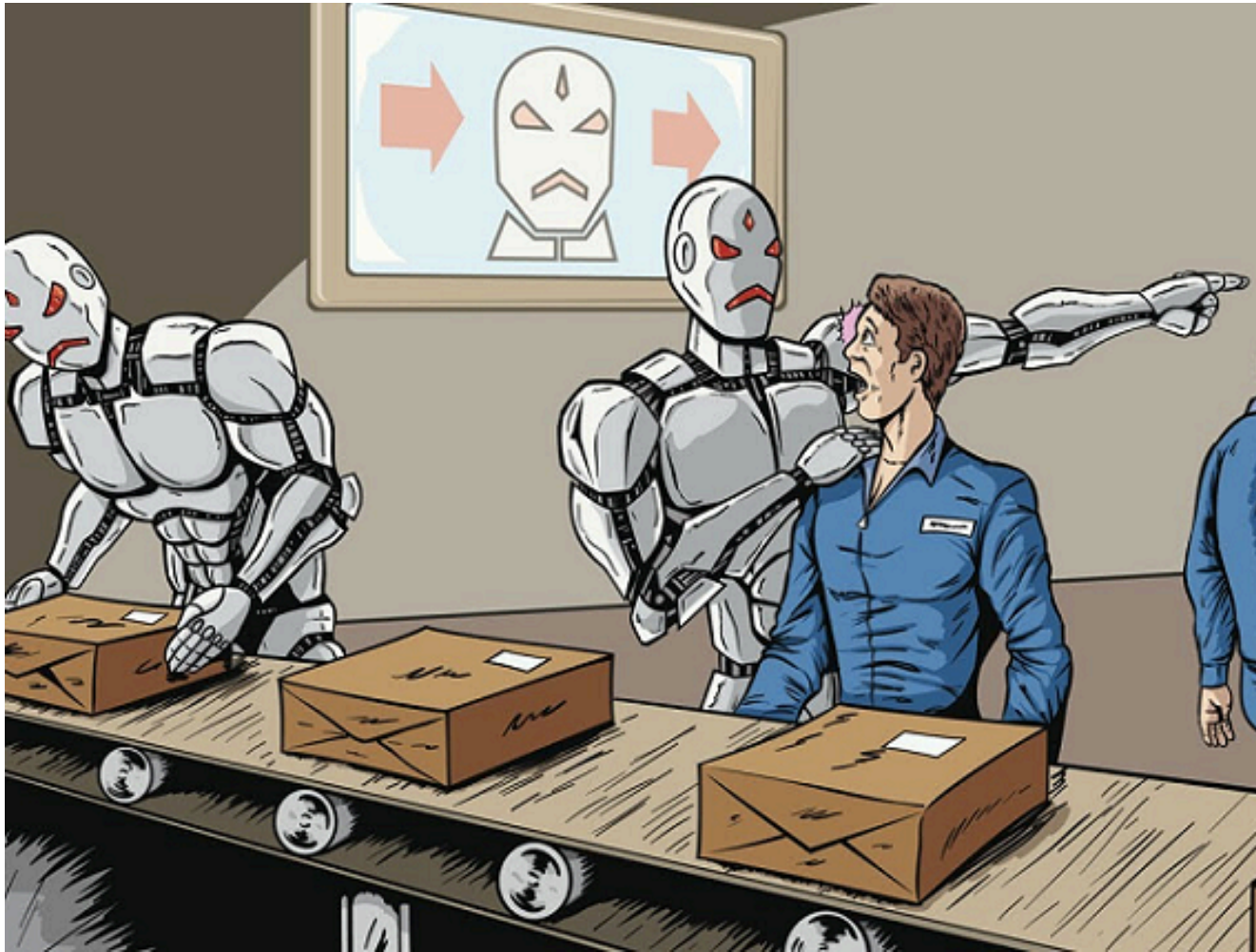# Making Policy with Data
An Introductory Course on Policy Evaluation

Policy Briefing

Instructor: Prof Yiqing Xu
April 13

Today's Topic: Robots and Jobs

https://www.youtube.com/watch?v=_QndP_PCRSw

Background

- Industrial robots, fully autonomous machines that can be programmed to perform several manual tasks.

