Labor in the Age of Automation and Artificial Intelligence

Anton Korinek

University of Virginia and Darden, NBER and CEPR

Intro

Threats to inclusive prosperity:

- distorted labor markets
  - e.g. monopsony power
- deteriorated social safety nets
- regressive tax policy
- trade liberalization with labor-abundant countries

BUT: new technology disrupted labor markets in major ways

Intro

Technological disruptions:

• lowered demand for many types of labor

• may be important drivers behind other threats to inclusive prosperity

Note:

• focusing on technology does not imply fatalism

→ just the opposite:

→ it makes us better informed in our pursuit of inclusive prosperity

Does Technological Progress Hurt Workers?

Several layers of answers:

1) Of course, stupid!
   Look at the man who has just lost his job!

2) Of course not, stupid!
   Technology destroys less efficient jobs to create more efficient jobs!

   → until recently, we economists have been a bit too focused on explaining the (beautiful) mechanism behind this story to account for adverse developments

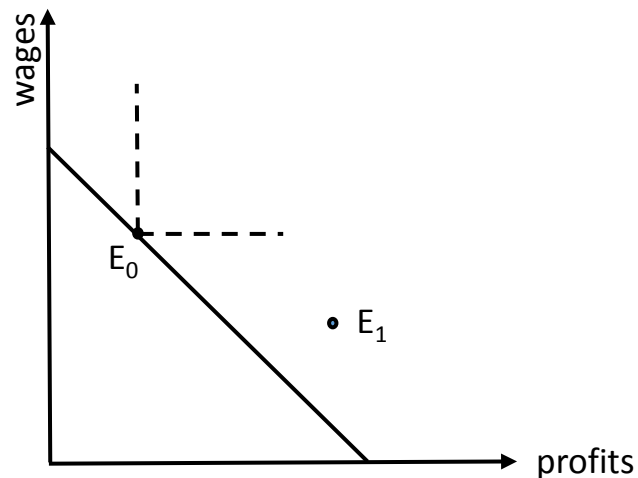# Does Technological Progress Hurt Workers?

Several layers of answers:

3) Let's be a bit more nuanced:

