Analysis on Quality of China’s Population Census Data:
Thoughts for 2010

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Source of Population Statistics

National Bureau of Statistics as the main source
• Population census (years ending with 0)
• 1% population survey (years ending with 5)
• Annual survey on population change (1‰)

Other Ministries
• Ministry of Public Security: household registration system (covering 97% of total population)
• Population and Family Planning Commission: Ad hoc surveys focusing on fertility
I. Analysis on Quality of Population Census Data
Quality of Population Data

• What to measure
  Census vs. household registers
  Census vs. annual survey

• How to measure
  Post enumeration survey

• Quality of census data declining
# Net Error of Population Censuses

<table>
<thead>
<tr>
<th></th>
<th>1982</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population as published</strong></td>
<td>1008180</td>
<td>1133680</td>
<td>1265830</td>
</tr>
<tr>
<td><em>(1,000 persons)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Population as enumerated</strong></td>
<td>1008180</td>
<td>1133680</td>
<td>1245110</td>
</tr>
<tr>
<td><em>(1,000 persons)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Over-count rate (%)</strong></td>
<td>0.071</td>
<td>0.01</td>
<td>--</td>
</tr>
<tr>
<td><strong>Undercount rate (%)</strong></td>
<td>0.056</td>
<td>0.07</td>
<td>1.81</td>
</tr>
<tr>
<td><strong>Net error over-count (%)</strong></td>
<td>0.015</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(150,000)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net error undercount (%)</strong></td>
<td></td>
<td>0.06</td>
<td>1.81</td>
</tr>
<tr>
<td><em>(680,000)</em></td>
<td></td>
<td>22.5 mil</td>
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</tr>
</tbody>
</table>
Assessment of Undercount

Analysis on 2000 Census Data:

- Both over-count and undercount
- Undercount much larger than over-count
- Undercount mainly in low age groups (0-9 years)
- Size of undercount: 30-34 million
- Size of over-count: 4.7-10 million
- Net undercount in consistency with PES results
Is the quality of 2000 census data acceptable?

Policy-maker’s view

International comparison
## Population Undercount Rate

<table>
<thead>
<tr>
<th>Country</th>
<th>Census Year</th>
<th>Undercount (%)</th>
<th>Country</th>
<th>Census Year</th>
<th>Undercount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1996</td>
<td>1.6</td>
<td>Italy</td>
<td>1991</td>
<td>0.7</td>
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<tr>
<td></td>
<td>2001</td>
<td>1.8</td>
<td>Viet Nam</td>
<td>1989</td>
<td>0.5</td>
</tr>
<tr>
<td>Canada</td>
<td>1996</td>
<td>2.4</td>
<td>Korea</td>
<td>1990</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>3.1</td>
<td>India</td>
<td>1991</td>
<td>1.7</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1996</td>
<td>1.6</td>
<td>Philippines</td>
<td>1990</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>2.2</td>
<td>Bangladesh</td>
<td>1991</td>
<td>4.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1991</td>
<td>2.2</td>
<td>Chile</td>
<td>1992</td>
<td>8.0</td>
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<tr>
<td></td>
<td>2001</td>
<td>2.0</td>
<td>Bolivia</td>
<td>1992</td>
<td>6.9</td>
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<tr>
<td>United States</td>
<td>1990</td>
<td>1.8</td>
<td>Kenya</td>
<td>1989</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>1.2</td>
<td>South Africa</td>
<td>1991</td>
<td>15.1</td>
</tr>
<tr>
<td>France</td>
<td>1990</td>
<td>1.1</td>
<td>Rwanda</td>
<td>1991</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Factors Affecting Data Quality

- Design of census programme
  Definition of permanent residents
- More complicated environment for taking census
  Large size of rural-to-urban migrants
  Multi-residence of urban population
- Less cooperation of respondents
  Privacy awareness
  Access more difficult
Factors Affecting Data Quality

- Insufficient budget
  - Decentralized budgeting system: poor areas
  - Lack of established mechanism on payment for enumerators
- Policy-related issues
  - Under-reporting of births
- Government performance assessment issues
  - Performance targets of local governments
  - Annual reports vs. census results
II. Thoughts for 2010 Census
Legislation

- Existing Statistics Law
- New Regulation on Population Census
  - Confidentiality of census questionnaire
  - Census results not to be used for performance assessment
Organization

- Set-up of census offices to formulate policies and coordinate efforts
- Closer cooperation among key ministries (public security, human resources and social security, family planning, finance, publicity, etc.)
- Extensive social mobilization through wide publicity
Coverage

• All persons living in China
  -Earlier censuses: persons with Chinese citizenship
  -2010 census: including international migration living in mainland of China for over 6 months

• Field enumeration: population present count plus emigrants from place of household registration
  -Easier for enumerators
  -Size of usual resident population count available through computer tabulation
Content

- Use of short form and long form
- Short form: basic information
  - household items <10, individuals items <10
- Long form: basic information, migration, education in detail, economic activity, marriage and fertility, housing, mortality, etc.
  - household items: 20, individual items: 25
Reference Time

- 0 hour on 1 November 2010
- For earlier censuses:
  - 2000 census: 0 hour on 1 November
  - Censuses of 1990, 1982, 1964 and 1953: 0 hour on 1 July
- Consideration: convenient for field enumeration (whether, less mobility, etc.)
Recruitment of Enumerators

- Source
- Qualification
- Training
- Free recruitment approach challenged
- Necessary subsidy required
Field Enumeration

- Face-to-face interview as the main approach

- Self-enumeration when applicable (especially in large cities and for international migrants)
Data Processing

- Advance results on key items through manual tabulation: 100 days after reference time
- Data capturing: OCR or OMR
- Decentralized mode of data capturing and processing
- Data processing completed in 1 year
- Use of GIS mainly for data presentation
Measures to Ensure Quality

- Quality control measures in each stage of census
- Formulation of policies and wide publicity to remove concerns:
  - from respondents on family planning-related penalty
  - from rural-to-urban migrants
  - from local government officials on performance assessment
Thank you!