Sex imbalances at birth
Trends, consequences and policy implications

Christophe Z Guilmoto
Outline

- Sex composition and sex ratios
- Rise in sex ratios at birth (SRB)
- Gender discrimination and its demographic impact
- SRB differentials
- Understanding sex selection
- Sociodemographic prospects
- The social impact of sex imbalances
- The policy responses to sex imbalances
- Current trends and future challenges
About sex ratios

- Sex ratios are measured as number of men per 100 women with e.g. 105 reflecting a 5% excess of men.
- Boys are more numerous than girls at birth and the sex ratio at birth (SRB) is around 105 male births per 100 female births.
  - Modest biological variations across populations are observed in the sex ratio at birth, within a range of 104-106.
- Sex ratios vary by age under the influence of:
  - Mortality differentials by sex (higher male mortality).
  - Migration (for studies, marriage, labor, retirement etc.).
- Higher male mortality reduces gradually the sex ratio to values below 100 during adulthood.
- Selective underenumeration of people and births may disturb sex ratio estimation.
SEX COMPOSITION AND SEX RATIOS
Biology and society

Biological and environmental factors

- Ethnicity, mother’s age and parity, period effects
- Intra-uterine mortality (spontaneous abortions)
- Infant and child mortality
- Adolescent and adult mortality, including maternal mortality

Sex ratio

- Higher probability of male conception
- Sex ratio at conception
- Sex ratio at birth
- Child sex ratio
- Adult sex ratio

Gender preferences

- Selective pre-implantation diagnosis, sperm sorting
- Abortions after prenatal sex determination
- Infanticide, excess mortality caused by relative neglect
- Selective migration
Sex ratio measurements

- The sex ratio at birth is best measured by using *birth records*
  - Birth registration/statistics are often deficient in Asian countries (Pakistan, China etc.)

- Sex ratios can be computed from decennial *censuses*
  - Sex ratio of recent births
  - Population below one (sex ratios by age)

*Surveys* provide less reliable estimates because of the sensitivity to small samples.
RISE IN SEX RATIOS AT BIRTH
Demographic masculinization

- Amartya Sen spoke of “missing women” in 1990
- Missing women are now increasingly “missing girls”
- Surge in sex ratio at birth (SRB) in many Asian countries
- Rising from 105 (normal level) towards 110-130 (5 to 25% excess male births)
- Caused by sex selective abortions: prenatal sex diagnosis followed by abortion of female fetuses
- Selective underenumeration in some cases
Sex ratio at birth in selected Asian countries

- Azerbaijan
- China
- Sri Lanka
GENDER DISCRIMINATION AND ITS DEMOGRAPHIC IMPACT
Prenatal sex selection

- Prenatal sex selection can never be computed directly from abortion data
- Prenatal sex selection must be inferred from SRB figures
- Biological sex ratio at birth rarely known (104-106 range) for lack of historical series of unbiased birth registration data
- Data used here: sex ratio at birth estimated from birth registration, census figures or surveys
## SRB in affected countries

<table>
<thead>
<tr>
<th>Country / regions</th>
<th>SRB</th>
<th>period</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East and South East Asia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China (Mainland)</td>
<td>118.1</td>
<td>2009</td>
<td>Census estimate</td>
</tr>
<tr>
<td>Rep. of Korea</td>
<td>106.7</td>
<td>2010</td>
<td>Birth registration</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>111.2</td>
<td>2010</td>
<td>Annual demographic survey</td>
</tr>
<tr>
<td><strong>South Asia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>110.6</td>
<td>2006-08</td>
<td>Sample registration</td>
</tr>
<tr>
<td>Pakistan</td>
<td>109.9</td>
<td>2007</td>
<td>Pop. and Demographic Survey</td>
</tr>
<tr>
<td><strong>Eastern and central Europe</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albania</td>
<td>111.5</td>
<td>2008</td>
<td>Birth registration</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>117.6</td>
<td>2009</td>
<td>Birth registration</td>
</tr>
<tr>
<td>Armenia</td>
<td>115.8</td>
<td>2008</td>
<td>Birth registration</td>
</tr>
<tr>
<td>Georgia</td>
<td>111.9</td>
<td>2006</td>
<td>Birth registration</td>
</tr>
<tr>
<td>Montenegro</td>
<td>111.6</td>
<td>2005-09</td>
<td>Birth registration</td>
</tr>
<tr>
<td><strong>Europe and North America</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian diasporas</td>
<td>107-110</td>
<td>2000-09</td>
<td>Special studies</td>
</tr>
</tbody>
</table>
Postnatal discrimination against girls