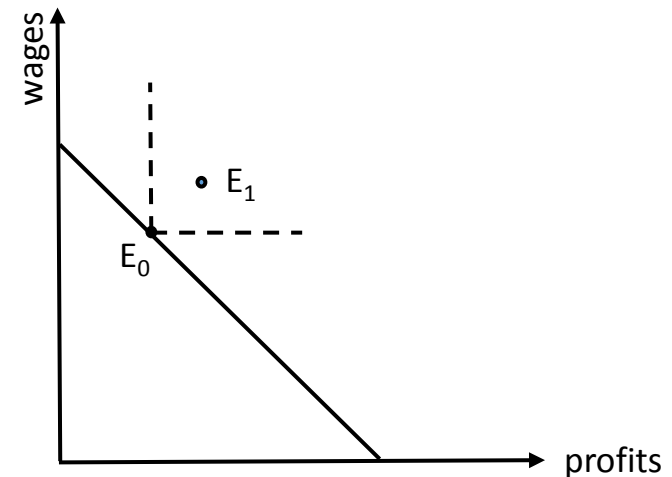3a) there are transition costs

3b) in the long run, it depends on the type of progress
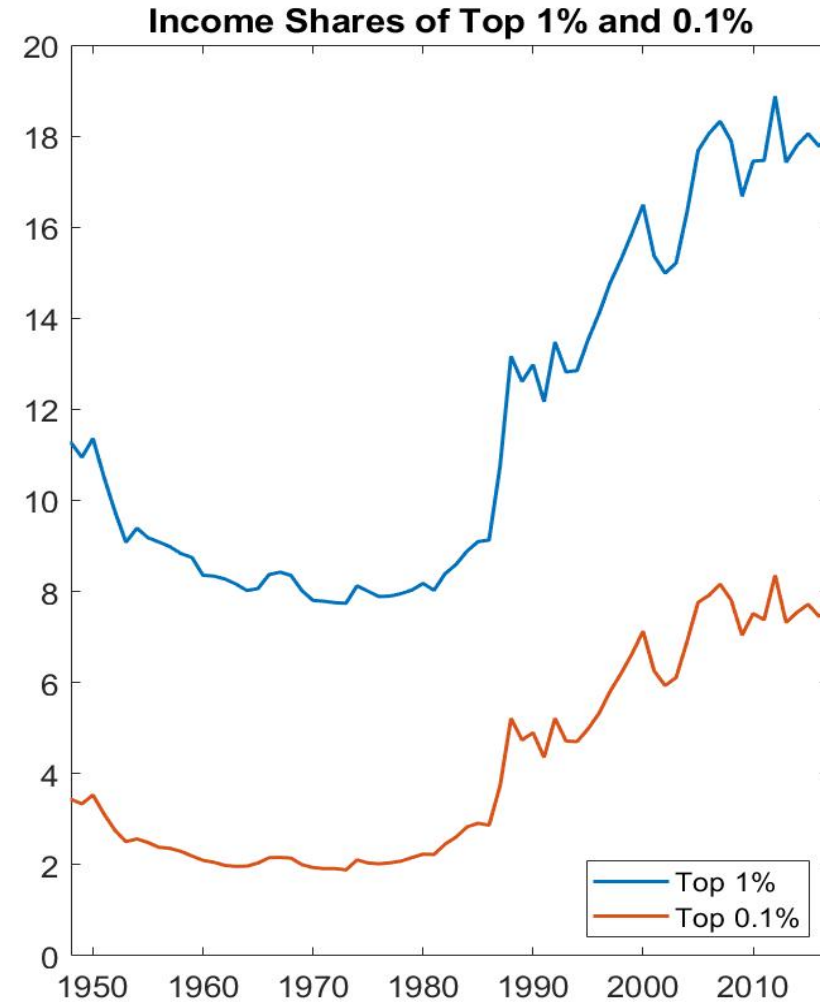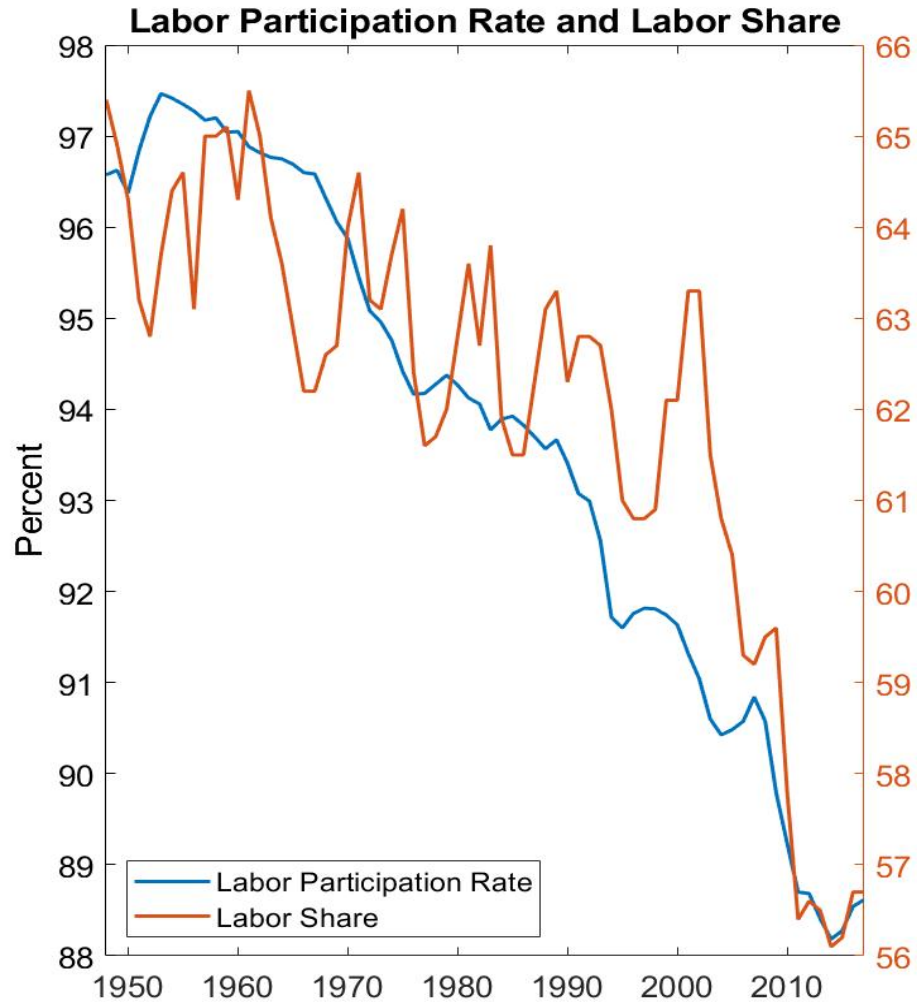
labor-saving progress   vs   labor-using progress

