

# POWER AND PROGRESS

*Our 1000-Year Struggle Over  
Technology & Prosperity*

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&  
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# In the age of breathtaking advances in Artificial Intelligence...

*Who controls the future?  
Who benefits?*

With advances in “machine intelligence,” we must consider how new technologies will serve society.

Will generative AI serve only a technological elite or underpin broad-based prosperity?

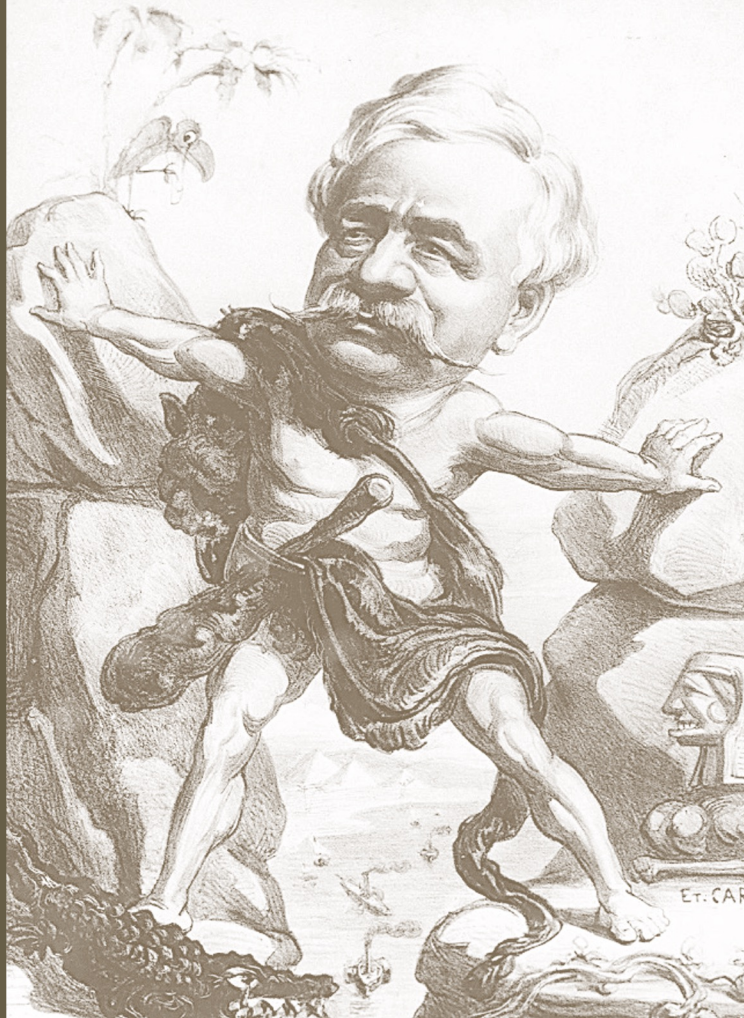




# We have been here before: Visionaries and hubris

Ferdinand de Lesseps was lauded for his great success, the Suez Canal.

Expecting similar success, he pushed his vision for a new canal in Panama, with catastrophic consequences.



