Africa’s slow fertility transition

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Population projections for sub-Saharan Africa

Source, United Nations
Crude birth and death rates
sub-Saharan Africa

Crude birth rate

Crude death rate

Source: United Nations
TFR trends in sub-Saharan Africa

Source: DHS
Determinants of fertility

- Socioeconomic development
- Mortality decline

- Fertility

- Family planning Program
- Diffusion processes
Hypotheses

1. Africa’s development is slow
2. Africa is exceptional
3. Family planning programs are lacking
Outline

1. Fertility and development trends
   • Levels
   • Pace
2. African exceptionalism
3. Impact of family planning programs
4. Conclusions
Development indicators 1970-2010

- GDP per capita (at PPP) from the PWT
- Education, % with primary + (Wittgenstein)
- Life expectancy at birth (UN 2013)
- Percent urban (UN 2014).
<table>
<thead>
<tr>
<th></th>
<th>Average at the time of transition onset</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>TFR decline %</td>
<td>10</td>
</tr>
<tr>
<td>Year of transition onset</td>
<td>1994</td>
</tr>
<tr>
<td>GDP/cap(log)</td>
<td>6.9</td>
</tr>
<tr>
<td>Education (% primary+)</td>
<td>29</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>51</td>
</tr>
<tr>
<td>Percent urban</td>
<td>29</td>
</tr>
</tbody>
</table>
Conclusions

1) African transitions later in time
   Consistent with conventional theory

2) But early relative to level of development
   Consistent with diffusion theories
Outline

1. Fertility and development trends
   • Levels
   • Pace
2. African exceptionalism
3. Impact of family planning programs
4. Conclusions
Total fertility rate, pace

Births per woman/year

1960 1980 2000 2020

Other LDCs

Africa
<table>
<thead>
<tr>
<th></th>
<th>Average pace at the time of transition onset</th>
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<tbody>
<tr>
<td></td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>TFR</td>
<td>0.09</td>
</tr>
<tr>
<td>Year</td>
<td>1994</td>
</tr>
<tr>
<td>GDP/cap(log)</td>
<td>0.008</td>
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<tr>
<td>Education (% primary+)</td>
<td>1.2</td>
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<tr>
<td>Life expectancy</td>
<td>0.12</td>
</tr>
<tr>
<td>Percent urban</td>
<td>0.29</td>
</tr>
</tbody>
</table>
Conclusions

3) African transitions are slow because the pace of development is slow

Consistent with conventional theory
Outline

1. Fertility and development trends
   - Levels
   - Pace
2. African exceptionalism
3. Impact of family planning programs
4. Conclusions
TFR by GDP/capita, 2010

Births per woman

$ per year

Africa

Other LDCs
<table>
<thead>
<tr>
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<tr>
<td>Africa effect</td>
<td>1.18**</td>
</tr>
<tr>
<td>GDP/cap</td>
<td>-0.36*</td>
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<tr>
<td>Education</td>
<td>-0.019***</td>
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<tr>
<td>Life expectancy</td>
<td>-0.02</td>
</tr>
<tr>
<td>Percent urban</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.84</td>
</tr>
<tr>
<td>N</td>
<td>71</td>
</tr>
<tr>
<td>Year</td>
<td>2010</td>
</tr>
</tbody>
</table>
1. Socioeconomic development
   - Mortality decline
2. Cost and benefits of children
3. Fertility preferences
4. Demand for contraception
5. Use of contraception
6. Fertility
<table>
<thead>
<tr>
<th></th>
<th>TFR</th>
<th>Contraceptive prevalence</th>
<th>Desired Family size</th>
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<td><strong>Africa effect</strong></td>
<td>1.18**</td>
<td>-10.9*</td>
<td>1.24*</td>
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<tr>
<td><strong>GDP/cap (log)</strong></td>
<td>-0.36*</td>
<td>0.83</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>-0.019***</td>
<td>0.51***</td>
<td>-2.7***</td>
</tr>
<tr>
<td><strong>Life expectancy</strong></td>
<td>-0.02</td>
<td>0.65</td>
<td>-0.04</td>
</tr>
<tr>
<td><strong>Percent urban</strong></td>
<td>0.00</td>
<td>-0.15</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.84</td>
<td>0.86</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>71</td>
<td>71</td>
<td>39</td>
</tr>
<tr>
<td><strong>Year</strong></td>
<td>2010</td>
<td>2010</td>
<td>Latest DHS</td>
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</table>
Conclusions:

African fertility is high relative to development

Consistent with theories about African exceptionalism (e.g. Caldwell)
Caldwell (1992) :

(1) African traditional society stressed the importance of ancestry and descent. ...younger generations assisted the older generations .. for males at least, high fertility ultimately brought substantial economic returns...

(2) Polygyny led in West and Middle Africa to separate spousal budgets. The father was spared much of the cost of rearing children.

(3) There was strength and safety in numbers. Communal land tenure meant that large families could demand a greater share of the land...

(4) Family planning programs were nonexistent or weak ..regarded as foreign or as incompatible with African culture
Outline

1. Fertility and development trends
   - Levels
   - Pace

2. African exceptionalism

3. Impact of family planning programs

4. Conclusions
Socioeconomic development
Mortality decline
Cost and benefits of children
Fertility preferences
Demand for contraception
Use of contraception
Fertility

Family planning program
Contraceptive access/information
Cost of contraception
Unmet need for contraception
Met and unmet need for contraception, developing world

Potential demand for contraception

Unmet need

Current use

Percent of couples

0 10 20 30 40 50 60 70 80

1960 1980 2000
Planned and unplanned pregnancies in Africa

Planning status:
- Intended
- Unintended

Pregnancy outcome:
- Abortion
- Unintended birth
- Intended birth

Source: Guttmacher
Successful FP experiment in Matlab, Bangladesh

Contraceptive Prevalence (%)

Experimental area

Control area

Source: Cleland et al. 1994
Fertility impact of weak vs strong FP programs

Births per woman

- Burundi: Weak
- Rwanda: Strong
- Uganda: Weak
- Kenya: Strong
- Pakistan: Weak
- Bangladesh: Weak
- Jordan: Strong
- Iran: Weak
- Philippines: Weak
- Indonesia: Weak

Births per woman range from 0 to 6.
Rwanda reproductive trends

- TFR
- Contraceptive use

Births per woman

% married women

Conclusion:

1) High unmet need for contraception and large numbers of unplanned pregnancies
2) Family planning programs can reduce fertility by about 1.5 births per woman
Population projection variants
sub-Saharan Africa

Billions

Variant
High
Medium
Low

Source: United Nations
Causes of slow fertility decline in Africa

1) Slow pace of development
2) African pro-natalism
3) Weak or non-existent FP programs
Sources


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