Structure

• Introduction
• Demographic Dynamics in Africa
• Determinants of the Demographic Transition
• Human Development Payoffs
• Jobs Payoffs
• Economic Growth in Africa
• Policies to Speed up the Demographic Transition
• Policies to Reap the Demographic Dividend
Total Fertility Rate in Select World Regions, 1960–2010

## Great Heterogeneity in Fertility Transition

<table>
<thead>
<tr>
<th>Total Fertility Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>Mauritius</td>
</tr>
<tr>
<td>South Africa</td>
</tr>
<tr>
<td>Cape Verde</td>
</tr>
<tr>
<td>Botswana</td>
</tr>
<tr>
<td>Swaziland</td>
</tr>
<tr>
<td>Sao Tome and Principe</td>
</tr>
<tr>
<td>Sudan</td>
</tr>
<tr>
<td>Cameroon</td>
</tr>
<tr>
<td>Kenya</td>
</tr>
</tbody>
</table>

*Note: The table represents a matrix of fertility rates across different countries.*
Fertility Reduction

The Demographic Dividend

• Pure age structure effects
• Behavioral effects
  – Female labor supply
  – Investments in child health and education
  – Longevity and saving

• Dividend not automatic
  – Extra resources must be productively employed
  – Dividend must be earned by investments

Fertility and Age Structure Across Countries, 2000
Working Age Share Projections

Ratio of Working Age to Dependents

Source: World Bank Medium Fertility Variant
Probabilistic Projections of Fertility

Dem. Republic of the Congo

TFR

Year

1950  2000  2050  2100

median
80% PI
95% PI
+/- 0.5 child
observed TFR
Proximate Determinates of Fertility

Proximate Determinants of Fertility Change

From Madhavan et al 2013. Data Source: Various DHS.
Policies to Promote Fertility Decline
Decrease Child Mortality

*World Development Indicator Data. 2010*
### Mortality Transition

#### Under 5 Mortality per 1000 Births

<table>
<thead>
<tr>
<th>Below 50</th>
<th>50-99</th>
<th>100-149</th>
<th>150-199</th>
<th>200-249</th>
</tr>
</thead>
<tbody>
<tr>
<td>Réunion</td>
<td>Namibia</td>
<td>Comoros</td>
<td>Guinea</td>
<td>Chad</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Botswana</td>
<td>Tanzania</td>
<td>Cameroon</td>
<td></td>
</tr>
<tr>
<td>Cape Verde</td>
<td>Madagascar</td>
<td>Kenya</td>
<td>Zambia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eritrea</td>
<td>Gambia</td>
<td>Nigeria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghana</td>
<td>Ethiopia</td>
<td>Niger</td>
<td></td>
</tr>
<tr>
<td>Sao Tome and Princip</td>
<td>Swaziland</td>
<td>Burundi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gabon</td>
<td>Congo</td>
<td>Burkina Faso</td>
<td></td>
</tr>
<tr>
<td></td>
<td>South Africa</td>
<td>Lesotho</td>
<td>Equatorial Guinea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zimbabwe</td>
<td>Togo</td>
<td>Angola</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senegal</td>
<td>Mauritania</td>
<td>CAR</td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>Côte d'Ivoire</td>
<td>Sierra Leone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sudan</td>
<td>Liberia</td>
<td>Somalia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uganda</td>
<td>DRC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rwanda</td>
<td>Mali</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benin</td>
<td>Guinea-Bissau</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Malawi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mozambique</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fertility Rates by Women’s Education

Data from various Demographic and Health Surveys.
Education of Women by Birth Year: Ethiopia

Average Years of Schooling, Female

Birth Cohort
No Coverage Partial Coverage Full Coverage
Demographic Dividend is not Automatic

• Depends on effective policies in other areas
  – Education
  – Labor market
  – Trade
  – Governance
  – Macroeconomic management

• Demography creates supply side increases in labor, human capital, and saving – but there is still a need for jobs and investment
Fertility Rates by Mother’s Education

Data from various Demographic and Health Surveys.
Female Education Is a Major Diver of Fertility Rates

Ethiopia: Fertility by Female Education Level

TFR

- 0
- 4
- 8
- 12
- Total TFR

Education of Women by Birth Year: Ethiopia

Average Years of Schooling, Female

Birth Cohort
No Coverage Partial Coverage Full Coverage

Infant Mortality
Adjusted RRR: Age of Mother at Birth
Short Birth Spacing Increases Infant Mortality

Adjusted Relative Risk by Birth Interval

- 7-11 months
- 12-17 months
- 18-23 months
- 24-29 months
- 30-35 months
- 36-47 months (ref)
- 48-59 months
- 60-95 months
- >95 months
Economic Growth in Sub-Saharan Africa

Annual Growth Rates
GDP & GDP per capita

GDP growth
GDP per capita growth

Decomposition of GDP/cap growth: $\alpha=0.33, \beta=0.67, \gamma=0.1$

- **WA share growth**
- **Employment growth**
- **TFP**
- **Capital per worker**
- **Education**
Economic Consequences
The Demographic Dividend

• Working age share 30 – 50 year boost
  – Labor force per capita
• Investments in
  • Child Health
  • Education
• Female Labor Force Participation
• Savings
Increasing Youth Cohorts In Sub Saharan Africa
Impact of large youth cohorts

• Youth Unemployment
• Underemployment in unpaid and low productivity jobs
• Slows industrialization and structural transformation, youth are absorbed in low productivity sectors such as agriculture
• Requires high levels of investment to maintain capital labor ratio
DRC
Total Population Under Different Scenarios

Key:
- Low
- Medium
- High

Graph showing the projected total population of DRC under different scenarios from 2010 to 2100.
DRC
Working Age Share of the Population

Key:
- Low
- Medium
- High
DRC
Average Years of Schooling of the Workforce
DRC
Share of Workers not in Agriculture
<table>
<thead>
<tr>
<th>Goals</th>
<th>Polices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed the Demographic Transition</strong></td>
<td></td>
</tr>
<tr>
<td>To empower women and allow fertility</td>
<td>Child mortality, female education, social norms, access to family</td>
</tr>
<tr>
<td>choices</td>
<td>planning</td>
</tr>
<tr>
<td><strong>Realizing the Labor Force Dividend</strong></td>
<td></td>
</tr>
<tr>
<td>To absorb Youth Bulge</td>
<td>FDI, domestic saving, natural resource revenues education, infrastructure, Industrialization (Agriculture and natural resources not sufficient)</td>
</tr>
<tr>
<td><strong>Realizing the Savings Dividend</strong></td>
<td></td>
</tr>
<tr>
<td>Harness the 2\textsuperscript{nd} dividend</td>
<td>Improve policies and institutions for promoting domestic savings and investment</td>
</tr>
</tbody>
</table>