



**Technical Seminar of the ISSA Technical Commission of
Statistical, Actuarial and Financial Studies
Limassol, Cyprus. – 30-31 October 2008**

Optimal financing of social security pension schemes

**Competing Views on Social Security Pension
Design and its Impact on Financing**

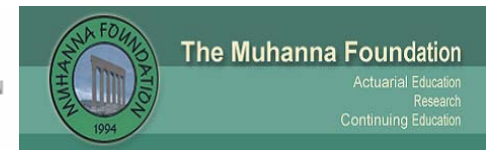
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Agenda

We will cover the following issues:

- **Funded vs Paygo**
- **Voluntary vs. Mandatory**
- **Individual Accounts vs. Commingling of Risk**
- **Public vs. Private**
- **Automatic Balancing Mechanisms**
- **Conclusion**

Primary purpose of Social Security Retirement Income is to minimize the probability that retirees live in poverty.

In turn, this implies that it is a method to allow retirees to share in a country's Gross National Product.

Funded vs. Paygo

Social Security need not be pre-funded.

One of its assets is “future contributions”.

However we should require sustainability.

Can expected contributions fund expected benefits?

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.

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?

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).

Individual Accounts vs. Commingly of Risk

The primary purpose of Social Security Retirement Income is to minimize the probability that retirees live in poverty.

This, in turn, implies that the system should mitigate risk.

Risks such as:

- 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.

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Individual Accounts vs. Commingly of Risk

The impact can easily be 2% (contributions or benefits).

There is **nothing** 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.)

Public vs. Private

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.

Public vs. Private

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.

Public vs. Private

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

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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.

Remember retirees normally have no way to respond to reduced benefits and reduced standards of living.

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Conclusion

The primary purpose of social security retirement income is to minimize the probability that retirees live in poverty.

Q & A