- Mortality is about 20% higher among boys than girls
- But excess mortality among girls is common and linked to neglect of girls (infanticide is rare)
- Excess mortality can be measured by the mortality sex ratio (expected to be above 120)
- Data used here: mortality rates deduced from the number of deaths of children by sex (UN Population Division)
Postnatal discrimination against girls

<table>
<thead>
<tr>
<th>Country/region</th>
<th>Mortality sex ratio under five (per 100)</th>
<th>Excess female deaths under five per year (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>98.0</td>
<td>24</td>
</tr>
<tr>
<td>Albania</td>
<td>104.5</td>
<td>*</td>
</tr>
<tr>
<td>Armenia</td>
<td>107.9</td>
<td>*</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>104.0</td>
<td>*</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>102.6</td>
<td>14</td>
</tr>
<tr>
<td>China</td>
<td>71.1</td>
<td>97</td>
</tr>
<tr>
<td>Georgia</td>
<td>109.7</td>
<td>*</td>
</tr>
<tr>
<td>India</td>
<td>87.9</td>
<td>271</td>
</tr>
<tr>
<td>Nepal</td>
<td>93.9</td>
<td>4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>105.4</td>
<td>25</td>
</tr>
<tr>
<td>Africa</td>
<td>111.6</td>
<td></td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>129.1</td>
<td></td>
</tr>
<tr>
<td>Northern America</td>
<td>121.7</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>125.0</td>
<td></td>
</tr>
</tbody>
</table>

- Mortality sex ratios under five computed as ratios of male mortality rates to female rates
- Annual excess female deaths (in thousands) computed by using 120 as normal mortality sex ratio for 2005-10
- *: negligible number.
Demographic impact

- Prenatal sex selection is easily detectable in many countries from Asia to Europe
- The observed excess of male births ranges from 5 to 15% of male births
- Postnatal discrimination against girls is still pronounced in several countries (and accounts for almost 20% of all missing girls)
- The number of excess deaths of female children may reach 271,000 in India per year
Gender gap in 2010

- Objectives: to estimate missing women in 2010
- Methodology:
  - Compute sex ratios by age in “normal” countries
  - Infer from these sex ratios the expected number of women in countries with sex discrimination
  - Compute the number of missing women by age by comparing with observed women
- Data source: 2010 World population estimates (UN Population Division)
Sex ratios by age: with or without gender discrimination

Sex ratio by five-year age group

sex ratio by age group per 100

14 countries with gender discrimination

Rest of the world

Age group
## Women missing in 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Total (000s)</th>
<th>%</th>
<th>Gender gap: 0-19 yrs</th>
<th>Total (000s)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>860</td>
<td>5.7%</td>
<td>265</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>Albania</td>
<td>45</td>
<td>2.8%</td>
<td>21</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Armenia</td>
<td>*</td>
<td></td>
<td>35</td>
<td>8.4%</td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>*</td>
<td></td>
<td>111</td>
<td>8.3%</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>2 082</td>
<td>2.8%</td>
<td>416</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>67 589</td>
<td>10.5%</td>
<td>25 112</td>
<td>15.0%</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>*</td>
<td></td>
<td>24</td>
<td>4.6%</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>42 687</td>
<td>7.2%</td>
<td>12 618</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>Montenegro</td>
<td>*</td>
<td></td>
<td>3</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>*</td>
<td></td>
<td>125</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>2 833</td>
<td>3.3%</td>
<td>206</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Rep. of Korea</td>
<td>608</td>
<td>2.5%</td>
<td>336</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>124</td>
<td>4.9%</td>
<td>21</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>*</td>
<td></td>
<td>139</td>
<td>1.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116 829</strong></td>
<td><strong>8.1%</strong></td>
<td><strong>39 467</strong></td>
<td><strong>7.7%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Numbers given in thousands  
Percentages of the total corresponding female population in each country  
*: no significant gender gap (country also excluded for the total)
Trends in missing women and girls

