Political Risk vs. Market Risk in Social Security

John B. Shoven

Stanford University and NBER

Sita N. Slavov

Occidental College

Overview of Argument

- A universal DB system is impossible
- Corporate DB plans transfer risk from participants to shareholders and/or insurers
- In Social Security, funding risk is passed to participants through political process
- Promised returns vary considerably across cohorts and over time for a given cohort
- Therefore, Social Security does not provide “safe” benefits

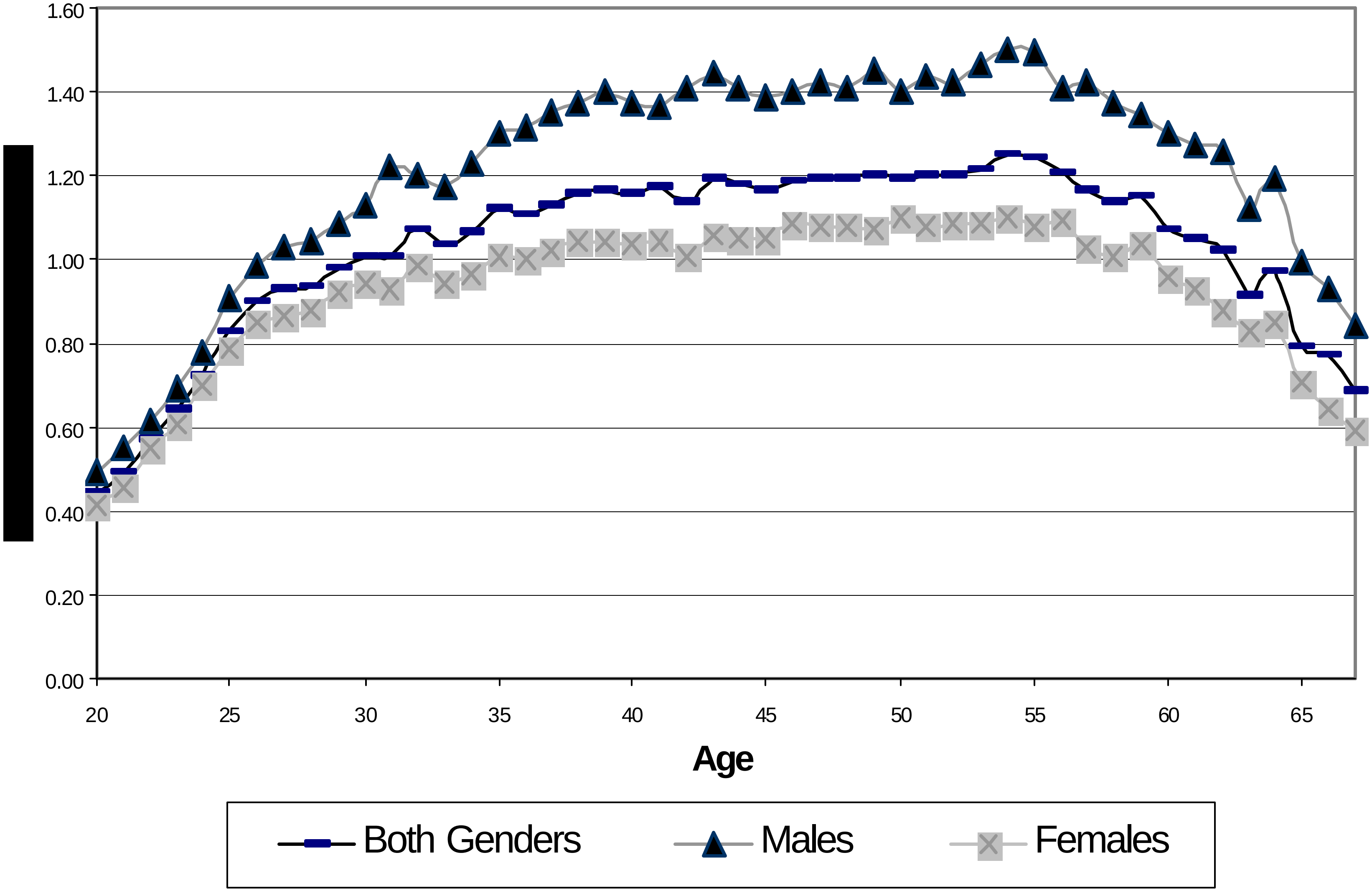
Funding Risk in PAYGO Social Security

- Demographic changes
  - Fertility
  - Mortality
  - Immigration
  - Labor market participation
- Macroeconomic changes
  - Wage growth
  - Inflation

Our Approach

- Research question: How much does the promised IRR vary as a result of law changes?
- Compute IRR for each birth cohort in each year
- Assumptions:
  - Start work at age 20
  - Live to age 80
  - Retire at normal retirement age
  - Payroll tax increased by 3.5 percentage points in 2005
  - Earnings by age simulated using a time-series of average wages for U.S. and an age-wage profile constructed from 2001 and 2002 CPS.

