

# The Economic Benefits of Education in the Knowledge Economy

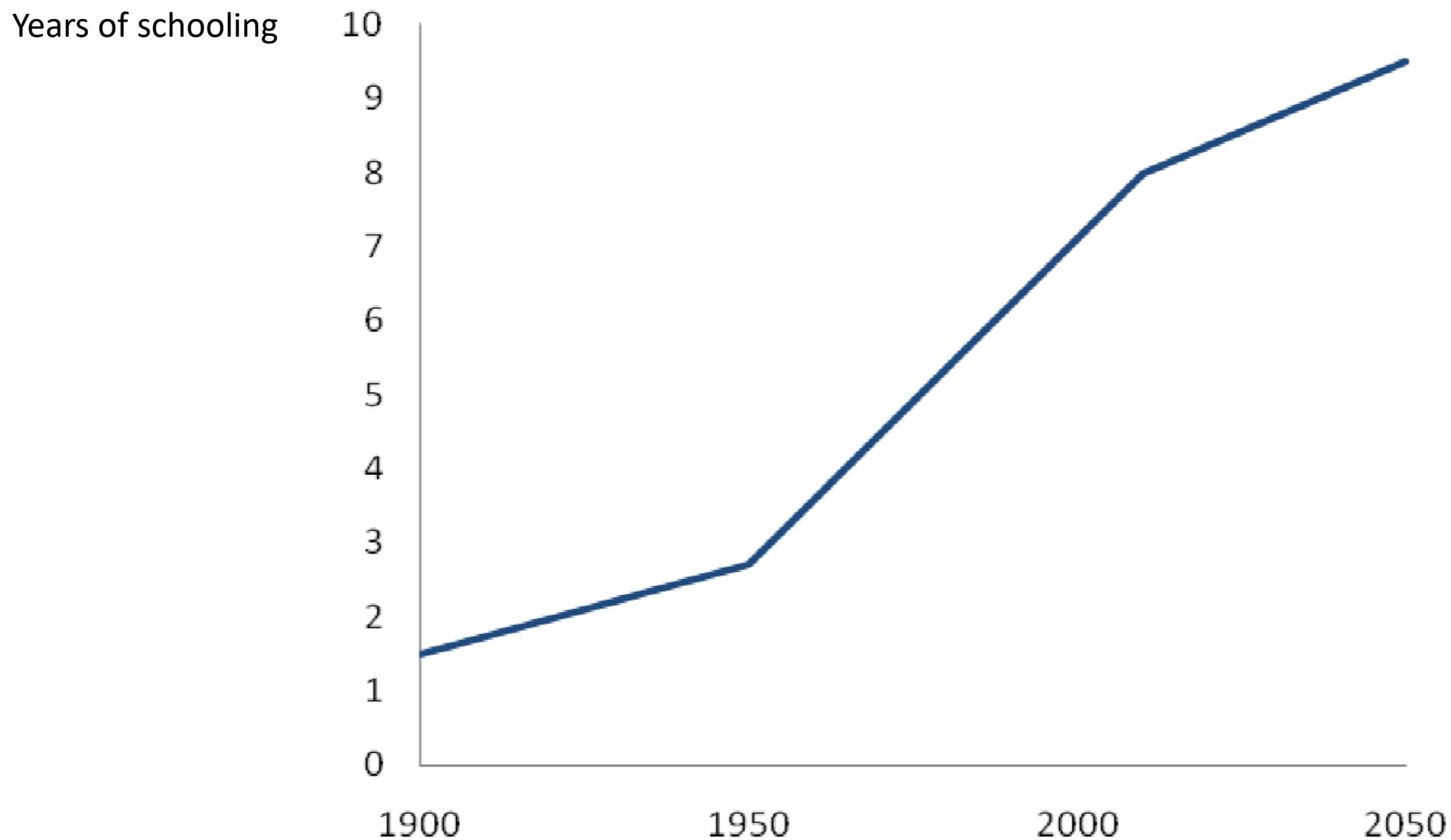
**Harry Anthony Patrinos**

 @hpatrinos

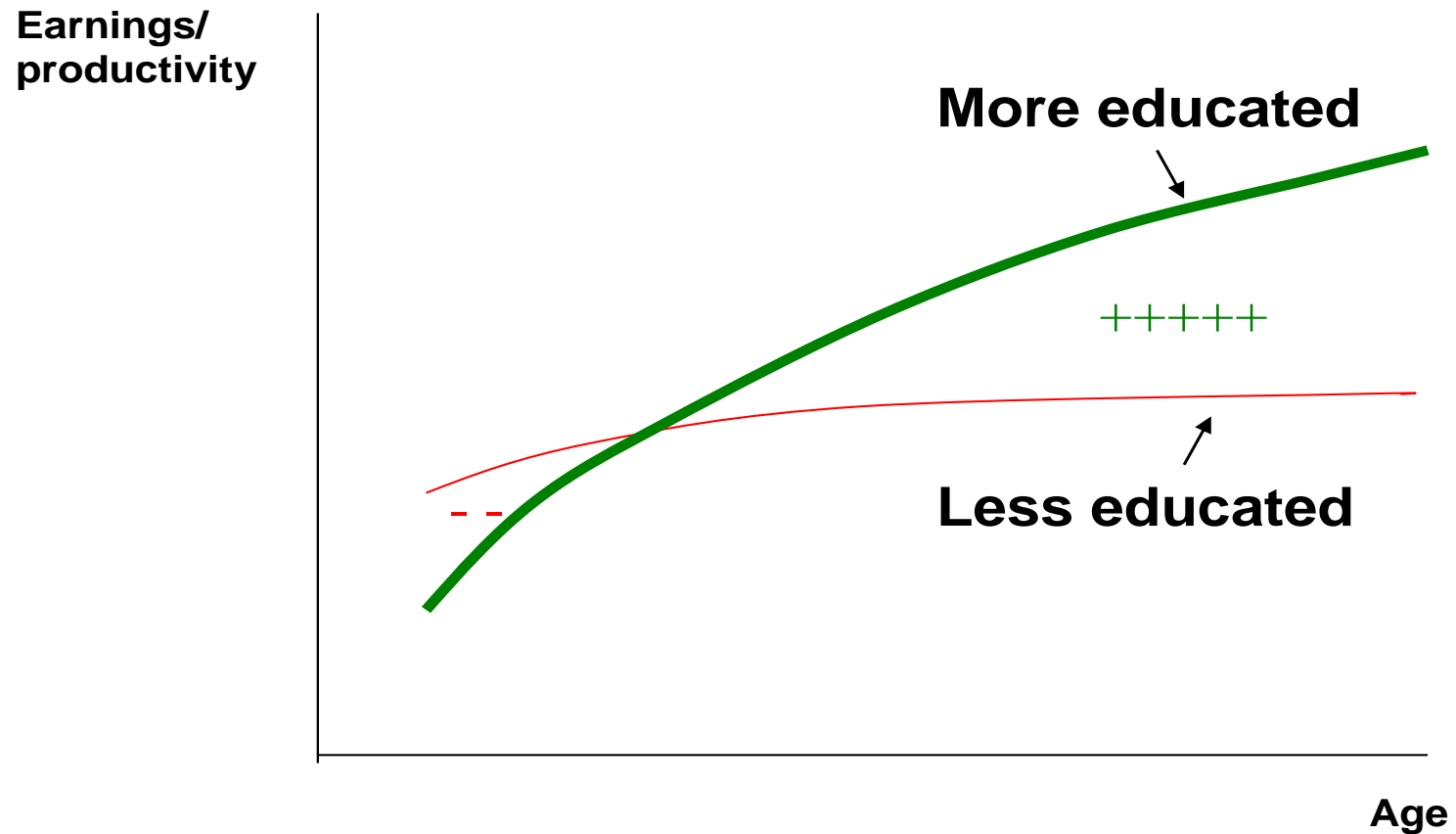
**Astana, Kazakhstan**

October 2017

# The Schooling Revolution



# Returns to investment in education

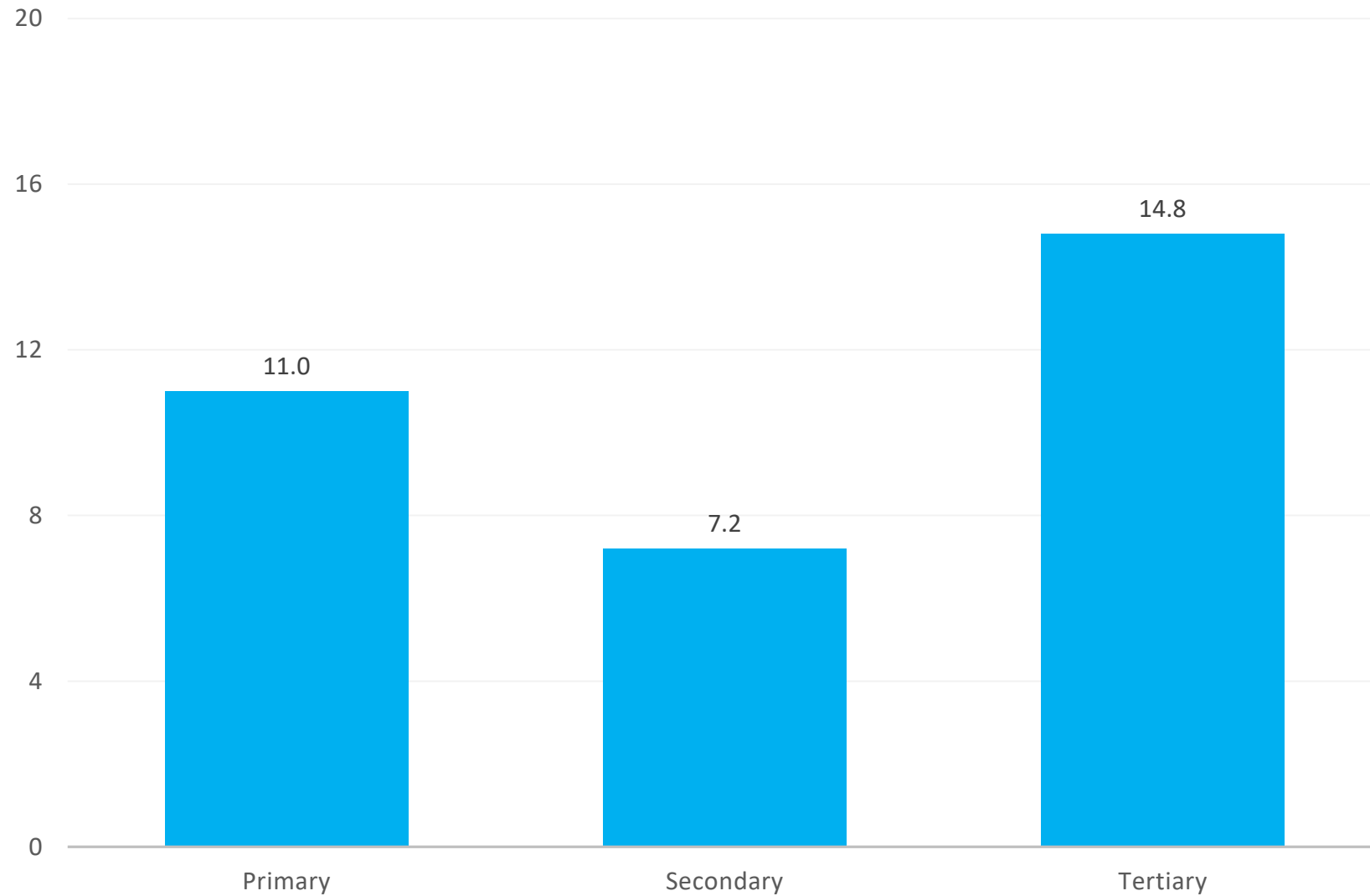


