Population Projections: Assumptions First, Results Second

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World Population

1900

1.6 Billion
World Population

2000

6.1 Billion
Fewer young people in developed countries ensures little population growth or even population decline.

Large numbers of young people in developing countries guarantee large population growth.

What’s Required for a Projection?

1. Base population
2. Assumption on the future course of fertility
3. Assumption on the future course of mortality (infant mortality, life expectancy at birth)
4. Assumption on the future course of immigration/emigration
The Total Fertility Rate (TFR)

The TFR is the average number of children a woman would bear in her lifetime if the birth rate of a particular year were to remain constant.
The Assumption Behind the Assumption

“To achieve such reductions, it is essential that access to family planning expands, particularly in the least developed countries.”

World Population Prospects, The 2010 Revision, Highlights and Advance Tables
And Further to the Point…

“The urgency of realizing the projected reductions of fertility is brought into focus by considering that, if fertility were to remain constant at the levels estimated for 2005-2010, the population of the less developed regions would increase to 9.7 billion in 2050 and to 25.8 billion in 2100 instead of the 8.0 billion and 8.8 billion projected by assuming that fertility declines.”

*World Population Prospects, The 2010 Revision, Highlights and Advance Tables*
World Population for 2010 and 2025 in Two UN Projections

Billions

- 2010
  - 1982 UN projection: 7.0
  - 2010 UN projection: 6.9

- 2025
  - 1982 UN projection: 8.2
  - 2010 UN projection: 8.0

Population of sub-Saharan Africa for 2010 and 2025 in Two UN Projections

TFR for 2010 as Projected in 1982 and Likely Current Value

Children per woman

TFR Assumptions, Mozambique, Two Projections vs. Surveys

Children per woman

TFR Assumptions, Bangladesh, Two Projections vs. Surveys

Future fertility decline in sub-Saharan Africa is quite doubtful, based on the results of recent surveys.

Circles indicate survey/census years

Demographic and Health Surveys.

Note: Gray circles indicate a census estimate.
Slow or little fertility decline is not confined to sub-Saharan Africa.

Demographic and Health Surveys and various surveys in Pakistan.

Circles indicate survey years
In Sub-Saharan Africa, Short-acting Methods Predominate

Percent of married women using

- Pill
- IUD
- Injection
- Condom
- Female sterilization
- Traditional Methods

United Nations Population Division, *World Contraceptive Use, 2011*
Projected TFRs vs. Recent Surveys, ca. 2010

Children per woman

<table>
<thead>
<tr>
<th>Country</th>
<th>UN Medium</th>
<th>IDB</th>
<th>Survey</th>
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</thead>
<tbody>
<tr>
<td>Sierra Leone</td>
<td>5.0</td>
<td>5.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Burundi</td>
<td>4.4</td>
<td>6.3</td>
<td>6.4</td>
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<tr>
<td>Ethiopia</td>
<td>4.2</td>
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<td>6.1</td>
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<tr>
<td>Zimbabwe</td>
<td>3.3</td>
<td>3.7</td>
<td>4.1</td>
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<tr>
<td>Angola</td>
<td>5.6</td>
<td>5.7</td>
<td>6.3</td>
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<tr>
<td>Peru</td>
<td>2.3</td>
<td>2.4</td>
<td>2.5</td>
</tr>
</tbody>
</table>

United Nations Population Division, World Population Prospects: The 2010 Revision and Demographic and Health Surveys and other surveys
Reported Government View on the Level of the Birth Rate, Sub-Saharan Africa, 1976 - 2009

Number of Countries

Fertility Decline in Bangladesh and the United States, 1800 - 2006
Two Very Different Histories

Lifetime children per woman

Population Reference Bureau, NCHS, DHS surveys
In quite a few developing countries, fertility decline has been rather smooth.

United Nations Population Division; and Demographic and Health Surveys.
Other Developing Countries with Significant Fertility Decline

Lifetime births per woman

Population Reference Bureau, DHS surveys
Total Fertility Rate, Sri Lanka, 1950-55 to 2005-2010

Children per woman

How Many Children Do Women Say Are “Ideal?”

