Optimal Design of Social Security Retirement Systems

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Agenda

We will cover the following issues:

- Funded vs Paygo
- Minimum benefits: Demogrant or Welfare
- Progressive versus Regressive
- Voluntary versus Mandatory
- Individual Accounts versus Commingling of risk
- Public versus Private Sourcing
- Automatic Balancing Mechanisms
- System Diversity
- Conclusion

An over-arching purpose of Social Security Retirement Systems is to minimize the probability that retirees live in poverty.

In turn, this it is a method to determine how much of a country's Gross National Product can be consumed by retirees

Funded vs. Paygo

- Social Security need not be pre-funded.
- One of its assets is “future contributions”.
- However we should require sustainability.
- Are funded plans backed 100% by government bonds actually PAYGO?

Funded vs. Paygo

A Paygo system should have some small reserve funds (e.g., 2 years benefits) to provide stability

Funded vs. Paygo

Funded systems should be favored when net rates of return on invested assets exceed the growth rate of the system's contribution base.

And, vice versa.

Rate of growth of contribution base depends on:

- fertility and immigration
- labor force participation rates
- real wage growth (productivity)

Funded vs. Paygo

- Paygo systems are no more volatile than funded systems.

- Paygo variability: demographics
- Funded variability: investment returns

Q: Which would you rather predict -- fertility or real interest rates ?

Funded vs. Paygo

How does paygo work?

If the paygo system has a 10% contribution rate, this is equivalent to a worker transferring one half day of work product (in a 5-day week) to a retiree for consumption.

Funded vs. Paygo

How does a funded system work?

The worker saves (does not consume) 10% of his/her product.

The worker buys assets (let's assume ultimately from retirees).

The retirees turn their pre-saved assets into cash and
buy goods and services.

What's the difference?

Political Risk

- SSRS is a captive source of credit to the government (and subsidized)
- Funds are invested for political not economic reasons
- Government may become active if a significant shareholder
- Government may erode benefits by allowing inflation
- Funds may be used to prop up financial markets
- Dictator may abscond with the assets

Minimum Benefits (Tier 0)

- To alleviate poverty
- Normally financed from general tax revenues
- Makes Tier 1 design easier (e.g., OASDI)

Minimum Benefits:
Demogrant or Welfare

- Is Benefit paid based on residency or need?

If Demogrant

- Need lengthy period of qualification to avoid adverse selection

Minimum Benefits: Demogrant or Welfare

If Welfare

- Will require a claw back
- Can be perverse if steep
  (no private savings/move to cash economy/cash out SSRS at retirement)
- Expensive if low

Progressive or Regressive

- DC plans are regressive since wealthy live longer (if no annuity risk classification)
- If Tier 0 is highly progressive, Tier 1 need not be
- Raising the Normal Retirement age could be regressive since poorer workers lose a larger % of benefits
- Still need social solidarity – so not too progressive

Voluntary vs. Mandatory

Systems that appear to be mandatory may not be if

- Those with low income do not contribute
- There are "drop-out" periods for (e.g.,)
  - military service
  - disability
  - child rearing
  - and so on

All of these lead to anti-selection and "gaming" of the system (e.g., a cash economy)

Voluntary vs. Mandatory

- A true mandatory system negates anti-selection.

- If anti-selection is present, costs rise (by 15% says one study -- James et al. (2008)).

- Those in poor health opt out leaving only the super select (as in private annuities).

- If fully mandatory, poor subsidize the rich.

