

Population Growth & Poverty

lecture notes Econ 3240 Spring 2015

Key Issues:

- Early in the development process population growth increases, especially among the poor (**demographic transition**).
- Faster population growth among the poor makes it harder to reduce the poverty rate (or to help the poor)
- Efforts by government to reduce population growth may help the country but hurt the poor (**the isolation paradox**).
- Malthus and other pessimists were wrong about the race between population and food supplies.
- Child labor is one reason poor families choose to have more children, but it can lead to a poverty trap.

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Key Issues:

- Early in the development process population growth increases, especially among the poor (**demographic transition**).
- Faster population growth among the poor makes it harder to reduce the poverty rate (or to help the poor— think about $H = \text{poor pop} / \text{total population}$)
- Efforts by government to reduce population growth may help the country but hurt poor families (**leading to an isolation paradox**). .

Early in development, population growth accelerates especially among the poor...

- As average incomes begin to rise and poverty falls, better nutrition and medical care reduces the death rate rapidly—this good news.
- Emerging from starvation raises the fertility rate, but birth rates then fall steadily—just not as fast as the death rate.
- Population growth is a race between births and deaths, so population growth surges until the birth rate falls as much as the death rate: this is the **demographic transition**.
- More rapid population growth among the poor makes it **harder to reduce poverty rates, themselves an outcome of a race between poor and non-poor populations**.

The Rev. T. H. Malthus saw poverty and famine as nature's check on population growth (until he got married...)

– See also Grand pursuit by Sylvia Nasar... the idea of mass prosperity starts with Dickens and Jane Austen in *An Essay on the Principle of Population, 1798* (1st of 6 editions)

- Higher incomes for the poor just raises birth rates... (see James Sterba,
- Food production cannot keep up with population growth.
- 2nd edition backs away argument, but everyone remembers the 1st edition.

The Dismal Science (circa 1820):

- **Malthus:** efforts to end poverty lead to famine, war, pestilence... & more poverty.
- **Ricardo:** scarce land rents rise, reducing wages & profits,
- **Marx:** class conflict leads to collapse of capitalism



Population growth is higher among the poor because...

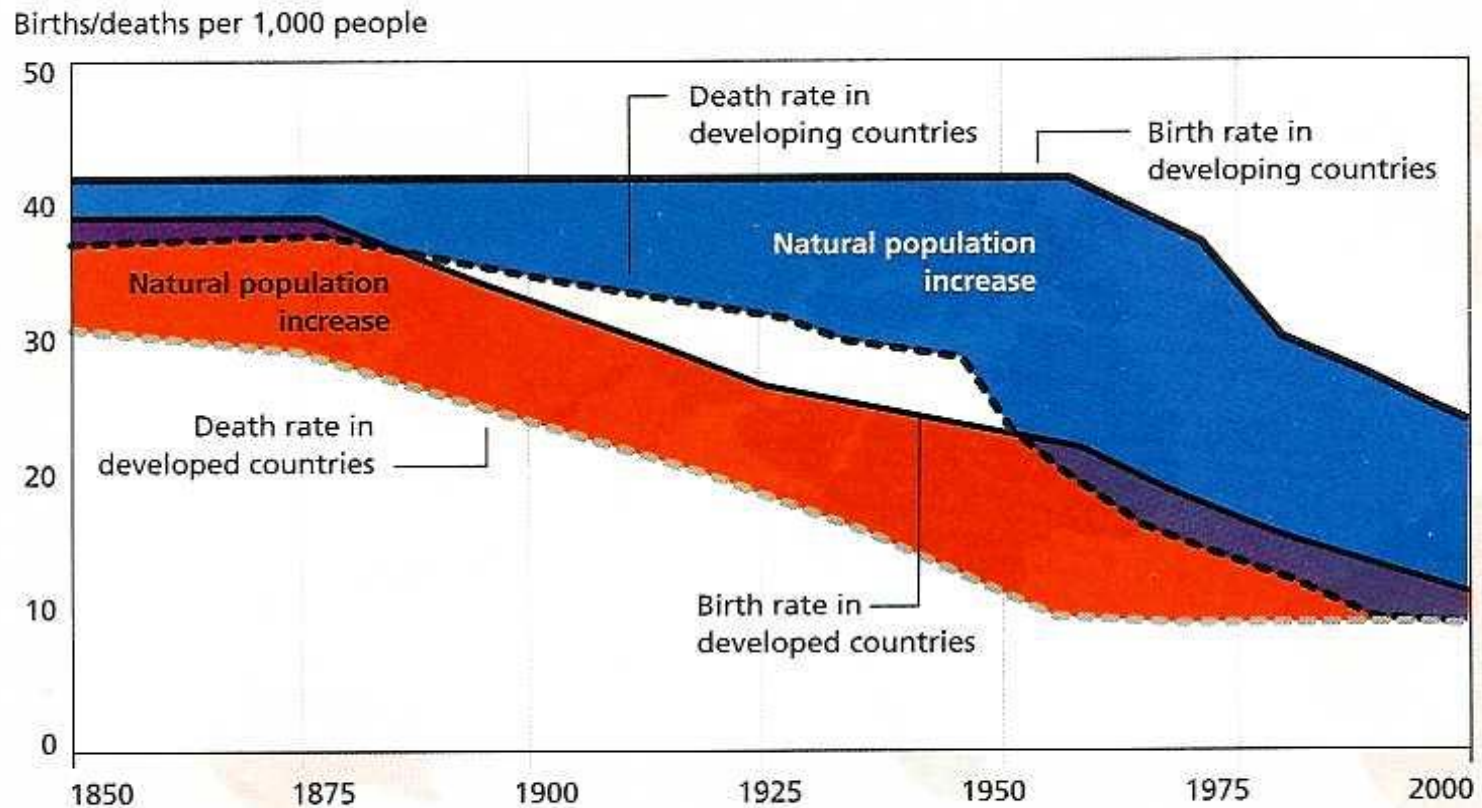
- Population growth is a race between the birth rate and the death rate... the death rate falls sharply with better nutrition and medical care...(this is the **demographic transition**)
- Poor family birth rates are high because children are a net private benefit to poor families. Birth rates rise in response to high child mortality rates...
- Some big families become poor because they are big families (a minor factor). Large families may also be less mobile geographically and send few kids to school.