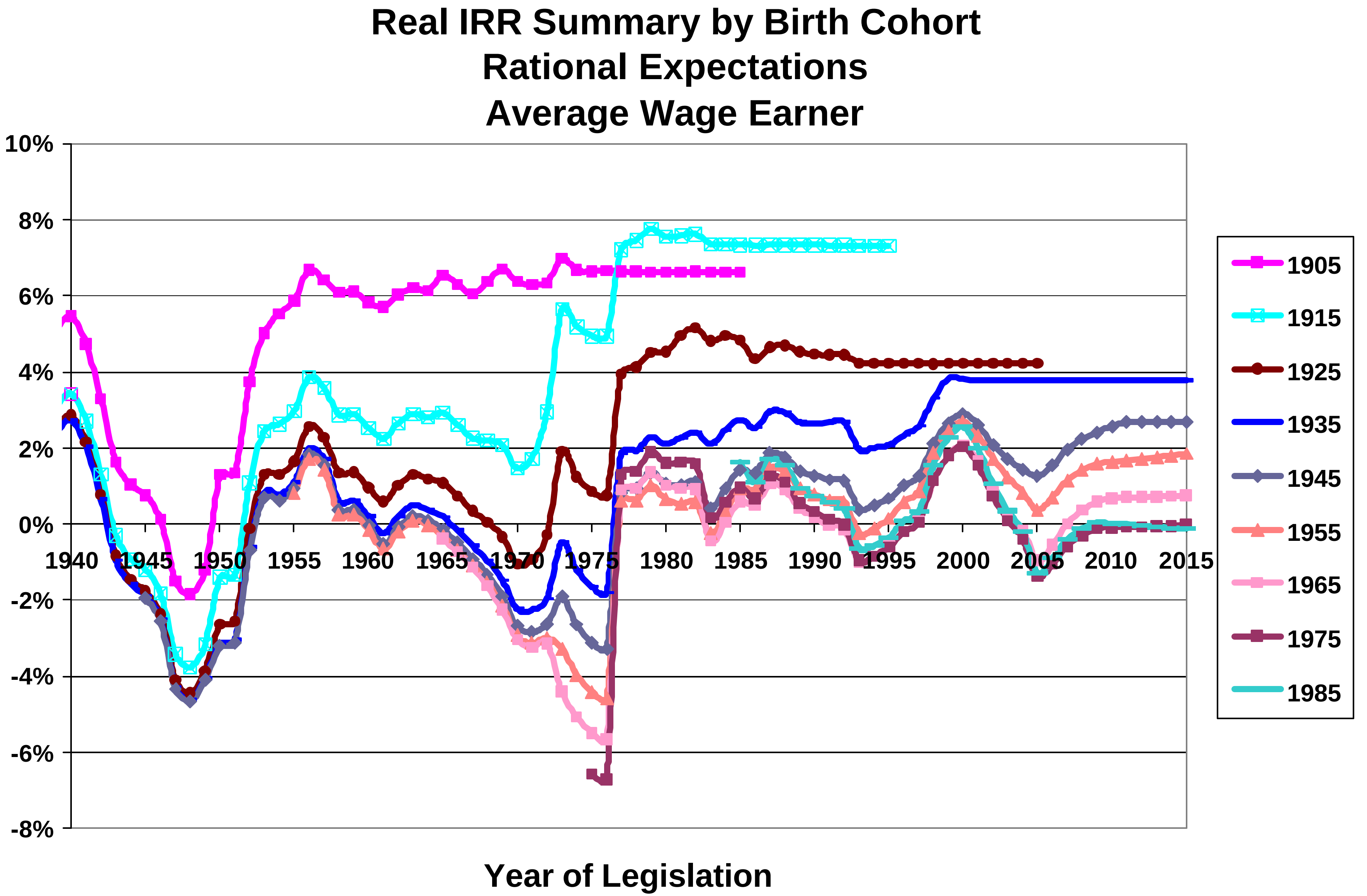
Age-Wage Profile (Weekly Wages)
(Average of 2001 and 2002 profiles)