- Robot usage is uneven across the nation
  (e.g. from 9% in the plastic and chemicals industry to 39% in the automotive industry.)

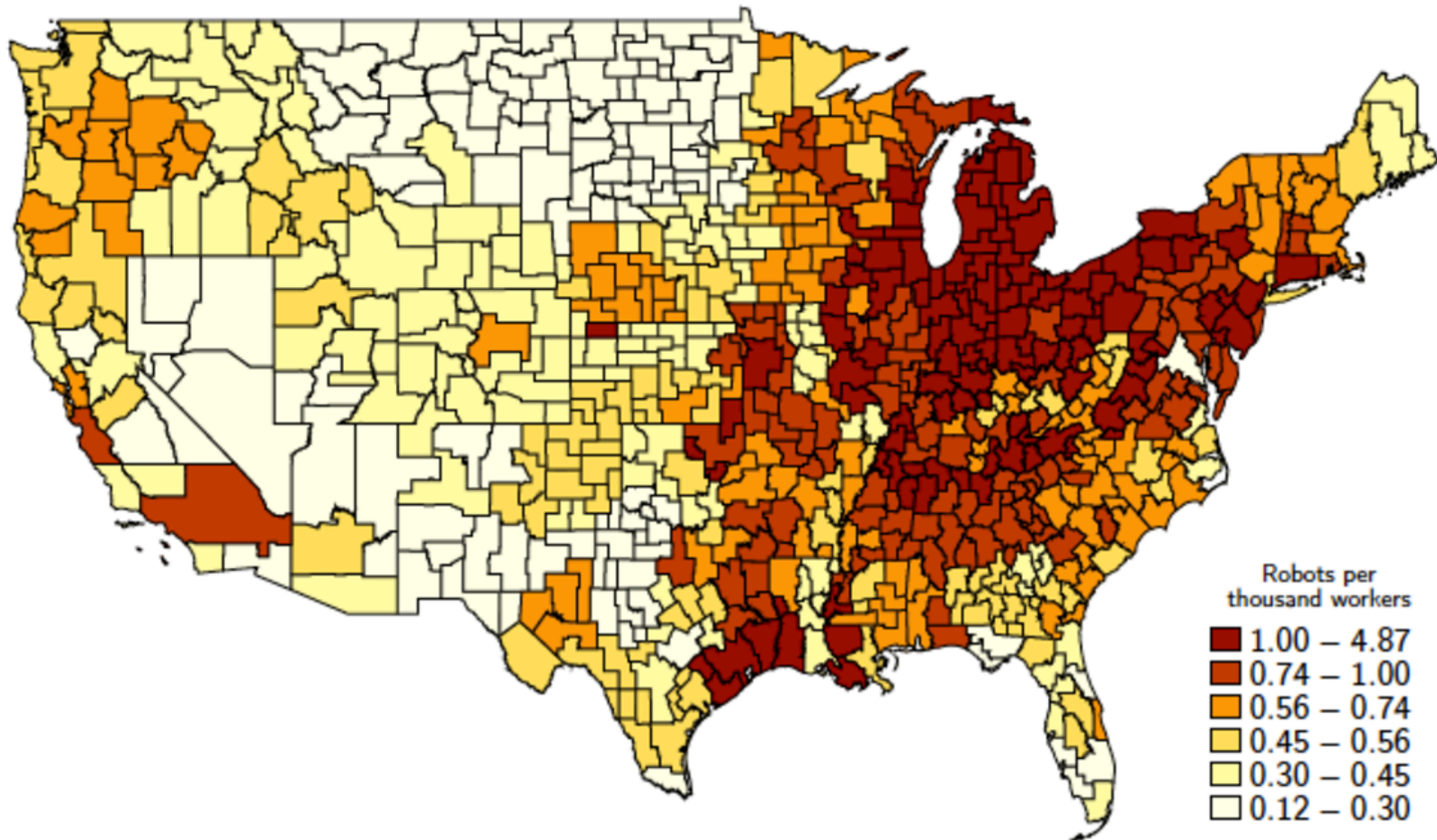- What is the impact of robots on employment and wages in the U.S.?