**Ferdinand de Lesseps:**  
the canal digger at Suez



**Costs of Lesseps's hubris:**  
22,000 dead at Panama



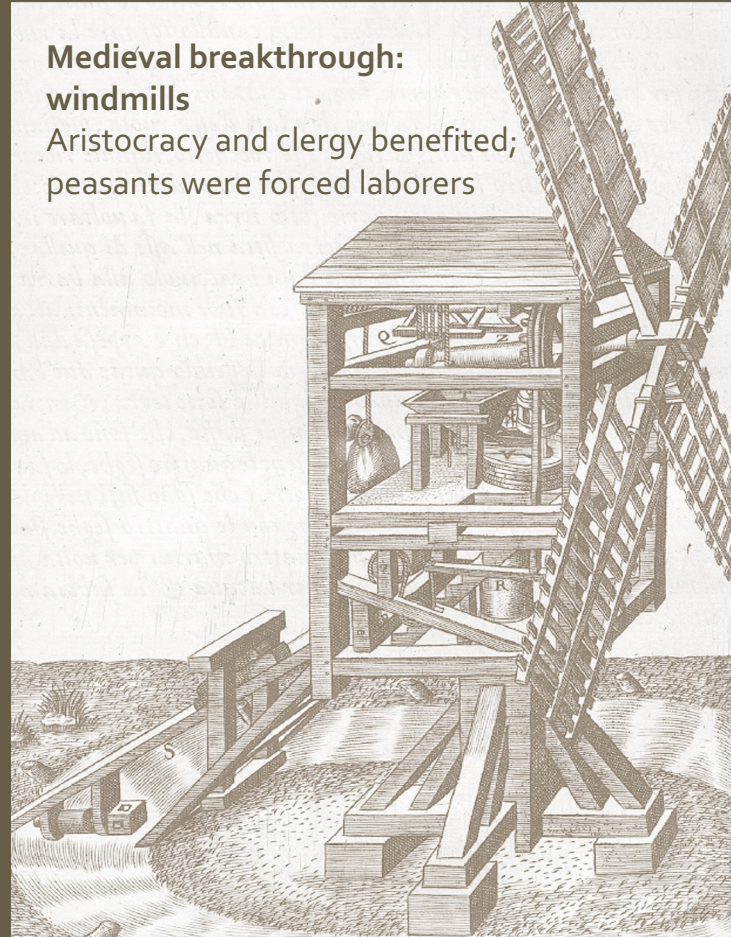
TECHNOLOGY  
IMPROVES

PRODUCTIVITY  
RISES

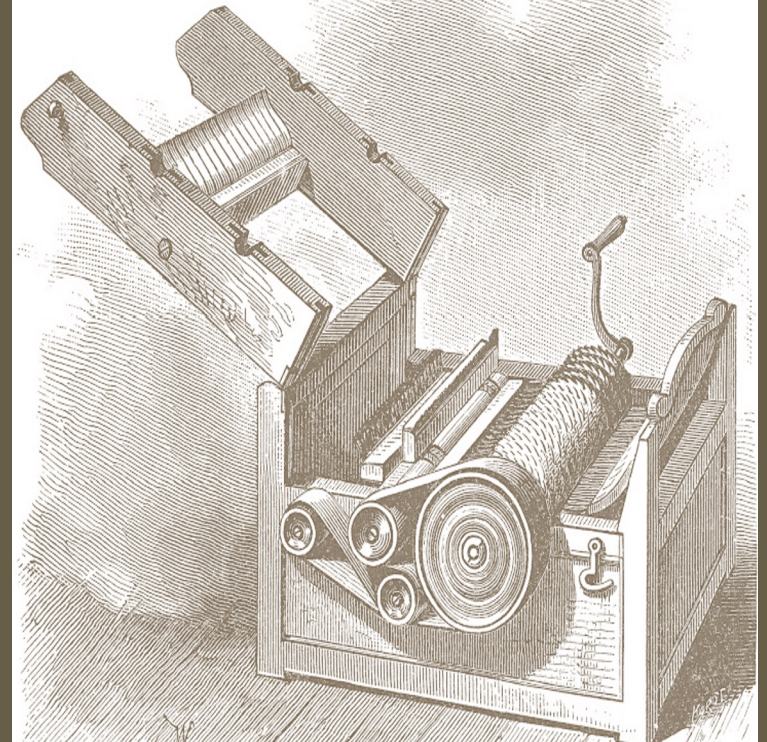
WORKERS  
ALSO BENEFIT

# The productivity bandwagon: do workers benefit?

**Medieval breakthrough:  
windmills**  
Aristocracy and clergy benefited;  
peasants were forced laborers



**Eli Whitney's cotton gin, 1794**  
Enslavers benefited; slavery  
intensified in the deep South