- The gender gap in these 14 countries has increased from 66 m in 1950 to 117 m today (+72%) and may not diminish before 2020.
- The gap among women below 20 has increased from 16 m in 1950 to 39 m today (+148%).
- 7.7% of women below 20 are missing in countries affected by gender discrimination.
- More than ¾ of girls below 5 that are missing are unborn girls, while the remaining gap results from excess female deaths in childhood.
SRB DIFFERENTIALS
Variations and the context for discrimination against girls

- The sex ratio at birth is never uniform across parities, social classes, regions, or ethnic groups

- Differentials help to understand who practices sex selection, and why, how or when they do it

- Factors combine demographic features and socioeconomic characteristics
SRB and family composition

- The sex ratio at birth increases with birth order (parity)
  - Relative indifference for the sex of the first child(ren)
  - Higher SRB for later births

- The sex ratio at birth increases in the absence of a previous male birth

- Sex selection is a way to satisfy both fertility limitations and gender composition target: fewer births but with at least one son
### Sex ratio at birth and parity

<table>
<thead>
<tr>
<th>Country</th>
<th>Birth order</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rep. of Korea (2000)</td>
<td>1</td>
<td>106.2</td>
<td>107.4</td>
<td>141.7</td>
<td>154.9</td>
</tr>
<tr>
<td>Armenia (2001-08)</td>
<td>1</td>
<td>106.8</td>
<td>110.4</td>
<td>176.9</td>
<td>177.4</td>
</tr>
<tr>
<td>China (2005)</td>
<td>2</td>
<td>108.4</td>
<td>143.2</td>
<td>156.4</td>
<td>141.8</td>
</tr>
<tr>
<td>Vietnam (2009)</td>
<td>2</td>
<td>110.2</td>
<td>109.0</td>
<td>115.5*</td>
<td></td>
</tr>
</tbody>
</table>

*: Birth order 3 and above
SRB and birth order

Sex ratio at birth

110 115 120 125 130 135 140 145 150 155 160 165 170 175 180

South Korea  Armenia  China  Vietnam
Spatial variations

- Measured between urban and rural areas
- Measured across regions or smaller administrative units (sex ratios ranging often from 105 to 150)
- Geographical variations reflect ethnic composition, development levels, fertility transition, population policies etc.
Sources of variation in sex ratios

<table>
<thead>
<tr>
<th>Factor</th>
<th>Impact on sex ratio at birth</th>
<th>Country</th>
</tr>
</thead>
</table>
| Birth order, gender composition | • Sex ratio increases rapidly with higher birth order  
• Sex ratio highest among final births  
• Sex ratio highest in families with no previous son | All countries, diasporas     |
| Rural/urban                 | • Moderate variations, with opposite trends across countries                                  | All countries               |
| Region                      | • Geography usually the strongest source of sex ratio variations within the country           | All countries               |
| Ethnicity                   | • Ethnic groups exhibit very distinct sex ratio levels  
• Most minority groups have lower sex ratio levels                                              | Viet Nam, China, India, Singapore |
| Religion                    | • Hindus, Sikhs, Buddhists, and Jains have comparatively higher sex ratio levels than Muslims or Christians | India, Rep. of Korea        |
| Socioeconomic status        | • Lower sex ratio among the poorest households  
• Highest among the richer sections and among the better educated  
• Decreases among the most affluent in China  
• Lower sex ratio among women with social insurance in China                                  | China, India, Viet Nam       |
UNDERSTANDING SEX SELECTION
The three preconditions of modern sex selection: ability, readiness and low fertility pressure.
“It is possible”: access to the new technology