Figure 1 Industrial robots per 1,000 workers in the US and Europe, 1993-2007
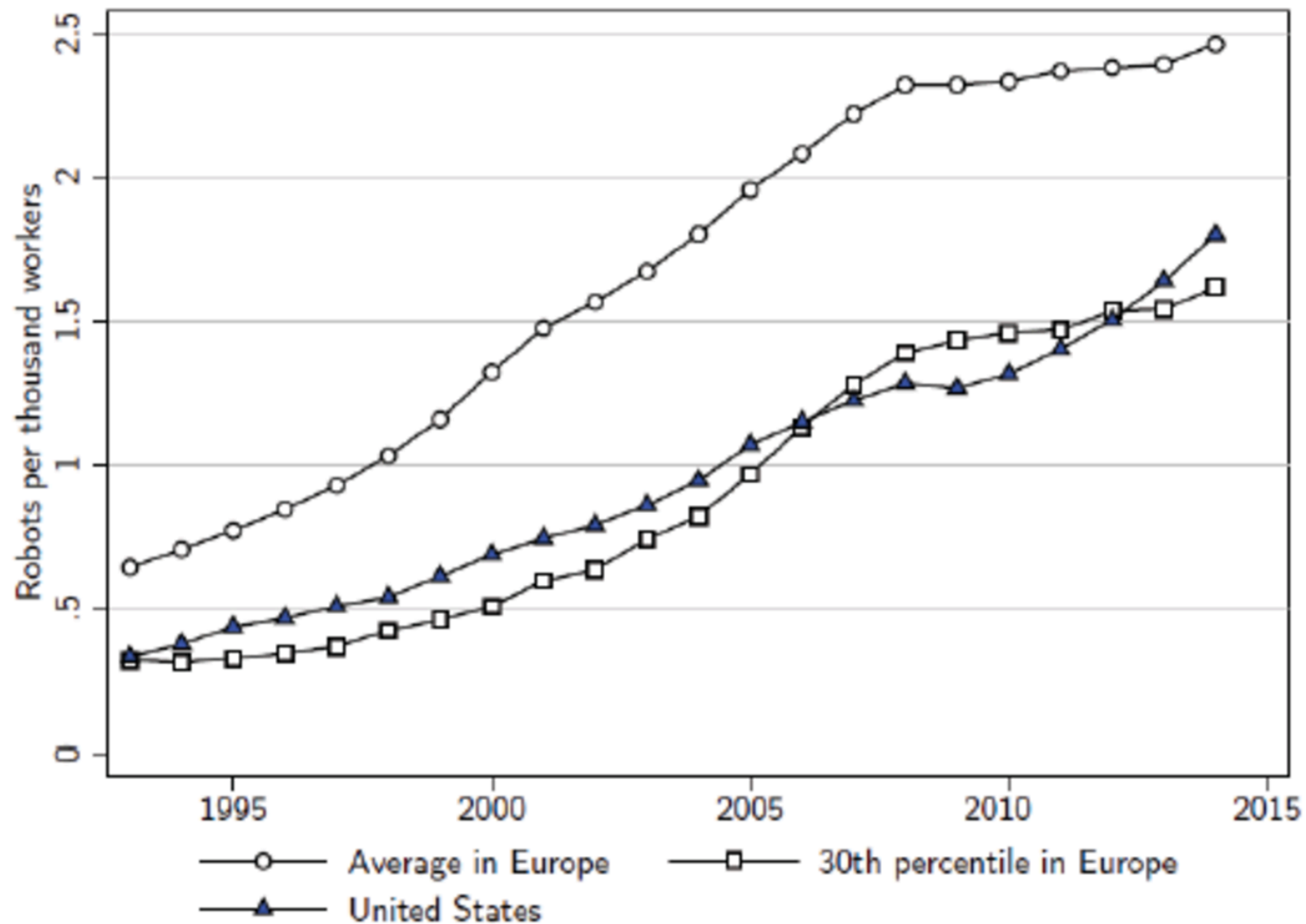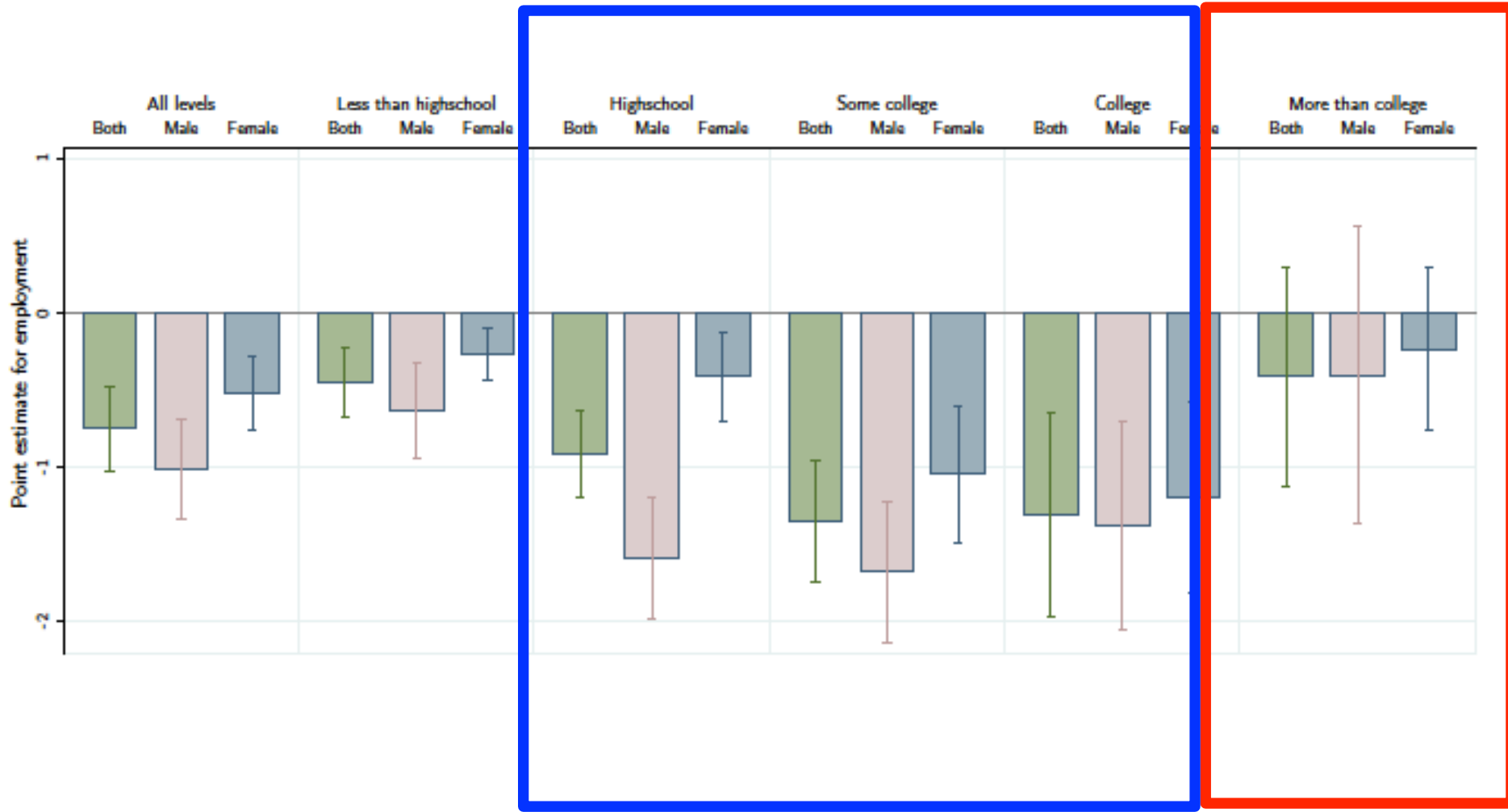
Exposure