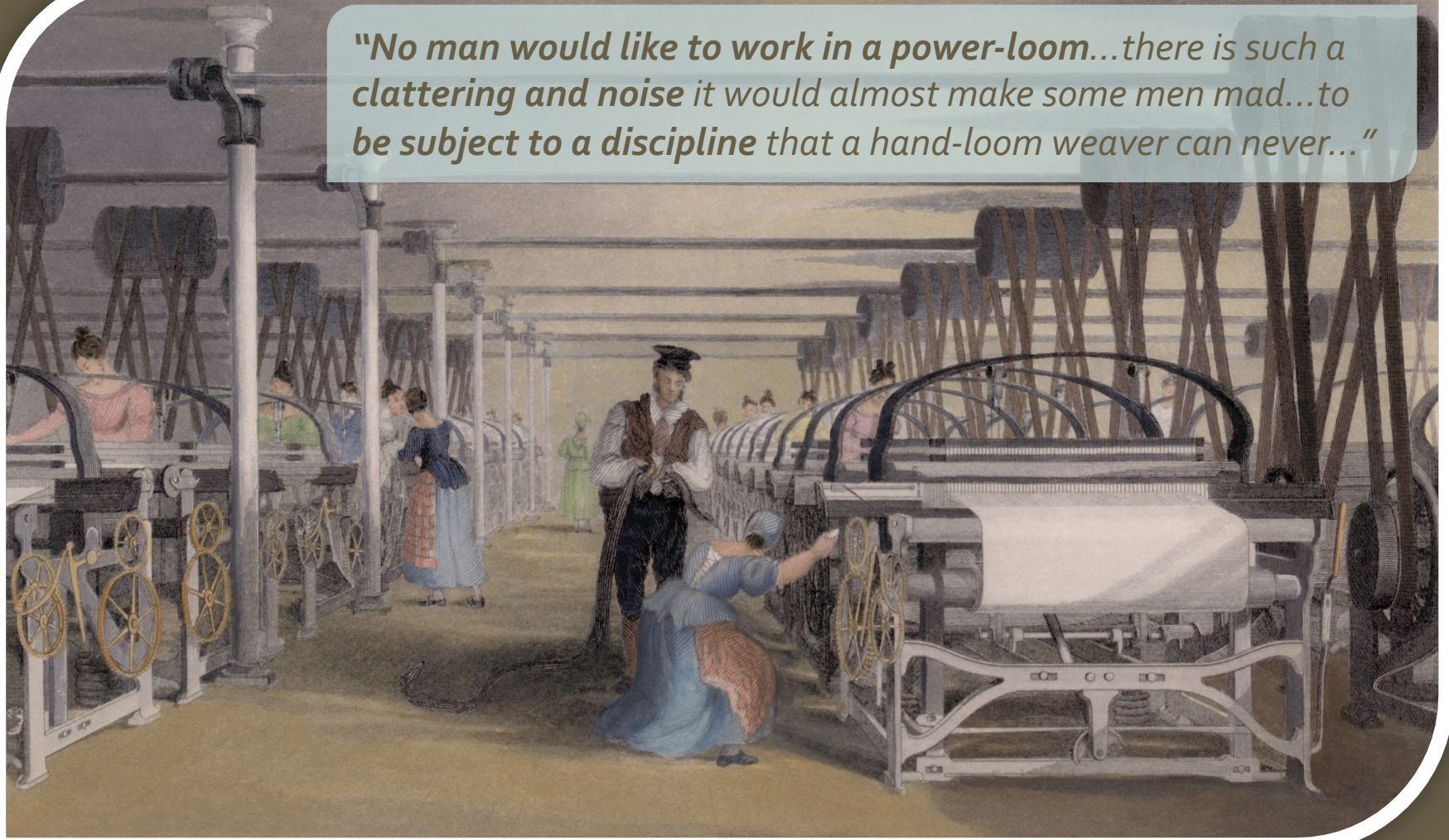
# The Industrial Revolution: Automation blues

In the nineteenth century, power looms automated the work of hand-weavers.

Working conditions worsened, wages were low, and surveillance was intense.

Automation displaced workers, and without the creation of new tasks for them, the productivity bandwagon ground to a halt.

*"No man would like to work in a power-loom...there is such a clattering and noise it would almost make some men mad...to be subject to a discipline that a hand-loom weaver can never..."*