- Old discriminatory technology: infanticide, neglect of girls, rituals for male births, etc.
- Contraception linked to gender composition
- Emergence of modern prenatal diagnosis from the 1980s
  - Better healthcare infrastructures and greater accessibility
  - Lower cost of prenatal technology
  - Improved reproductive health and prenatal care
  - Higher living standards
Sex selective abortions

- A very “efficient” method of sex selection
- A “modern”, medical procedure
- Costs decreasing with time
- Limited social visibility
- More efficient methods available today outside Asia
“It is necessary”: the “squeeze” effect of declining fertility

- Fertility decline occurred throughout most of the developing world
- Governments in many countries introduced policies to encourage birth control; a couple imposed it
- It became more difficult to simply have one more pregnancy to get a son
- Lower fertility means higher risks of not having a son
# Low fertility and the risk of not having a son

<table>
<thead>
<tr>
<th>Number of children per woman</th>
<th>Probability of not having a son</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>2</td>
<td>24%</td>
</tr>
<tr>
<td>1</td>
<td>49%</td>
</tr>
</tbody>
</table>
“It is worthwhile”: local contexts of son preference

- Sociocultural, economic, demographic, political and spiritual reasons make sons more valuable than daughters.

- Reasons vary across regions and social groups, but the common context is the presence of “patriarchal” kinship systems:
  - Patrilineal descent groups (clans, patrilineage etc.)
  - Patrilocal systems (residence with or close to the husband’s parents)
Local contexts of son preference

- Economic considerations:
  - Cost of education and care for girls
  - Dowry and marriage costs for brides
  - Old age support by sons

- Household considerations:
  - Patrilineal family and clan/caste/lineage
  - Coresidence and common patrilineal property

- Religious and social requirements
  - Funerals, ancestors’ worship, etc.
Prenatal sex selection: families, governments and markets

**Families**
- Patriarchal son preference

**Governments**
- Past birth control policies

**Markets**
- Sex selection technology

(time)
## Temporal changes that made sex selection happen

<table>
<thead>
<tr>
<th></th>
<th>Son preference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unchanging preference for son</strong></td>
<td>Unchanging preference for son proceeding from patriarchal norms: only boys are permanent household members, offer labor and support, perform after-life rituals, etc.</td>
</tr>
<tr>
<td><strong>Fertility “squeeze”</strong></td>
<td>Fertility decline and birth control reduce the average biological number of boys and increase the risk of remaining without a male heir</td>
</tr>
<tr>
<td><strong>Prenatal technology</strong></td>
<td>Combined with abortion, prenatal technology offers an effective sex selection method—that the private healthcare market can deliver at ever decreasing costs.</td>
</tr>
<tr>
<td><strong>Sex ratio at birth</strong></td>
<td>The demand for sex selection grows under the effect of fertility decline and is met by the new prenatal technology</td>
</tr>
</tbody>
</table>
Rising sex ratios at birth

1. Son preference
2. Fertility decline
3. Prenatal sex determination

Birth control
Economic development
Contraception
Access to technology
Private sector
Patriarchal family
Prenatal sex selection
SOCIODEMOGRAPHIC PROSPECTS
Population projections

- Examination of the largest contributors to sex imbalances: *China and India*
- Use of standard demographic parameters (UN world population prospects)
- Addition of 2 scenarios based on SRB variants
  - *No transition*: no change in high sex ratio at birth
  - *Rapid transition*: rapid SRB decline achieved by 2020 (SRB= 105)
- Use of marriage schedules for each country
Projection results

- Population sex ratios in China and India remain above 100 during the entire 21st century, even when the SRB returns to normalcy by 2020
- The world sex ratio remains above 100 also
- One important is the increase in adult sex ratios (weighted by marriage rates) according to the two different scenarios
Adult sex ratios: China

- Peak
- Plateau
- Return to normalcy
Adult sex ratios: India

- First Peak
- Plateau
- Long-term plateau
- Return to normalcy
The extent of the marriage squeeze

- Adult sex ratios reflect the number of “new” prospective brides and grooms in each period, but do not factor the backlog of previously unmarried men who will try again to marry.