# Every Year of School Raises Earnings by 10%

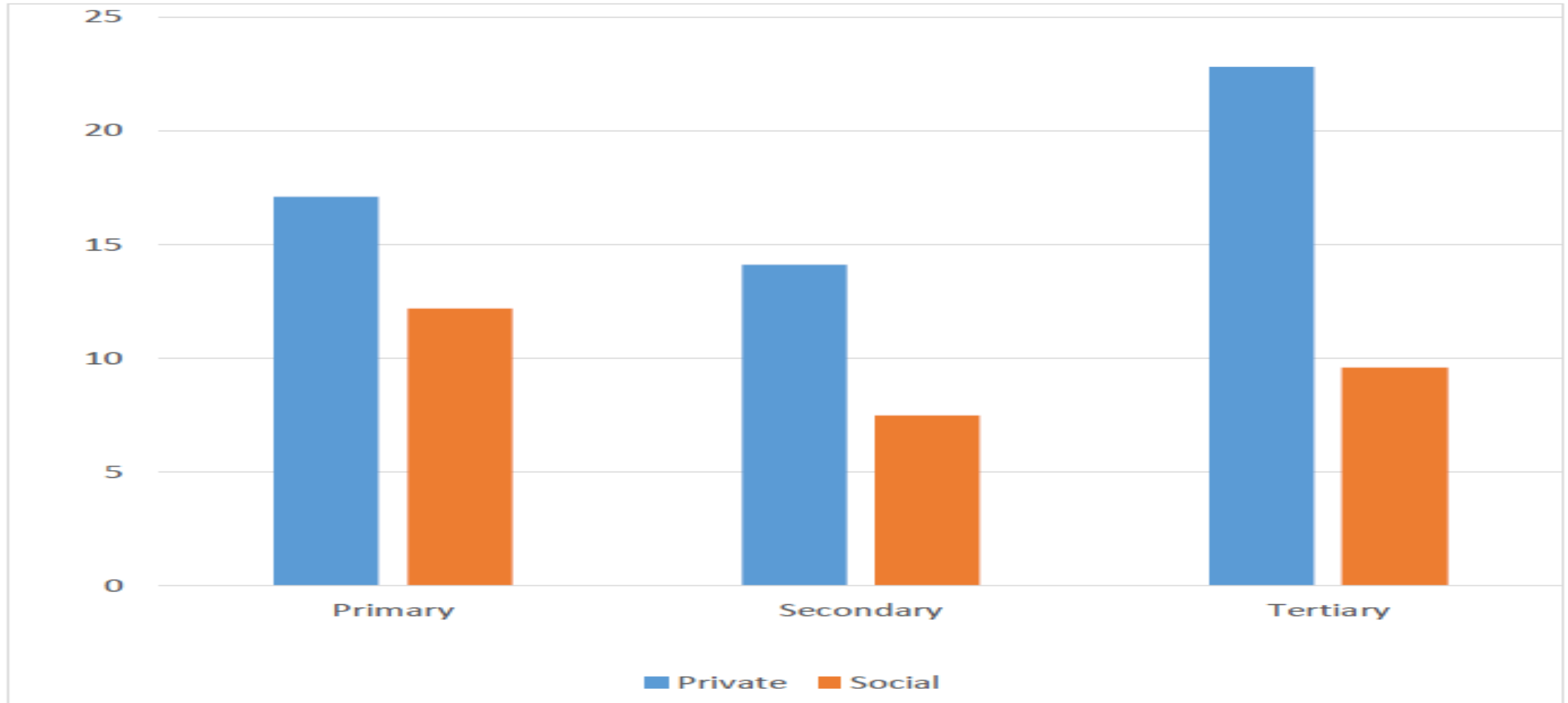


Kazakhstan: 8%

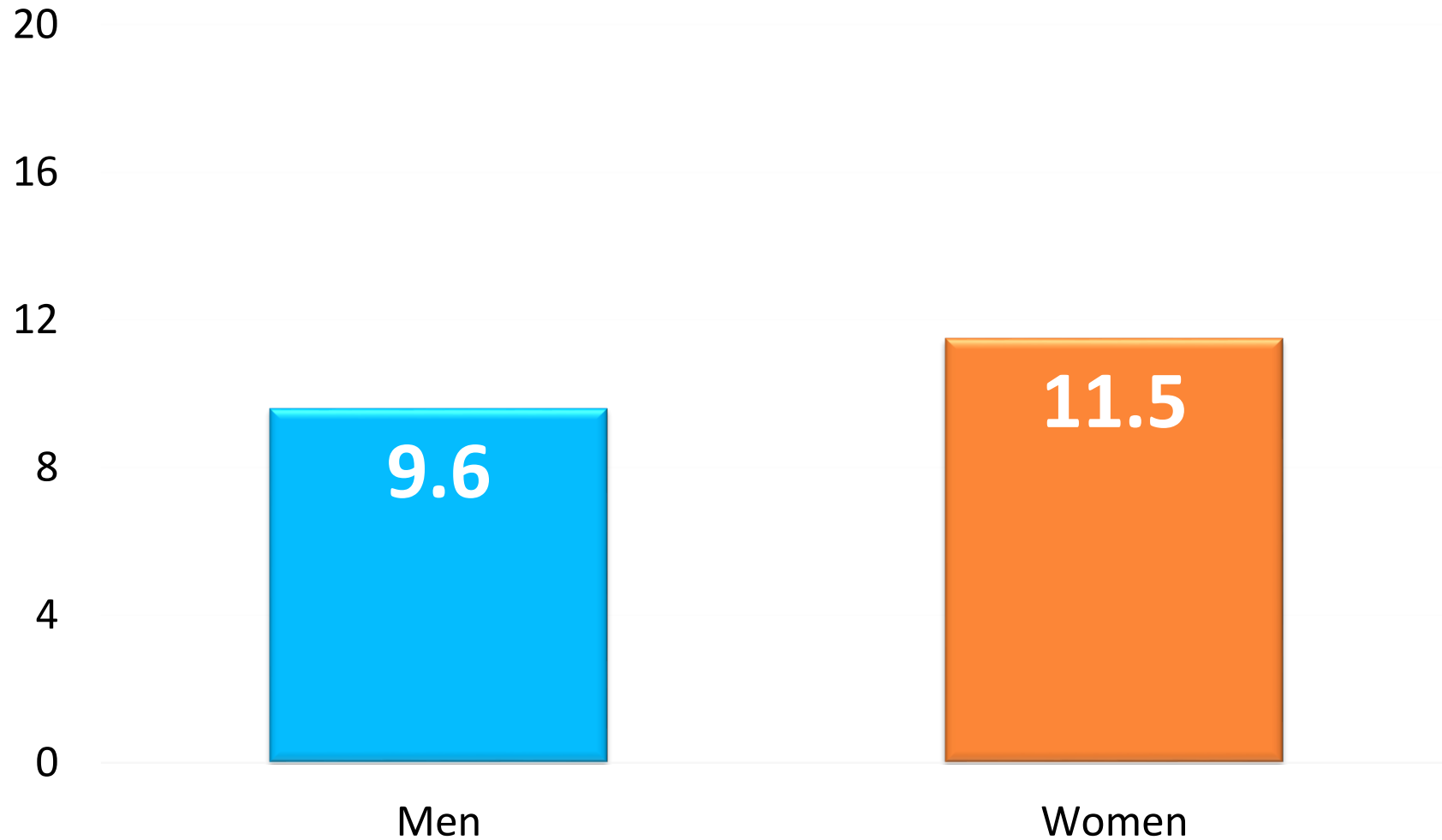
# Private Returns to Schooling



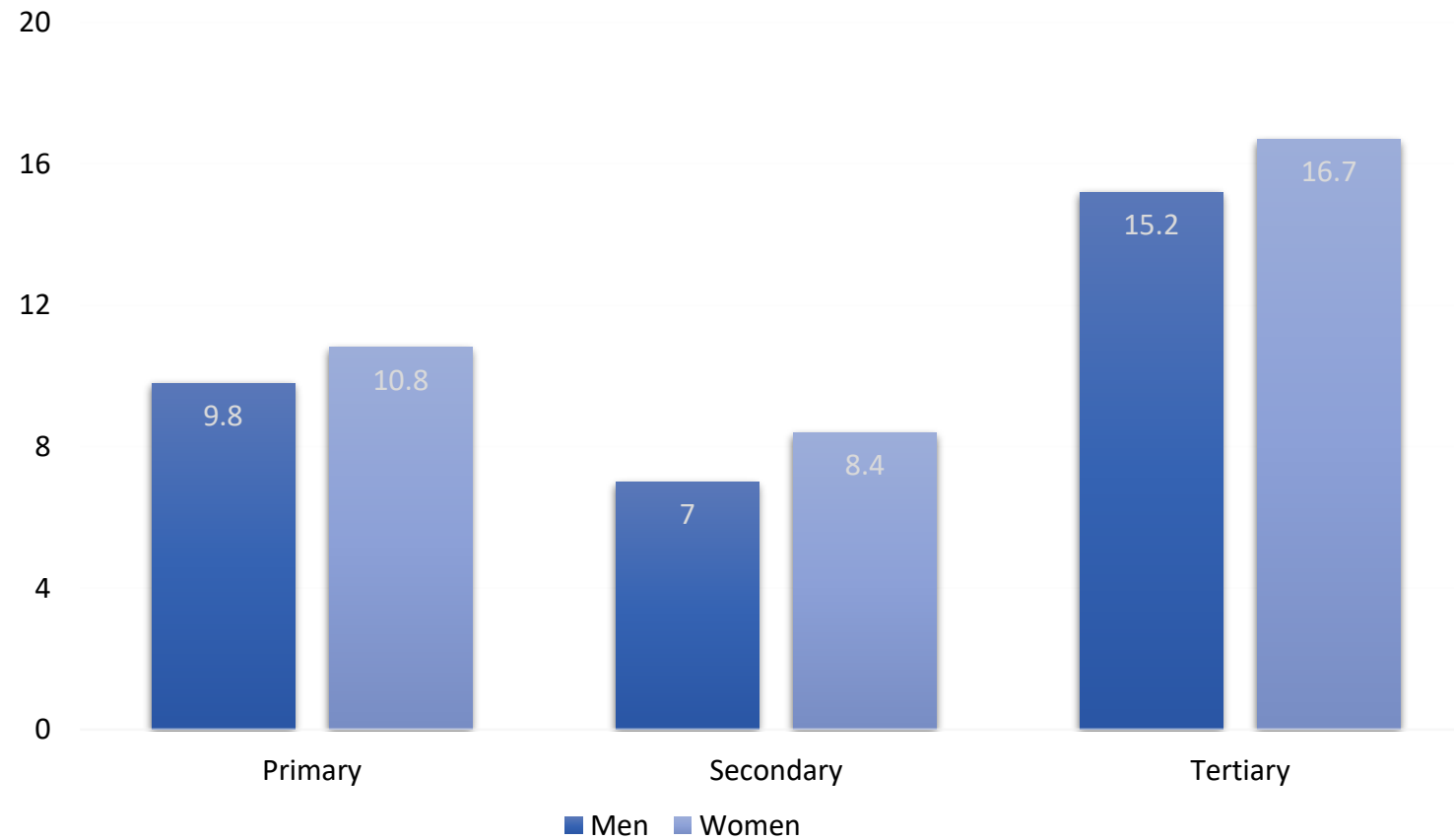
# Returns to Education Low Income Countries



