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Self-Adjusting Mechanisms for Sustainable Retirement Systems

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Disclaimer

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The Problem

- With continued increases in life expectancy, traditional pay-as-you-go social security will eventually encounter financing problems.
- Without offsetting adjustments in the social security program, the value of lifetime benefit payments increases with increases in life expectancy

Characteristics of Ad Hoc Adjustments

- Political risk as to what adjustments will be made – adjustments are unpredictable
- Risk as to timing of adjustments - adjustments made infrequently
- Adjustments often made due to a financing crisis, with little lead time
- Adjustments tend to be large, rather than incremental

Characteristics of Automatic Adjustments

- No political risk – adjustment rule known in advance, predictable
- Exact adjustment not known, but rule determining it known
- Adjustments made frequently
- Adjustments made before a crisis occurs
- Adjustments tend to be incremental

Types of Automatic Adjustments

- Indexing social security for life expectancy
- Automatic adjustments tied to social security insolvency

Autopilot: A New Trend

- At least 12 countries have adopted some type of life expectancy indexing or indexing tied to insolvency
- Nearly all of the autopilot policies have been adopted since 2000
- Most inspired by path-breaking reform in Sweden

Autopilot Mathematics

- PAYG budget constraint
- $BN = twL$
- B = per capita annual benefits
- N = number of beneficiaries
- T = payroll tax rate
- W = average covered wages
- L = number of covered workers

Autopilot Dynamics

- Dynamics: E = percentage change operator (derivative of natural log)
- $E(BN) = E(twL) = E(wL)$, assuming t constant because countries reached max tax rate
- $E(B) + E(N) = E(w) + E(L)$
- $E(B) = E(w) + E(L) - E(N)$
- $E(B) = E(w) - E(N/L)$

Key Result

- $E(B) = E(w) + E(L) - E(N)$
- If the beneficiary population N is growing faster than the labor force L , average benefits must grow slower than average wages.

Result (2)

- $E(B) = E(w) - E(N/L)$
- If the dependency ratio N/L is growing, the growth of average benefits must be less than the growth in average wages.

Countries with Life-Expectancy Indexing of Benefits

- Traditional DB social security – Brazil, Finland, Portugal
- Notional Defined Contribution – Sweden, Italy, Latvia, Norway, Poland

NDC Systems

- A notional defined contribution system, also called nonfinancial DC
- Each worker has a notional individual account which is credited contributions and interest payments on an accumulated balance
- Benefits defined in terms of account balance

Frequency of Adjustment

- Most countries make the adjustment annually, which has the advantage that each adjustment is small
- Italy will make the adjustment every 10 years, reduced to every 3 years by a recent reform

Adopting Countries

- Life-expectancy adjustment of benefits is natural in an NDC system, and all those countries have adopted it in some form
- Technically, the adjustment can easily be adopted in a traditional PAYG system, and a couple of countries have done so.

Life-Expectancy Indexing US Social Security Benefits

- According to the Congressional Budget Office, with this change Social Security would be solvent for 50 years
- On average, a 0.3 percent reduction in annual benefits for each new birth cohort
- The reduction in benefits could be offset by workers working longer or by moving back the ERA (Early Retirement Age)

Life-Expectancy Indexing Other Parameters

- Adjustment factor for postponed retirement – Italy
- Early retirement age UK
- Ratio of contribution years for a full benefit to average years in retirement - France

Auto Adjustment Tied to Insolvency

- Countries also having life expectancy indexing – Sweden
- Countries without life expectancy indexing – Germany, Japan, Canada

Sweden

- Life-expectancy indexing of benefits at retirement age
- Adjustment of benefits in payment for level of productivity growth
- Less than full price indexing of benefits if real wage growth less than 1.6 percent per year

Sweden (2)

- Because of life-expectancy indexing of initial benefits, and productivity growth affecting price indexing of benefits, expected that further adjustments will be needed infrequently

Sweden (3)

- Solvency indexing adjustment entirely on benefits in payment and benefits accrual, the payroll tax rate is fixed
- Normally, the rate of per capita wage growth is used as the rate of interest accrual credited to the workers' account balances.
- Total wage growth would be a better measure for maintaining solvency

Canada

- A different system for adjustments than used in other countries.
- If the social security system is projected to have a shortfall, and if the political system does not resolve the issue, then the automatic adjustment occurs
- Benefit levels are frozen for 3 years and contribution rates are increased
- Reassessment every 3 years

Conclusions

- Life-expectancy indexing would reduce political risk
- If established in the US, would maintain solvency for more than 50 years
- It has been established by 8 countries in recent years

Conclusions (2)

- Life-expectancy indexing maintains the value of life-time benefits, but reduces annual benefits if the worker does not postpone retirement.
- Postponing retirement could offset the benefit cut.

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