



Global Trade Analysis Project



WORLD BANK GROUP

# Shared Socio-Economic Pathways: Potential implications for global income distribution

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World Bank Workshop

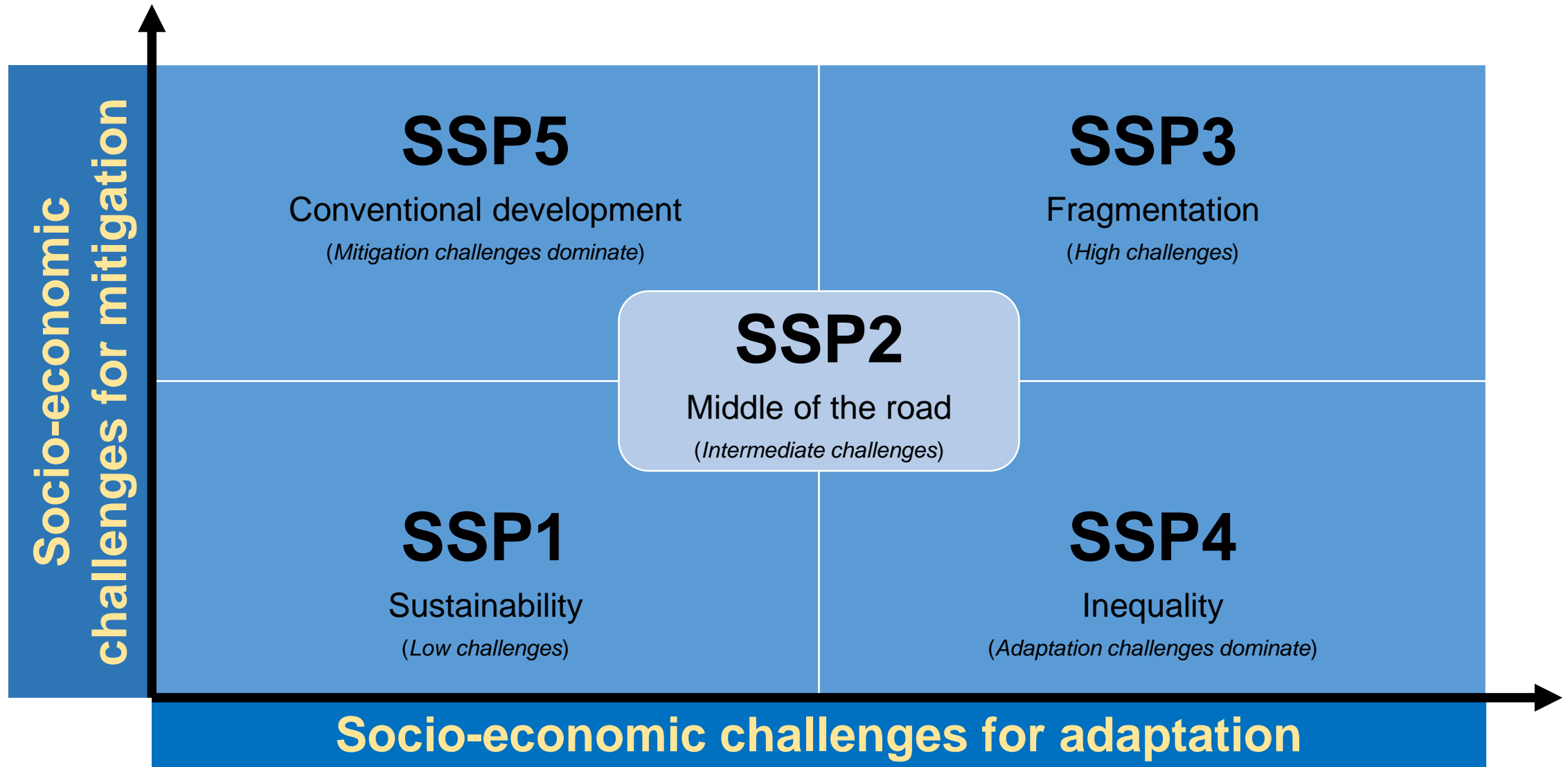
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# ENVISAGE-GIDD Simulation Framework

- **Top-down structural model**
  - Interaction between the 4 channels of Climate Change Framework:  
**(1) Prices (2) Productivity (3) Assets (4) Opportunity**
- **Macro Structural Model (ENVISAGE)**
  - Environmental Impact & Sustainability Applied General Equilibrium Model
- **Micro: Global Income Distribution Dynamics (GIDD)**
  - Based on International Income Distribution Database (I2D2)
    - 130 surveys, 3.67 million households, 12.5 million observations