- This backlog of single men will fast accumulate and throng the “marriage market” for years.
Marriage simulations

- Estimation method: marriage simulation

- Results (rapid transition scenario):
  - Unmarried men may outnumber unmarried women by around 60% in China (2020-55) and in India (2040-60)
  - Age at marriage among men will increase faster than that of women (greater age difference)
  - The proportion of men forced to stay single will increase from 3 to 15% in China and from 1 to 10% in India after 2050
Unmarried men at age 50 in China

Delayed impact on singlehood
Unmarried men at age 50 in India
Synthesis of the demographic simulations

- Men will remain more numerous than women
- Rapidly increasing surplus of unmarried men (up to 60% greater than prospective brides)
- Further delay in marriage among men
- Rise in involuntary non-marriage, with 10-15% of men forced to remain unmarried
- Delayed impact of marriage squeeze felt even among cohorts with normal sex ratio at birth
THE SOCIAL IMPACT OF SEX IMBALANCES
Understanding potential consequences of sex imbalances

- A situation of an extent never experienced by human societies in the past
- Imbalances felt today only in a few areas of China and India, but the full effects emerging only from 2025 onwards
- Reflection still based on limited field evidence from China and India and therefore partly speculative
Possible consequences on men

- Delayed marriage among men
  - Increased resort to prostitution, trafficking, etc.

- Increasing competition among unmarried men
  - Impact on savings and education investments

- Increase in involuntary non-marriage
  - Impact stronger among the vulnerable men: poorer, less educated, from remote areas, etc.
  - Inability to perpetuate the family line
Possible consequences on women and society

- Increased frequency of exploitation of women, female trafficking, gender-based violence.
- Pressure on women to marry and bear children
- Less political voice

- Change in marriage patterns and family structures
- Rise in the number of “bare branches”
  - Potential increase in antisocial behavior, social unrest, crime, aids prevalence, uncontrolled migrations, violence, etc.
Potential responses by communities

- Reduced caste, regional and ethnic endogamy
- In-migration of prospective brides
- Out-migration of unmarried grooms
- These are minor adjustments unlikely to offset significantly the marriage squeeze
POLICY RESPONSES TO SEX IMBALANCES
The sex ratio crisis as a tragedy of the commons

A tragedy of the commons is a situation in which perceived individual interests prevail over long-term collective interests.

- Families respond rationally to fertility decline, technological change and son preference by artificially rising the proportion of boys.
- High SRB will cause a collective crisis (a demographic *malus*) decades later.
- Individual interest gradually destroys a “public good” such as balanced sex ratios.
- Everybody gets affected.
Government’s leverage on the intermediary factors of sex selection

- **Low fertility pressure:**
  - Ending drastic birth planning regulations

- **Technology:**
  - Regulating access to sex determination and emerging technologies
  - Controlling illegal abortions

- **Son preference:**
  - Subsidizing girls: conditional cash transfers and affirmative action
  - Promoting gender equity: campaigns and laws on family, inheritance, employment etc.
Access to technology

- **Measures**
  - Prohibitions of sex selective abortions
  - Banning prenatal sex determination

- **Illustrations**
  - Bans introduced early in China, India and Rep. of Korea, reinforced in India for sex determination

- **Impact and issues**
  - Sex selection made more risky for both practitioners and customers
  - Serious enforcement limitations
  - Very few condemnations/fines imposed on doctors and families
  - Potential negative impact on access to abortions, where legal
Support to girls

- **Rationale:**
  - Offsetting the apparent economic disadvantage of girls by offering support to girls and their parents

- **Illustrations:**
  - Conditional cash transfer schemes or scholarships linked to schooling, immunization, delayed marriage, pension benefits (parents), etc. “Care for girls” campaign, numerous initiatives in Indian States

- **Impact and issues**
  - Potential rapid impact on lower-income households
  - Multiplier effects on education, health behaviour etc.
  - Significant implementation and monitoring costs
Promotion and communication

- **Rationale:**
  - Changing the mindsets on the girl child
  - Publicizing existing laws
  - Documenting the negative effects of sex selection on society

- **Illustrations:**
  - Advocacy campaigns on gender equity targeting specific groups: leaders, schoolchildren, young adults, medical community etc. “Care for girls” campaign in China, initiatives in India
  - Studies, statistics, press reports on sex selection and its consequences

- **Impact and issues**
  - Lasting impact difficult to monitor
Gender equity

Rationale:
- Ensuring the introduction or proper implementation of gender-equity laws: employment, family, land property, domestic violence, etc.
- Addressing gender bias in traditional institutions: family, religion, marriage, etc.

