The Future of Social Security

Andrew B. Abel
October 4, 2000

OASDI Operations
Estimates for 2000
(billions of dollars, except Trust fund ratio)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust fund at beginning of year</td>
<td>896.1</td>
</tr>
<tr>
<td>Income excluding interest</td>
<td>500.7</td>
</tr>
<tr>
<td>Interest income</td>
<td>64.9</td>
</tr>
<tr>
<td>Total income</td>
<td>565.7</td>
</tr>
<tr>
<td>Outgo</td>
<td>410.3</td>
</tr>
<tr>
<td>Net income</td>
<td>155.4</td>
</tr>
<tr>
<td>Trust fund at end of year</td>
<td>1051.5</td>
</tr>
<tr>
<td>Trust fund ratio</td>
<td>2.18</td>
</tr>
</tbody>
</table>

Social Security: Demographic Time Bomb

Beneficiaries per 100 Covered Workers

Source: 2000 OASDI Trustees Report, Table II.F.19

Baby Boom in a PayGo System

- Seeds of the Problem
  - Boomers in the work force
    - Easy to pay high per-retiree benefits to early (small) cohorts of retirees
- The Problem Blossoms
  - Boomers in retirement
    - High per-retiree benefits are expected (promised)
    - Large number of retirees
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OASDI Trust Fund Ratios

<table>
<thead>
<tr>
<th></th>
<th>Intermediate</th>
<th>Low Cost</th>
<th>High Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum trust fund ratio (%)</td>
<td>421</td>
<td>574</td>
<td>301</td>
</tr>
<tr>
<td>Year attained</td>
<td>2013</td>
<td>2018</td>
<td>2009</td>
</tr>
<tr>
<td>Year of exhaustion</td>
<td>2037</td>
<td>--</td>
<td>2026</td>
</tr>
</tbody>
</table>

Trust Fund Operations
(Intermediate Projection)


First year outgo exceeds income excl. interest: 2015
First year outgo exceeds total income: 2025

Income and Cost Rates:
Intermediate

Source: 2000 OASDI Trustees Report, Table II.F.13
Income and Cost Rates: Low Cost

Source: 2000 OASDI Trustees Report, Table II.F.13

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Income and Cost Rates: High Cost

Source: 2000 OASDI Trustees Report, Table II.F.13

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### Actuarial Balance

#### Intermediate

<table>
<thead>
<tr>
<th>Year range</th>
<th>Income rate</th>
<th>Cost rate</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 - 2024</td>
<td>12.76</td>
<td>12.30</td>
<td>0.46</td>
</tr>
<tr>
<td>2025 - 2049</td>
<td>13.11</td>
<td>17.55</td>
<td>-4.44</td>
</tr>
<tr>
<td>2050 - 2074</td>
<td>13.26</td>
<td>18.67</td>
<td>-5.42</td>
</tr>
<tr>
<td><strong>2000 - 2074</strong></td>
<td><strong>13.51</strong></td>
<td><strong>15.40</strong></td>
<td><strong>-1.89</strong></td>
</tr>
</tbody>
</table>

#### Low Cost

<table>
<thead>
<tr>
<th>Year range</th>
<th>Income rate</th>
<th>Cost rate</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 - 2024</td>
<td>12.73</td>
<td>11.30</td>
<td>1.43</td>
</tr>
<tr>
<td>2025 - 2049</td>
<td>12.98</td>
<td>14.65</td>
<td>-1.68</td>
</tr>
<tr>
<td>2050 - 2074</td>
<td>13.03</td>
<td>14.04</td>
<td>-1.01</td>
</tr>
<tr>
<td><strong>2000 - 2074</strong></td>
<td><strong>13.41</strong></td>
<td><strong>13.03</strong></td>
<td><strong>0.38</strong></td>
</tr>
</tbody>
</table>

#### High Cost

<table>
<thead>
<tr>
<th>Year range</th>
<th>Income rate</th>
<th>Cost rate</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 - 2024</td>
<td>12.81</td>
<td>13.62</td>
<td>-0.81</td>
</tr>
<tr>
<td>2025 - 2049</td>
<td>13.27</td>
<td>21.11</td>
<td>-7.84</td>
</tr>
<tr>
<td>2050 - 2074</td>
<td>13.59</td>
<td>25.40</td>
<td>-11.81</td>
</tr>
<tr>
<td><strong>2000 - 2074</strong></td>
<td><strong>13.65</strong></td>
<td><strong>18.65</strong></td>
<td><strong>-5.00</strong></td>
</tr>
</tbody>
</table>


### 75-Year Actuarial Balance and Annual Balance in 2075

(Percent of taxable payroll)

<table>
<thead>
<tr>
<th></th>
<th>75-Year Actuarial Balance</th>
<th>Annual Balance in 2075</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate</td>
<td>-1.89</td>
<td>-6.19</td>
</tr>
<tr>
<td>Low Cost</td>
<td>0.38</td>
<td>-0.86</td>
</tr>
<tr>
<td>High Cost</td>
<td>-5.00</td>
<td>-14.50</td>
</tr>
</tbody>
</table>

Source: Tables I.G2 and II.F13
Why Should the Government Provide Retirement Income?

