

SOCIAL SECURITY PAYGO vs Full Funding

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The Essence of Social Security

- Macro-economic concept: a system to decide how much of a country's GNP a non-active retiree can consume
- Micro-economic concept: a system to decide how much of a workers product will be transferred to a non-active retiree to consume
- Definition results in smashing several "myths"

How Different is PAYGO vs Fully-Funded

- Assume 10% contribution rate either way
- Equivalent to saying a worker foregoes one-half day's product so that an elderly retiree can consume those goods and services

How it works: PAYGO

- Worker sends in a 10% contribution in the morning which goes out in the afternoon as benefits to the elderly retiree
- Worker foregoes consumption
- Elderly gets consumption

How it works: Fully-Funded

- Worker saves 10% of pay (foregoes 10% of consumption)
- Wants to buy assets (e.g., stocks and bonds)
- Elderly has stocks and bonds but wants cash to pay for consumption
- Retiree gets cash from Worker and consumes
- Worker delays consumption and gets assets from Elderly
- Impact equivalent to PAYGO

Plan Assets are all Government Bonds (U.S.)

- Workers are both Social Security Contributors and Tax-Payers
- To provide benefits (consumption) to the elderly, worker either pays contributions to Social Security or pays taxes to the government to buy back bonds
- End result is absolutely the same both as to the size and the timing of the cash flow requirements as pure PAYGO

Social Security System holds “real” assets Offshore

- May be difficult politically
- Don't invest in a country with similar demographics
- Creates foreign exchange risk
- Overall impact is minor

Are Fully-Funded Systems Demographically Immune?

- Ratio of retirees to workers as important to Fully-Funded system as to PAYGO system
- We need a balance between the demand for assets and the demand for cash for consumption
- Individual plans appear to be demographically immune, but macro-economic scheme is not (Fallacy of Composition)
- The extreme: If there are no workers, there will be no GNP and no consumption

Drivers of Cost/Contributions

- Fully-Funded: Rate of return on invested assets
- PAYGO: Rate of growth of earnings upon which contributions are based (which is growth rate of economy) which is a product of:
 - Labor Force Growth Rate
 - Rate of Productivity Improvement
- Will be times when PAYGO is preferred
- Will be times when Fully-Funded is preferred

Volatility of Cost: PAYGO vs Fully-Funded

- Fully Funded: Volatility is that of investment rates
- PAYGO: Volatility is a combination of:
 - Fertility Rates
 - Migration Rates
 - Labor Force Participation Rates
 - Productivity Improvement Rates
- Life expectancy affects both systems similarly
- Which would you rather predict?

What to Avoid in Design of Social Security System

- Optimal system would minimize risk (volatility) and expenses
- Avoid (do not allow) Individual Account (IA)
Defined Contribution (DC) Social Security

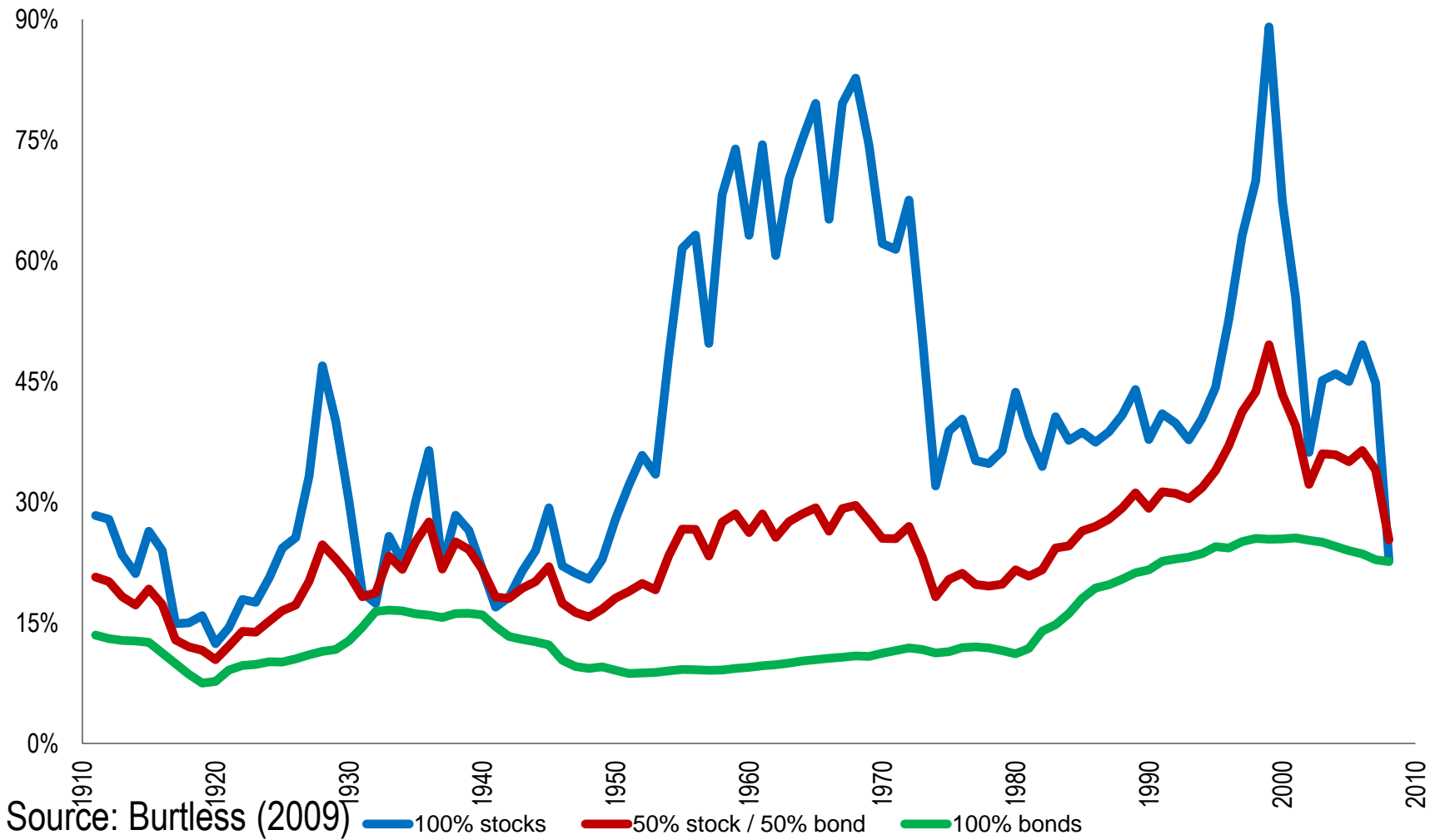
Why Not IA DC Social Security?