Illustrations:
- New or amended land, employment, inheritance, family laws through gender mainstreaming in Rep. of Korea and India.
- Interventions targeting traditional customs and institutions

Impact and issues
- Slow process of change
- Strong social and political resistance
- Difficulty to change “sticky norms”
SRB decline in Delhi, India

- Introduction of the pro-girl *Laadli* scheme
- Rapid downward SRB trend
CURRENT TRENDS AND FUTURE CHALLENGES
Worrying trends

- Diffusion of sex selective behaviour to new regions and to lower-income groups
  - Consequence of further fertility decline
  - Consequence of economic growth
  - Urbanization, private healthcare system

- Illustrations
  - Viet Nam, Central India, West China.

- Potential emergence in new countries
  - South Asia, Eastern Europe, Central Asia
Signs of a turnaround

- The experience of the Rep. of Korea
- Plateau or slow decline reached in Coastal China, South Caucasus, Northwest India
- Plateau or decline among higher-income groups
**Pathway to a gradual reduction of sex selection**

<table>
<thead>
<tr>
<th>Son preference</th>
<th>The fertility “squeeze”</th>
<th>The supply factor (technology)</th>
<th>Sex ratio at birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Son preference diminishes under the impact of the growing market irrelevance of patriarchy, new schemes supporting girls, gender equity laws, and the marriage squeeze crisis.</td>
<td>The impact of the fertility “squeeze” (risk of not having a son) continues to increase, except in areas where drastic birth control regulations are relaxed. Yet fertility doesn’t rebound.</td>
<td>Access to discriminatory technology continues to improve thanks to new sex selection technology unless governments can effectively ban sex determination testing.</td>
<td>The downturn in birth masculinity trends results from the rapid decline of son preference as a result of market-driven social changes and further support to gender equity by the State.</td>
</tr>
</tbody>
</table>
The main levers of the future change in birth masculinity

- **Families**
  - Marriage squeeze

- **Governments**
  - Policy interventions

- **Markets**
  - Social change
The main levers of the future change in birth masculinity

- **Government intervention:**
  - Regulation of sex selection, advocacy campaigns, cash transfers, changes in gender laws

- **Patriarchal predicament:**
  - Sex selection resulting in unmarried sons and prospering daughters

- **Social and economic change:**
  - New value systems, growing women’s autonomy, weakening of patriarchal structures
Patriarchal predicament

- Sex selection as a tragedy of the commons:
  - Individual benefits of sex selection, but looming marriage squeeze (NW India, Central China)

- Skewed sex ratios becoming a threat to
  - Endogamic norms (caste, ethnicity, regions etc.)
  - Universal marriage of men
  - Patrilineal dominance
  - Family reproduction
  - Lineage, ancestors’ worship, family name etc.
Social and economic change

- Rapidly changing value systems
- Lesser demographic burden for women:
  - Lower fertility, delayed marriage, increasing agency in demographic decisions etc.
- Growing women’s autonomy:
  - Impact of female employment, education, legal protection, etc.
- Weakening of patriarchal structures
  - Growth of the non agricultural sector, equal inheritance, access to insurance and pension, etc.
Challenges ahead

- Better understanding patriarchy’s weak spots” (inheritance, marriage constraints, etc.) for intervention
- Monitoring deterioration in birth masculinity in new vulnerable regions or countries
- Assessing the effectiveness and the direct and indirect impact of policy interventions
Faleminderit, Հանդիպանքին, Çox sağ ol, ধোন্নোবাদ, 謝謝, გმადლობთ, ধন্যবাদ, धन्यवाद, शक्रीय, Cảm ơn ông, thank you