What is the Demographic Transition?– as income per person rises above \$1 per day...

- ***The death rate falls from 30-40 to 8-12 per 1000 people*** due to better nutrition and medical care.
- **More slowly, the birth rate also falls from 35-45 to about 12-18 per 1000 as incomes rise.**
- **Bottom line: since the death rate falls faster than the birth rate population growth surges for about two generations** (the 1st wave of young people have kids too leading to **population momentum**– but then as the birth rate drops population growth returns to normal rates of 1% per year or less).

The Demographic Transition in LDCs started after WWII and was faster than in Europe

Figure 3.2 Trends in birth and death rates, 1850–2000



Note: Developed countries include high-income countries and present-day transition economies.

Faster poor population growth makes it harder to reduce poverty rates...

- Poverty Rate, $H = \text{\# of poor} / \text{total population}$
- *Falling poverty rates requires slower growth in the poor relative to the total population...*
- Change in H equals the change in the poor population minus the change in the total population, that is,

Change in $H = \text{Change in \# of poor} - \text{Change in total population}$

Why birth rates are higher for poor families?

- The value of parents time is low so the cost of raising children is low as well.
- Children can contribute to household income, as much as 15-20% of income according to studies in Latin America....
- Child mortality rates are high so a larger number births are required to build a family...
- Children are an asset for the poor, a form of social capital and saving for the future.

Two Population Booms Compared: Europe vs. Developing Countries...

Demographic Transition: North vs. South:

In Europe (1830-1980)

In LDCs (1950-2050)

