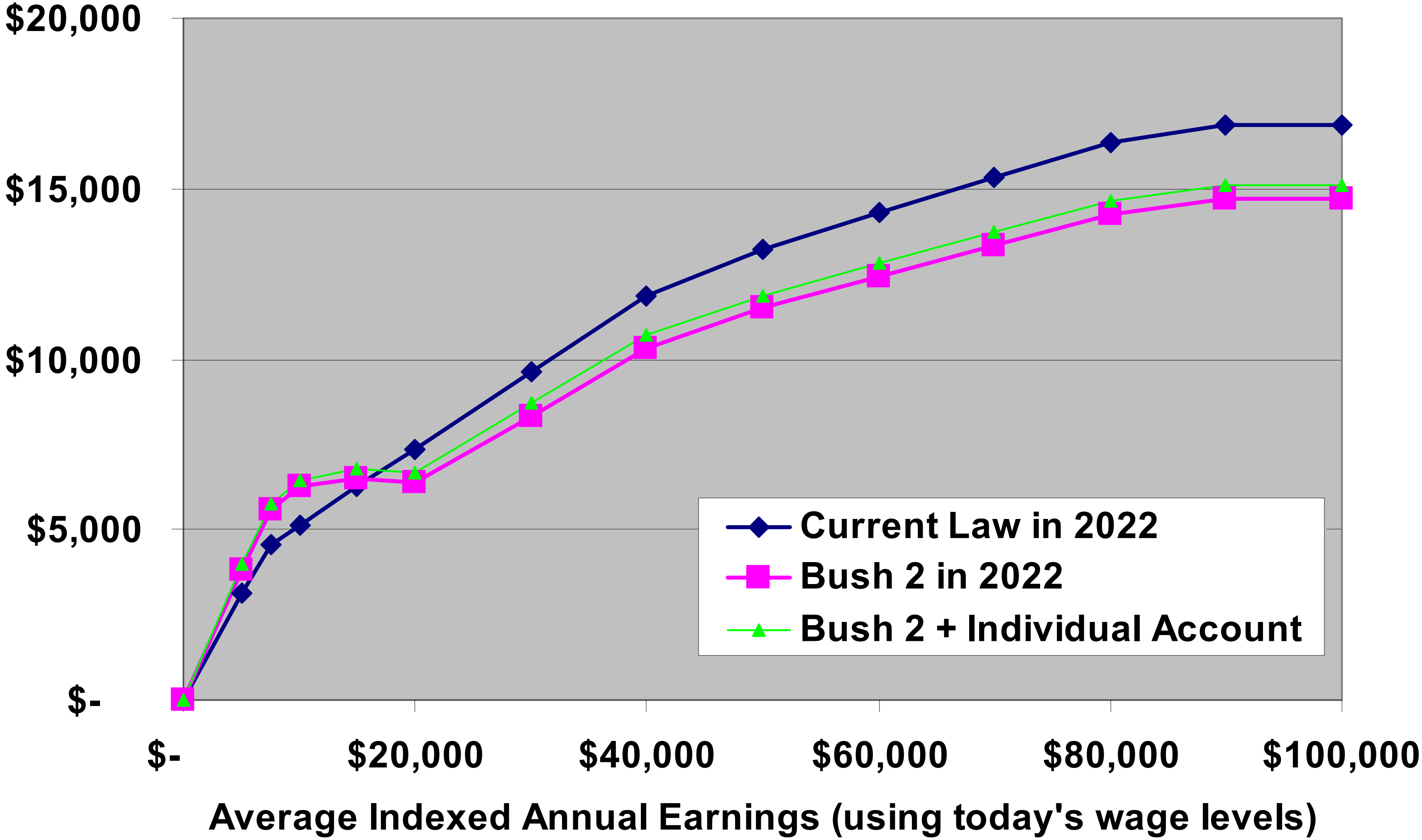
# Bush Commission – Model 2

- 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

# Bush Commission – Model 2

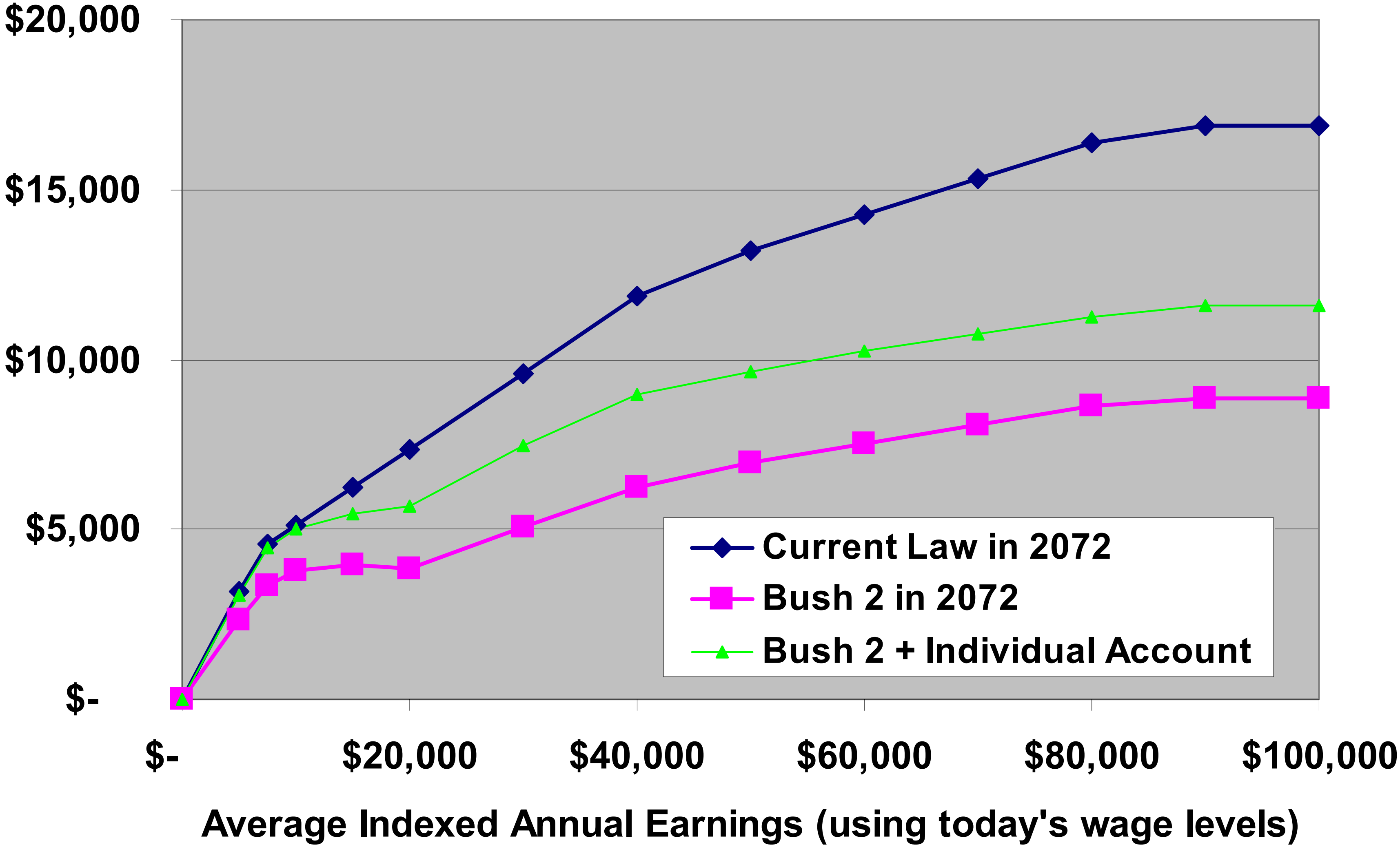
- General Revenue as needed to keep FR> 100%
- Reductions to unified budget until 2048 (if 100% participation)
  - Even if no surplus in those years
- Total US Debt lower in 2061 & thereafter
  - By $1.4T in 2075 + $1.1T asset

# Social Security Benefits at Age 62




Bush 2 benefits decrease between $15K and $20K around 2020, if worked over 30 years.
Disability benefits around 2020 can be so high as to discourage work

# Social Security Benefits at Age 62




Small individual accounts ($1,000/ year max) can't compensate for large drop in SS benefit, but the total benefit will often exceed what Social Security can pay with current financing.