# Returns Higher for Women



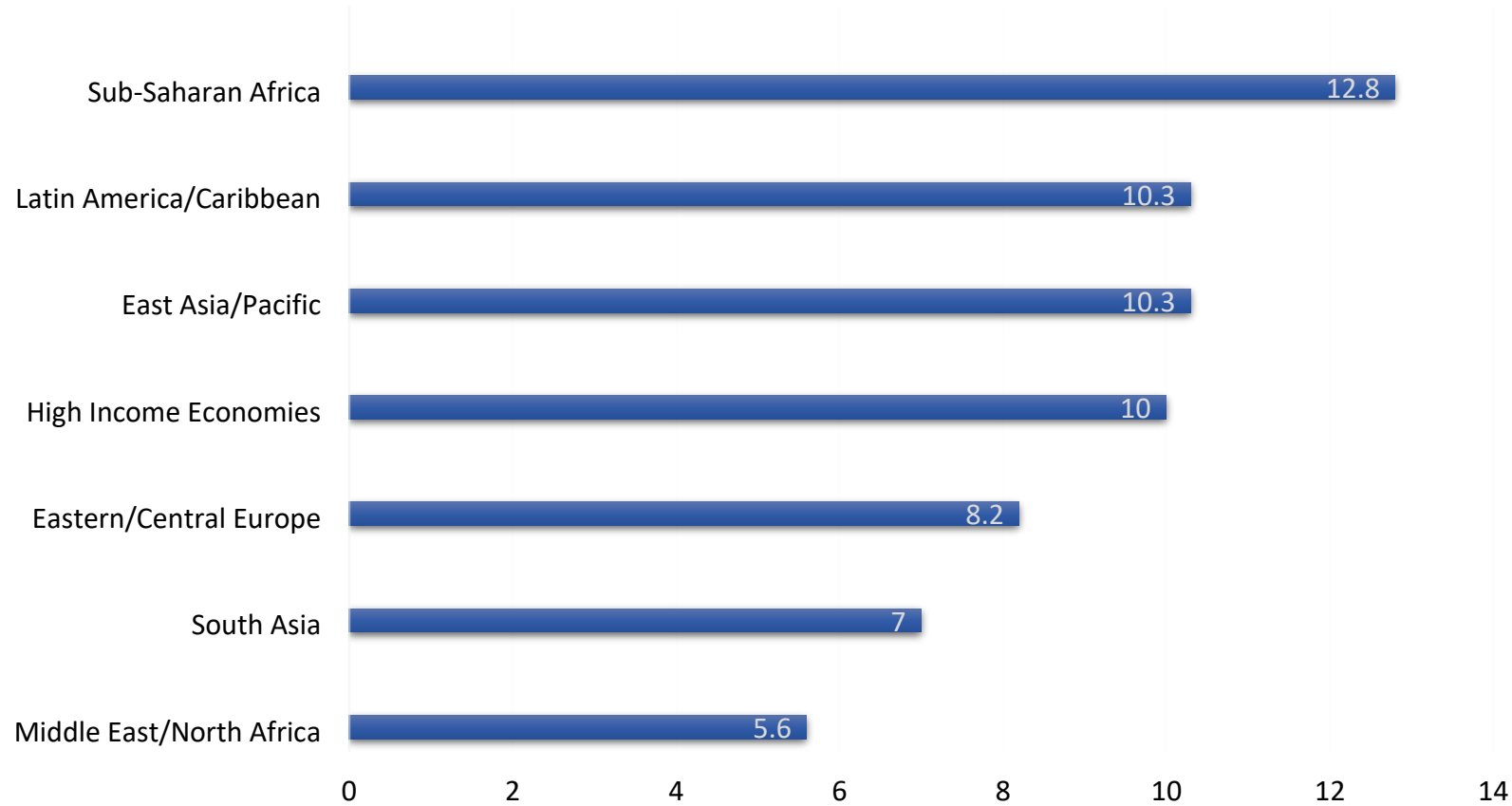
# Returns Higher for Women



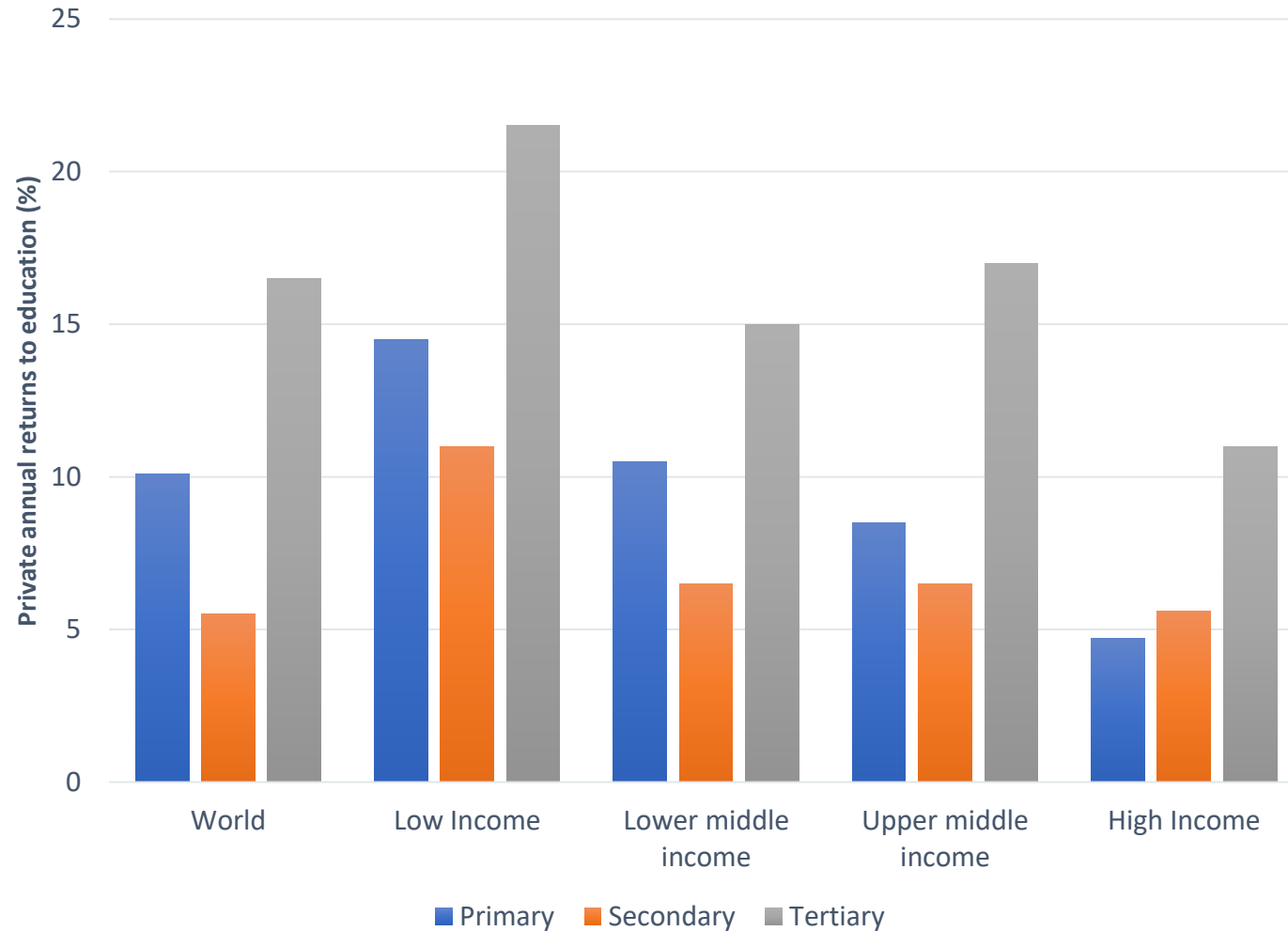


# Highest in Sub-Saharan Africa

Returns to Schooling (%) by region  
(latest available year between 2000-2011)