**1 Longer & more gradual
1-1.5% pop. growth.**

**Began Dramatically in 1950s and
1960s-- 2-3% pop. growth.**

**2 Massive Out Migration
(50 M 1881-1920)**

**Little emigration, except to Cities
(10-15M Temporary Worker**

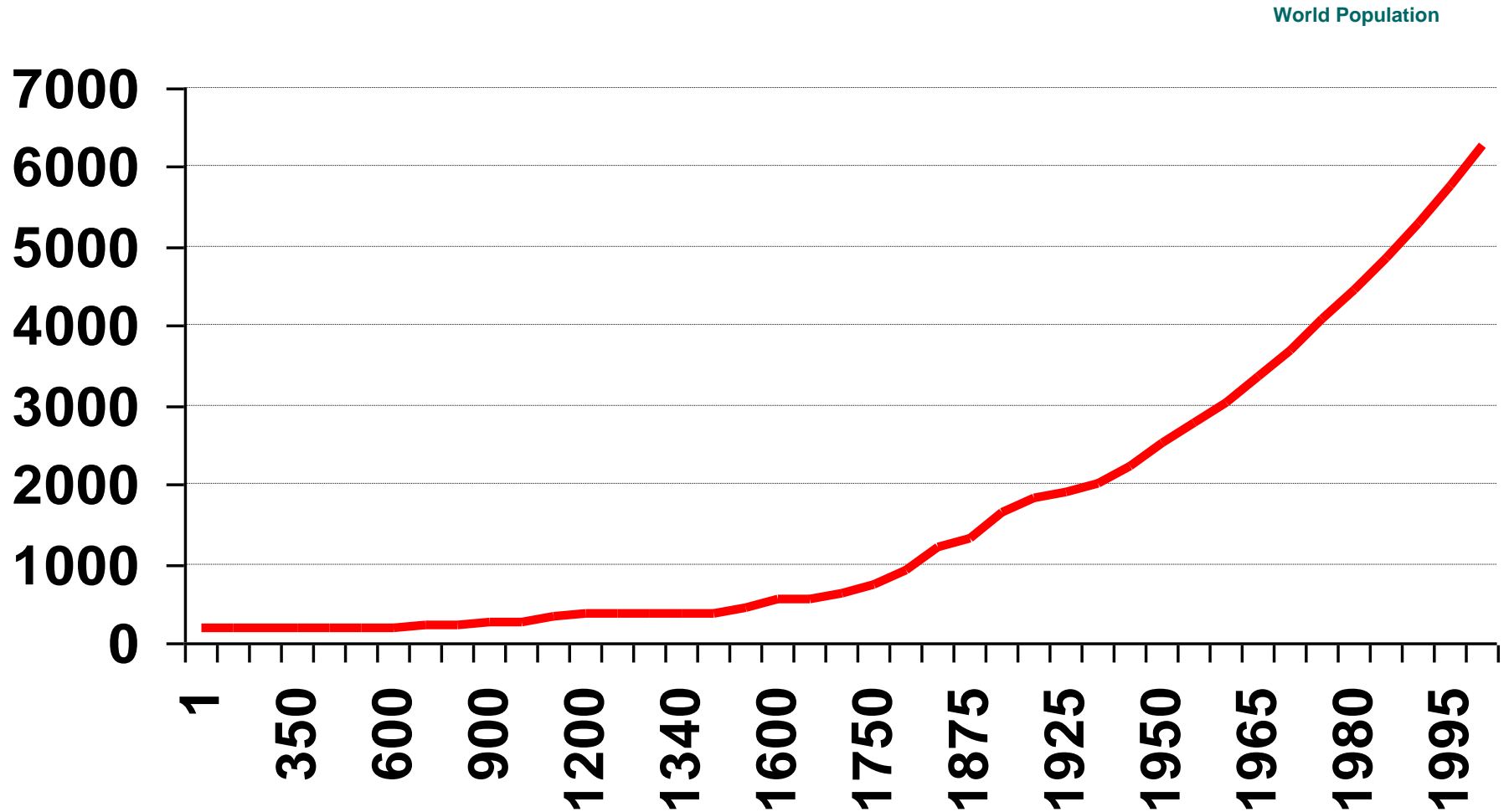
**3. Expanding Land Base
(Colonial Expansion)**

**More intensive cultivation--requir
Green Revolution Technologies
Environmental Problems**

But Malthus, Marx and Ricardo were wrong...in fact since 1820 living standards increased eightfold... as almost everywhere:

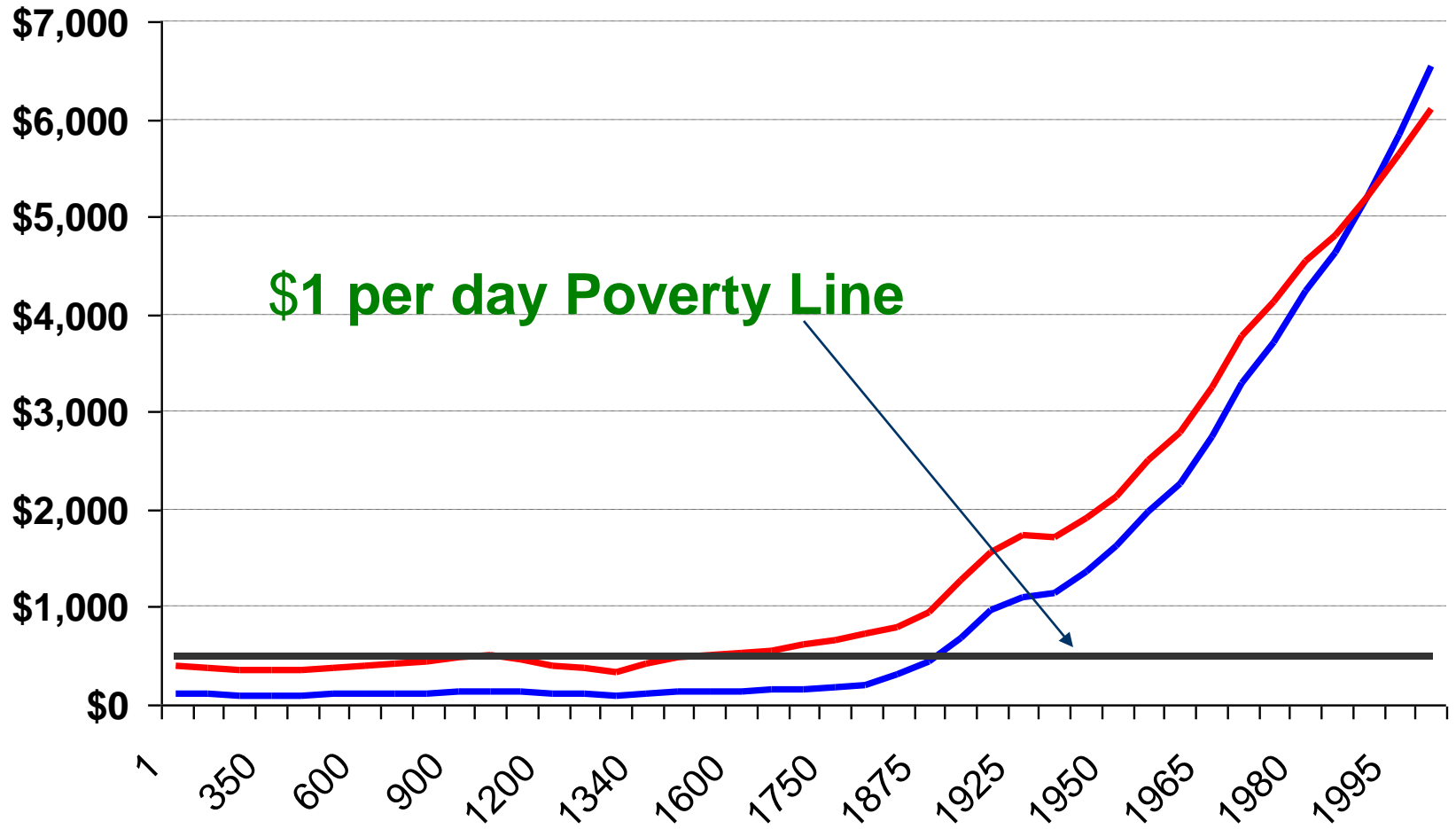
- ***Birth rates rose with the end of malnutrition, but then fell as income per family rose:*** both the value of parent's time-- the cost of raising children rises so the birth rate falls as parents substitute quality for quantity.
- ***Agricultural output increased faster than world population*** even in populous South and East Asia rice yields have outstripped population growth...
- ***Even the poorest families choose their family size rationally,*** maximizing their own, if not the nations, well-being contrary to the uncontrolled reproduction Malthus envisioned in the 1st edition of his *Essay on Population*.