# Bush 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 ⇑ 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)

# Bush 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

# Bush 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 $e_{NRA}$ 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

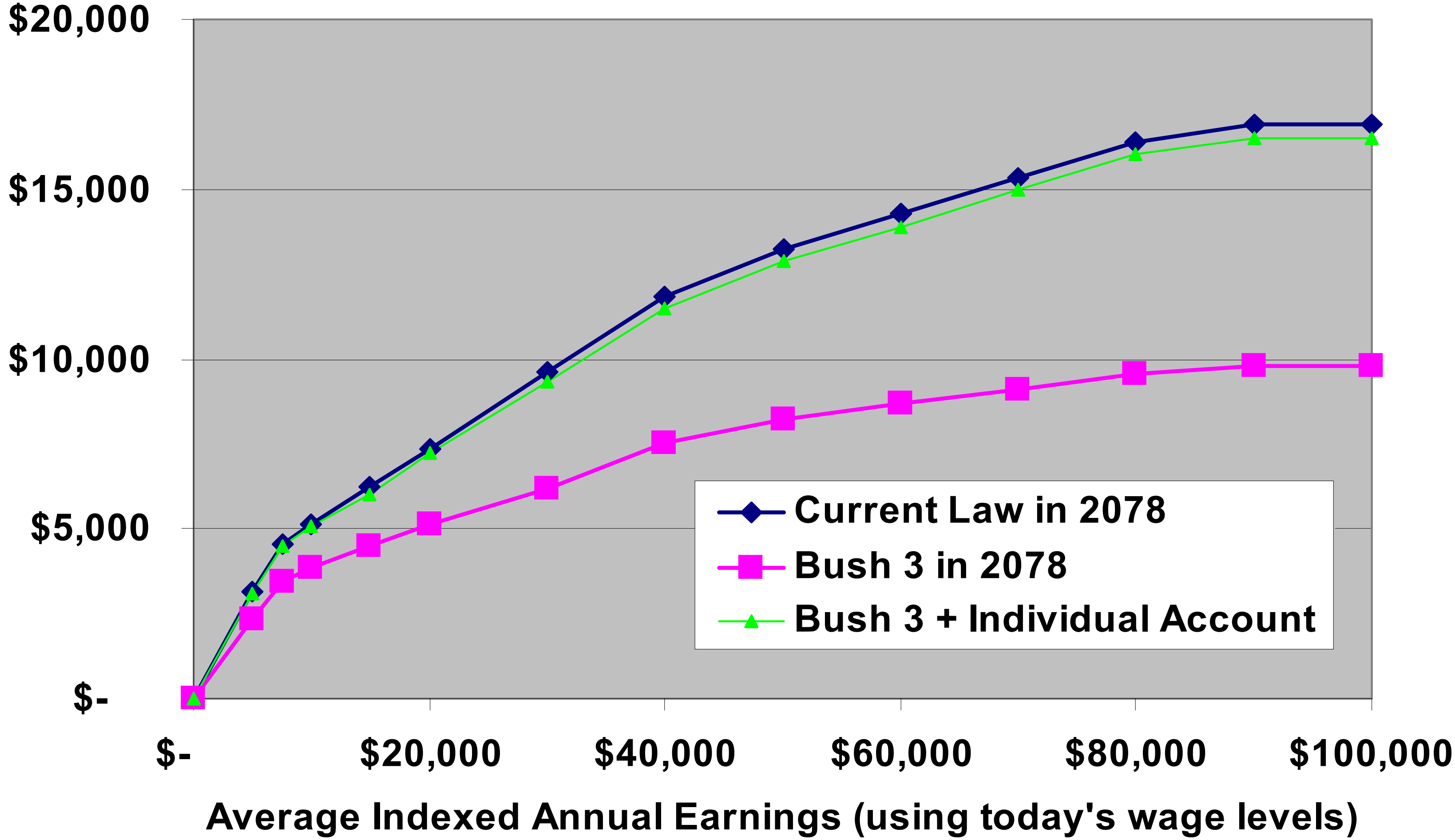
# Bush Commission – Model 3

- 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)
  - 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