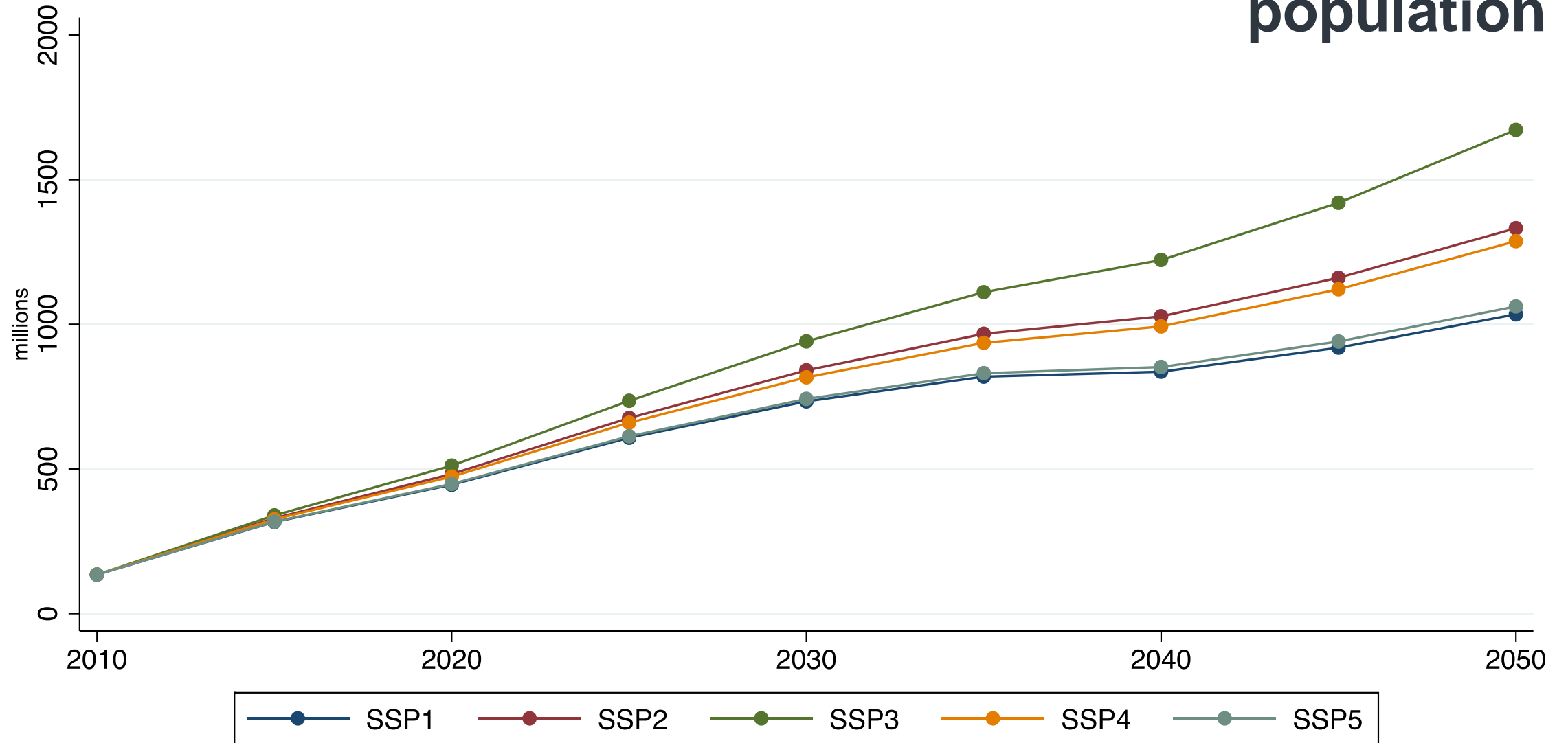
# Two-axes: adaptation & mitigation challenges