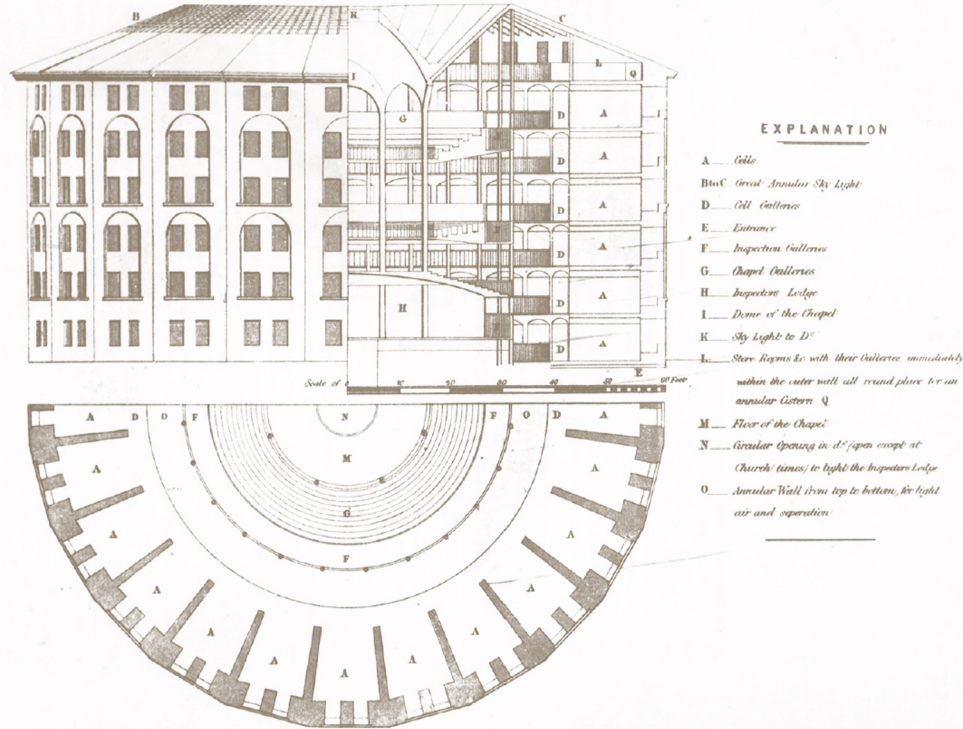




# The Industrial Revolution: Worker monitoring and worsening health

Surveillance technologies, inspired by the panopticon, enabled capital to squeeze labor.  
As cities grew, disease and squalor abounded.

*A General Idea of a PENITENTIARY PANOPTICON in an Improved, but as yet, Unfinished State  
See Postscript References to Plan, Elevation & Section, being Plate referred to as N° 2.*



DIPHTHERIA SCROFULA CHOLERA

FATHER THAMES INTRODUCES HIS OFFSPRING TO THE FAIR CITY OF LONDON

Worker monitoring: Jeremy Bentham's panopticon, 1791

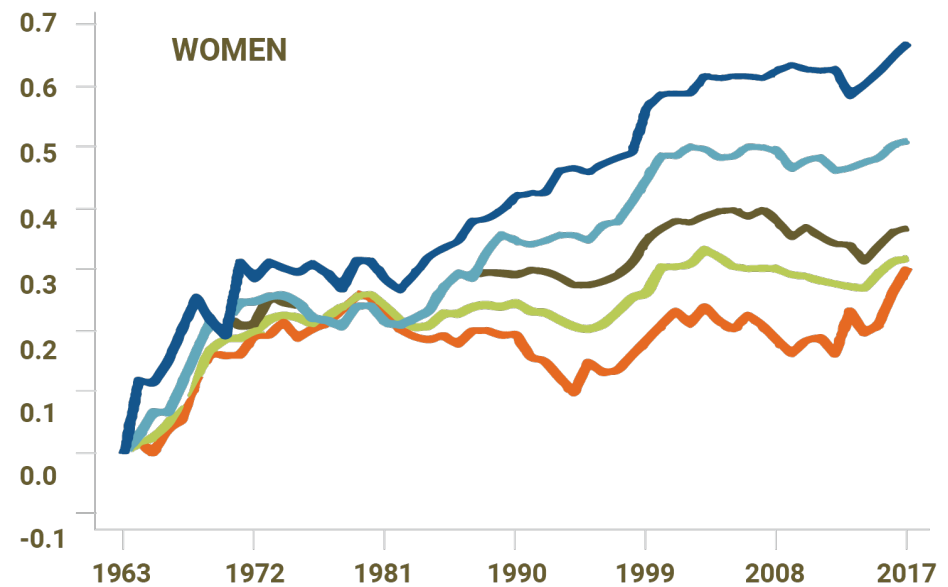
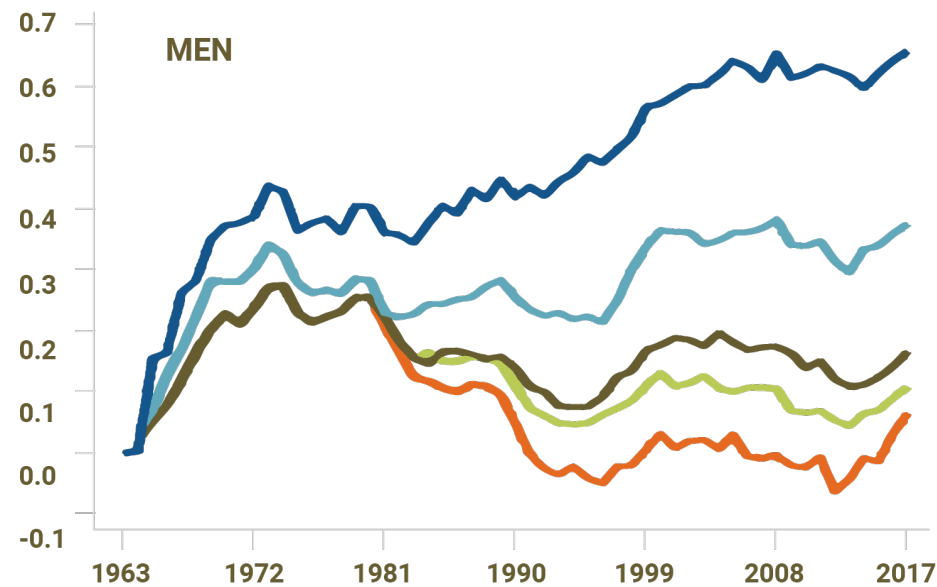
City squalor: growth of industry worsened health, 1858