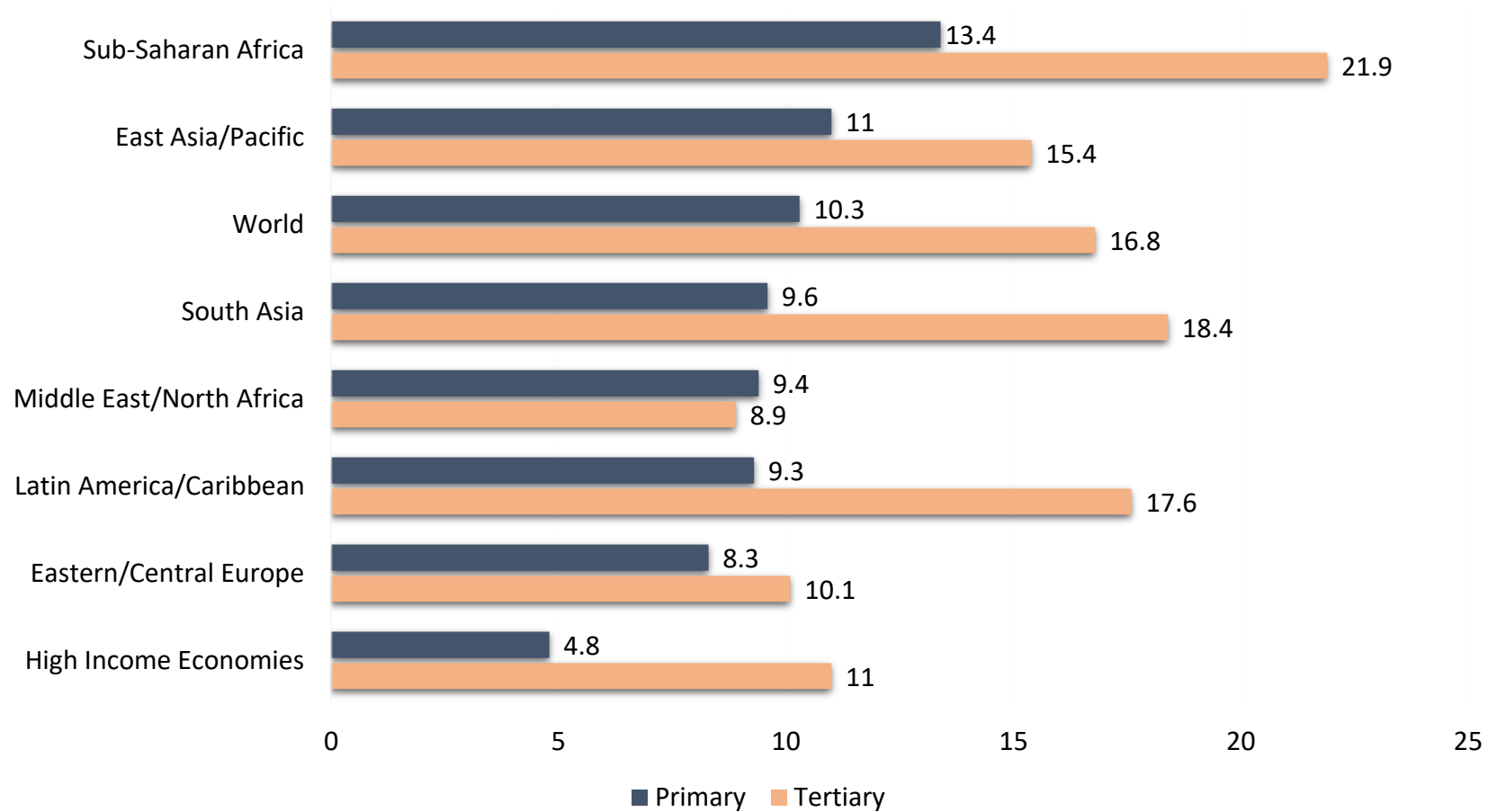


# Primary Returns High in Low Income

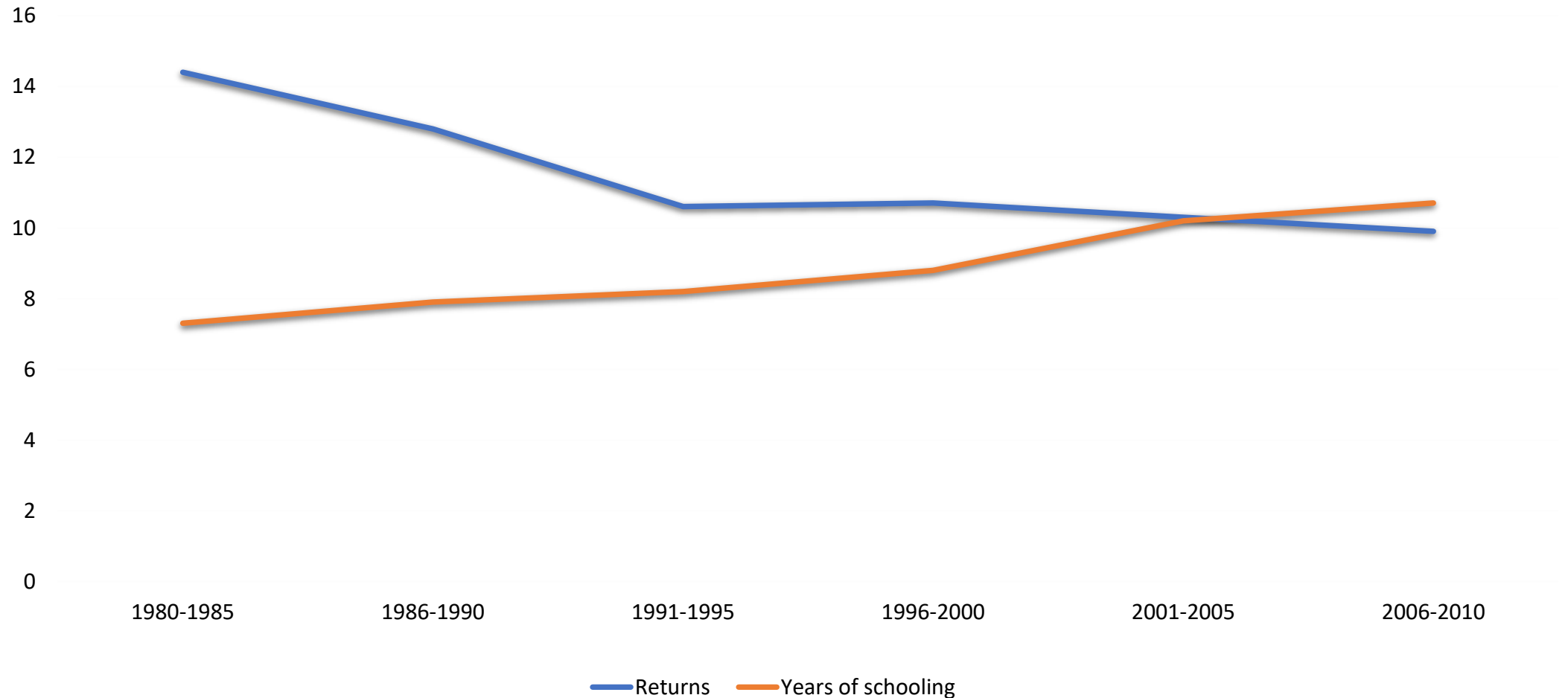


# Returns Highest at Tertiary Level

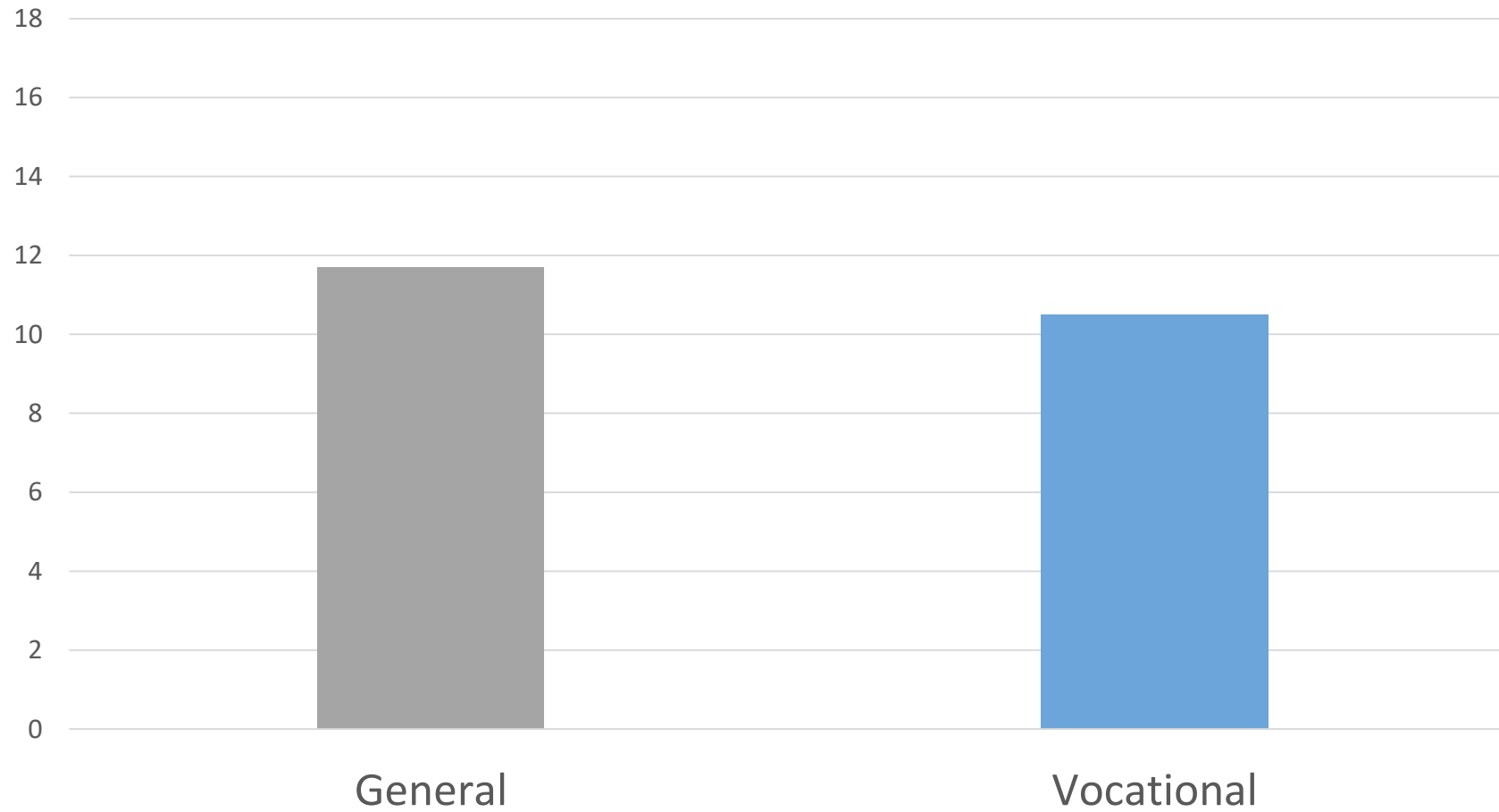