# Bush 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 x 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

# Social Security Benefits at Age 62




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

# Bush 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

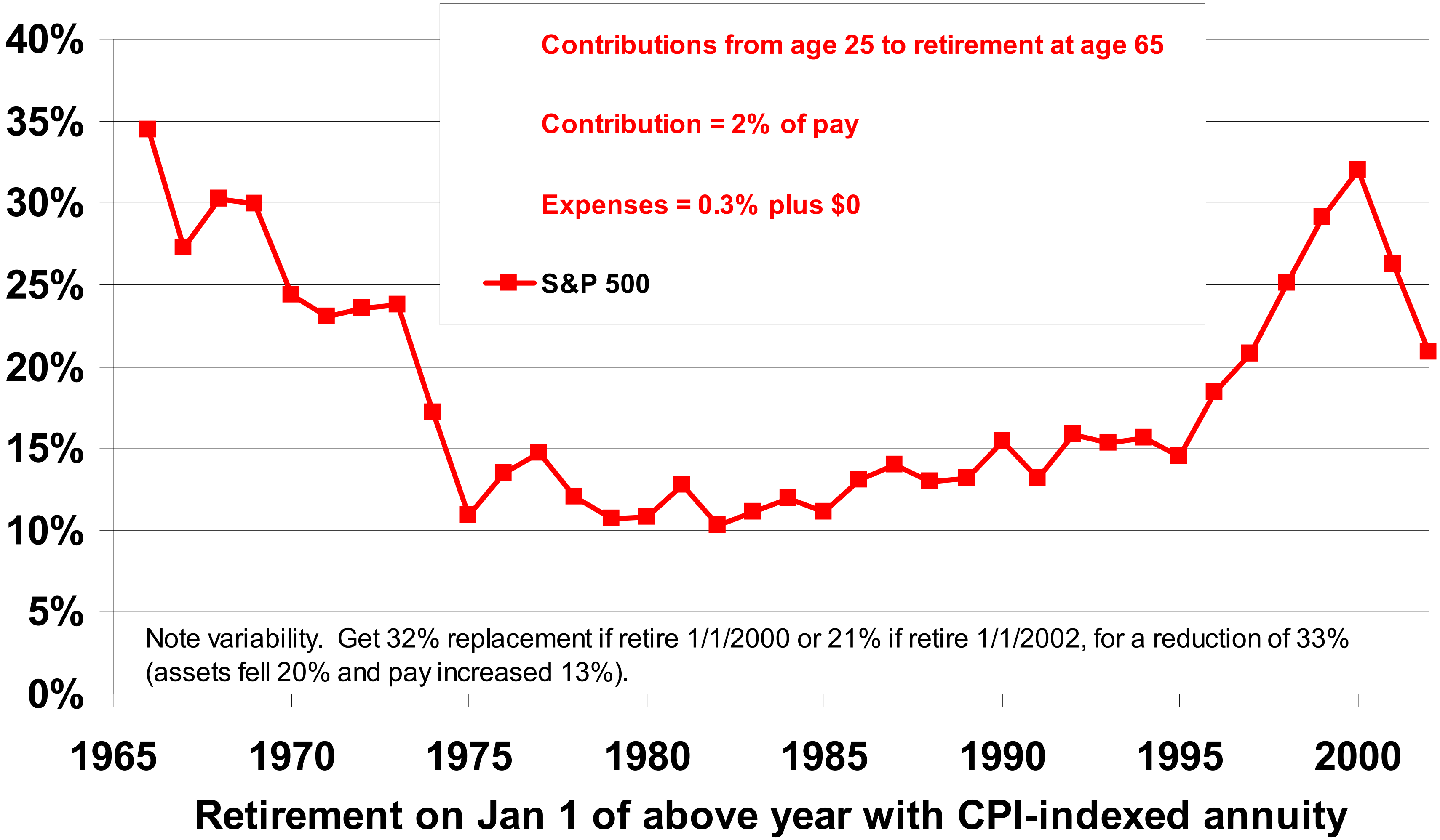
# Bush Commission – Model 3

- 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