

# Population and Sustainable Development

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July 21, 2021

# Acknowledgements

- UN Population Division
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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

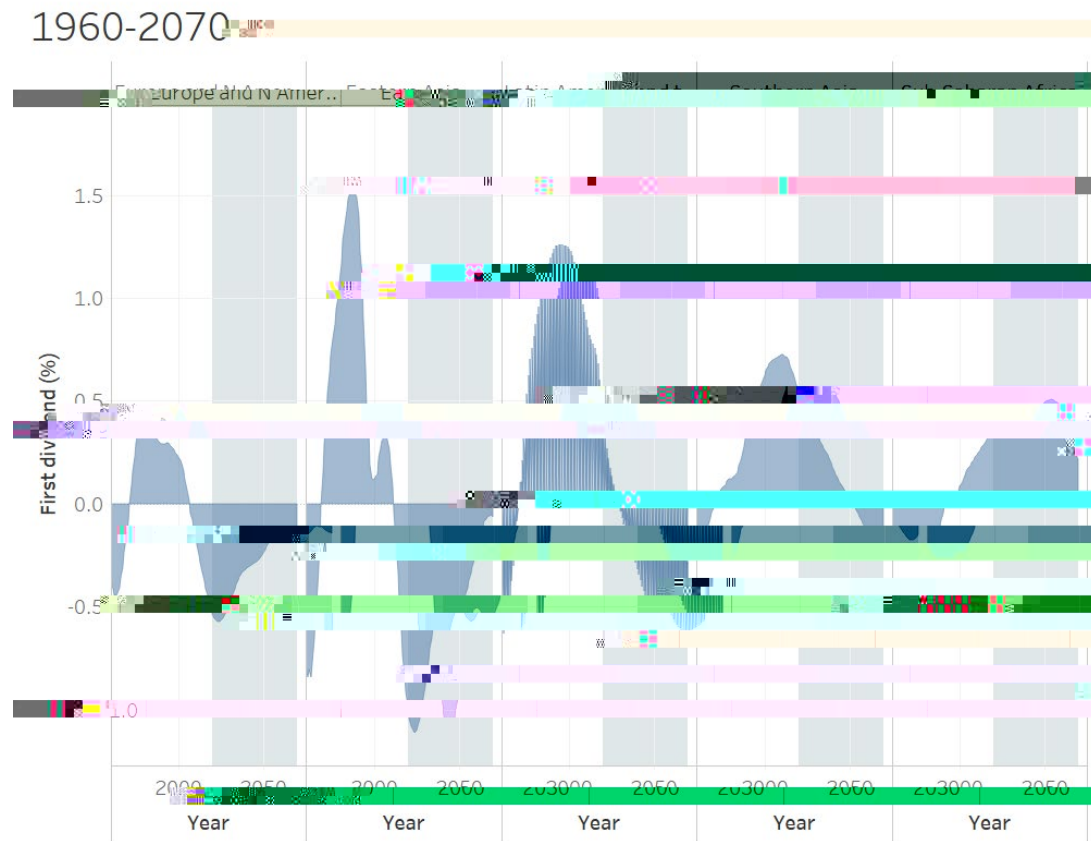
Definition: Growth in consumption per effective worker due to population change.

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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