THE COMING GENERATIONAL STORM

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U.S. Demographics

77 million baby boomers
Oldest boomers are 59, youngest are 41
In 2030
• 100% more elderly, 18% more workers
• Entire country will be a lot older than current day Florida

Dying old – Let’s count the ways

<table>
<thead>
<tr>
<th>Current Age</th>
<th>Age 80 Males</th>
<th>Age 80 Females</th>
<th>Age 85 Males</th>
<th>Age 85 Females</th>
<th>Age 90 Males</th>
<th>Age 90 Females</th>
<th>Age 95 Males</th>
<th>Age 95 Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>73%</td>
<td>83%</td>
<td>58%</td>
<td>70%</td>
<td>39%</td>
<td>52%</td>
<td>22%</td>
<td>30%</td>
</tr>
<tr>
<td>65</td>
<td>75%</td>
<td>84%</td>
<td>60%</td>
<td>71%</td>
<td>41%</td>
<td>53%</td>
<td>22%</td>
<td>31%</td>
</tr>
<tr>
<td>70</td>
<td>79%</td>
<td>87%</td>
<td>63%</td>
<td>74%</td>
<td>43%</td>
<td>54%</td>
<td>23%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Probability of living to

U.S. workers per oldster

<table>
<thead>
<tr>
<th>Year</th>
<th>Workers Per Retiree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>16.0 workers per retiree</td>
</tr>
<tr>
<td>2005</td>
<td>3.3 workers per retiree</td>
</tr>
<tr>
<td>2030</td>
<td>2.0 workers per retiree</td>
</tr>
</tbody>
</table>

Forever old

US keeps aging throughout the century
Old old grow most rapidly
In 2050: Those 85+ can fill NY, LA, & Chicago
In 2050: Those 100+ can fill Washington, DC

The Share of the Elderly at Home and Abroad

<table>
<thead>
<tr>
<th>Country</th>
<th>2002</th>
<th>2030</th>
<th>2050</th>
<th>2070</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>17.1%</td>
<td>26.3%</td>
<td>30.6%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Japan</td>
<td>18.0%</td>
<td>29.9%</td>
<td>36.8%</td>
<td>37.7%</td>
</tr>
<tr>
<td>U.S.</td>
<td>12.4%</td>
<td>19.1%</td>
<td>21.3%</td>
<td>21.6%</td>
</tr>
</tbody>
</table>
**Fertility rates of developed countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>1950</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>2.32</td>
<td>2.16</td>
</tr>
<tr>
<td>Germany</td>
<td>2.73</td>
<td>1.69</td>
</tr>
<tr>
<td>France</td>
<td>2.75</td>
<td>1.32</td>
</tr>
<tr>
<td>Japan</td>
<td>2.85</td>
<td>1.43</td>
</tr>
<tr>
<td>Russia</td>
<td>3.45</td>
<td>2.11</td>
</tr>
<tr>
<td>United States</td>
<td>1.23</td>
<td>1.21</td>
</tr>
</tbody>
</table>

**The aging world and coming population decline in millions**

- **Europe**
  - 2000: 800 million
  - Projected: 600 million

- **United States**
  - 2000: 100 million
  - Projected: 200 million

**Global aging**

- The U.S. is the young kid on the block
- Japan is 15 years ahead of U.S. wrt aging
- Japan is engaged in national Hari Kara
- Japan’s population will halve over century
- Italy, Germany, Spain – all depopulating
- China may become world’s oldest nation

**Paying the piper**

- Social Security + Medicare + Medicaid = $21,000 per older
- Medicare + Medicaid Spending = $600 Billion
- Medicare & Medicaid benefits are growing like crazy
- Medicaid spending > Medicare spending

**Entitlements as a share of GDP**

- Total Federal Spending for Medicare and Medicaid (Percentage of GDP)
  - Actual: 10%
  - Projected: 15%

Source: Congressional Budget Office, New York Times, data from various sources.
The distribution of Medicare costs

Concentration of total annual Medicare expenditures among beneficiaries (percent)

Source: Congressional Budget Office

The Rising Cost of Health Care, 1970 - 2002

<table>
<thead>
<tr>
<th>Country</th>
<th>Annual Growth in Expenditure Per Recipient</th>
<th>Ratio of Expenditure Growth to GDP Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>2.82%</td>
<td>1.9</td>
</tr>
<tr>
<td>Japan</td>
<td>3.87%</td>
<td>2.1</td>
</tr>
<tr>
<td>U.S.</td>
<td>4.24%</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Source: Congressional Budget Office

Present Value of Projected Government Health Spending as Share of Present Value of GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>17.4%</td>
</tr>
<tr>
<td>Japan</td>
<td>12.9%</td>
</tr>
<tr>
<td>U.S.</td>
<td>24.3%</td>
</tr>
</tbody>
</table>

Source: Christian Hagist and Laurence Kotlikoff

Mind the Gap!

Fiscal Gap = PV Expenditures – PV Receipts

Uncle Sam is broke!

U.S. Fiscal Gap = $65,900,000,000,000!

Source: Jagadeesh Gokhale and Kent Smetters

It’s the implicit debt, stupid

Official debt is a side show
Real story – Entitlement payments

Source: Jagadeesh Gokhale and Kent Smetters
Comparative bankruptcy

U.S. fiscal condition may be worse than Japan’s and Western Europe’s.
It may be a lot worse than Brazil’s.

Eliminating the Fiscal Gap
-- The menu of pain

Immediate and permanent income tax hike
100%

Immediate and permanent discretionary spending cut
146%

Immediate and permanent cut in Medicare and Social Security
67%

Delay makes things worse

The fiscal gap is like a credit card bill.
The longer you ignore it, the bigger it gets.

Economic effects of aging
Relative to the year 2000

<table>
<thead>
<tr>
<th></th>
<th>Reduction in real wages</th>
<th>Increase in taxes on labor</th>
<th>Net reduction in take home pay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By 2030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>10%</td>
<td>13.4%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Europe</td>
<td>8%</td>
<td>19.7%</td>
<td>27.7%</td>
</tr>
<tr>
<td>Japan</td>
<td>8%</td>
<td>20.3%</td>
<td>28.3%</td>
</tr>
<tr>
<td></td>
<td>By 2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>15%</td>
<td>15.9%</td>
<td>30.9%</td>
</tr>
<tr>
<td>Europe</td>
<td>13%</td>
<td>28.5%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Japan</td>
<td>12%</td>
<td>32.0%</td>
<td>44.0%</td>
</tr>
</tbody>
</table>


Bush fiscal policy
Accelerating U.S. bankruptcy

Privatizing social security
- Significant immediate tax cuts and huge, but unlikely long-term benefit cuts
Tax reform will be revenue neutral
- Exacerbates fiscal child abuse
No structural reform of medicosts
- Benefits keep growing like crazy
Eating our young

Fake elixirs

Immigration
Increased fertility
Capital deepening
Technological change
Delayed retirement
Help from employers
Help from dad and mom
Help from kids
Going critical

Countries that can't raise taxes or cut spending, print money
Practice dates to Emperor Diocletian in 300 AD
20 hyperinflations in the last century
Do cry for me Argentina
Think about brazilian interest rates

U.S. saving and domestic investment, the trade gap, and fiscal policy
-- connecting the dots

Getting to yes

Sensible social security reform
Sensible Medicare and Medicaid reform
Sensible = Radical = Politically Infeasible

What might be coming

Tax hikes, benefit cuts
Very high Inflation, if not hyperinflation
Very high nominal interest rates
Very high real interest rates
Low growth, high unemployment
Capital shortage and lower real wages