# Modern times are different... right?

Shared growth and prosperity following WWII, but a growing divergence over the past 40 years

The change in real (log) weekly earnings, since 1963  
*Working age adults, ages 18–64*

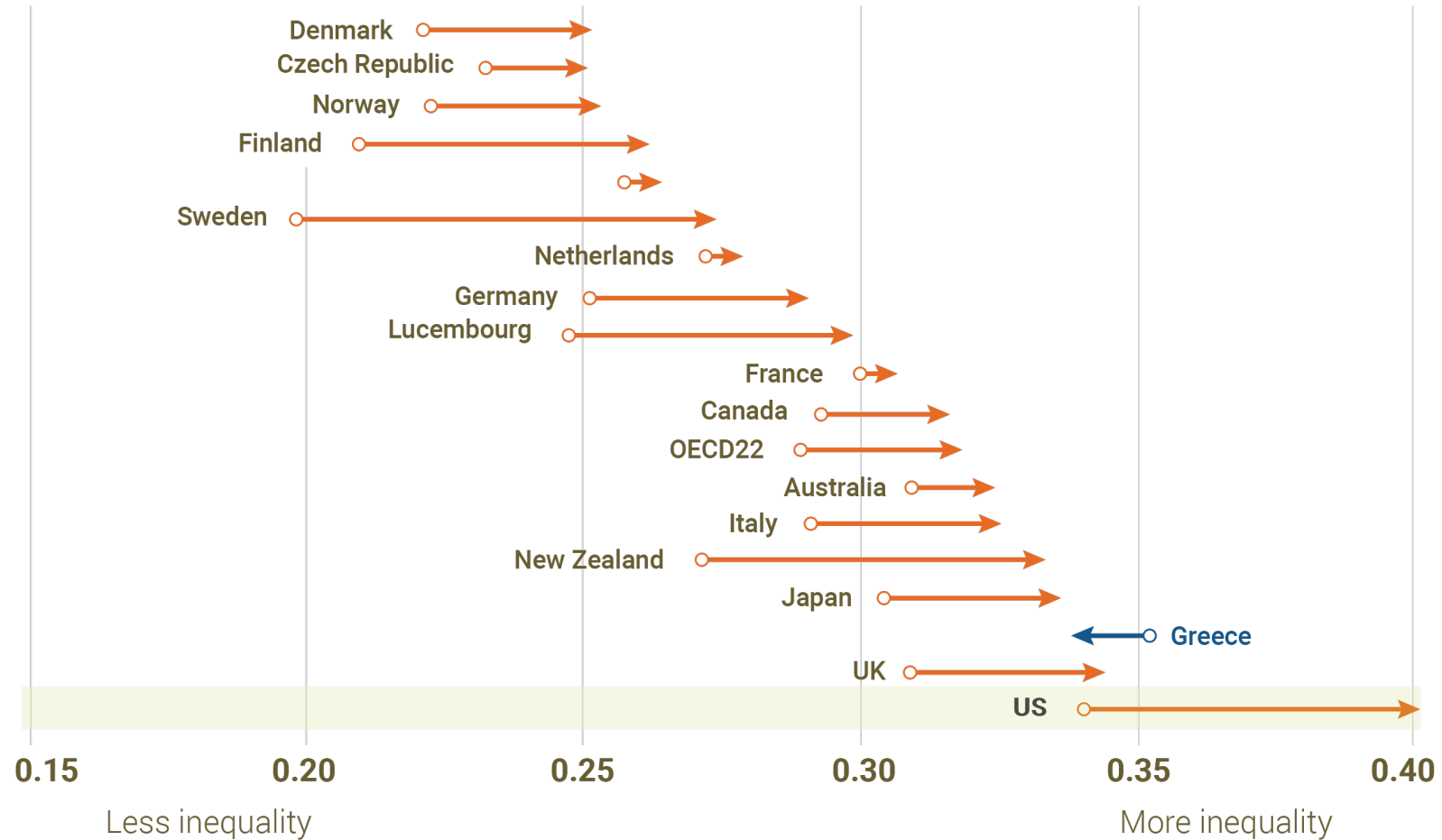


● High School dropout    ● High School graduate    ● Some College    ● College degree    ● Graduate degree