- Assumptions required are:
 1. Workers can save and invest wisely.
 2. Or they can get asset management inexpensively
 3. Workers will adhere to “life-cycle” investing
 4. Workers can buy fair-value life annuities
- All assumptions are patently false

Workers Can Save and Invest Wisely

- They have zero training and education in investing
- Equities have unacceptable volatility
- Fixed Income has unacceptable low returns
- And the deaccumulation phase is even more difficult
- There is also a “timing” risk (e.g., retire in 2009)
- Workers will typically invest conservatively with low rates of return
- Nicely illustrated in the following Graph

Replacement rate obtained from personal account savings of workers who invest in alternative portfolios



Workers can get Asset Management Inexpensively

- MER of 2% of assets per annum is not uncommon
- Over 35 years this decreases the fund by 31.7%
- Over 40 years, each added 1% MER decreases the fund by 20%
- Actively managed funds under-perform Indexed funds even before expenses
- Broker sold mutual funds perform worst of all

The impact of investment fee ratios on pension adequacy

Management expense ratio (basis points)	0	40	150	300
Accumulated value (\$ after 40yrs)	777,000	707,000	551,000	400,000
Payout (\$/yr)	45,000	41,000	32,000	23,000
Replacement ratio (%)	90	82	64	46

Assumes annual contributions of \$10,000 over a worker's 40 yr career with average annual income of \$50,000

Source: Ontario Expert Commission on Pension Reform

At the least, run the DC Acct as a “Collective” Acct

- Much Lower MERs
- Opportunity for Private Placements/Infrastructure
- Large funds also achieve stability of large numbers
- Target funds of \$10B minimum

The cost of investment fees in pension funds (by fund size) and individual savings accounts

	Average management expense ratio (basis points)
Large cap equities	
\$10 million	60
\$1 billion	42
\$10 billion	28 to 35
Individual account	250 to 300

Source: Ontario Expert Commission on Pension Reform

Worker will Invest Wisely and Use Life-Cycle Model

- No support for this in the literature
- If given a large number of choices, Workers tend to choose the Default Option
 - 80% in Australia; majority in Sweden
- At the least, have a good default option
- Annuitizing brings its own problems

Annuities are available at a Fair Actuarial Price

- Need annuities to cover the longevity risk
- Low interest rates mean high costs
- Plus, I.C. must cover “anti-selection”
- Healthy applicants buy more and bigger annuities
- Those with low Life Expectancy do not buy
- Most I.C. in North America price all annuities assuming the applicant’s health is five star (no risk classification)
- Result is over 50% of population can’t get a fair price
- System is regressive since wealthy live longer

Annuities are Available at a Fair Market Price

- If no annuity, then must manage draw down
- No one knows their life expectancy
- Should plan for life expectancy plus standard deviation
- Result is living at a low standard of living and still having the longevity risk

DC Plans have Perverse Labour Force Impact

- When times are good, DC funds are strong and worker can retire just when needed in the labour force
- When times are bad, DC funds are weak and worker must continue to work when labour force wants retirement

Result: Don't use Individual Acct. DC Systems

- Inadequate education of the public
- Poor investment choices
- Lack of smart default options
- Inadequate regulation of investment managers
- High MERs
- Low investment returns (even before MERs)
- Low retirement replacement ratios

Conclusion

- PAYGO systems are not remarkably different from Fully-Funded systems
- Fully-Funded systems are not demographically immune
- Fully-Funded systems are not inherently cheaper nor more stable than PAYGO systems
- The most problematic system is Individual Acct. DC Social Security

Q & A