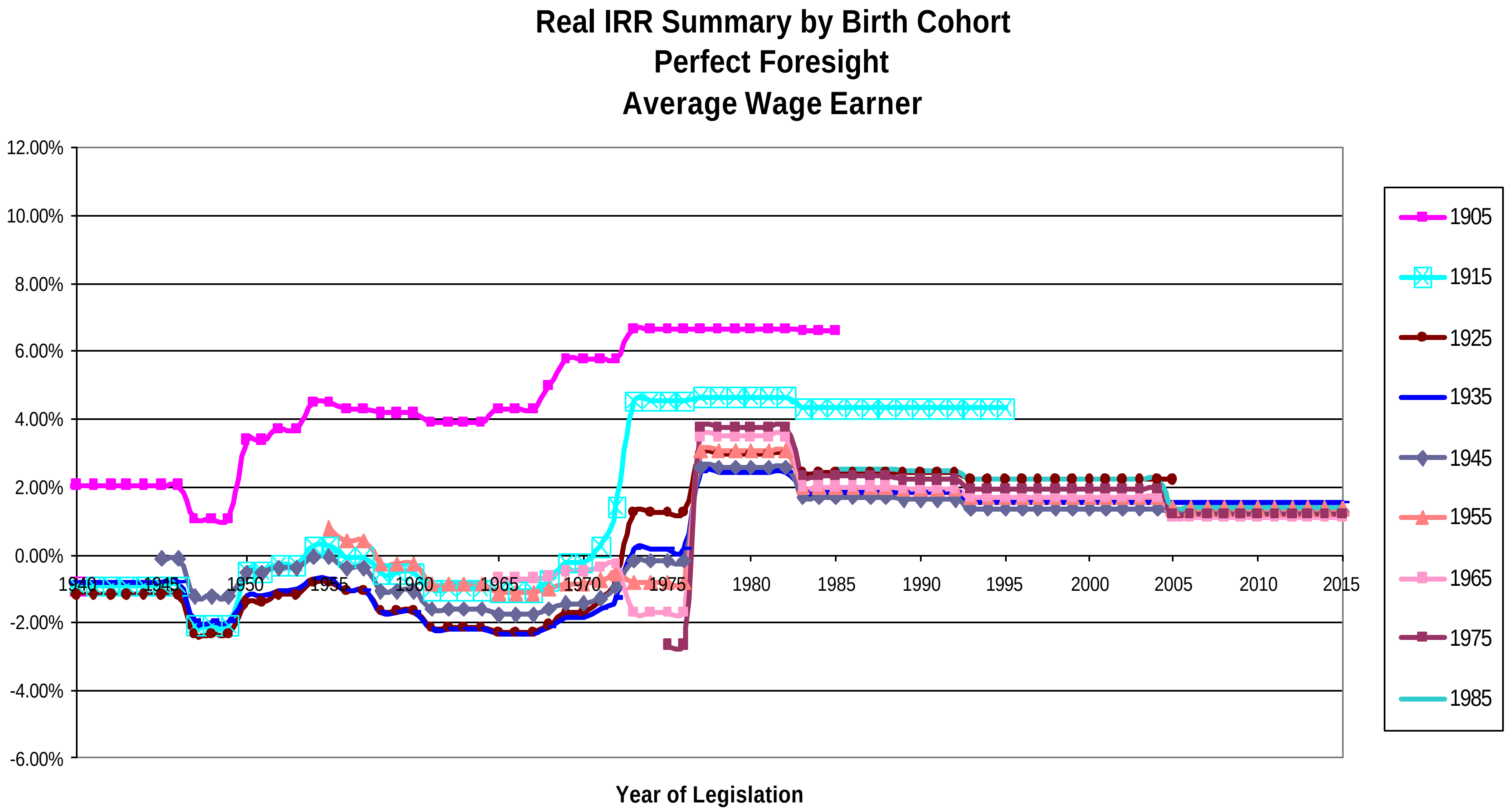
Source: CPS, Outgoing Rotation Group, Weighted weekly earnings.

Two Methods of Forecasting Macroeconomic Variables

- Rational Expectations
  - Participants expect inflation and wage growth to be the average of the past 5 years
  - Variation in IRR comes from changing expectations of macroeconomic variables and law changes
- Perfect Foresight
  - Participants perfectly predict future inflation and wage growth
  - Isolates variation in IRR due to law changes



Real IRR Summary by Birth Cohort
Rational Expectations
Average Wage Earner
10%
8%
6%
4%
2%
0%
-2%
-4%
-6%
-8%
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
Year of Legislation
1905
1915
1925
1935
1945
1955
1965
1975
1985



Real IRR Summary by Birth Cohort
Perfect Foresight
Average Wage Earner
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
-6.00%
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
Year of Legislation
1905
1915
1925
1935
1945
1955
1965
1975
1985

Results

- Earlier cohorts received higher IRR
- Considerable variation in promised IRR over any given cohort's lifetime
- Compared to 60/40 stock-bond portfolio:
  - Portfolio IRR
    - Mean = 6.2%　　　　St. dev. = 2.03%
  - Simulated IRR for 1960 cohort (1977-2004):
    - Mean = .525%　　　　St. dev. = 0.8 %
- This risk is highly correlated with labor market earnings, leaving many workers without diversified assets.
- Large decrease in IRR due to 1983 and 1993 reforms, even for those at or near retirement
- Similar pattern for 10^{th} and 90^{th} percentile wage-earners

International Comparison

- Most developed countries are beginning to address their systems' funding risk
- Changes in the method for indexing benefits
- Increases in Early and Normal Retirement Ages
- Explicit movement from PAYGO to DC plans

Reforms in Germany

- Switch from gross to net wage indexation (1989)
- Increase in retirement age (1997)
- Decrease in replacement rate from 70% to 63.5% (2001)
- Explicit recognition of demographic risk: benefits linked to “sustainability factor” (2004)

Other Countries

- France: Price indexation replaced wage indexation
- Sweden: Introduced private accounts and notional defined contribution
- Italy: Reduced pension liabilities (and hence benefits) by 25%

Conclusions

- Traditional Social Security is not a defined benefit program
- Risk comes from macroeconomic and demographic changes (transmitted through law changes)
- Debate over private accounts:
  - Not “safe versus risky”
  - Political versus financial risk