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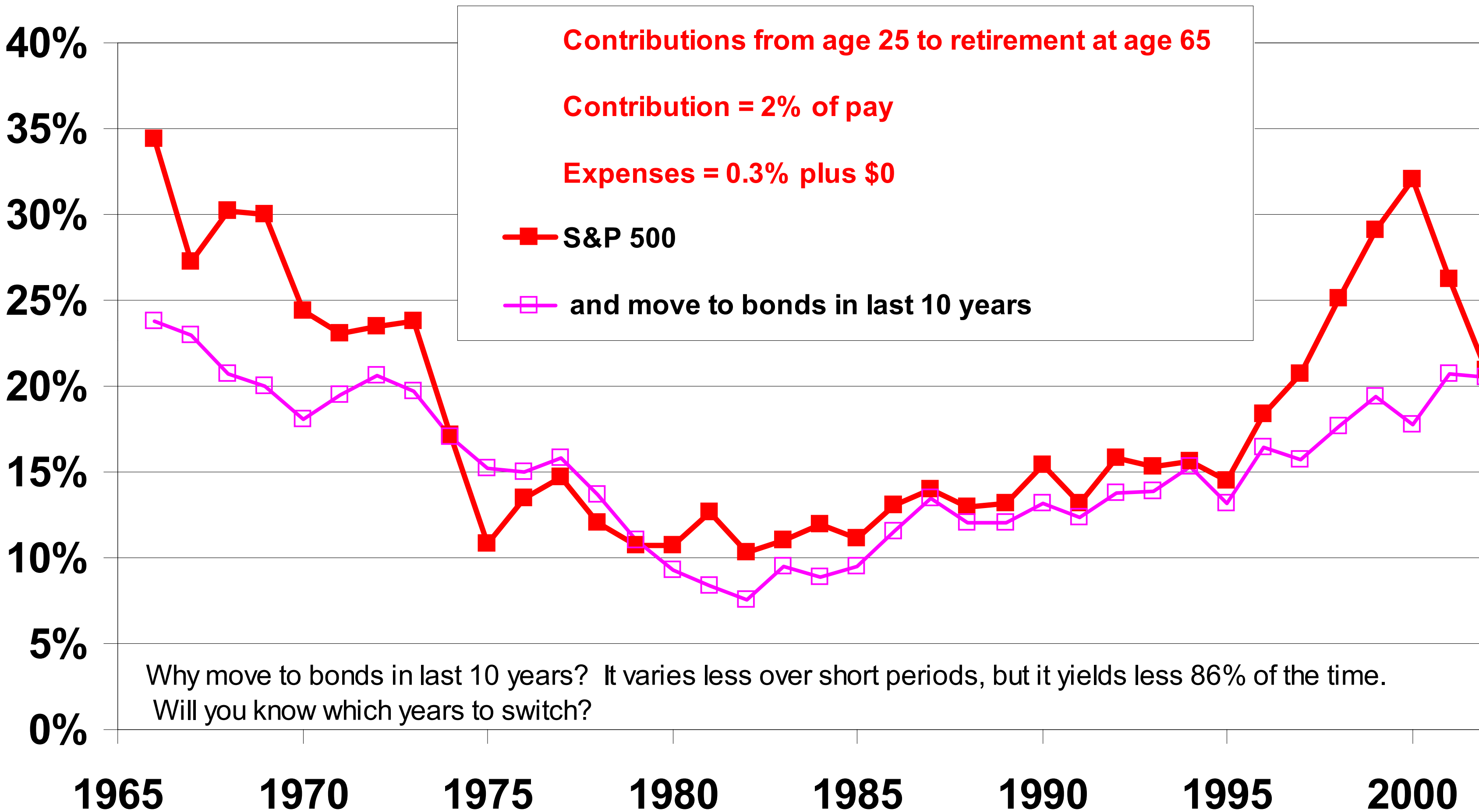
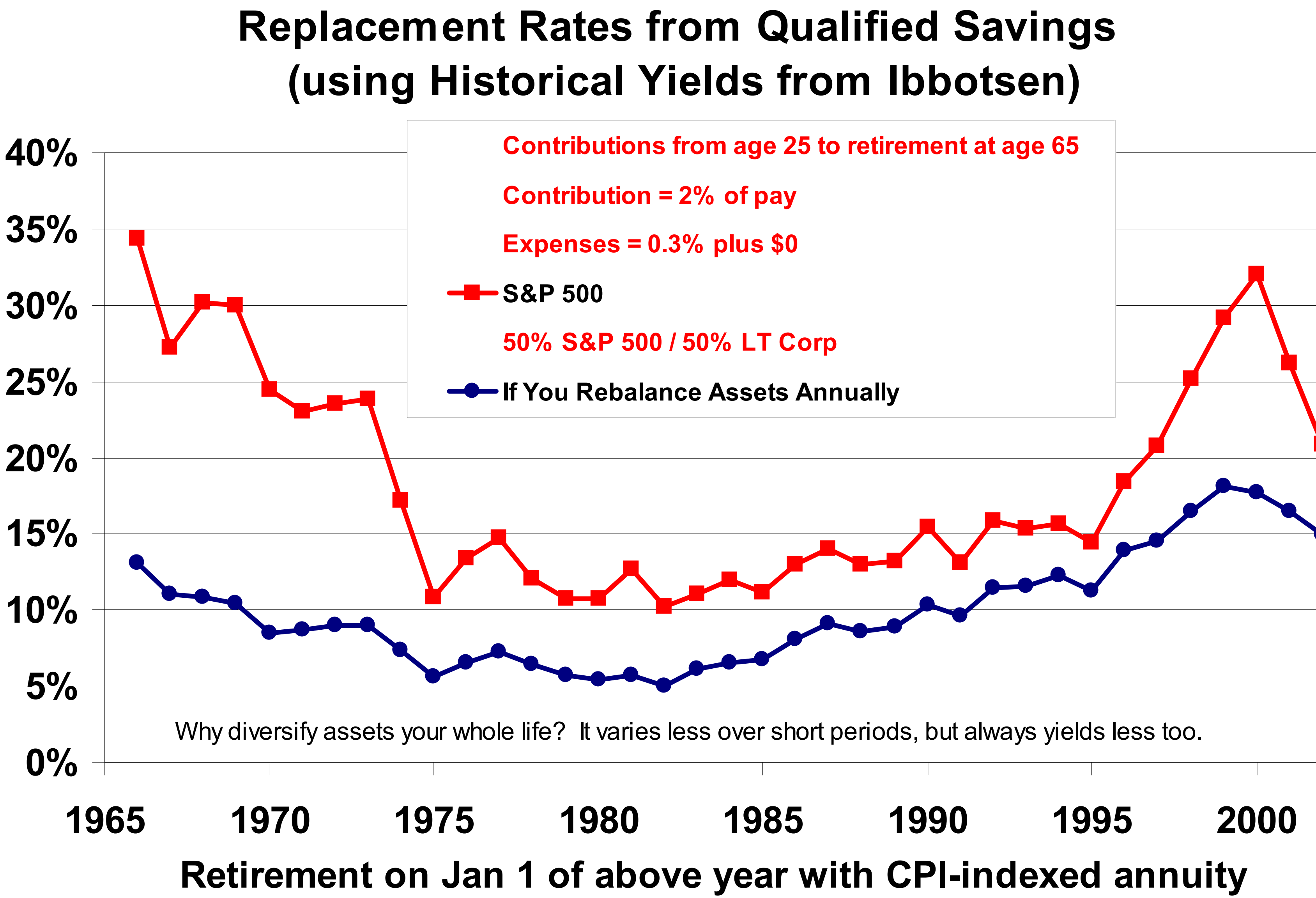
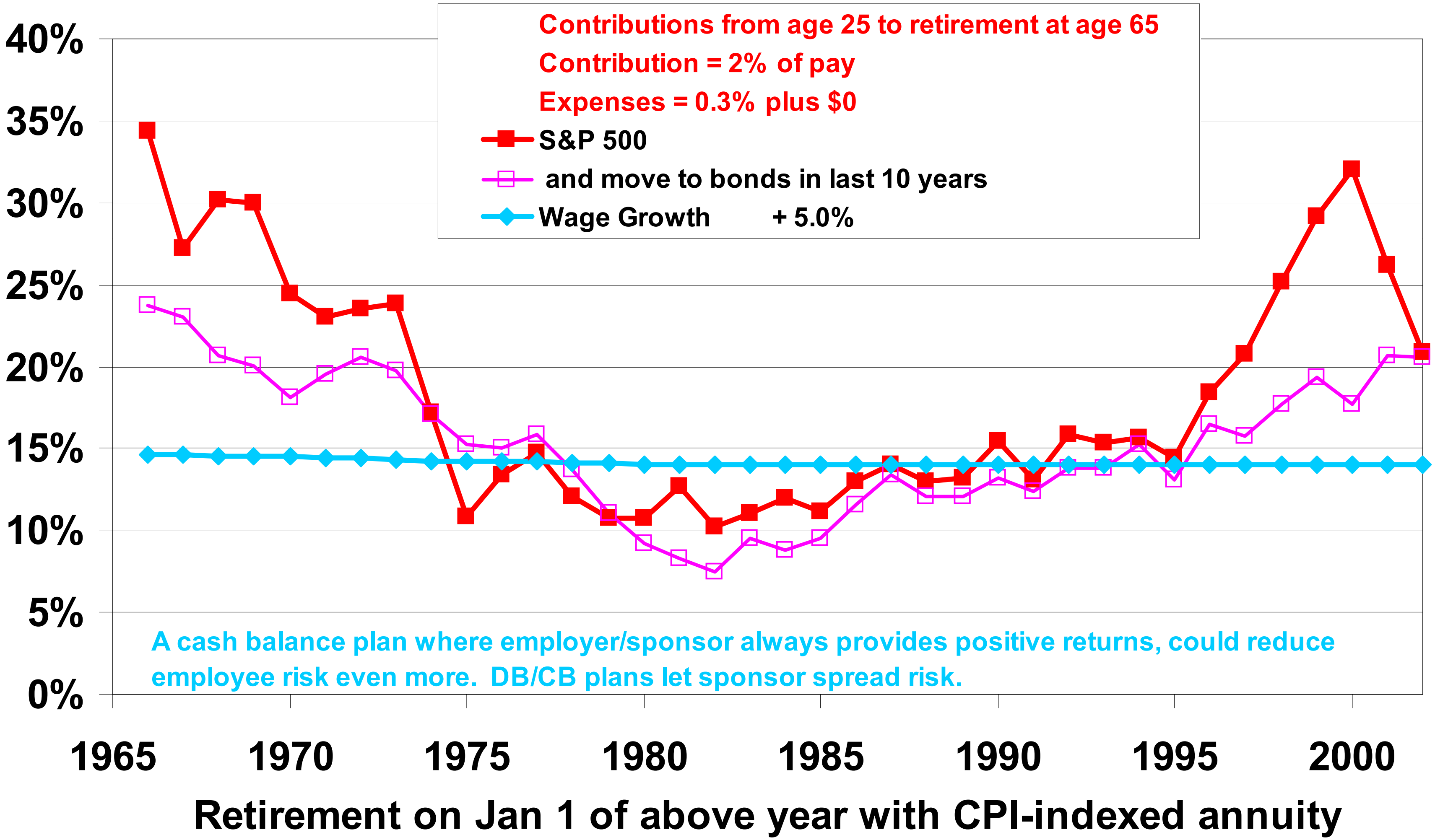



Retirement on Jan 1 of above year with CPI-indexed annuity



Replacement Rates from Qualified Savings
(using Historical Yields from Ibbotsen)
Contributions from age 25 to retirement at age 65
Contribution = 2% of pay
Expenses = 0.3% plus $0
S&P 500
50% S&P 500 / 50% LT Corp
If You Rebalance Assets Annually
40%
35%
30%
25%
20%
15%
10%
5%
0%
Why diversify assets your whole life? It varies less over short periods, but always yields less too.
1965
1970
1975
1980
1985
1990
1995
2000
Retirement on Jan 1 of above year with CPI-indexed annuity

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



# Individual Accounts (Problems & Remedies)

- Moving from DB to DC (or NDC)
  - 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
      - NDC 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
  - Matches or subsidies to IA's of low income people
  - But that increases portion of their benefit subject to market risk
- Low Coverage rates continue
  - 1/4 to 1/2 of economy is informal and inefficient
- IA 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 is 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