A Quick Look at the Data

Labor Participation Rate and Labor Share

Income Shares of Top 1% and 0.1%

A Quick Look at the Data

Decomposition of Income Shares
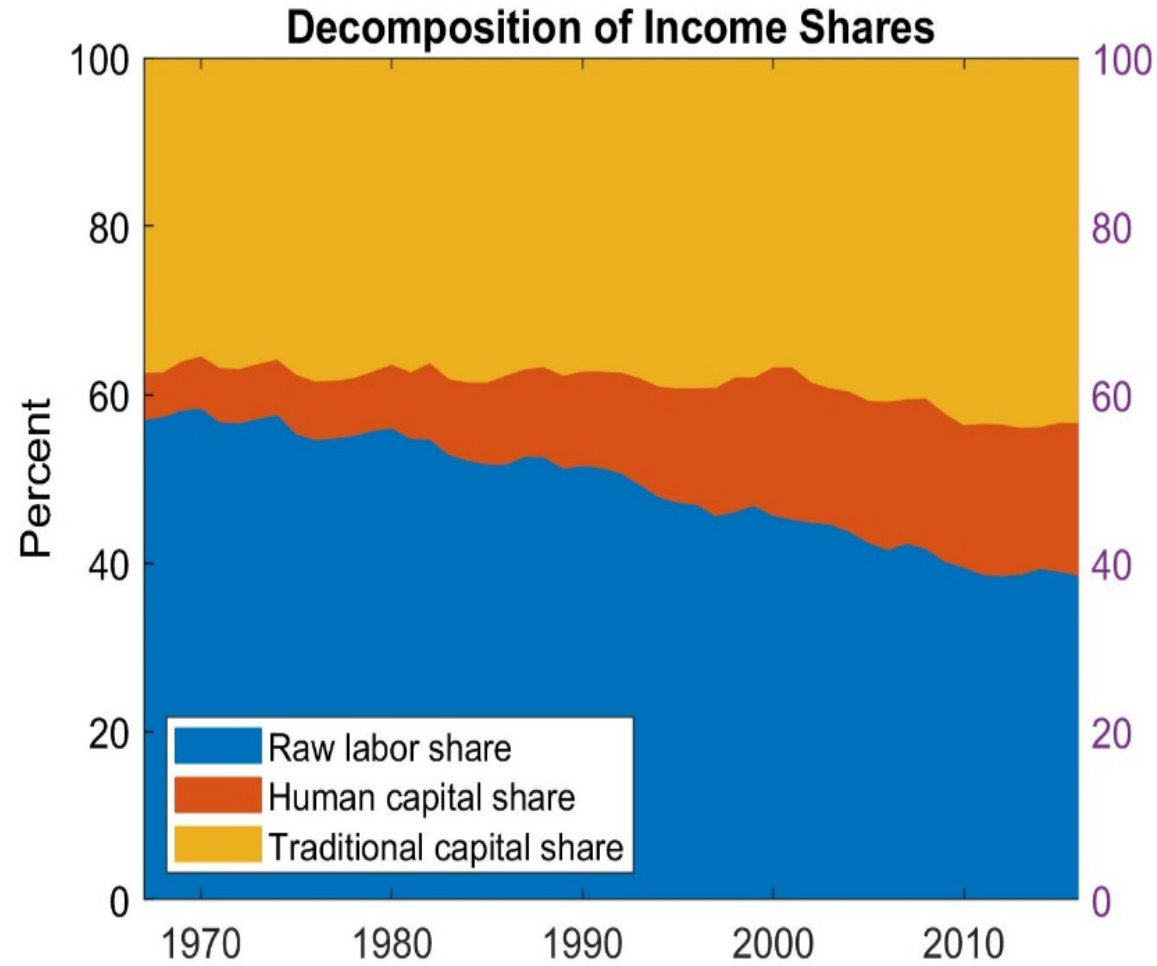
Quick Summary