- Myopia/Ignorance of Individuals?
- Adverse Selection in Private Annuities
  - Compulsory program is immune to adverse selection
- Moral Hazard of Individual Savers
  - Government will not let them starve
- Redistribution of Income
  - Intra-generational and inter-generational

PayGo vs. Funded

- PayGo
  - Decreases national capital accumulation
  - Allows intergenerational risk sharing
    - Social Security began during Great Depression
    - Requires intergenerational cooperation
- Funded
  - Increases capital accumulation and wages
  - Does not rely on intergenerational cooperation
    - Does not allow intergenerational risk sharing
Strategies for Fixing Social Security

- Changes within Current PayGo Framework
- Change the Structure to a Funded System
  - Funded system run by government
  - Funded system with limited individual control
  - Privatization
  - These changes require a transition that respects currently accrued promises

Strategies in PayGo Framework

- Increase Contributions by Workers
  - Increase OASDI taxes
    - increase tax rate or remove cap
  - Increase retirement age
- Reduce Benefits Paid to Retirees
  - Increase retirement age
  - Tax Social Security benefits (redistributational)
- Earn Higher Return on Assets in Trust Fund
  - Invest in other assets such as equities
Moving to a Funded System

- $9 Trillion of Unfunded Liabilities
  - Transition to funded system cannot ignore these
  - Could issue “recognition bonds”
    - People might accept less than 100% of claim
    - Would increase debt/GDP from 0.35 to 1.25

Motivation for Equity Investment:
Exploit the Equity Premium

- Equity Premium = Rate of return on stock
  minus riskless interest rate
  - Ex post equity premium - data presented below
  - Ex ante equity premium
    - should guide investment
    - unobservable
- No Free Lunch: Equity premium is risky
Average Annual Returns: Bonds, Bills, Stocks

Equity Premium Relative to Bonds and Bills

Source: CRSP
Will the Equity Premium Persist?

- Is the Market Overvalued?
  - Historically high price/earnings ratios
    - Reversion to typical P/E would reduce returns
- Demographic Factors?
- Effect of Trust Fund Investment on Equity Premium?
  - Probably will reduce equity premium
    - By how much?

Index of Stock Prices in Japan

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How Big is the Risk of Investing in Equities? - Conceptual Issues

- Who Bears the Risk of Low Investment Returns?
  - If Trust Fund invests in equities
  - If private accounts invest in equities
- Can the Trust Fund be Used to Share Risks across Generations?
- Intra-generational Distributional Issues
  - Social Security is more important for low-income families
    - May bear more of the risk

Gore Plan – Debt Reduction

- “Prosperity for America’s Families – The Gore Lieberman Economic Plan”
- Pay off Federal debt to public by 2012
- Current debt held by public: $3.4 trillion
- Ten-year plan for $3 trillion public debt reduction
  - $2.3 trillion from SS surplus
  - $0.45 trillion from Medicare surplus
  - $0.3 trillion (1/6 of non-SS/non-Medicare surplus) in Surplus Reserve Fund
Gore Plan – Social Security

- Plan to extend solvency of SS system to 2054
- Save SS surplus in lockbox
- During years 2011-2050, use interest savings (from reduced Federal debt) for Social Security
- Reduce poverty among elderly women
  - Reduce motherhood penalty (5 years credit for raising children)
  - Increase widow’s benefit
- Retirement Savings Plus accounts
  - Matching tax credits (3-to-1 for low income)

Bush “Plan”
Six Principles

- Do not change existing benefits for retirees or near-retirees
- Use SS surpluses only for future SS
- Do not increase SS payroll taxes
- Government must not invest SS funds in stock market
- Preserve disability and survivors components
- Individually controlled, voluntary personal retirement accounts
Lockbox

- Trust Fund holds Treasury’s debt
  - Asset of Trust Fund
  - Liability of Treasury
  - No effect on net worth of consolidated Federal government
- Debt held by public
  - Claims on future tax revenues
- Treasury debt in Trust Fund is a claim on future tax revenue