# The rise in inequality is not just a US phenomenon.

Change in the Gini Coefficient, measure of inequality  
1985–2010's



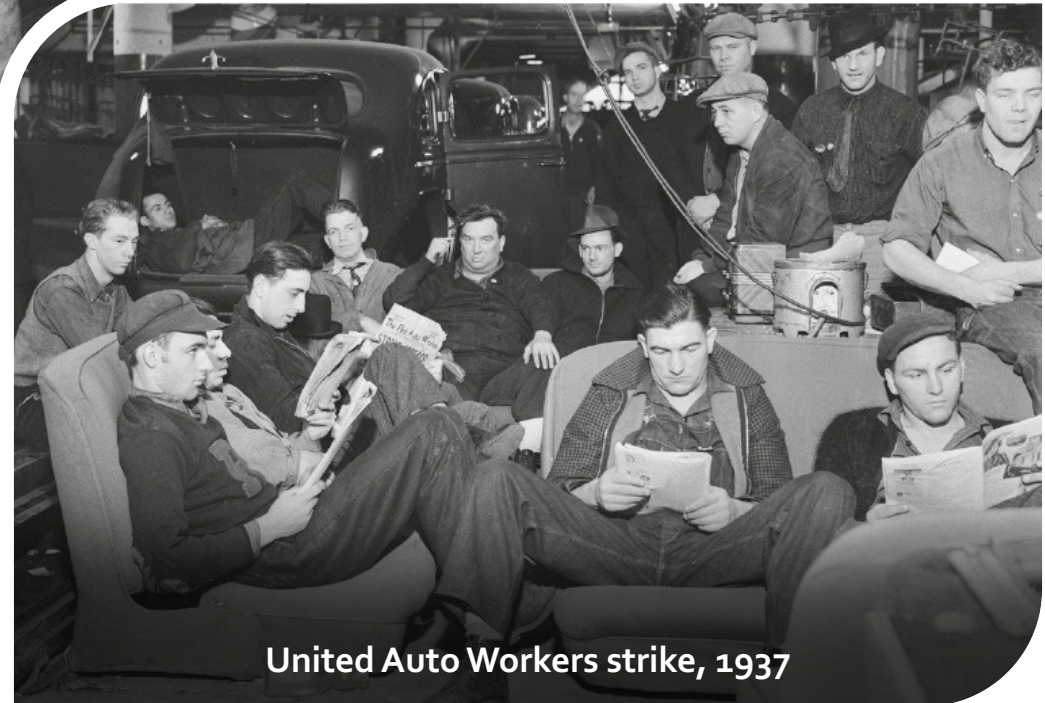
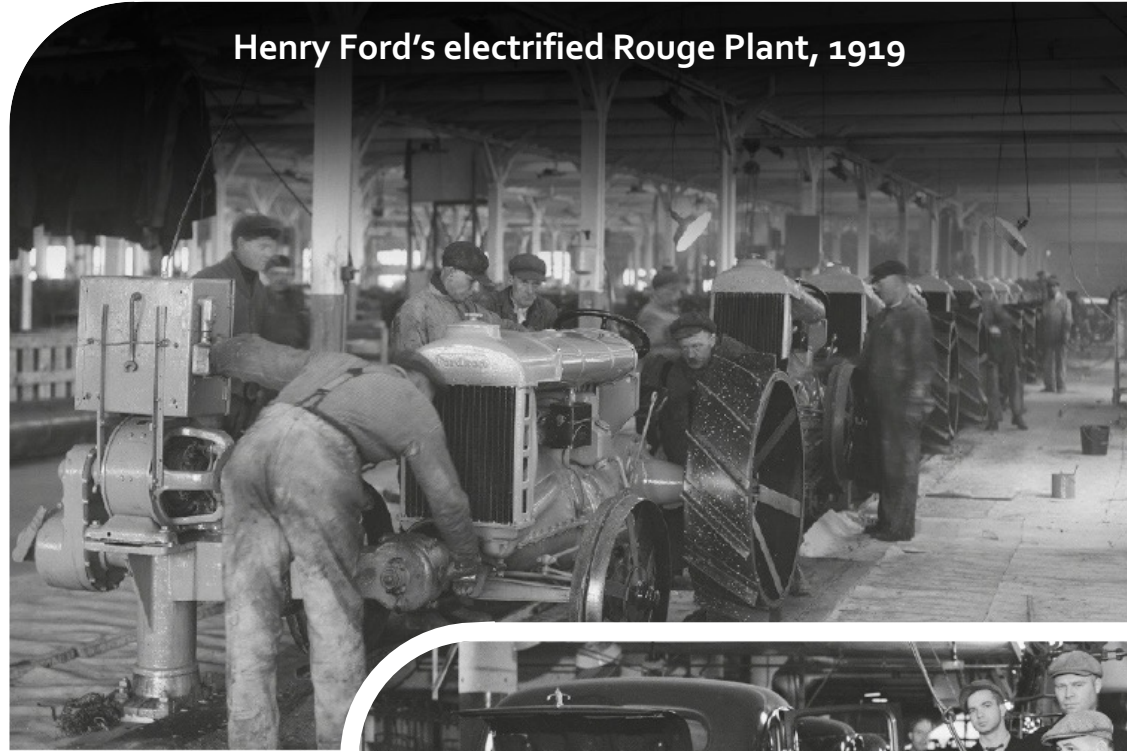
# When does the “productivity bandwagon” deliver shared prosperity?