Returns to schooling by region (and World)  
and by Primary and Tertiary Education



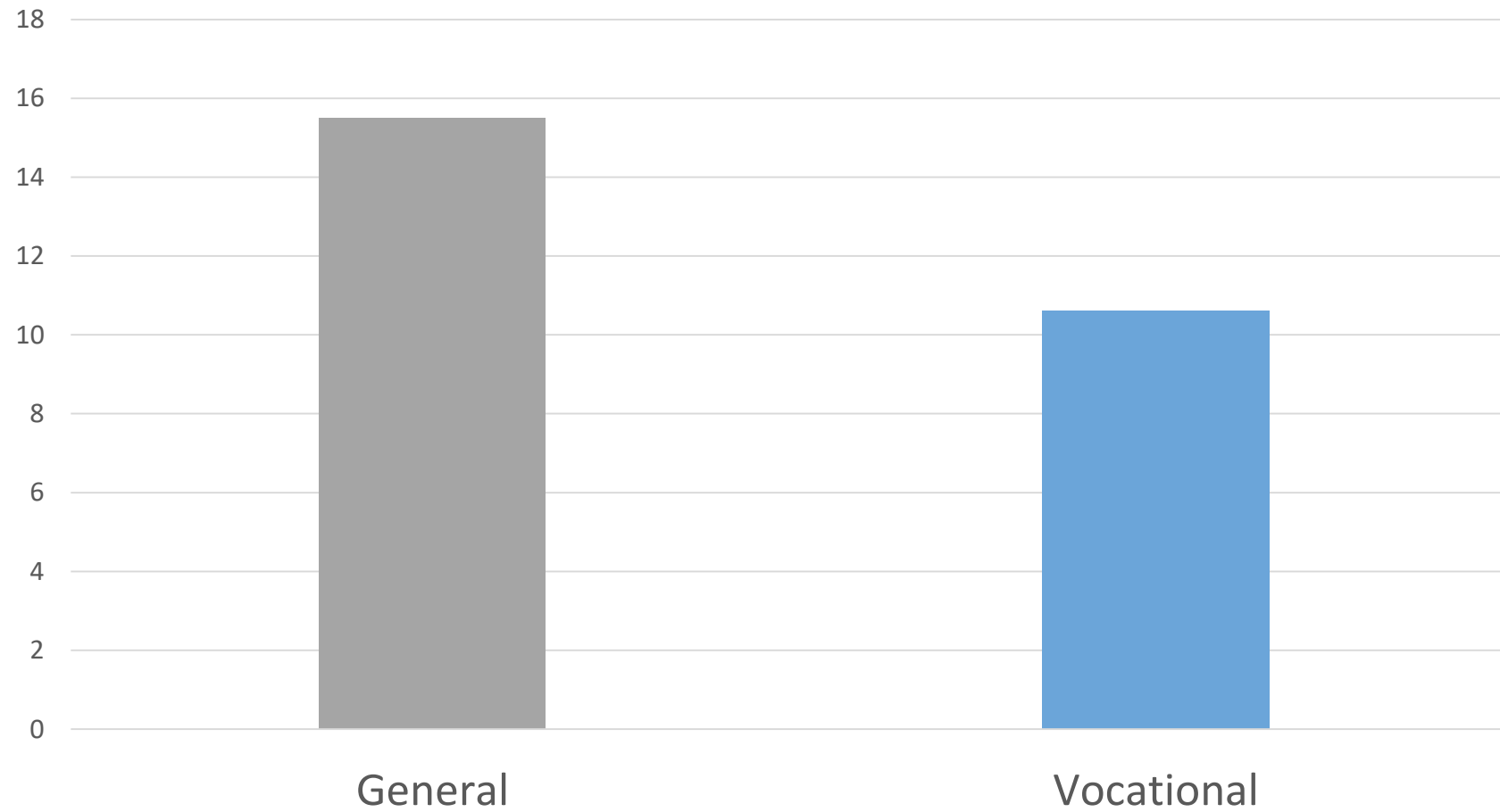
# Returns Decline as Schooling Increases