1000 Years of World Population (millions)



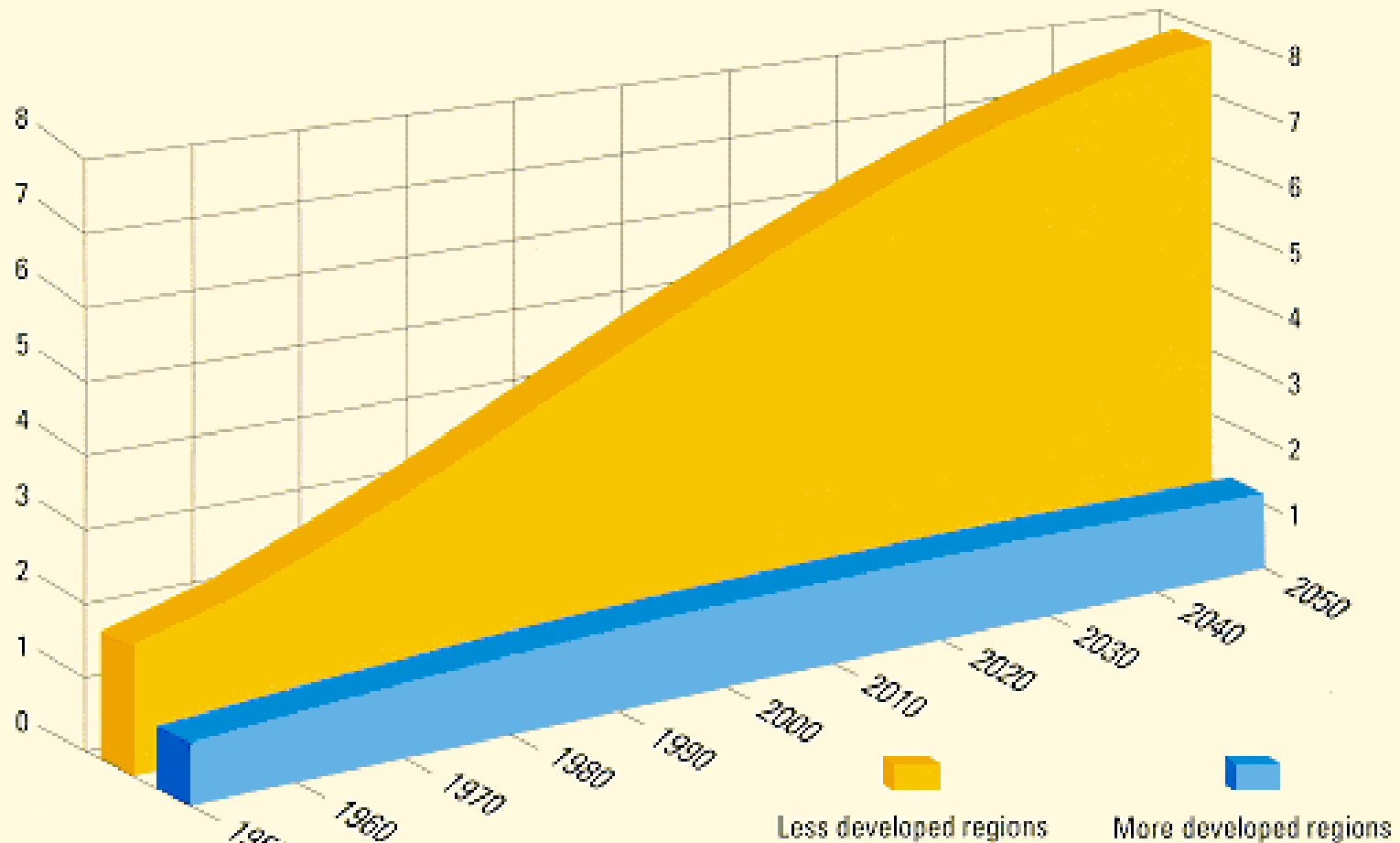
World Income Per Person (1990 \$US)

