Session 5
Very Low Fertility

Social and Economic Aspects of Fertility Decline

Population, Family and Reproductive Health
380.655
AY 2008-2009
Objectives of the Lecture

• At the end of this lecture and the accompanying reading students will be able to:
  – Describe recent trends in fertility world wide (2)
  – Distinguish among the major aspects of the decline to very low fertility
    • Delay of first births
    • Decline in transition to second or higher births
    • Decline of marriage/stigma of non-marital childbearing
  – Distinguish among the conceptual framework used to explain the decline to very low fertility and variations in fertility quantum in low fertility societies
    • Supply and Demand
    • 2nd Demographic Transition
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Cohort vs. Period Perspectives

• Remember discussion of TFR
  – Cohort TFR is the actual completed fertility of a birth cohort (or sometimes a marriage cohort)
  – Period TFR is a synthetic measure
Next Two Slides

• Cohort Fertility for women born from 1915 (reaching reproductive age in early 1930s) to 1967 (reaching reproductive age in mid 1980s)
  – First slide Western Europe
  – Second slide Eastern and Central Europe
  – In both settings there has been a very sharp decline
Total Cohort Fertility Rates, Selected Western European Countries, Birth Cohorts 1915-1967

Total Cohort Fertility Rates, Selected Central and Eastern European Countries, Birth Cohorts 1924-1967

Completed cohort fertility (CTFR)

Birth cohort


Slovak Republic
Poland
Russia
Bulgaria
Czech Republic
Slovenia
Lithuania

Next Two Slides

- Period TFRs
- Below Replacement in mid 1990s and declined since then

<table>
<thead>
<tr>
<th>Year</th>
<th>Japan</th>
<th>South Korea</th>
<th>Taiwan</th>
<th>Singapore</th>
</tr>
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<tbody>
<tr>
<td>1995</td>
<td>1.42</td>
<td>1.64</td>
<td>1.78</td>
<td>1.67</td>
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<td>1996</td>
<td>1.43</td>
<td>1.70</td>
<td>1.76</td>
<td>1.66</td>
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<td>1997</td>
<td>1.39</td>
<td>1.54</td>
<td>1.77</td>
<td>1.61</td>
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<td>1998</td>
<td>1.38</td>
<td>1.47</td>
<td>1.47</td>
<td>1.47</td>
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<tr>
<td>1999</td>
<td>1.34</td>
<td>1.42</td>
<td>1.56</td>
<td>1.47</td>
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<tr>
<td>2000</td>
<td>1.36</td>
<td>1.47</td>
<td>1.68</td>
<td>1.60</td>
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<tr>
<td>2001</td>
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<td>2002</td>
<td>1.32</td>
<td>1.17</td>
<td>1.34</td>
<td>1.37</td>
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<tr>
<td>2003</td>
<td>1.29</td>
<td>1.17</td>
<td>1.24</td>
<td>1.26</td>
</tr>
<tr>
<td>2004</td>
<td>1.29</td>
<td>1.16</td>
<td>1.18</td>
<td>1.25</td>
</tr>
<tr>
<td>2005</td>
<td>1.25</td>
<td>1.08</td>
<td>1.12</td>
<td>1.25</td>
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</table>
Total Fertility Rate for China, 1949 to 2001

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Aspects of Declines to Very Low Fertility

• Tempo vs. Quantum
  – Shifts in the mean age of childbearing can cause artifactual fluctuations in the period TFR
  – Next Slide illustrates this
    • If the time period for the rate was t to t+1
    • B panel shows what happens when mean age at childbearing goes up
    • C panel shows what happens when mean age at childbearing goes down
Tempo Effects On Fertility

No change in tempo

Births deferred

Births advanced

Western Europe

- Mean Age at Childbearing has been increasing quite a bit, therefore observation of low TFRs might be mistaken
- Next Slide shows mean age at first childbearing
Mean Age of Women at First Childbirth in Selected Countries and Regions of Europe and in the United States, 1960-2005 (arithmetic averages)

Bongaarts and Feeney

- Proposed a mathematical adjustment to period TFRs that purportedly adjusts for tempo effects
  - Has been questioned
  - Outside the scope of this class
  - Currently in very wide use
Next Slide

- Applies the Bongaarts-Feeney adjustment to show that some of the apparent decline in Western Europe, at least, was due to tempo effects
- For Western Europe, adjustment brings TFR pretty close to replacement
- Elsewhere it increases, but not that much
Table 1: Period TFR and the estimated level of tempo-adjusted TFR in main European regions in 2001-2003 and 1995-2000

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>Western Europe</td>
<td>149.3</td>
<td>1.75</td>
<td>1.92</td>
<td>-0.17</td>
<td>1.88</td>
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<td>Northern Europe</td>
<td>24.3</td>
<td>1.70</td>
<td>1.96</td>
<td>-0.26</td>
<td>1.94</td>
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<tr>
<td>German-speaking countries</td>
<td>97.8</td>
<td>1.32</td>
<td>1.53</td>
<td>-0.21</td>
<td>1.52</td>
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<tr>
<td>Southern Europe</td>
<td>120.4</td>
<td>1.28</td>
<td>1.43</td>
<td>-0.15</td>
<td>1.59</td>
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<tr>
<td>Central Europe</td>
<td>77.6</td>
<td>1.25</td>
<td>1.66</td>
<td>-0.41</td>
<td>1.74</td>
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<tr>
<td>Southeastern Europe</td>
<td>43.7</td>
<td>1.33</td>
<td>1.64</td>
<td>-0.31</td>
<td>1.67</td>
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<tr>
<td>Eastern Europe</td>
<td>205.8</td>
<td>1.25</td>
<td>1.45</td>
<td>-0.19</td>
<td>1.46</td>
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<tr>
<td>EUROPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-15</td>
<td>378.6</td>
<td>1.49</td>
<td>1.67</td>
<td>-0.18</td>
<td>1.70</td>
</tr>
<tr>
<td>EU-12 new (2004 &amp; 2007 accession)</td>
<td>104.1</td>
<td>1.24</td>
<td>1.63</td>
<td>-0.39</td>
<td>1.67</td>
</tr>
<tr>
<td>EU-27</td>
<td>482.6</td>
<td>1.44</td>
<td>1.66</td>
<td>-0.22</td>
<td>1.69</td>
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<tr>
<td>Europe</td>
<td>722.0</td>
<td>1.39</td>
<td>1.61</td>
<td>-0.22</td>
<td>1.63</td>
</tr>
</tbody>
</table>
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Aspects of Declines to Very Low Fertility