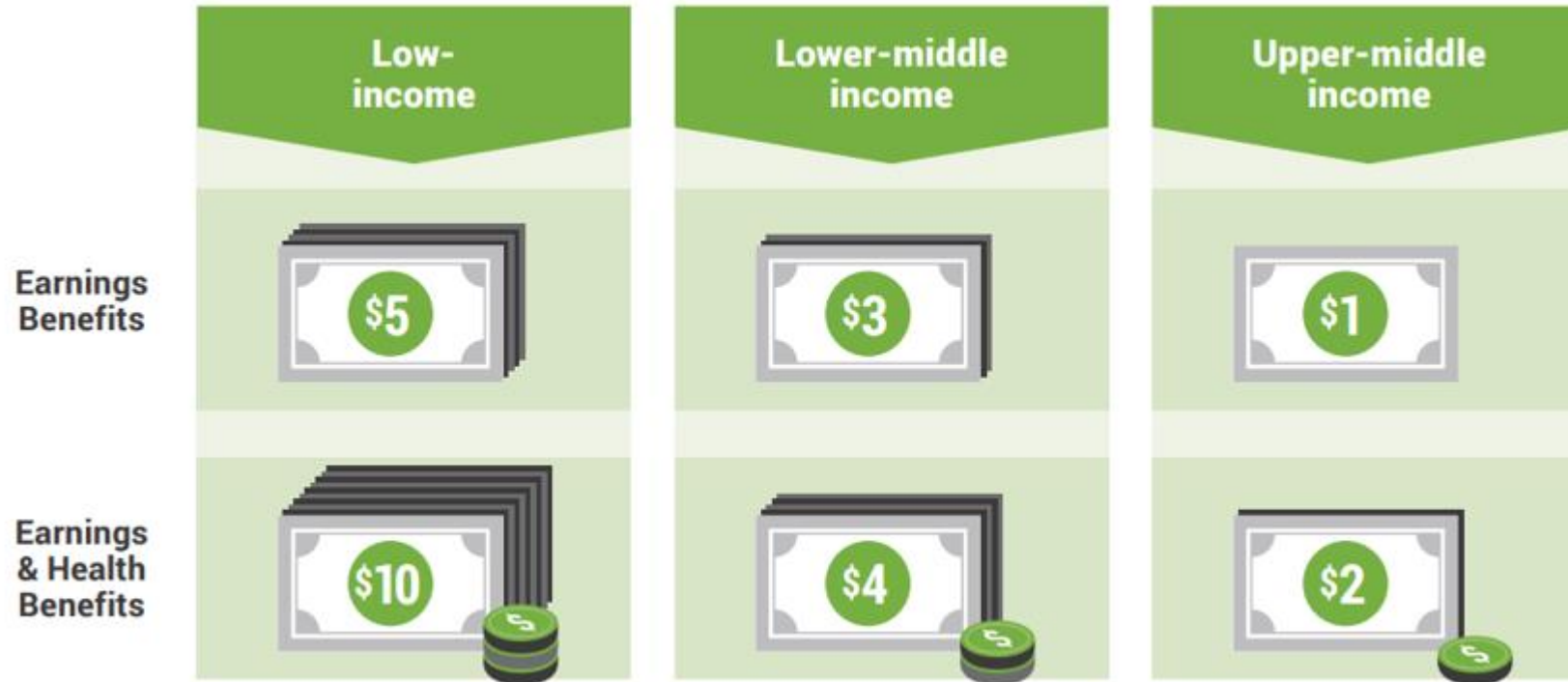
# Private Returns by Type



# Social Returns by Type



# Benefit-Cost Ratios are High



# Returns to Alternative Investments (%)





# Automation

---

At the same time, automation implies a race between education and technology









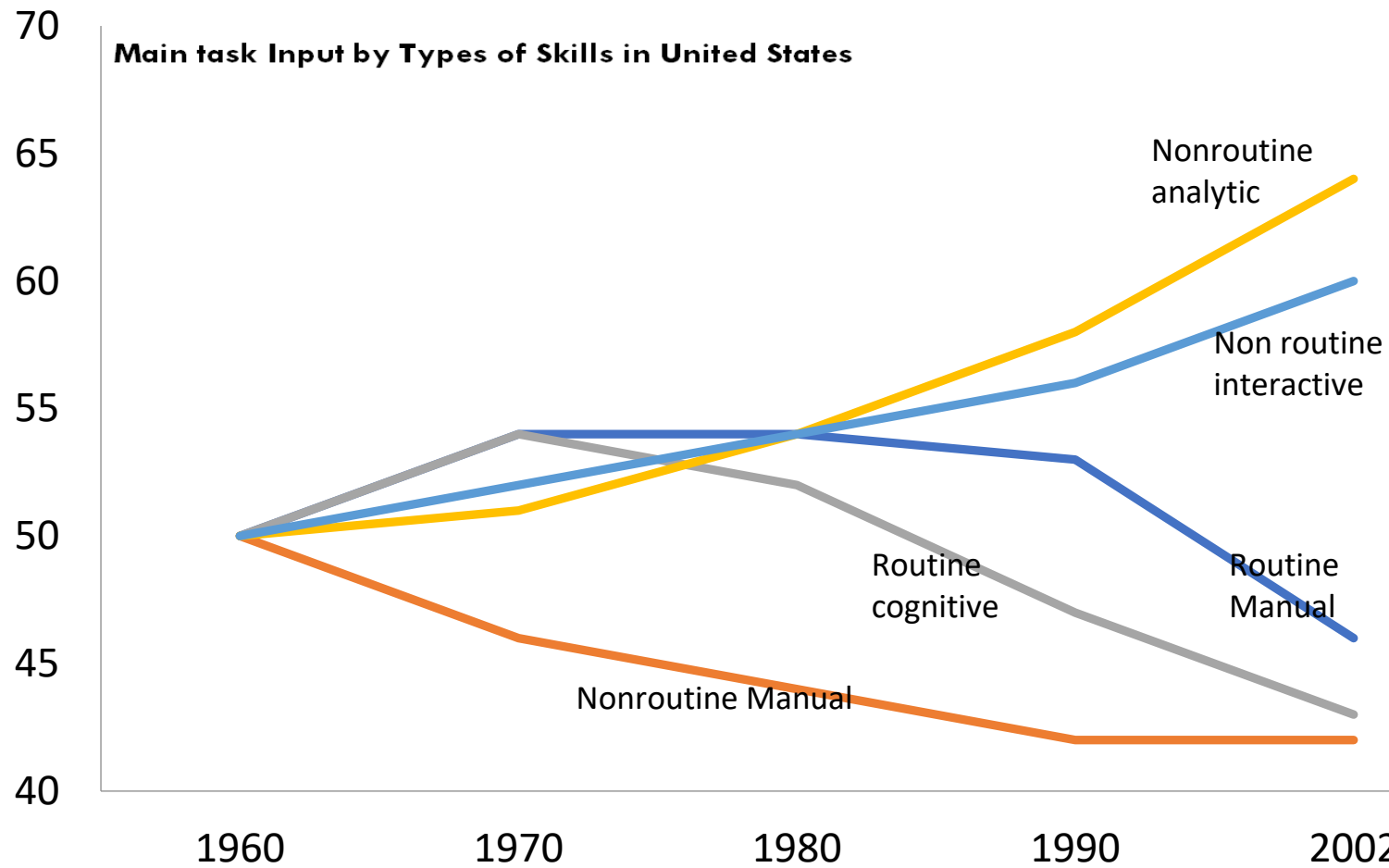


Japanese company replaces office workers with artificial intelligence