Individual Accounts vs. Commingling of Risk

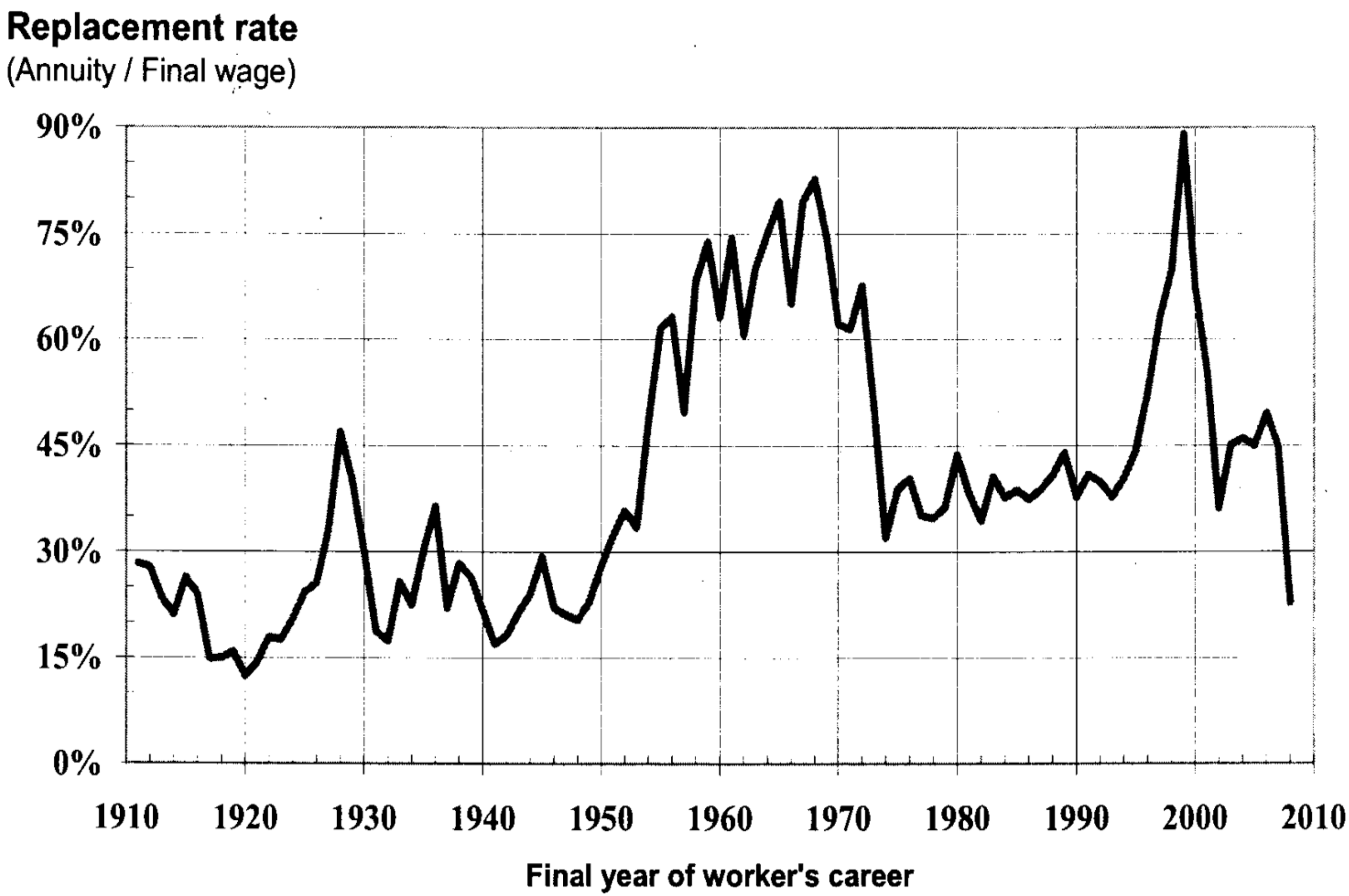
- All SSRS should mitigate risk.

- Risks include:
  - investment and investment expense risk
  - interest rate risk
  - inflation risk
  - longevity risk

