Economic Development: Theory and Policy

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4. Introduction - Unified Growth Theory

- Transition from stagnation to sustained economic growth → unprecedented increase in income per capita
- Change in the distribution of wealth across the globe
- Variation in the timing of the take-off from stagnation to growth led to a divergence of income across the globe
- The ratio of income per capita between the richest and the poorest of the world has been increased
  - in 1820: 3/1
  - in 2000: 18/1
- Change in the world distribution of population generated by the decline in population growth in Europe and North America and the delay of the demographic transition in the less developed regions
- Interaction between the transition from stagnation to growth and the demographic transition
The evolution of economies over the major portion of human history was marked by Malthusian Stagnation:

- Increases in income generated by technological progress and land expansion induced and increase in population growth → stagnant income per capita.
- Cross-country differences in technologies were reflected in population densities but not in levels of standards of living.

The increased role of human capital in the second phase of the Industrial Revolution induced the demographic transition, such that the decline in population growth and the associated increase in technological progress and human capital formation paved the way for sustained economic growth.
Unified Growth Theory seeks to capture the transition from stagnation to growth within a single theory and argues that the understanding of the contemporary growth process will be limited unless research sticks to disjoint theories explaining only fragments of the development process of human history.

Moreover the hurdles faced by less developed countries would remain obscure unless we have a clear understanding about the factors that promoted a transition to sustained economic growth in the developed world.
Main characteristics of the process of development captured by UGT

1. The epoch Malthusian stagnation
2. The escape from Malthusian stagnation and the increase in population growth and income per capita
3. The emergence of human capital formation
4. The demographic transition
5. The era of sustained economic growth
6. The divergence in income per capita across the globe

According to UGT the emergence of multiple growth regimes is due to the existence of variations in the position of countries across the distinct growth regimes (phases of development).

Different timing in the take-off is responsible for the Great Divergence.
Unified Growth Theory and the phenomenon of the Great Divergence

- What accounts for the sudden take-off from stagnation to growth in some countries in the world and the persistent stagnation in others?
- Why has the positive link between income per capita and population growth reversed its course in some economies but not in others?
- Why have the differences in per capita incomes across countries increased so markedly in the last two centuries?
- Has the transition to a state of sustained economic growth in advanced economies adversely affected the process of development in less-developed economies?
Unified Growth Theory and the phenomenon of the Great Divergence

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4. Historical Evidence

Source: Galor (2005)
4. Historical Evidence - Fertility, Mortality and Life Expectancy

- Ambiguous relationship between fertility and mortality during the Malthusian epoch
- Increasing incomes per capita induced declining mortality rates and increasing fertility rates
- Increased mortality increased fertility rates such that the number of surviving offspring was maintained constant and compatible to the amount of available resources.
- Early urbanization (1540-1740) induced a drop in life expectancies at birth.
- A decline in mortality along with an increase in life expectancy started in England around 1740
4. Historical Evidence - Fertility, Mortality and Life Expectancy

Source: Galor (2005)
4. Historical Evidence - Fertility, Mortality and Life Expectancy

Source: Galor (2005)
4. Historical Evidence - Differential Timing of Take-off

Source: Galor (2005)
4. Historical Evidence - Output and Population Growth

- Malthusian regime: positive link between income and fertility such that income per capita remained constant
- Post-Malthusian regime: positive link between income and fertility but increasing income per capita
- Modern Growth regime: negative link between population growth and income per capita
4. Historical Evidence - Output and Population Growth

Source: Galor (2005)
4. Historical Evidence

Source: Galor (2005)
4. Historical Evidence - Demographic Transition

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Source: Galor (2005)
4. Historical Evidence - Demographic Transition

Source: Galor (2005)
4. Historical Evidence - Industrialization and Human Capital Formation

Source: Galor (2005)
4. Historical Evidence - The Great Divergence

Source: Galor (2005)
4. Historical Evidence - Shift in World Population Shares

Source: Galor (2005)
4. Historical Evidence - Industrialization

Source: Galor (2005)
4. The Theory


→ capture the process of development over the entire course of human history.
That is, capturing the epoch of Malthusian stagnation that characterized most of human history, the contemporary era of modern growth and the forces that triggered the transition between the two regimes.

What is the justification for the selective use of observations which characterize only the contemporary growth process?
4. The Theory

The Malthusian model has two key components:

1. Fixed factor of production (land) implying decreasing returns to scale for all other factors.
2. Positive effect of the standard of living on the growth rate of population.

Malthus:
when population size is small, the standard of living is high, and population will grow as a natural result of passion between sexes.
When population size is high, the standard of living is low. Population will be reduced by "preventive checks" or "positive checks" (disease, malnutrition, etc.).
4. The Theory

Implications of the Malthusian model:

In the absence of technological progress or in the availability of land

- the size of population will be self-equilibrating,
- increases in available resources will be offset by the size of population,
- countries with superior technologies will have denser populations, but a similar standard of living (China).

These predictions are consistent with the evolution of technology, population, and output per capita for most of human history. Maddison (1982): growth rate of per-capita GDP between 500 and 1500 was zero.
The Post-Malthusian Regime:

The Malthusian mechanism linking higher income to higher population growth is still at work, but the diluting effect on resources per capita was counteracted by technological progress.

In western Europe population growth was 40 percent as large as total output growth between 1820-1870, and only 20 percent as large between 1929-1990.
The Modern Growth Regime:

is characterized by steady growth in both income per capita and the level of technology. there is a negative relationship between the level of output and the growth rate of population.

- In England live births per 1,000 women aged 15-44 fell from 153.6 in 1871-1880 to 109.0 in 1901-1910 (Wrigley, 1969).

- The reversal of the Malthusian relationship corresponded to an increase in the resources invested in each child. The average number of years of schooling in England and Wales rose from 2.3 for a cohort born between 1801-1805 to 9.1 for the cohort born between 1897-1906.
4. The Theory

Implications:

- Key event that separates the Malthusian and Post-Malthusian Regimes is the acceleration in the pace of technological progress.
- Event that separates the Post-Malthusian and the Modern Growth Regime is the demographic transition that followed the industrial revolution.