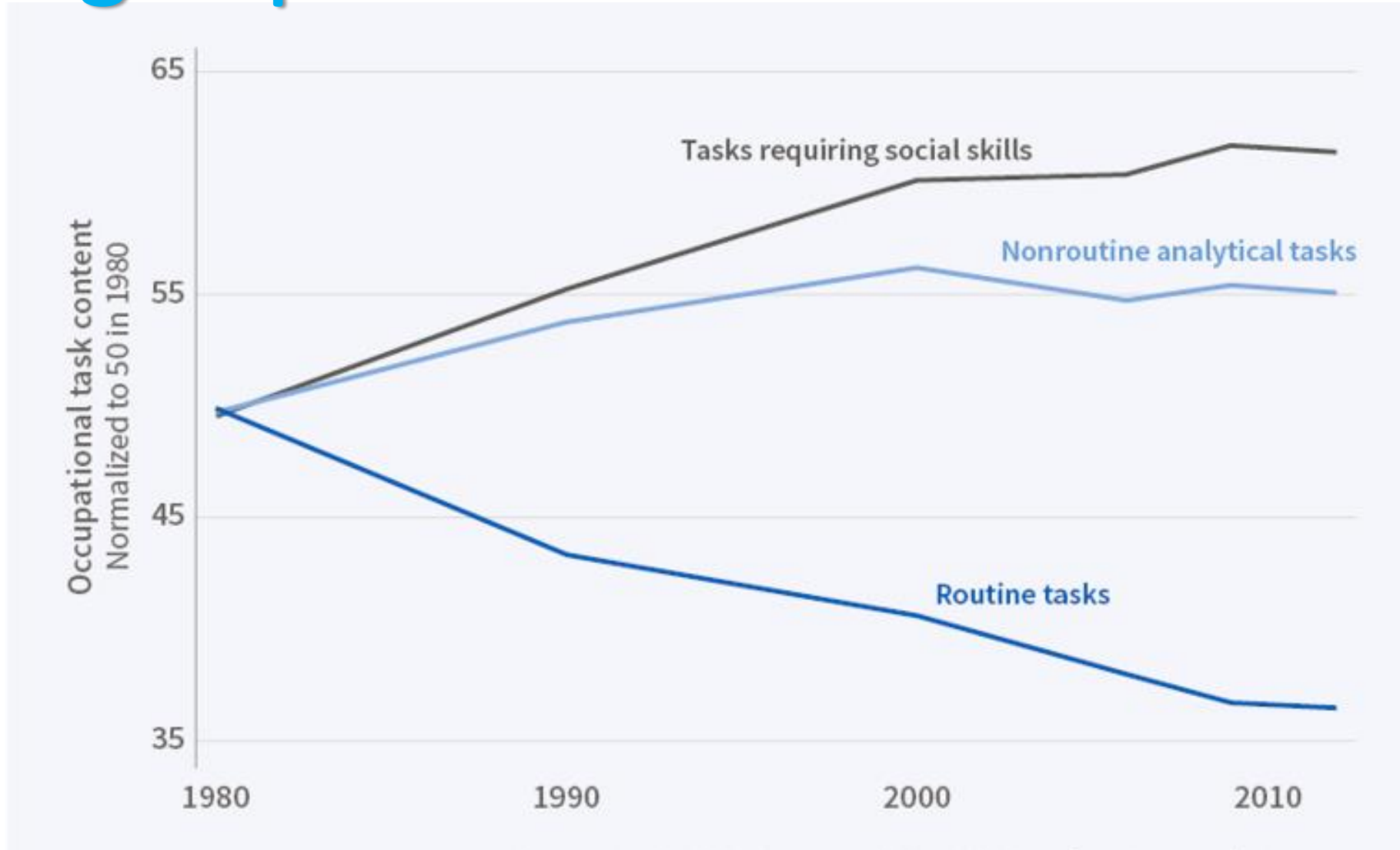
---



# Skills Demanded by Labor Market Changing

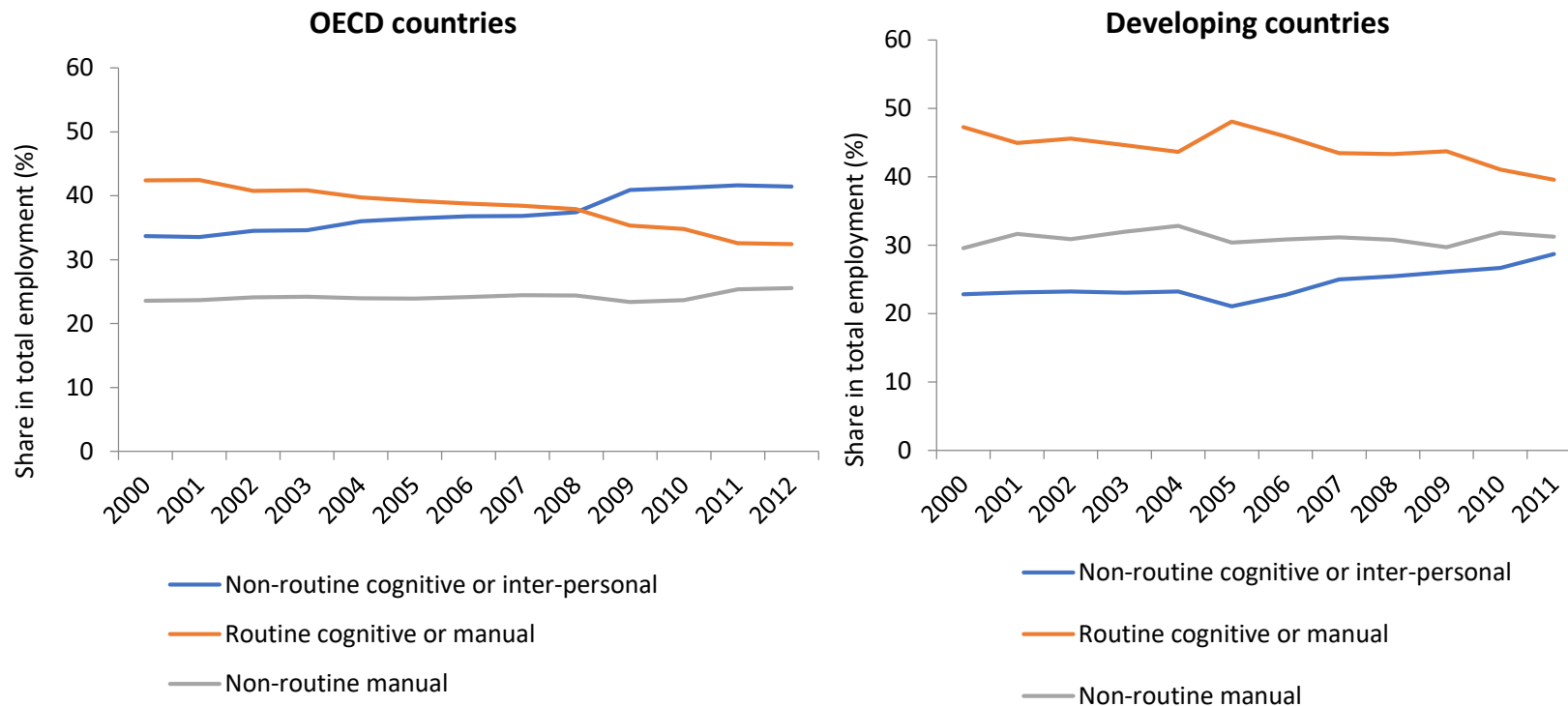


# Growing Importance of Social Skills at Work

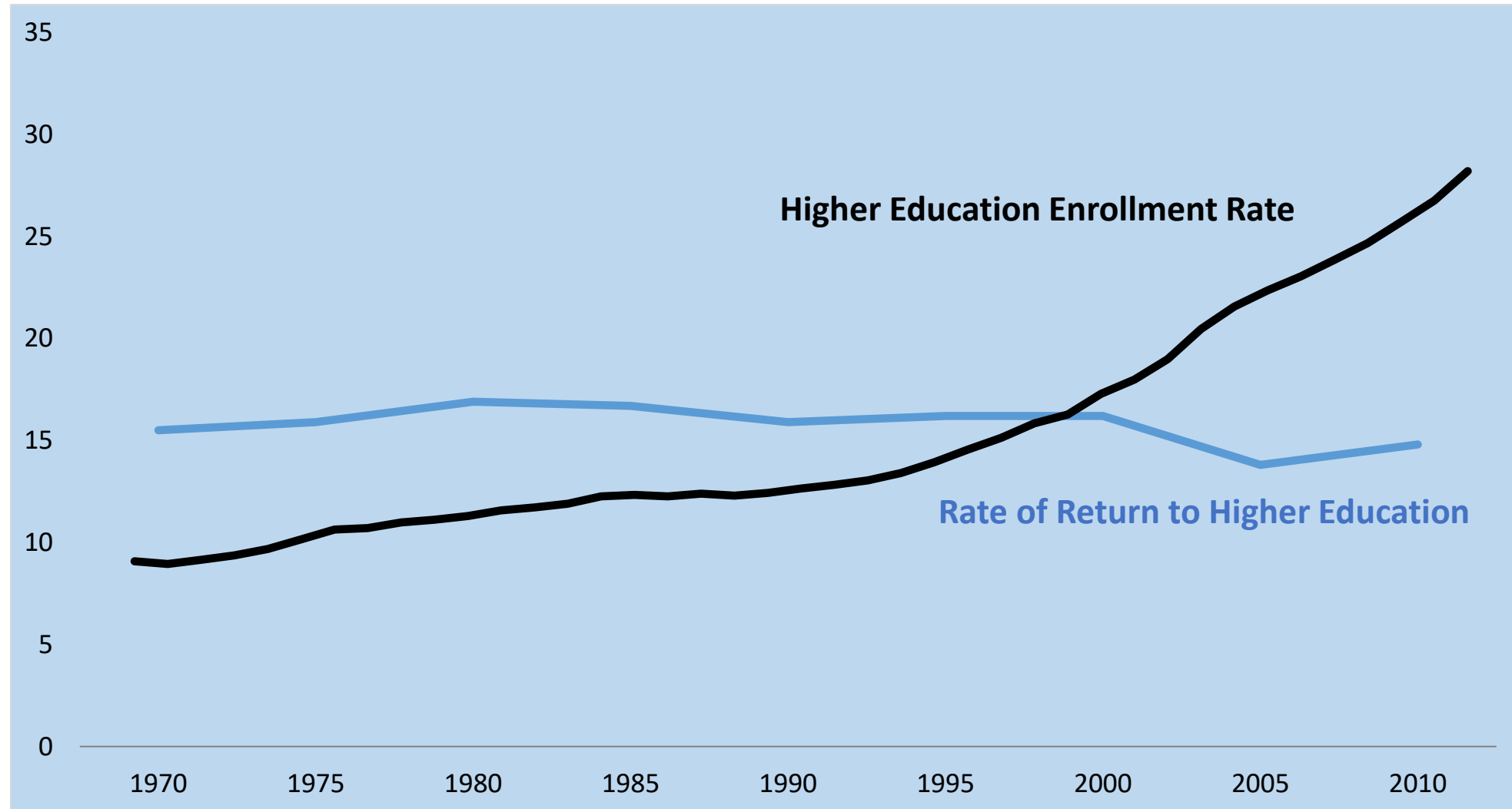


# Skills demand shift towards New Skills (non-routine cognitive and interpersonal skills)

Employment Composition (simple cross country average by type of occupation; 2000-2012)