• Decline in second and higher order births
  – Parity progression ratios
    • The percent of women who had x births who go on to have either x+1 births, or x+ births
Parity Progression Ratios in the Netherlands

• Next Slides show
  – Not much of a decline in parity progression from 0 to 1, slight delay, recuperation and then return
  – Some decline, but mostly recuperation
Netherlands, First Births

Proportion of women having a first birth over age.

Netherlands, Second Births

Proportion of women having a second birth vs. Age

- 1960
- 1965
- 1970
- 1975
- 1980

Parity Progression Ratios in Bulgaria

- Next Slides show
  - Not much change in progression from 0, very high (higher than Netherlands) except for very recent cohorts
  - Lots of change in progression from 1 to more
Bulgaria, First Births

Proportion of women having a first birth

Age

1960
1965
1970
1975
1980

Bulgaria, Second Births

Proportion of women having a second birth

Age

1960
1965
1970
1975
1980

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Decline of Marriage

- Societies vary hugely in their tolerance for childbearing outside marriage or outside co-residential unions
  - When virtually no childbearing takes place outside marriage, and marriage is delayed then fertility will go down
Next Slide

• Huge amount of variation in the amount of childbearing outside marriage and outside co-residential unions
  – Outside marriage
    • Italy around 6%
    • Sweden around 45%
  – Outside co-residential unions
    • Belgium around 1%
    • U.S. around 15%
### TABLE 1  Childhood exposure to single parenting (from birth to age 15), by child's birth status: Children of the FFS female respondents (in percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>Status at birth</th>
<th>Childhood exposure to single parenting</th>
<th>Relative risk of parental separation: cohabitation vs. marriage</th>
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<tbody>
<tr>
<td></td>
<td>Out of wedlock</td>
<td>Cohabiting parents</td>
<td>Born to a single mother</td>
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<tr>
<td>Italy</td>
<td>6.3</td>
<td>4.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Slovenia</td>
<td>18.9</td>
<td>12.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Spain</td>
<td>6.5</td>
<td>3.4</td>
<td>3.1</td>
</tr>
<tr>
<td>Belgium</td>
<td>6.4</td>
<td>4.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Poland</td>
<td>12.1</td>
<td>2.4</td>
<td>9.7</td>
</tr>
<tr>
<td>Switzerland</td>
<td>7.4</td>
<td>4.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Finland</td>
<td>16.9</td>
<td>13.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Hungary</td>
<td>11.5</td>
<td>7.1</td>
<td>4.4</td>
</tr>
<tr>
<td>France</td>
<td>25.6</td>
<td>21.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>46.7</td>
<td>41.2</td>
<td>5.5</td>
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<td>Canada</td>
<td>24.1</td>
<td>15.8</td>
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<td>Czech Republic</td>
<td>13.2</td>
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<td>Germany</td>
<td>25.9</td>
<td>10.7</td>
<td>15.2</td>
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<td>Austria</td>
<td>30.7</td>
<td>17.1</td>
<td>13.6</td>
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<tr>
<td>Latvia</td>
<td>19.3</td>
<td>10.5</td>
<td>8.8</td>
</tr>
<tr>
<td>New Zealand</td>
<td>31.0</td>
<td>18.4</td>
<td>12.6</td>
</tr>
<tr>
<td>United States</td>
<td>26.9</td>
<td>10.7</td>
<td>16.2</td>
</tr>
</tbody>
</table>
Reminiscent of historical Europe

• Next Slide show ASFRs from Japan, both total and marital
  – Marital fertility has not gone down as much as total fertility, particularly at younger ages
Overall and Marital Fertility in Japan Over Time
Why are we concerned?

• Scholars are, of course, concerned about any kind of change
• Public Health (Population level) concerns:
  – Aging
  – Negative Population Growth
    • Doubling time has become halving time
  – Sex Ratios (particularly in Asia)
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Explanations

• Economic Explanations
  – Demand/supply theories
    • Demand for children goes down when the “opportunity costs” of women’s time goes up
    • As female labor force participation goes up, fertility will go down
      – Conflict between childrearing and work
    • A lot like DTT, instinctive, but not perfectly matched with the data
Explanations

• Intact, but with the following modifications
  – 2\textsuperscript{nd} Demographic Transition
    • Secularization, individualization
      – Lesthaeghe who was an ideational theories
    – State can intervene (or not) to affect the level of conflict between children and work
Guidance for Reading

• DiPrete and his colleagues
  – Measurement of conflict (time)
  – Attention to the state and public policy
• Perelli-Harris
  – Basically 2\textsuperscript{nd} demographic transition, but focusing on different ideologies
• Boling
  – Calling attention to marriage aspects in Japan
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