Demographic Transition
and Demographic Dividends

New International Evidence

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Acknowledgements

• Andy Mason
• Members of NTA teams that constructed NTA for the 60+ economies in our database
NTA Membership

Growth of NTA Membership

Countries belonging to the NTA network are represented by blue. Countries constructing accounts and not yet members of the network are represented by orange.
National Transfer Account

“Understanding the Generational Economy”

![Graph showing National Transfer Account and Head-count](image)
Purpose

• Quantify the demographic dividend
  – Contribution to economic growth of changes in fertility, mortality, and age structure that occur over the demographic transition

• Explore channels through which demography influences the economy

• Capitalize on the increased availability of National Transfer Account data
  – Country team estimates for about 60 economies from which we model economic lifecycles of 100+ more
Demographic change is a potentially powerful development factor operating through multiple channels.
Demographic Dividends

• First dividend: Fertility decline leads to a substantial, sustained, but ultimately transitory, rise in the number of workers relative to the number of consumers.

• Second dividend: Fertility decline leads to an increase in the productivity of each worker
  – Consequence of increased capital and human capital
  – Delayed as compared with the first dividend
  – Can be permanent or self-sustaining.

• Taken together, the results suggest a substantial payoff to policies that enable couples to have fewer children with families and governments investing more in each child.
First Demographic Dividend

About 70% of countries currently benefitting

![Proportion of countries over time: 1980, 2010, 2040]
First Demographic Dividend

Substantial, Sustained, Transitory

<table>
<thead>
<tr>
<th>Region</th>
<th>Timing (Average)</th>
<th>Dividend (% points)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start</td>
<td>End</td>
</tr>
<tr>
<td>Africa</td>
<td>1991</td>
<td>2084</td>
</tr>
<tr>
<td>Americas</td>
<td>1974</td>
<td>2032</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>1975</td>
<td>2033</td>
</tr>
<tr>
<td>Europe</td>
<td>1964</td>
<td>2001</td>
</tr>
<tr>
<td>World</td>
<td>1977</td>
<td>2041</td>
</tr>
</tbody>
</table>
Second Demographic Dividend

Greater human capital spending with fewer children per woman
Second Demographic Dividend

Greater demand for pension wealth as population age
DemDiv Simulation

Model

- Economic growth influenced by size of labor force, human capital, physical capital, and exogenous technological change
- Standards of living influenced by first and second dividends with capital and human capital channels distinguished
- Model parameters: NTA estimates and standard parameters drawn from the literature
- Nigerian population scenarios
  - Medium and low fertility scenario compared with no fertility decline scenario.
  - Radical fertility decline scenario based on China’s experience.
Three demographic scenarios
First Dividend

Growth effect (percentage points)

Fertility scenario

- Medium
- Low
- Radical

2010-2040
2040-2070
2070-2100

NTA
Demographic Dividends Combined

<table>
<thead>
<tr>
<th>Growth effect (percentage points)</th>
<th>Medium</th>
<th>Low</th>
<th>Radical</th>
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<tr>
<td>2010-2040</td>
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</table>

Legend:
- Blue: 2010-2040
- Red: 2040-2070
- Green: 2070-2100
Cumulative effect on per capita consumption

Increase in per capita consumption (%)

-50 0 50 100 150 200 250 300 350 400

2010 2040 2070 2100

Radical fertility decline scenario
Low fertility decline scenario
Medium fertility decline scenario
Conclusions

• Low fertility path could boost per capita consumption by 80% in two generations time
• Radical fertility path could boost per capita consumption by nearly 300% in two generations time
• First dividend benefits come early, are significant, but dissipate eventually
• Second dividend is delayed, but **given appropriate policy** benefits are large and permanently boost income and consumption