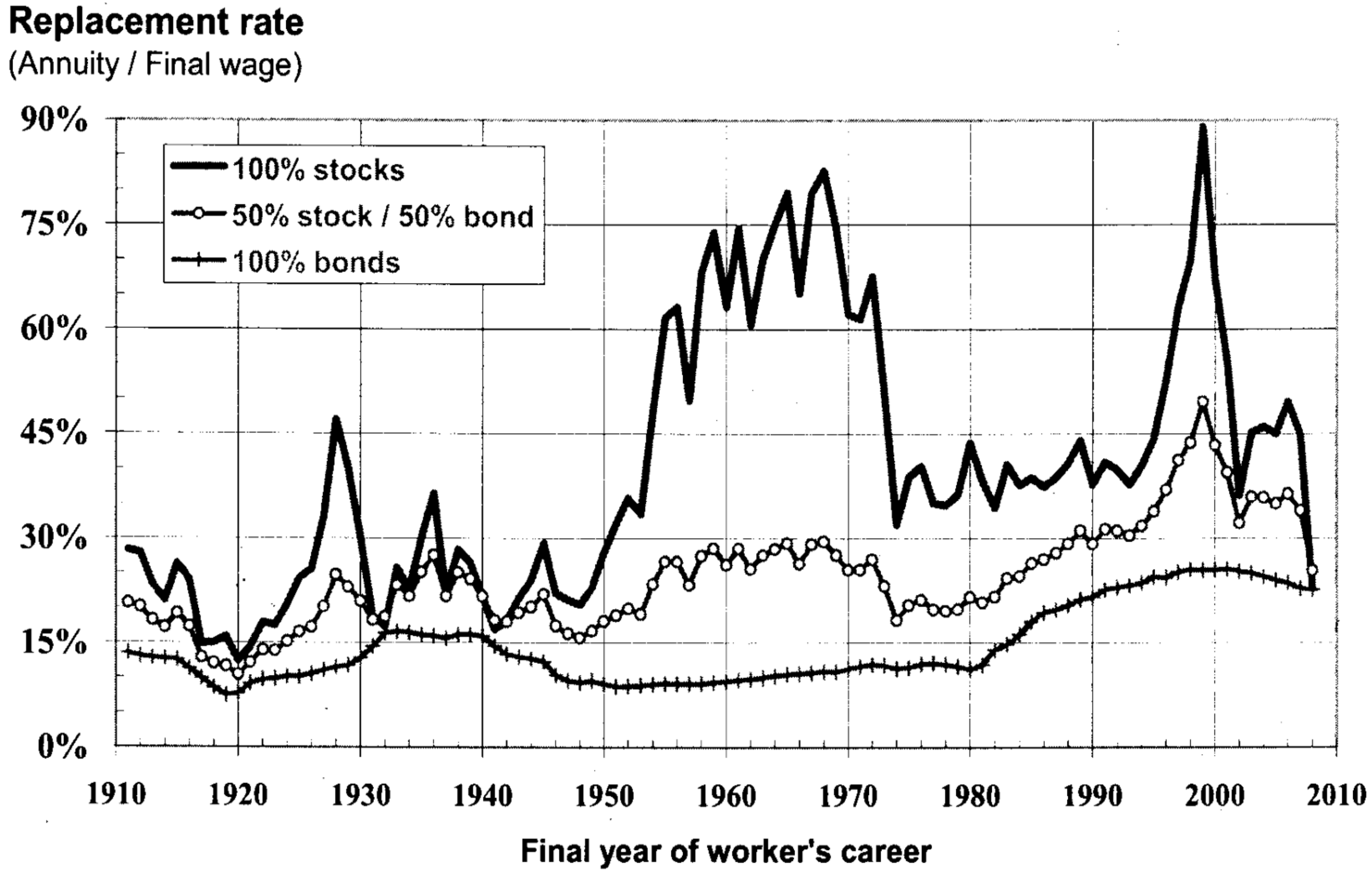
- Commingled plans will always be superior here either through the Law of Large Numbers or the efficiencies of scale.

- Size matters

Replacement rate obtained from personal account savings of workers who invest solely in stocks and contribute 4% of annual salary over a 40-year career



Replacement rate obtained from personal account savings of workers who invest in alternative portfolios and contribute 4% of annual salary over a 40-year career



Individual Accounts vs. Commingling of Risk

- Private investment expertise can easily cost 2% of plan assets per annum.

- Should not ascribe characteristics to workers that they do not (and cannot) have.

- Individual also cannot manage de-accumulation

- There is <u>**nothing**</u> to recommend individual accounts as the preferred plan design for social security.

Public vs. Private

- Mix often depends on local culture.

- If private plans have significant tax incentives, then, to that extent, aren't they public?

- (And tax incentives may be regressive.)

Automatic Balancing Mechanisms (ABM)

- Now exist in Canada, Brazil, Sweden, Germany and Japan.
- Meant to return a plan to sustainable benefit/contributions.
- An optimal ABM would share the pain between workers and retirees, but …
- Only one of the above ABM (Canada) shares the pain and even Canada hits retirees harder than workers.
- Retirees normally have no way to respond to reduced benefits and reduced standards of living.

System Diversity

- One advantage of a mix is plan diversification.

- Sometimes funded is best.
- Sometimes paygo.

- Sometimes DB is best.
- Sometimes DC.

- So don't put all of your eggs in one basket.

System Diversity

- All private savings are DC and fully-funded.

- All individual accounts are DC and fully-funded.

- Employer-sponsored pensions can be DB or DC but should be fully funded at any moment since the employer can disappear at any moment.

- Huge shift in U.K. and U.S. from DB to DC.

System Diversity

- So if you wish to diversify, the **LAST** plan design you want for social security is fully-funded DC.

!

Conclusion

The primary purpose of social security retirement system is to determine how much of a country's GNP can be consumed by the retired elderly.

Q & A