World Income Per Person



— De Long — Nordhaus — — Poverty Line

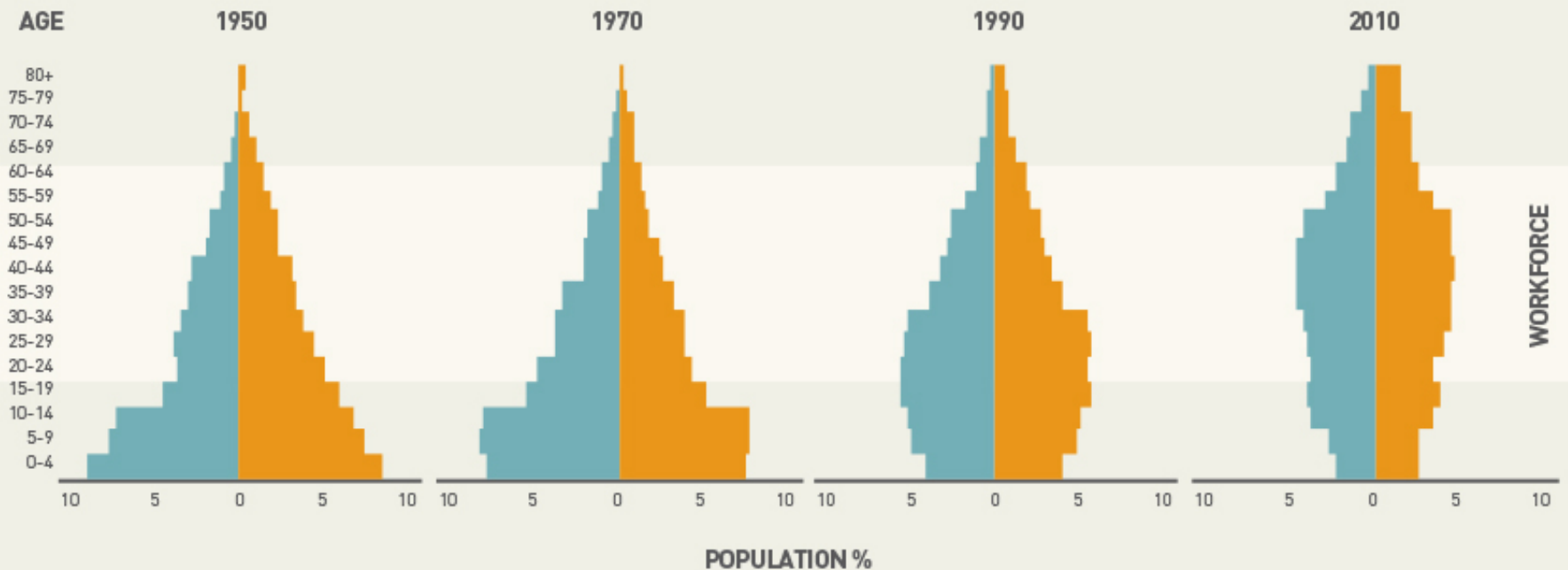
The Demographic Transition in LDCs is coming to an end...



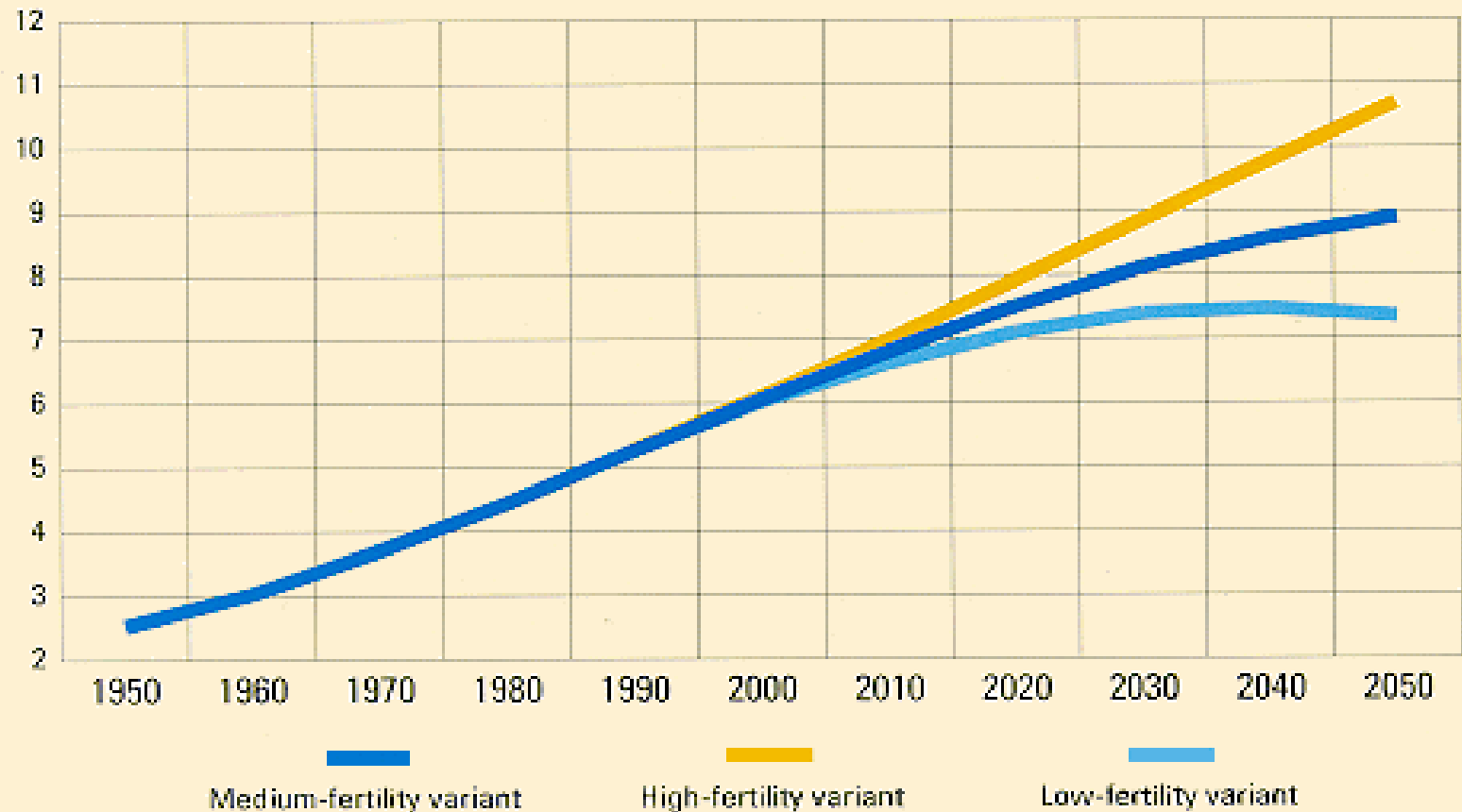
Leading to a Demographic Bonus or Dividend (more young adult workers per dependent.... See [Melinda Gates FA Myth #3](#))

