The Consequences of the Missing Girls of China

Avi Ebenstein and Ethan Jennings
WB Gender, Poverty & Demography Conference
March 25th, 2008
Overview

• Motivation: The ‘Missing Girls’ of China → ‘Bare Branches’

• Summary of Results

• Detailed Results
  – Section 1: Marriage Rates in China, Past and Future
  – Section 2: HIV in China and the ‘Bare Branches’
  – Section 3: Population aging and the Unmarried Elderly
  – Section 4: Marital Status and welfare

• Summary and Conclusions
Summary of Results

1. Marriage market problems emerge around 2015, and 13% of men age 25+ failing to marry.

2. Prostitution and HIV will increase, if current hazards by age X sex X marital status persist.

3. Rapidly aging population – 10% elderly in 2000, 40% around 2050. Around 15% of the men will be childless.

4. Failure to marry associated with bad outcomes – correlation or causation? Either way, it’s a problem

5. Should China relax the One Child Policy?
Section 1
Marriage Rates in China
Past & Future
Historical Trends in Marriage

1. This is an “old” problem and the sex ratio imbalance affects marriage rates

2. Poor men fail to marry
Population of China Will Shrink
Sex Ratios and Spousal gaps

![Graph showing age and year of marriage trends over decades.](image-url)
Sex Ratios and Spousal gaps

1.5
2
2.5
3

1935-1945

1945-1955

1955-1965


Males/Females

Year

0.9
1
1.1
1.2

Age Gap

Sex Ratio of Marriage Market  Husband's Age-Wife's Age
Population of China Will Shrink
‘Bare Branches’ on the Horizon

---

The diagram shows the percentage change over time for different scenarios (SR) ranging from 106 to 125. The x-axis represents years from 2000 to 2100, while the y-axis indicates the percentage change. The curves illustrate how the percentage changes over time under each scenario.
Section 2
HIV and Marital Status
Why worry about the Sex Ratio & HIV?

1. Evidence that young single men are more likely to pay for sex:
   
   14.7% of singles, 7.3% of married men (CHFLS 2000)

2. Evidence that young single men are more likely to be HIV+:
   
   odds ratio 1.4 (single to married) and 1.7 (male to female)
   
   [Tucker et al 2005]

3. How big could this effect be? What if the only change observed
   in China in these phenomena is driven by demographic
   change?
Rising Prostitution/HIV?

Men 25+ Paid for Sex

Simulated HIV Rate

(These are not ‘predictions’)

Section 3
Old Age Support of the Childless Elderly
Age Distribution

Point: The Chinese will be very old.
Aging and Childless

Share of Population 65+

Share of Men 65+ Never Married

Point: When the Chinese are old, there will be men who will need social support
Old, Poor, and Childless

1. Emerging population of unmarried males who are from bottom of distribution of income.

2. Very limited programs for old age insurance.

3. No children, and so intra-household transfers limited as well.
Section 4
Marital Status and Welfare
Table 6: Marital Status and Welfare Outcomes

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Personal Income</td>
<td>Financial Assets</td>
<td>Good Health</td>
</tr>
<tr>
<td>Never Married</td>
<td>-760.2***</td>
<td>-3,686**</td>
<td>-0.105***</td>
</tr>
<tr>
<td></td>
<td>(261.960)</td>
<td>(1,685.664)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Age</td>
<td>-44.0***</td>
<td>25.2</td>
<td>-0.011***</td>
</tr>
<tr>
<td></td>
<td>(3.528)</td>
<td>(22.701)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Years of Education</td>
<td>230.2***</td>
<td>529.3***</td>
<td>0.009***</td>
</tr>
<tr>
<td></td>
<td>(15.722)</td>
<td>(101.168)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>Minority</td>
<td>30.5</td>
<td>-1.221</td>
<td>0.024</td>
</tr>
<tr>
<td></td>
<td>(219.562)</td>
<td>(1,412.844)</td>
<td>(0.023)</td>
</tr>
<tr>
<td>Constant</td>
<td>7,801.9***</td>
<td>56,119***</td>
<td>1.108***</td>
</tr>
<tr>
<td></td>
<td>(371.892)</td>
<td>(2,393.058)</td>
<td>(0.039)</td>
</tr>
<tr>
<td>Observations</td>
<td>10,033</td>
<td>10,033</td>
<td>10,033</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.26</td>
<td>0.37</td>
<td>0.16</td>
</tr>
<tr>
<td>Sample Average</td>
<td>2,184</td>
<td>24,085</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Table 7: Marital Status and 10-Year Mortality Rates

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Ever Married</th>
<th>Never Married</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>55-59</td>
<td>14.3%</td>
<td>15.2%</td>
<td>-.009%</td>
</tr>
<tr>
<td>60-64</td>
<td>25.7%</td>
<td>39.1%</td>
<td>-13.4%</td>
</tr>
<tr>
<td>65-69</td>
<td>41.3%</td>
<td>51.3%</td>
<td>-10.0%</td>
</tr>
<tr>
<td>70-74</td>
<td>59.6%</td>
<td>67.5%</td>
<td>-7.88%</td>
</tr>
<tr>
<td>75-79</td>
<td>77.1%</td>
<td>86.1%</td>
<td>-8.98%</td>
</tr>
</tbody>
</table>

Source: The mortality rates are calculated by comparing the number of individuals in the 1990 and 2000 census data by marital status, and the rates are reported by the age of the cohort at the time of the 1990 census. The ratio of observations observed between the census years is the survival rate, and the mortality rate is 1 minus the survival rate.
Policy Implications

• Welfare implications of high sex ratios affect men as well
• Problem is exacerbated by population aging
• Should the One Child Policy be revised?
  – More fertility may lower the SRB
  – May mitigate effects of population aging.
THE END
Acknowledgements

Monica Dasgupta, Bill Lavely, Sharona Shuster, Steven Leung, Tian Feng, Claudia Sitgraves