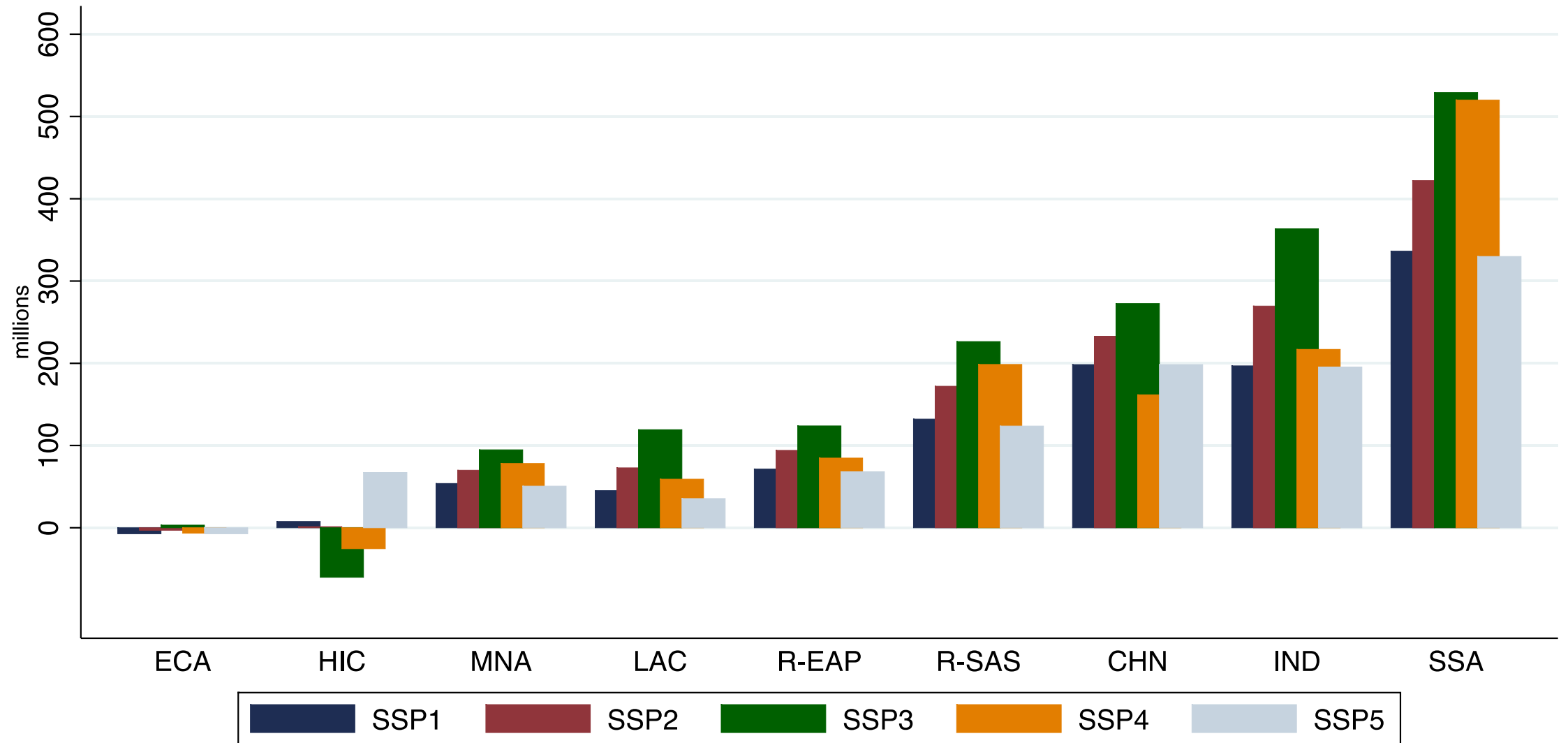
# ENVISAGE-GIDD Simulation Framework

- **Scenarios: 5 Shared Socio Economic Pathways**
  - (SSP1 to SSP5)
- **Target year is 2050 (in 5-year intervals)**
- **Distributional changes are caused by:**
  - $\Delta$  Working-age Population
  - $\Delta$  Wage premia between skilled and unskilled labor
  - GDP growth

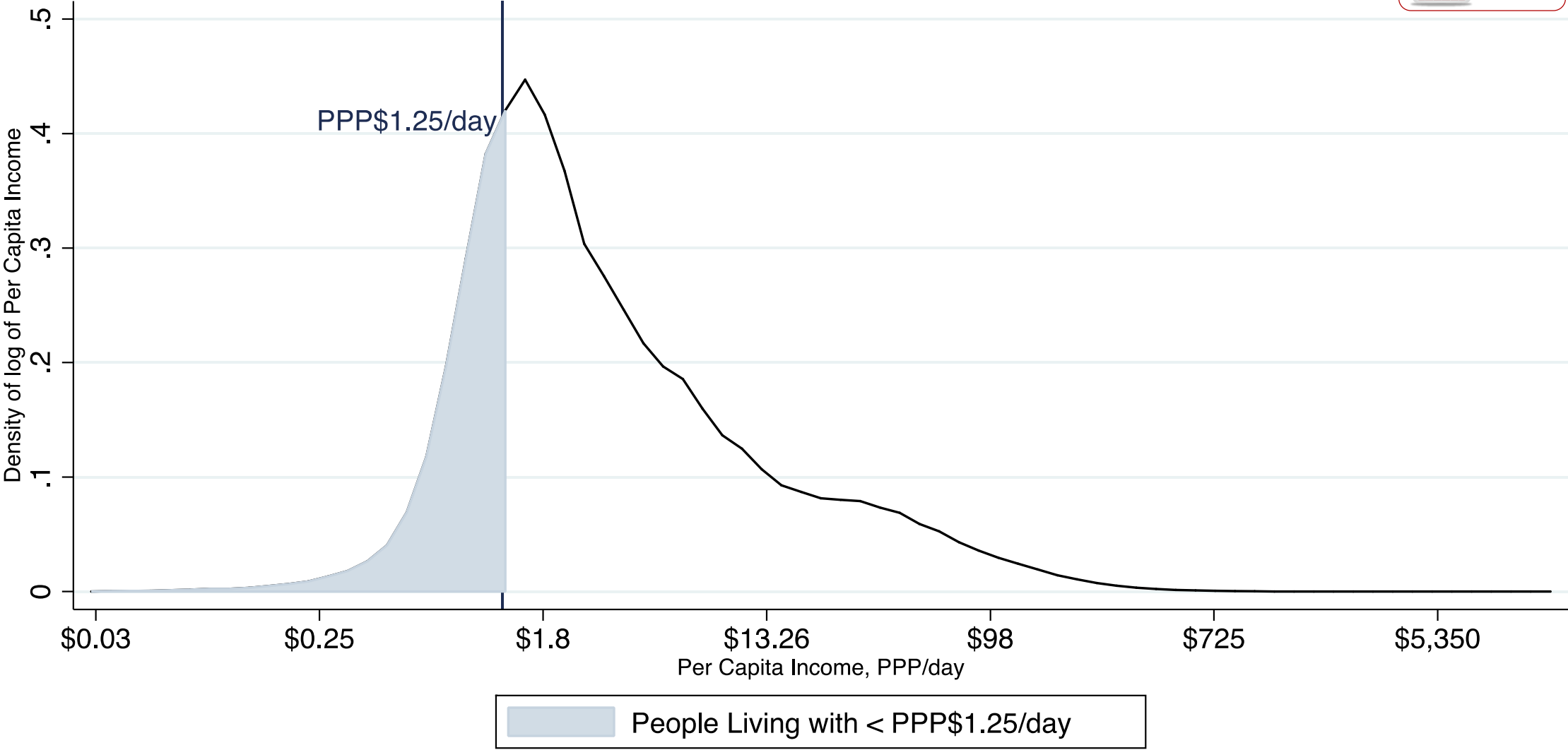
# By 2050, 1.3 billion net increase in global working-age population