SOUTH KOREA'S CHANGING AGE STRUCTURE HELPED IT REAP THE DEMOGRAPHIC DIVIDEND

● MEN ● WOMEN



Various UN Population Council scenarios result in 7-11 billion people by 2050, but right now a plateau at about 8 billion seems most likely...



Population control may hurt the poor but help the nation due to an "isolation paradox":

- The poor make rational decisions regarding the cost and benefit of children for them (evidence from twins studies, a "natural experiment") Having more children improves the poor's well being, but creates a policy dilemma for government.
- **Isolation Paradox:** parents don't pay the full cost of raising children – social costs exceed private costs (schools, water, sanitation not paid for by the poor)
- Baby booms require more social services and public investment perhaps slowing national growth—what helps poor families may hurt the nation as a whole...

The Demographic Bonus- late in demographic transition the dependency rate falls (a silver lining):

- As the demographic transition ends and population growth slows the ratio of children to adults (the dependency ratio) falls, more working age adults and fewer dependents raises average income.
- An older more experienced population earn higher wages, commit fewer crimes, save and pay more taxes, all with fewer children to take care of.
- This boost to living standards and the quality of life created by more working age adults and fewer dependents is the Demographic Bonus (if young adults are employed....).

Population growth & child labor:

- Population growth is faster among poor families—mainly because the benefits of larger families exceed the costs for them.
- One reason that larger families benefit the poor is that children work at an early age... and some may not go to school at all.
- **Education and work outside** the home for women reduces the birth rate, as the lost income created by raising children increases.
- Also Women who work or go to school tend to **delay marriage** reducing the birth rate for any given population cohort.

Population growth slowing....

- Number of children has peaked at 2 billion...



The image shows a screenshot of a TED video player. At the top left is the TED logo in red. To its right are navigation links: Watch, Read, Attend, Participate, and About. On the top right is a search bar with the text "Search...". The main content area features a large video player with a play button in the center. The video title is "Global population growth, box by box" in large white text. Above the title, it says "Hans Rosling:". Below the title, it says "TED@Cannes · 10:04 · Filmed Jun 2010" and "Subtitles available in 44 languages". There is also a link to "View interactive transcript". The video player shows a man in a light blue shirt and glasses, Hans Rosling, pointing at a stack of yellow and blue boxes. The background is dark with a large white letter 'U'.

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How could we be so wrong??

- *“The misdiagnosis of the population explosion by the vast majority of social scientists and policymakers, and the grave harm that the resultant mistaken policy did to many millions, were among the most serious intellectual and ethical failures of a century in which there were many.” Angus Deaton (2013, p. 246)...*
- *“In spite of the prophecies of doom, the population explosion failed to plunge the world into famine and destitution. On the contrary, the past half-century has seen not only the decrease in mortality that caused the explosion but also a mass escape from the poverty and deprivation that the population explosion was supposed to cause.” more here*