Egypt
- 1988: 2.9
- 1992: 2.8
- 1995: 2.9
- 2000: 2.9
- 2005: 2.9
- 2008: 2.9

Indonesia
- 1987: 3.1
- 1991: 2.9
- 1994: 2.9
- 1997: 2.9
- 2002-03: 2.9
- 2007: 2.8

Jordan
- 1991: 3.3
- 1996: 3.4
- 1999: 3.2
- 2002: 3.3
- 2007: 3.2

Latest DHS total fertility rate in red

Demographic and Health Surveys (DHS)
How Many Children Do Women Say Are “Ideal?” – con’t

Demographic and Health Surveys (DHS)

Uganda

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Fertility Rate</th>
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</thead>
<tbody>
<tr>
<td>1988-89</td>
<td>6.8</td>
</tr>
<tr>
<td>1995</td>
<td>5.6</td>
</tr>
<tr>
<td>2000-01</td>
<td>5.1</td>
</tr>
<tr>
<td>2006</td>
<td>5.3</td>
</tr>
<tr>
<td>1992</td>
<td>6.2</td>
</tr>
<tr>
<td>1996</td>
<td>5.7</td>
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<tr>
<td>2001-02</td>
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<td>2007</td>
<td>5.1</td>
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Zambia.

<table>
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<th>Year</th>
<th>Total Fertility Rate</th>
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<td>1992</td>
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<tr>
<td>1996</td>
<td>5.7</td>
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<tr>
<td>2001-02</td>
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<tr>
<td>2007</td>
<td>5.1</td>
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Niger

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Fertility Rate</th>
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</thead>
<tbody>
<tr>
<td>1992</td>
<td>8.5</td>
</tr>
<tr>
<td>1996</td>
<td>8.5</td>
</tr>
<tr>
<td>2006</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Latest DHS total fertility rate in red

1988-89: Uganda - 6.8
1995: Zambia - 6.2
2006: Niger - 7.1
With How Many Living Children Do Half of Women Say That They Wish to Cease Childbearing?

Demographic and Health Surveys.
Fertility Rates in India Are Not Uniform, 2008 Data

Lifetime births per woman

INDIA: 2.6
URBAN: 2.0
RURAL: 2.9
Bihar: 3.9
Uttar Pradesh: 3.8
Rajasthan: 3.3
Chhattisgarh: 3.0
Assam: 2.6
Haryana: 2.5
Gujarat: 2.5
Orissa: 2.4
J&K: 2.2
Karnataka: 2.0
Maharashtra: 2.0
Delhi: 2.0
Punjab: 1.9
West Bengal: 1.9
Himachal Pradesh: 1.9
Andhra Pradesh: 1.8
Kerala: 1.7
Tamil Nadu: 1.7

Registrar General of India, Sample Registration System
Before Nationally-representative Surveys Were Taken, the Prevalence of HIV Was Often Overestimated – but Still High

Percent of adult population, ages 15-49 with HIV

<table>
<thead>
<tr>
<th>Country</th>
<th>Before Survey</th>
<th>After Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>21.5</td>
<td>15.6</td>
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<tr>
<td>Kenya</td>
<td>15.0</td>
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<tr>
<td>Central Af. Rep.</td>
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<td>6.2</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>7.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Uganda</td>
<td>4.1</td>
<td>7.1</td>
</tr>
</tbody>
</table>

UNAIDS and Demographic and Health Surveys (DHS)

Note: DHS Surveys from 2003 to 2006
Total Fertility Rates, Selected EU 15 Countries and the U.S., 1960 - 2011

Children per woman

- Germany
- Sweden
- Italy
- France
- U.S.A.

Council of Europe, *Recent demographic developments in Europe* and national statistics websites
Small numbers of young people in many developed countries have all but guaranteed fewer future births.

Population of Japan by Age and Sex, 1 December, 2009
Population of Foreign Stock, Selected Countries, 1990 and 2010

United Nations, *International Migrant Stock, the 2008 Revision*
Virtually all population growth is in the world’s poorest countries.
Thank You