# 1 in every 3 new entrants are from Sub-Saharan Africa

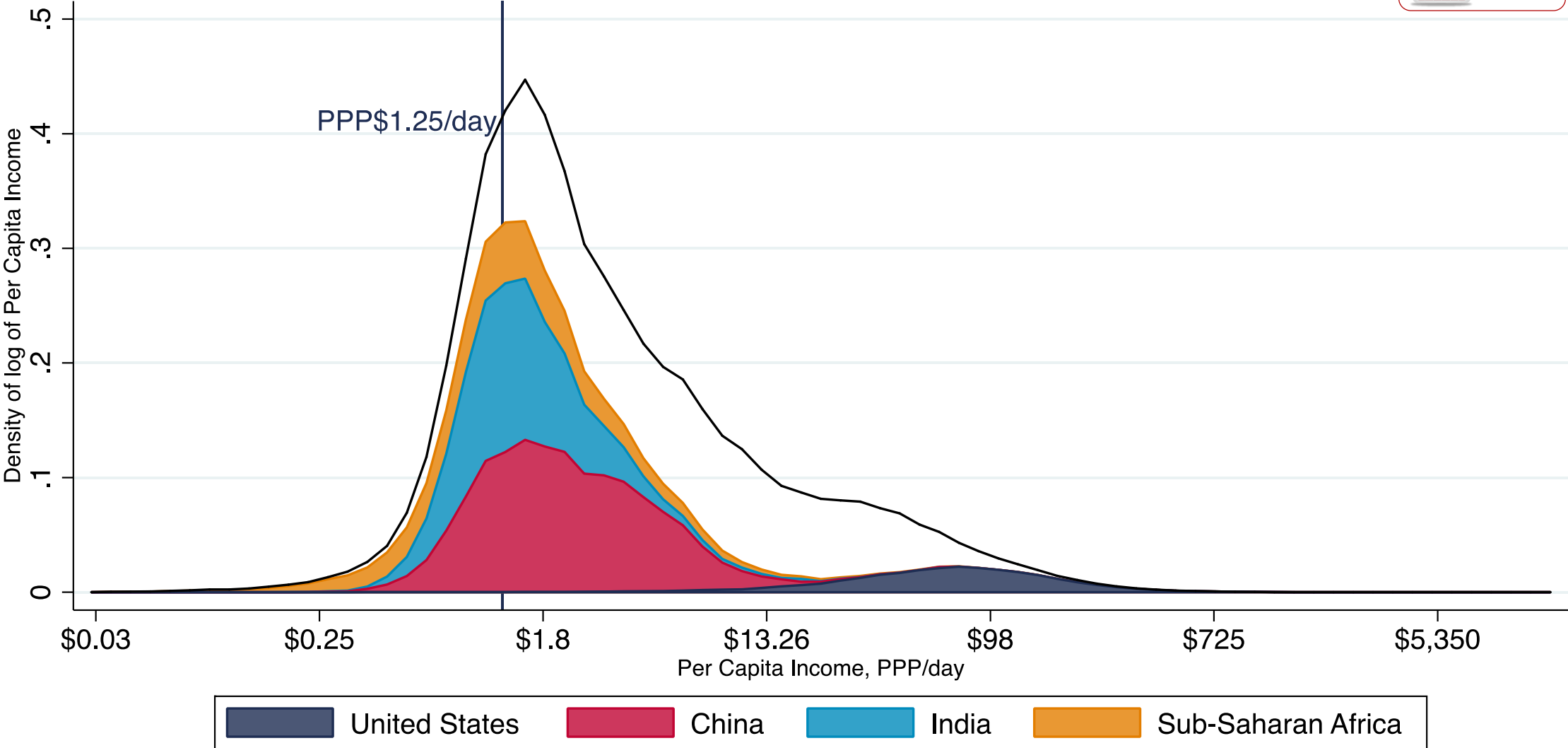


# Global Income Distribution



Source: Global Income Distribution Dynamics

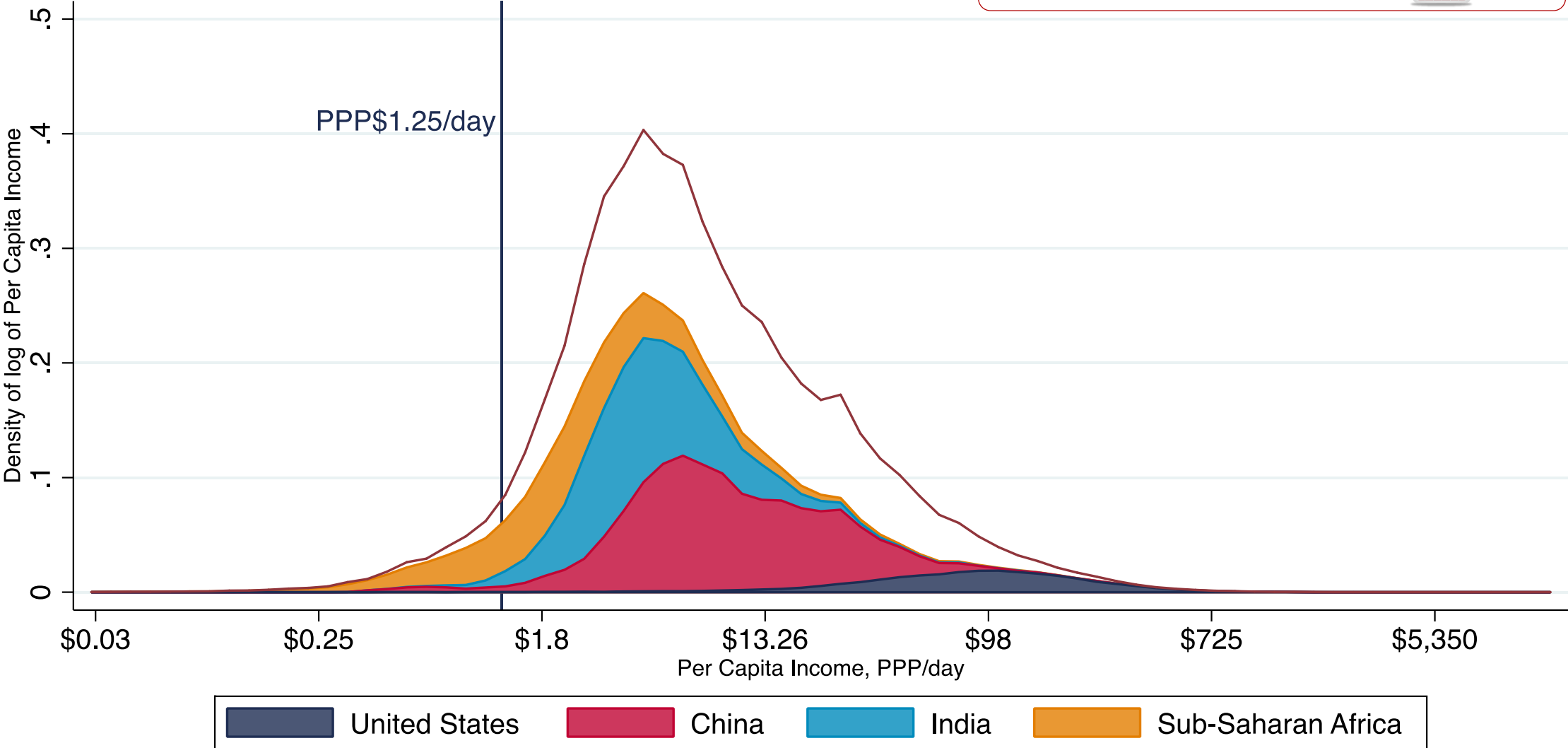
# Global Income Distribution



Source: Global Income Distribution Dynamics

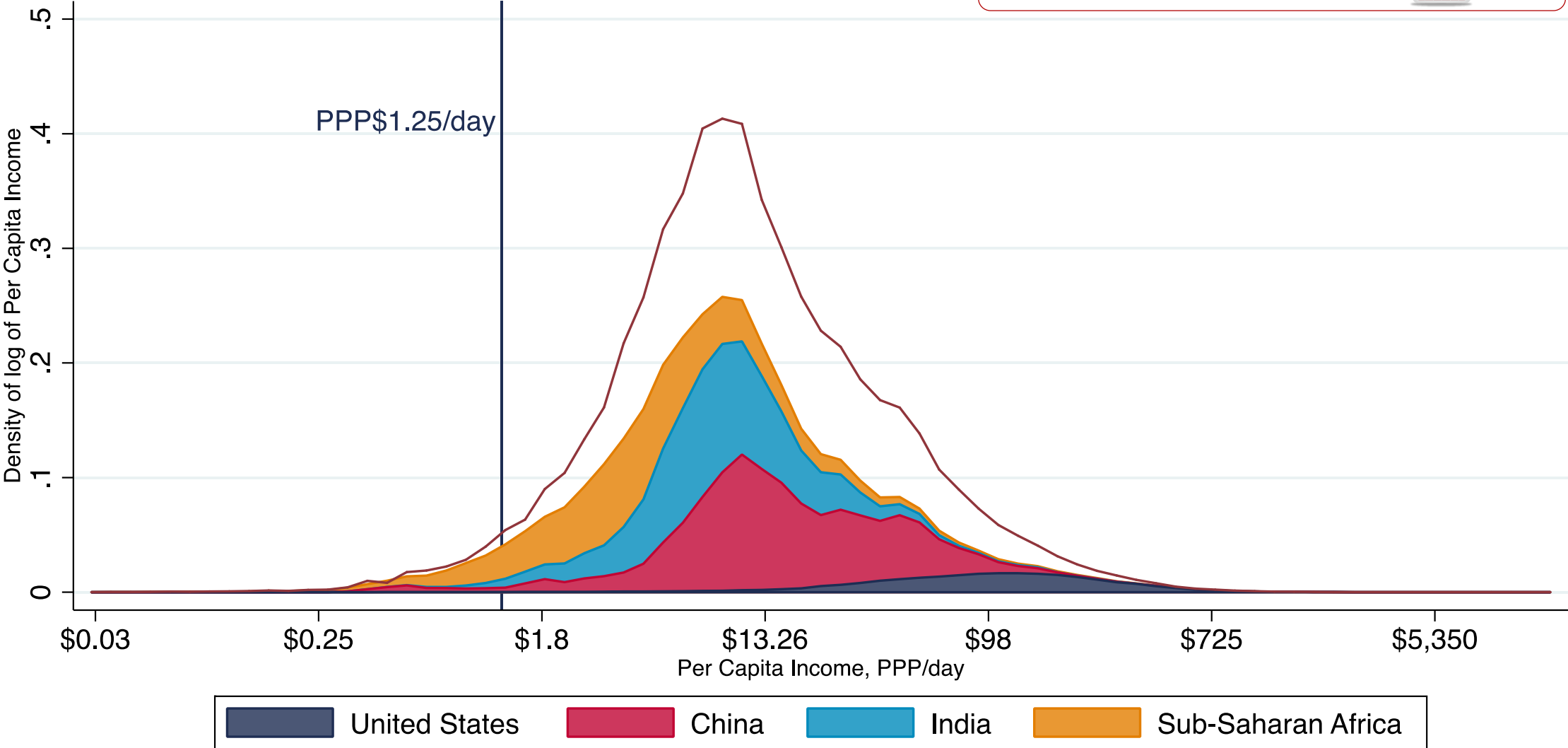


# Global Income Distribution



Source: Global Income Distribution Dynamics