Figure 3 Geographic distribution of the exposure to robots, 1993-2007
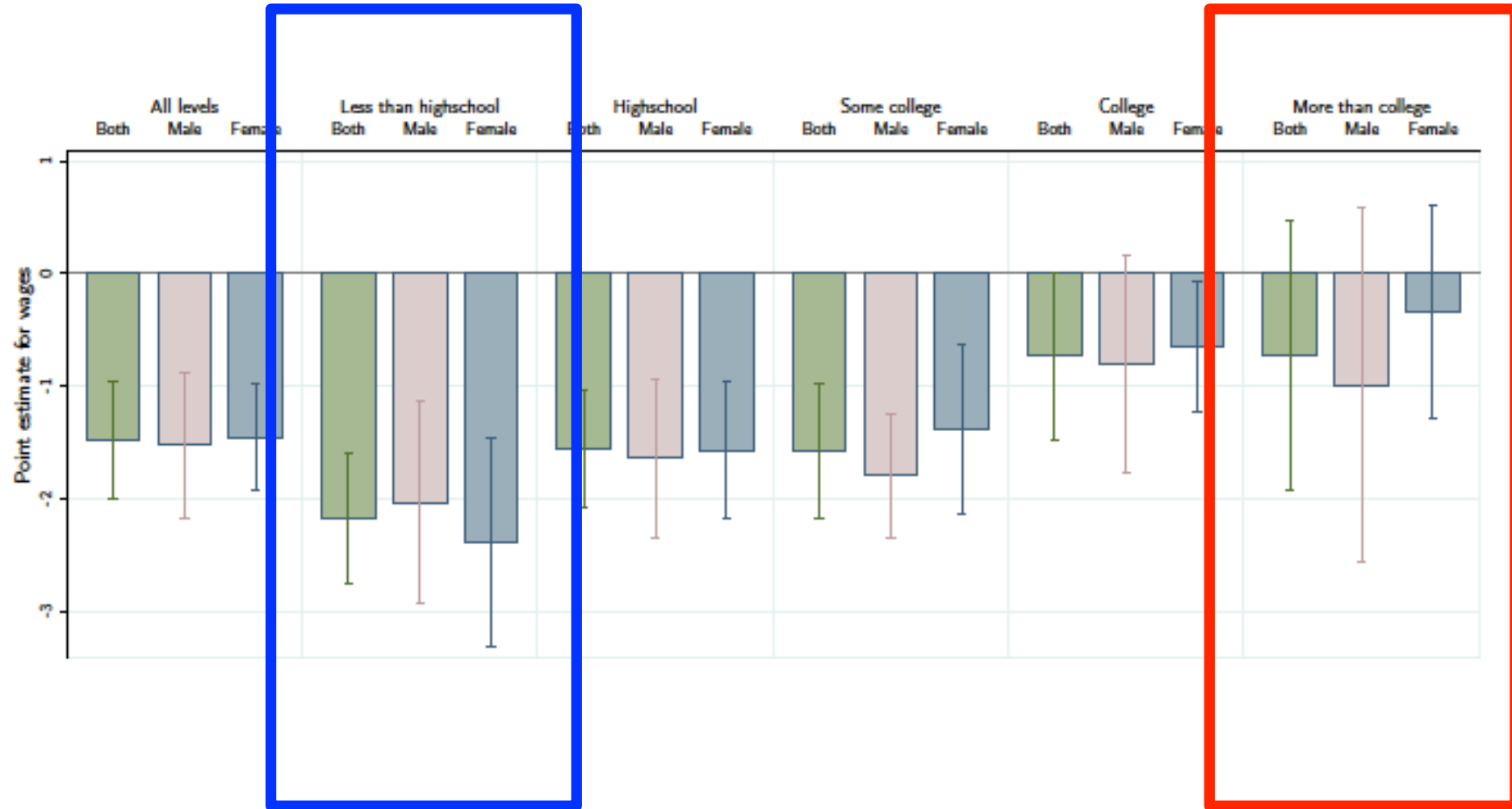