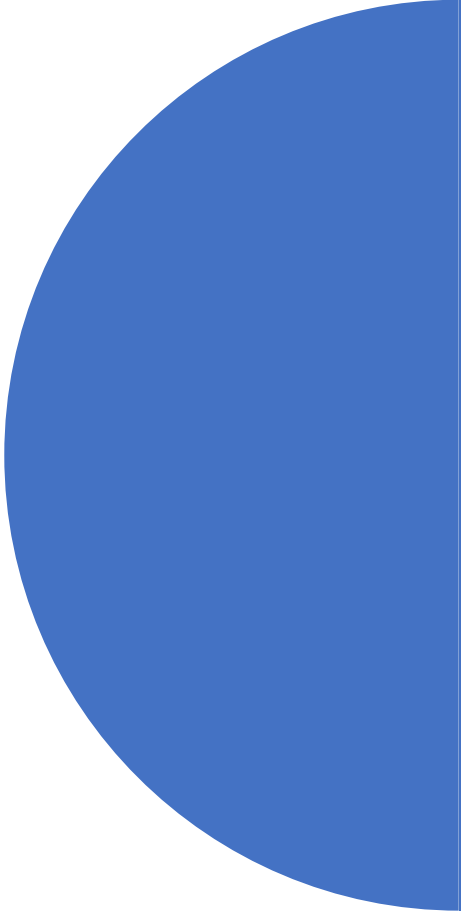


# The Race Between Education & Technology





# 47% of Jobs at Risk

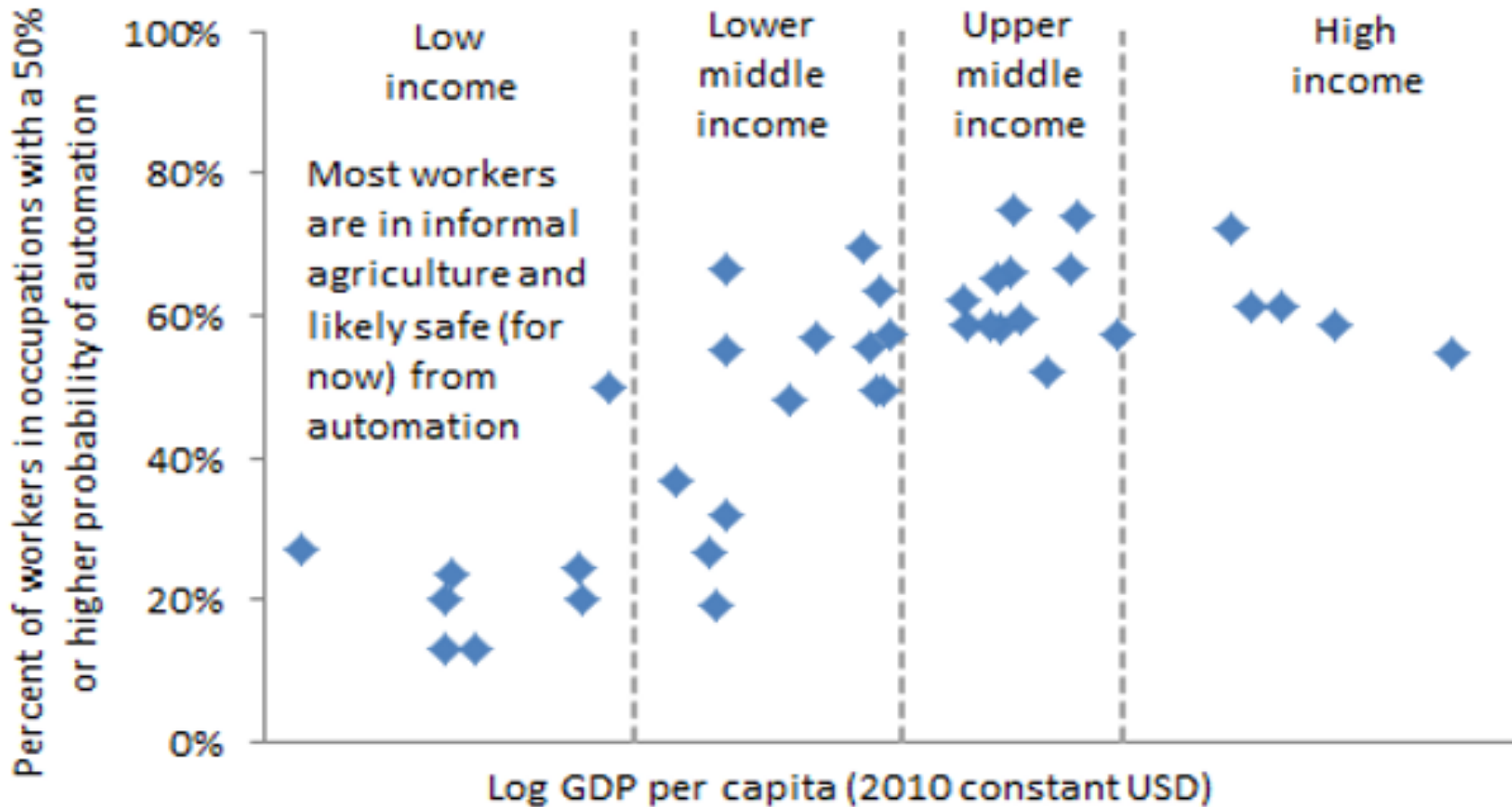


12 jobs  
with the  
largest total  
declines

- Bookkeeping
- Cooks
- Postal service mail carriers
- Executive secretaries
- Farmworkers
- Sewing machine operators
- Tellers
- Postal service mail sorters...
- Cutting, punching, machine setters
- Switchboard operators
- Molding
- Computer programmers

# Upper Middle Income Countries Vulnerable

Workers whose occupations have 50% or higher probability of automation in next 20 years



# Invest in Relevant Skills

Problem-solving



Learning



Communication



Personal

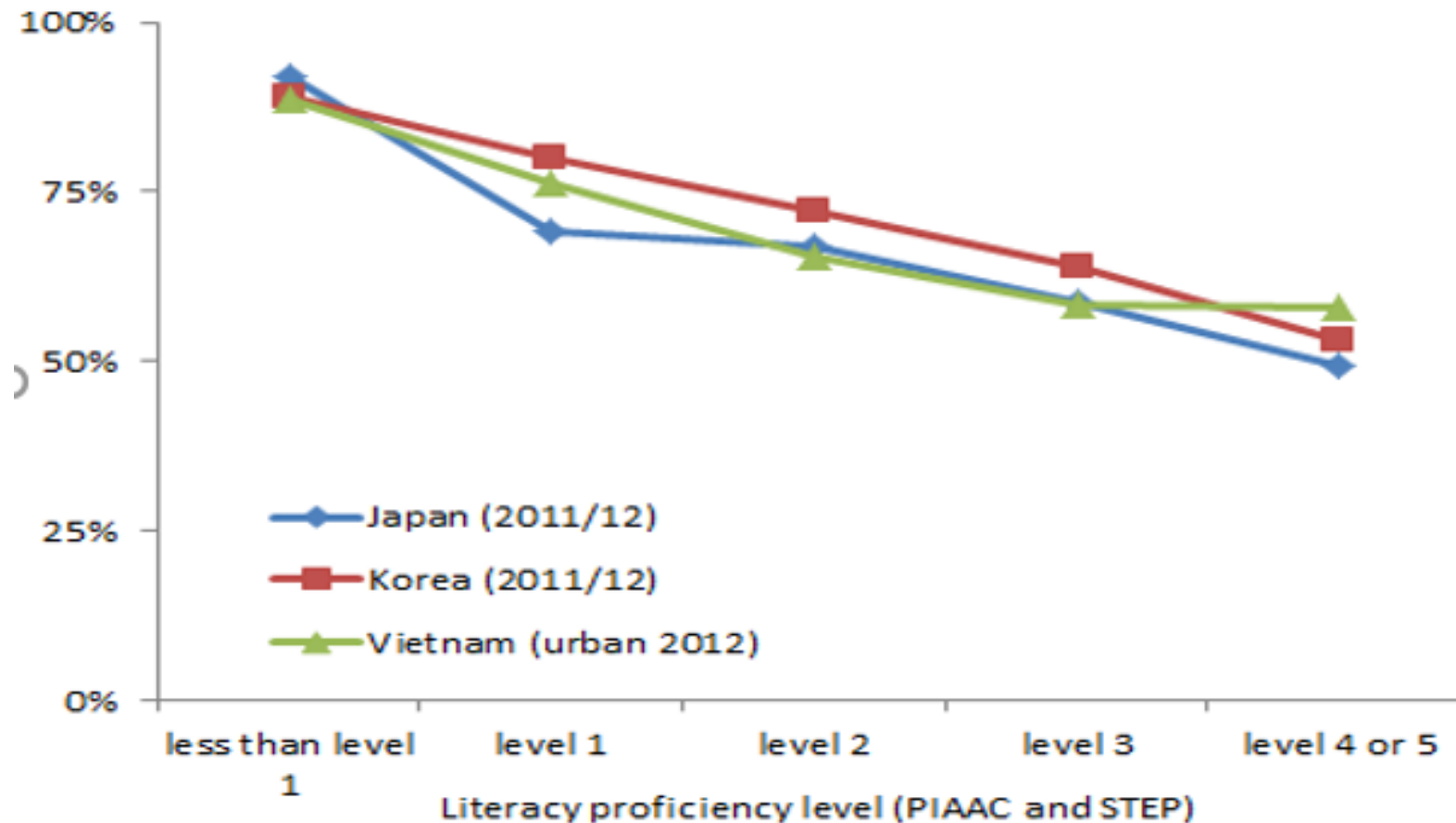


Social



# More Skilled = Less Prone to Automation

Workers in automation-prone occupations by proficiency level



# Improve Education Systems

- Focus policy on skills, equity and finance



# Harry Anthony Patrinos

Education, World Bank

 @hpatrinos