## *New tasks and worker power*

Lessons from the U.S. automobile manufacturing industry:

- I. Electrification and the modern factory dramatically boosted *marginal worker productivity*
- II. Labor organizations became stronger, bolstering *sharing of productivity gains and worker voice*

Henry Ford's electrified Rouge Plant, 1919



United Auto Workers strike, 1937



# Why did things go wrong in the digital age?

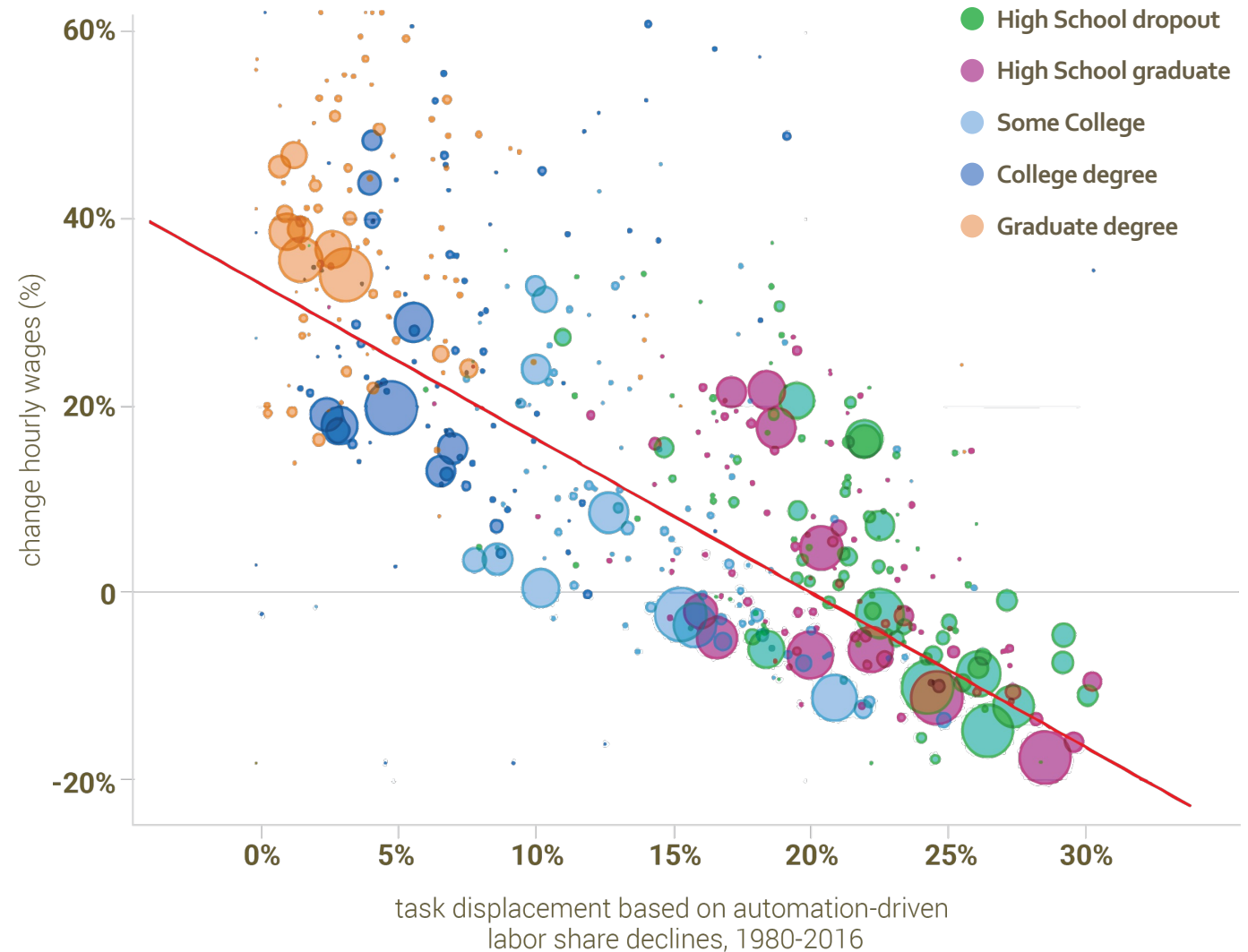
**1a** *Too much focus on automation, not enough on creating new tasks*



# Why did things go wrong in the digital age?

## 1b *Consequences of automation for wages and inequality*

Change in real wages due to automation of job tasks  
1980–2016



Source: Acemoglu, Daron and Pascual Restrepo. 2022. "Tasks, Automation, and the Rise in U.S. Wage Inequality." *Econometrica*, 90(5): 1973–2016.



