

Population and Sustainable Development

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Population and sustainable development Highlights

Four ways population influences sustainable development

- Gains in life expectancy
- Population-driven GDP growth
- Transformation of reproduction and human capital investment
- Demographic dividends

Policy in an aging world

Gains in life expectancy

Life expectancy at birth

	India	Japan	US
1900	24.0	44.0	47.0
1950	37.9	62.2	68.6
2000	62.5	81.8	77.2
2020	69.9	84.8	78.9

Source: Maddison (2000) and United Nations (2011, 2019)

Notes: 2020 values projected.

Population as a driver of GDP growth

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Population as a driver of global GDP
Major role in 1975-

Transformed reproduction and human capital investment

- Increased opportunities for women as they redirect their time to:
 - Education
 - Production of market goods and services
 - Time-intensive childrearing
- Small families are investing more per child in human capital
 - Health
 - Education
 - Both public and private

Greater investment in human capital per child



- Human capital spending is a synthetic cohort value calculated as the sum of public and private education spending, ages 3 to 26, and public and private health spending 0 to 17 expressed as a percentage of annual pre-tax labor income of persons 30-49.
- Higher productivity and income for children
- Ability to maintain support for older generations as population aging occurs.
- Source: Lee and Mason 2010 updated.

Demographic dividends: Impact of changing population on growth in standards of living.

First dividend

Definition: Growth in the effective number of workers relative to effective number of consumers.

Measurement: Age profiles of consumption and labor income combined with population data to incorporate the effects of policies and practice that vary from country to country.

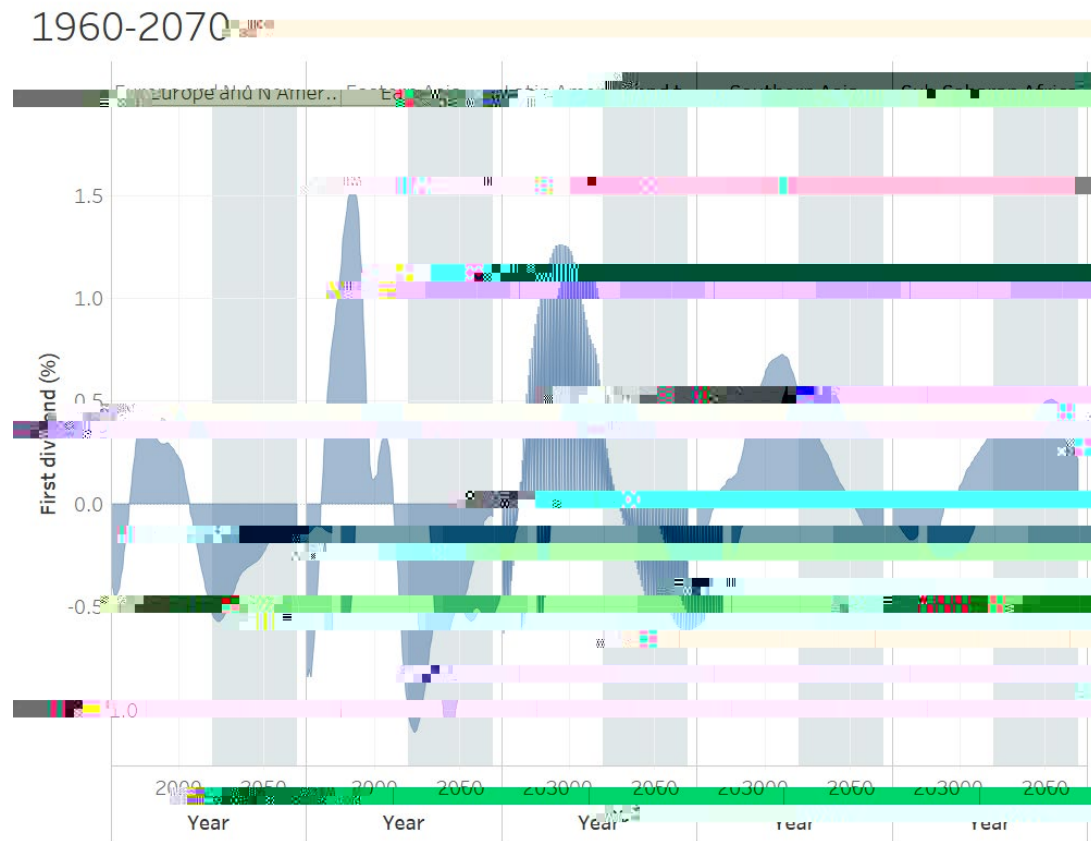
Second dividend

Definition: Growth in consumption per effective worker due to population change.

Capital deepening, human capital investment, etc.

Not explored here.

For the next 50 years, the contribution of the first dividend will be very mixed



- First dividend has turned negative in the West and in Eastern Asia.
- It will turn negative in Latin America and the Caribbean beginning in 2030.
- First dividend will be positive in Southern Asia until 2050 and for the foreseeable future in sub Saharan Africa.
- First dividend is playing a convergent role as the support ratio declines in rich countries and increases in poor countries.

Steady-

Concluding observations

- Population changes have complex implications for sustainable development.
- Longer life and modern reproduction contribute in a very positive way.
- Population aging will require restructuring of economic systems to achieve sustainable development.

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