→ wide swathe of workers have lost out in recent decades

→ extrapolation is dangerous, but this is likely to continue
(the data presented does not yet include any effects of modern AI)

→ strong headwinds for pursuit of inclusive prosperity

Three Policy Propositions:
1) Technological Redistribution and Social Redistribution
2) Steering Technological Progress
3) Taxing Digital Monopolies

1) Technological Redistribution and Social Redistribution

Effects of technological change can be decomposed into two parts:

i)   increase in output (E_0 → E')

ii)   zero-sum redistribution between factor owners (E' → E_1)
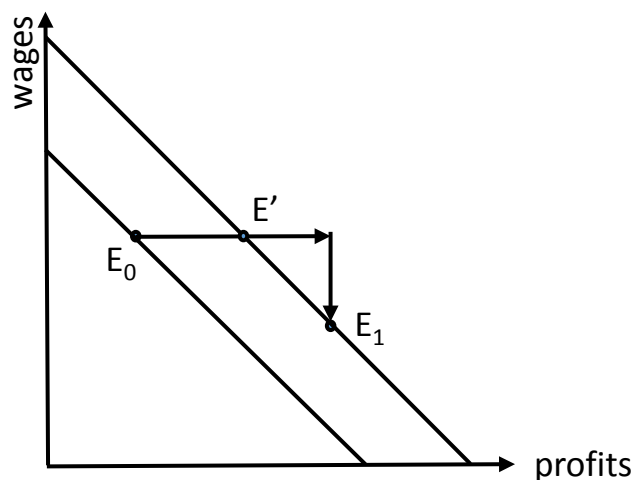
(Korinek and Stiglitz, 2019)

→ natural goal for social policy is to undo technological redistribution

1) Technological Redistribution and Social Redistribution

Winners can keep gains they experience from (i) increased output

But should compensate losers by undoing (ii) the redistribution
  → sometimes it is possible to directly tax these (e.g. rising property prices)
  → progressive tax systems are 2nd best mechanism

2) Steering Technological Progress

Technological progress does not just happen
> → it is driven by conscious and targeted economic decisions
> → but price signals to innovators do not necessarily reflect social value (e.g. pecuniary externalities)
> → need to actively steer technological progress in an inclusive direction

Example:

• Google Maps vs Waymo

More generally: "intelligent assistants" enhance value of labor

2) Steering Technological Progress

Need to steer technological progress in
(i)   government-sponsored research
(ii) regulation, taxation, subsidy policy
(iii) by creating awareness among entrepreneurs

See Korinek and Stiglitz (2019), "Steering Technological Progress"

3) Taxing Digital Monopolies

Nature of information goods:

(i)   non-rival but

(ii) excludable

fixed costs → create natural monopolies

competitive market *cannot* efficiently provide information goods

• markups → inefficient quantities

• insufficient creation of information goods

3) Taxing Digital Monopolies

Most efficient solution: public provision of information goods
   …but has other downsides

Second-best: grant monopoly power (intellectual property rights)
   …but tax some of the windfall gains

See Korinek and Ng (2018), "Digitization and the Macro-Economics of Superstars"

The Rise of Artificial Intelligence

Extrapolating further into the future:

- we may well see the "End of Labor" in future decades

  competitive market wage may fall below subsistence income

- but: for vast majority of people, labor = main source of income

- need *comprehensive* policies to ensure inclusive prosperity in a labor-less future
  - o direct or in-kind benefits or subsidies to human labor
  - o mechanisms to provide other by-products of labor: meaning, structure, …

See Korinek (2020), "AI and the Non-existent future or labor"