A. Exogenous exposure to robots from 1993 to 2007

Robots per thousand workers

- 1.00 − 4.87
- 0.74 − 1.00
- 0.56 − 0.74
- 0.45 − 0.56
- 0.30 − 0.45
- 0.12 − 0.30
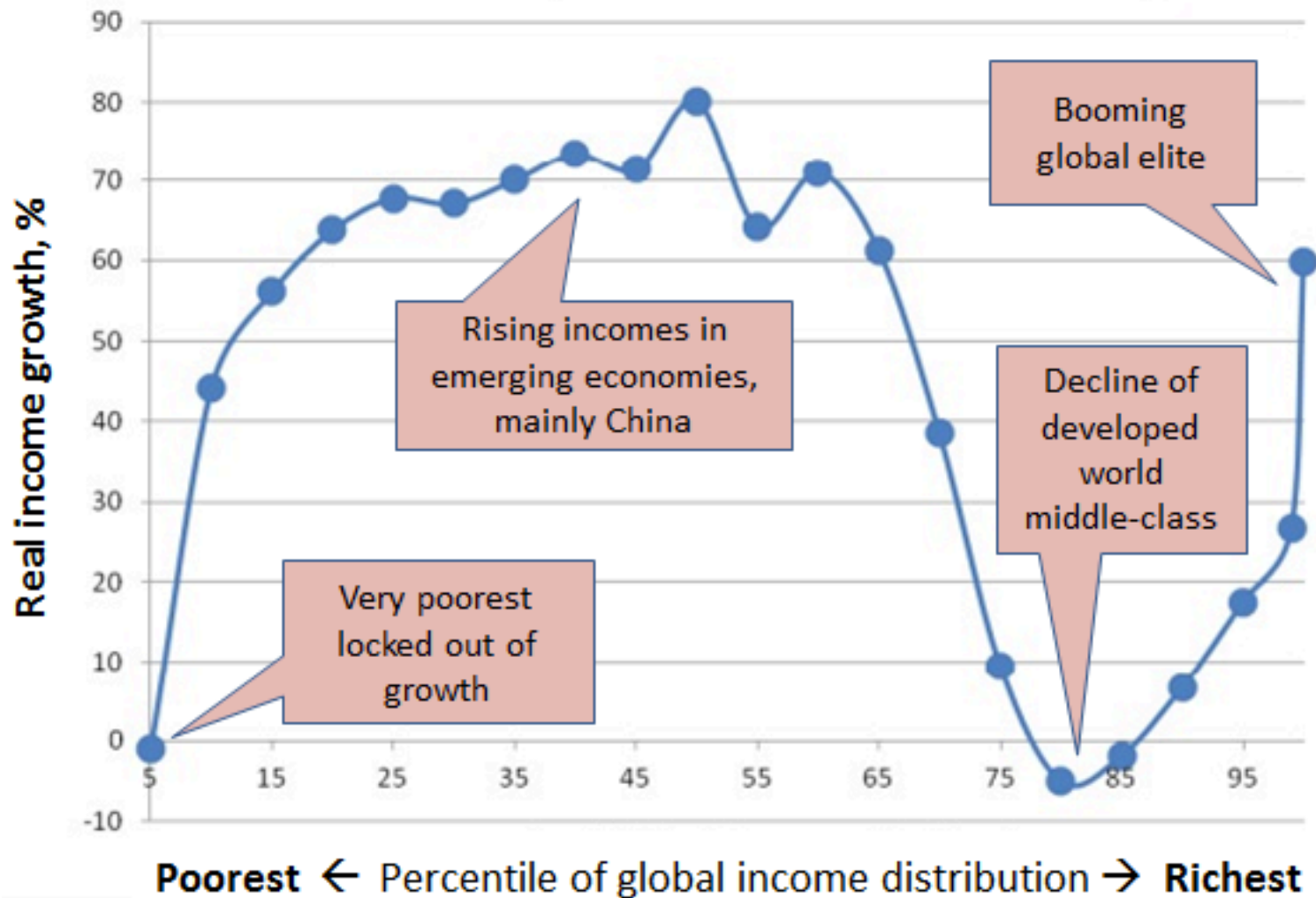
Impact on Employment

"3 to 6 workers losing their jobs for every robot."

Impact on Wages

Consequence

Global income growth from 1988 to 2008

Technological Unemployment

"We are being afflicted with a new disease of which some readers may not have heard the name, but of which they will hear a great deal in the years to come, namely, technological unemployment."

(John Maynard Keynes 1930)

Buzzword:
Artificial Intelligence (AI)

Artificial Intelligence

- A subfield in computer science

- Vaguely defined, highly task-oriented

Artificial Intelligence

- **Solving specific problems**

  - Planning

  - Finding the shortest path

  - Various searching problems

  - Game playing

- **Statistical learning / Machine learning**

  - Prediction (ElasticNet, SVM, trees, neuronal nets, "Deep" learning)

  - Natural language processing (e.g. machine translation, speech recognition, question answering)

- **Understanding human intelligence**