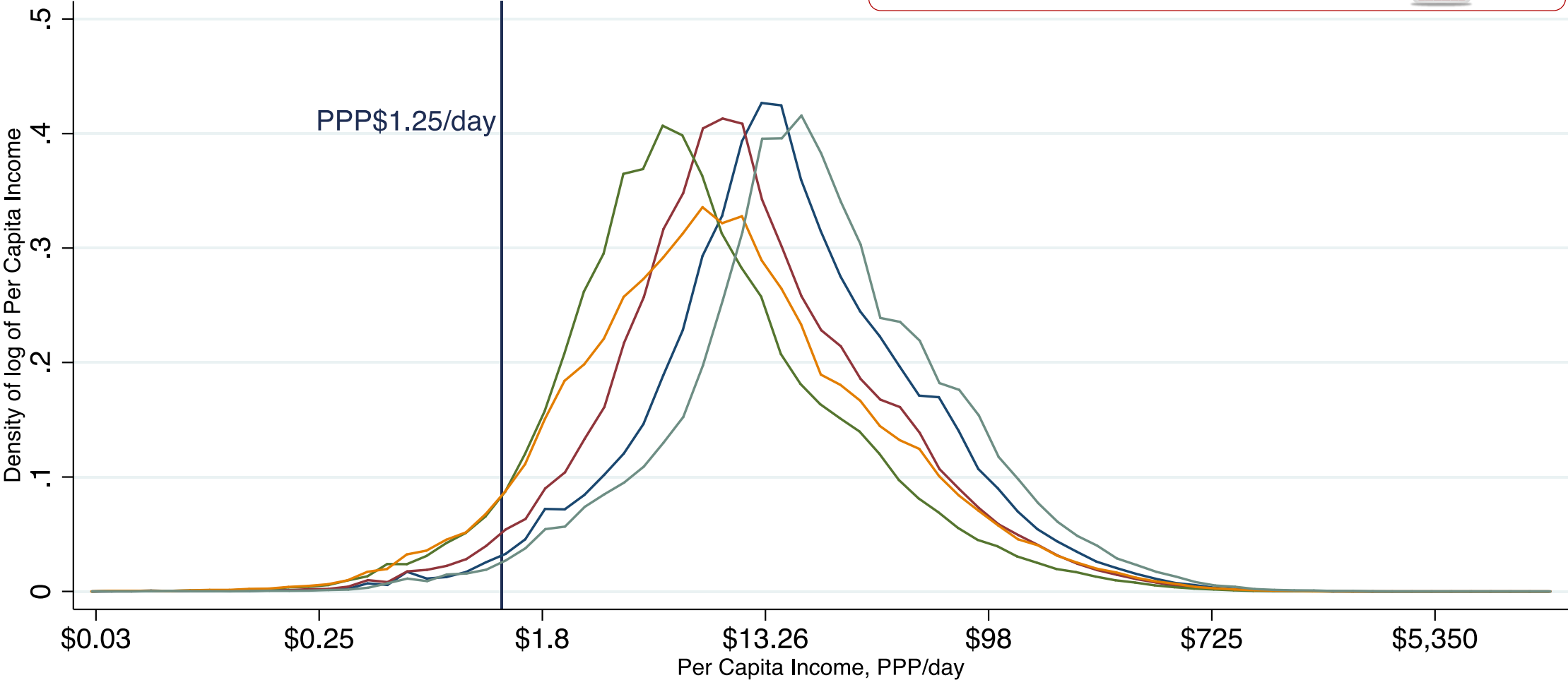
# Global Income Distribution



Source: Global Income Distribution Dynamics

# Global Income Distribution

Shared Socioeconomic Pathways 1 to 5  2050



— SSP1 — SSP2 — SSP3 — SSP4 — SSP5

## Poverty Headcounts (People living with less than PPP\$1.25/day)

**SSP1: 2.0%**

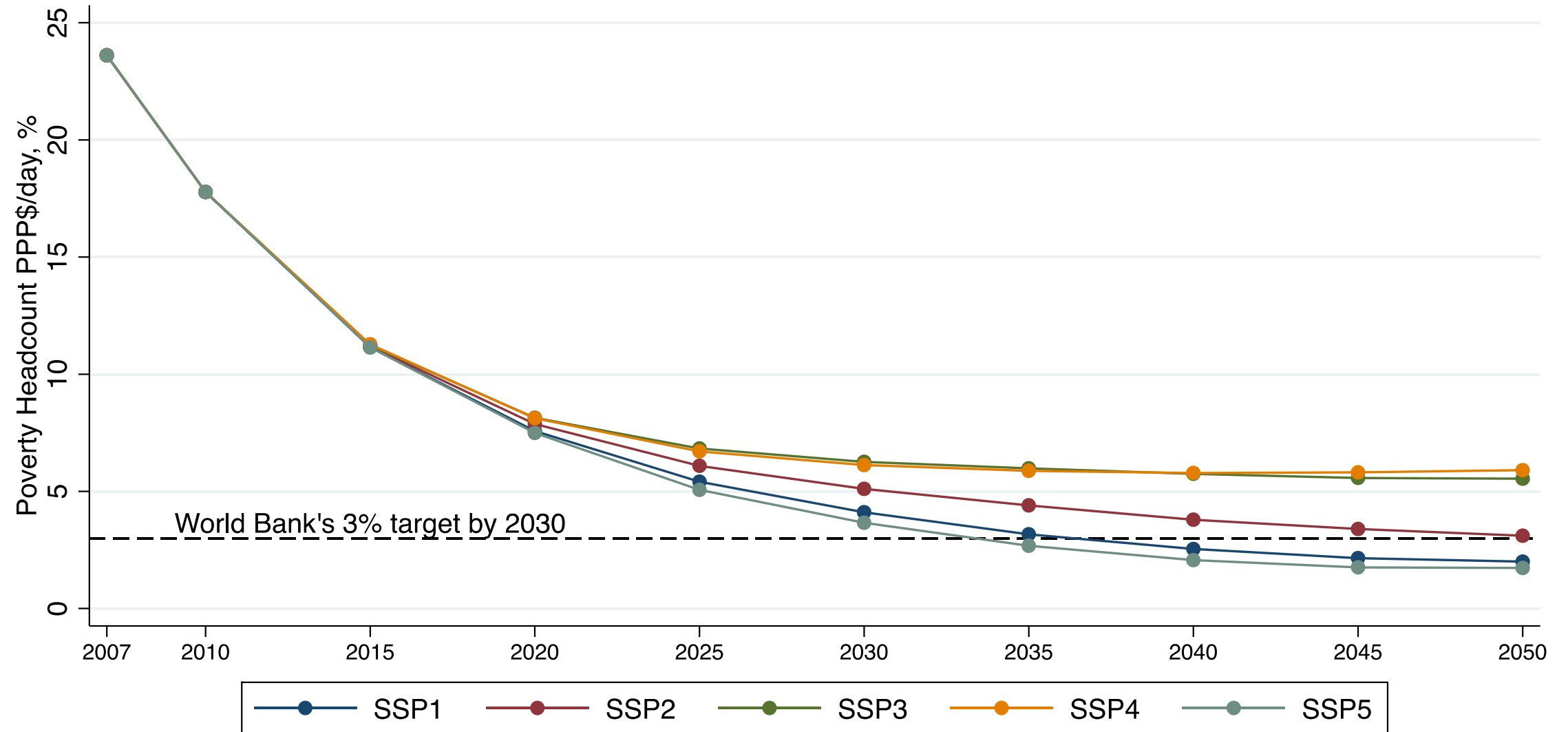
**SSP2: 3.1%**

**SSP3: 5.5%**

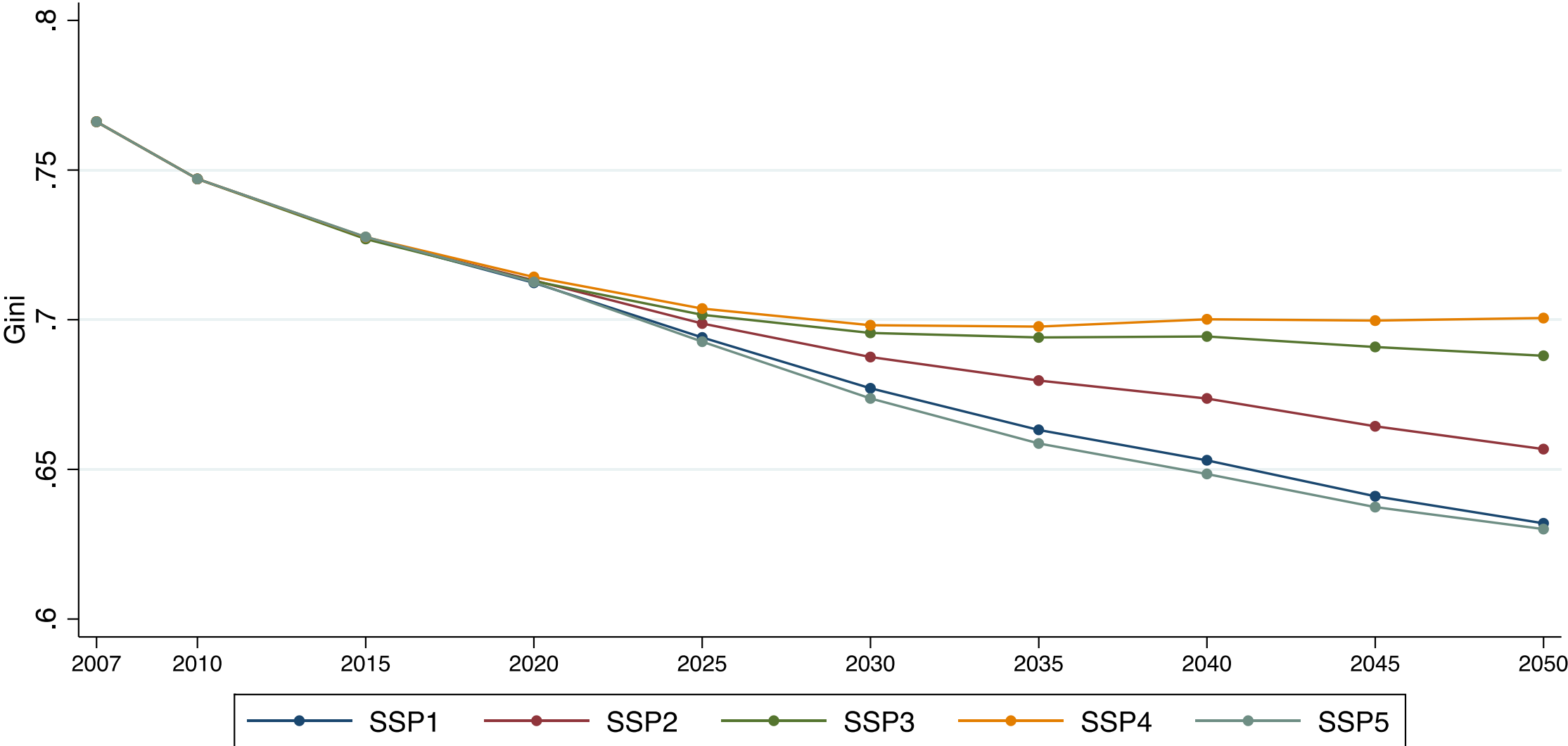
**SSP4: 5.9%**

**SSP5: 1.7%**

# 3% - poverty target is ambitious



# Global Inequality to decline ...



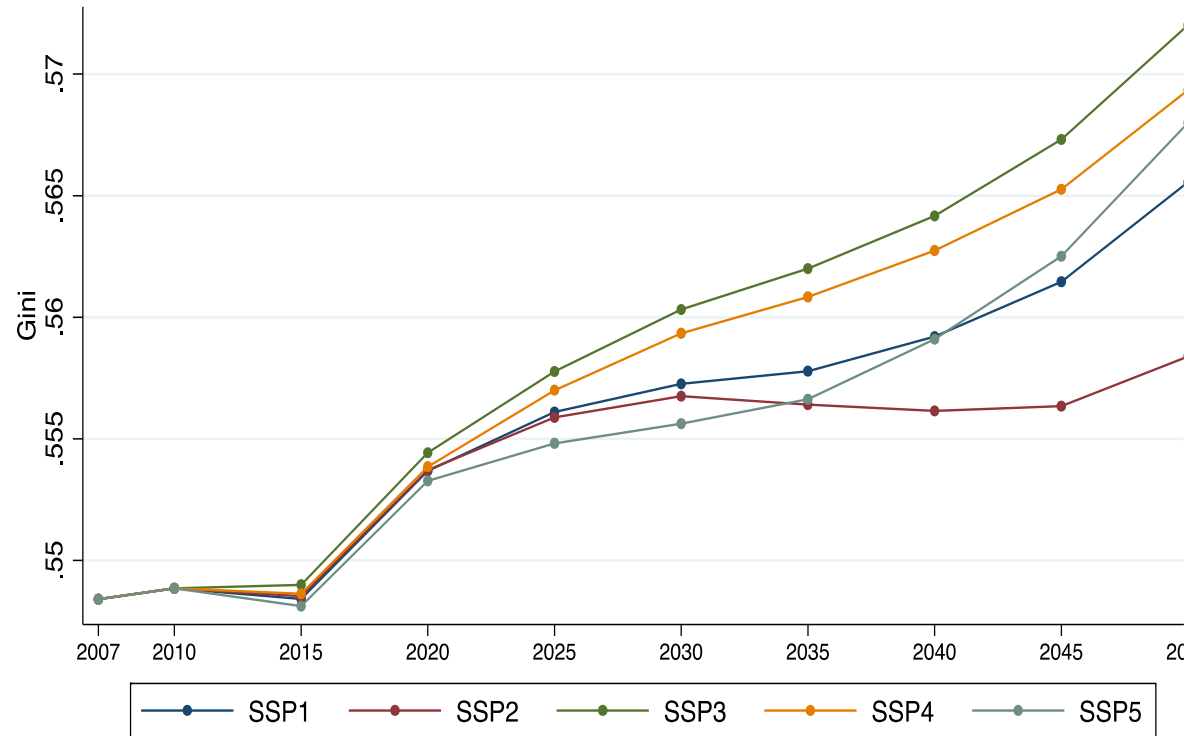
• Reduction in Income Inequality by 2050 (Gini, p.p):

• **SSP1: 13.4**      **SSP2: 10.9**      **SSP3: 7.8**      **SSP4: 6.5**      **SSP5: 13.6**

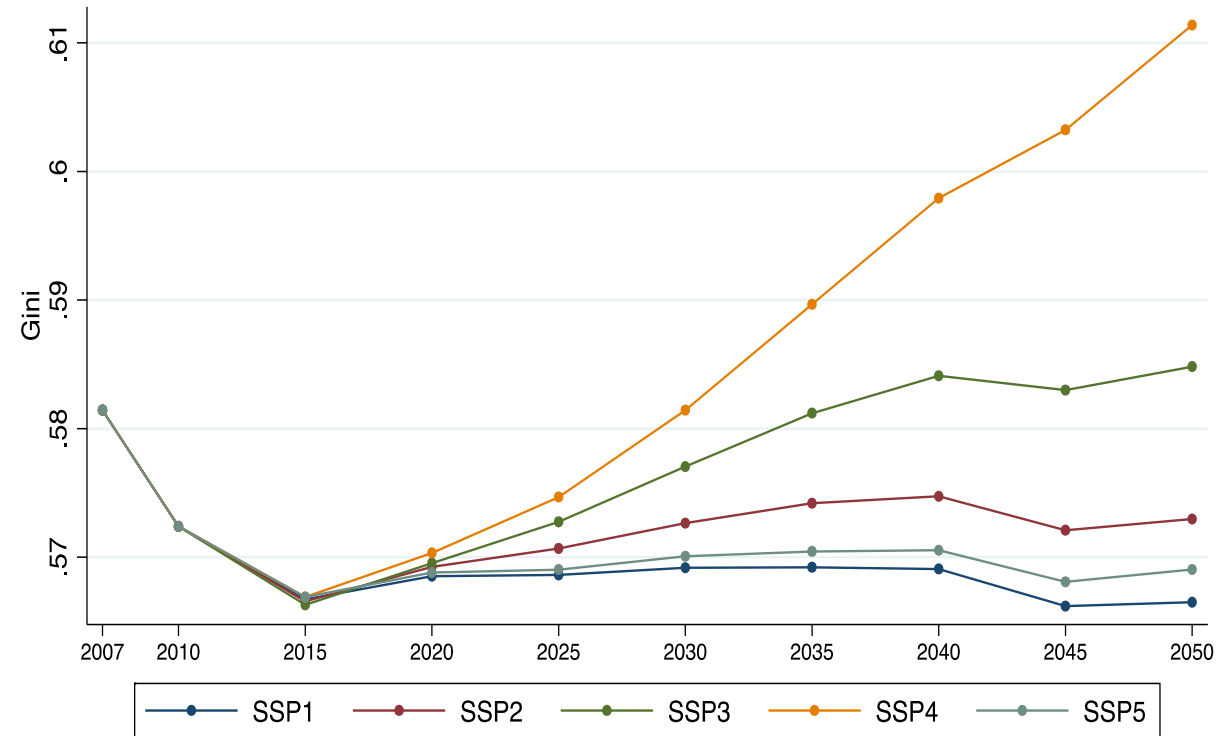
Source: Global Income Distribution Dynamics

# ...with increasing within-region inequality

## High-Income Countries



## Low- & Middle-Income Countries



# Conclusion

- **SSPs project radically different futures**
  - What policies would encourage turnaround in population trends?
  - What policy mix would encourage more environmentally sustainable and equitable economic growth?
- **Poverty, as currently defined will most likely be eliminated in the next few decades**
- **However, relative poverty could persist and a worsening of within-country income distribution is possible**

# Moving forward

- **Incorporate layers to structural models**
  - Making use of additional SSP quantifications, e.g. education and urbanization projections, consumption prices
- **Incorporate the climate signal into the system**
- **Data**
  - initial differences in poverty and inequality