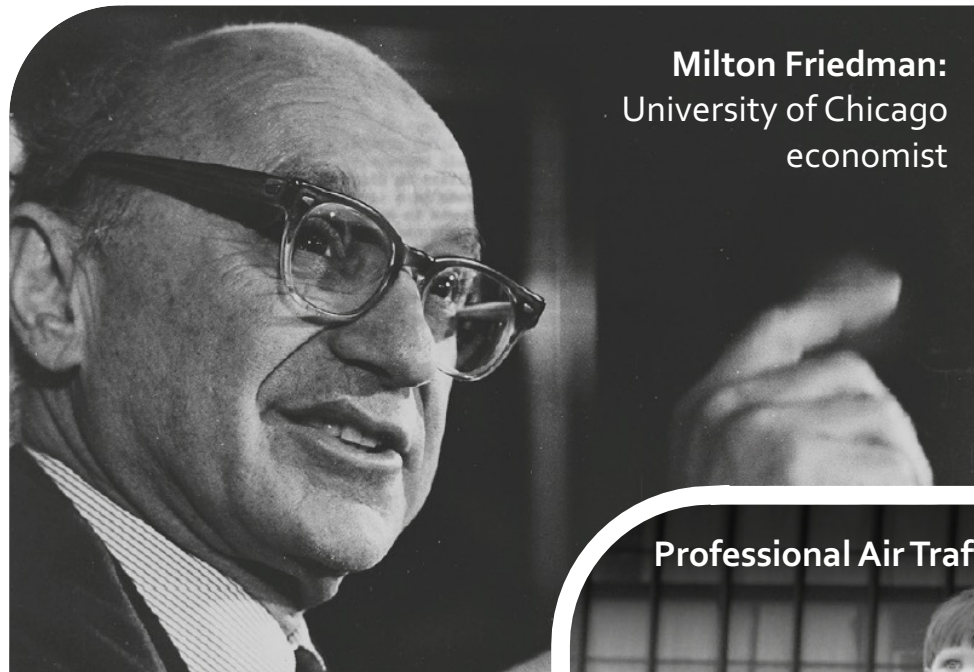
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# Why did things go wrong in the digital age?

## 2 *New corporate visions and erosion of worker power*

“The social responsibility of business is to increase its profits”

—Milton Friedman, 1970



Milton Friedman:  
University of Chicago  
economist

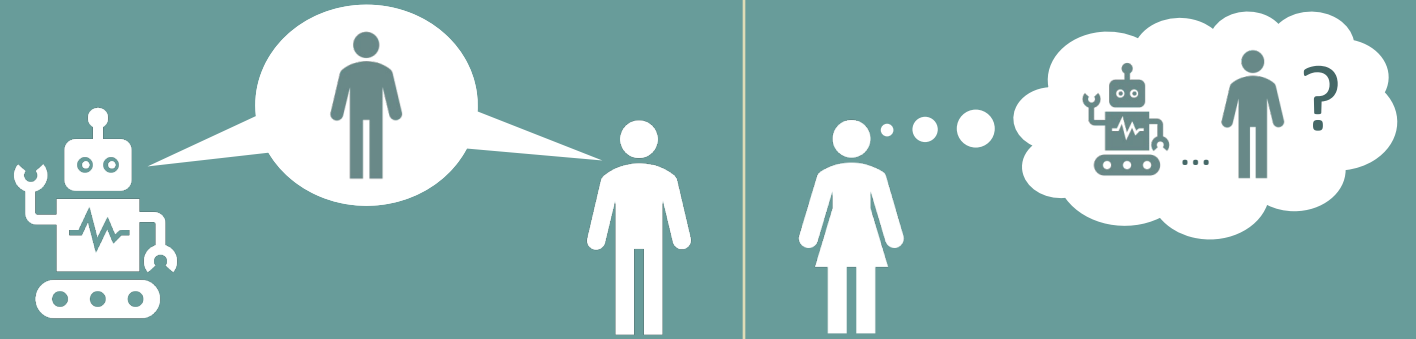


Professional Air Traffic Controllers strike, 1981

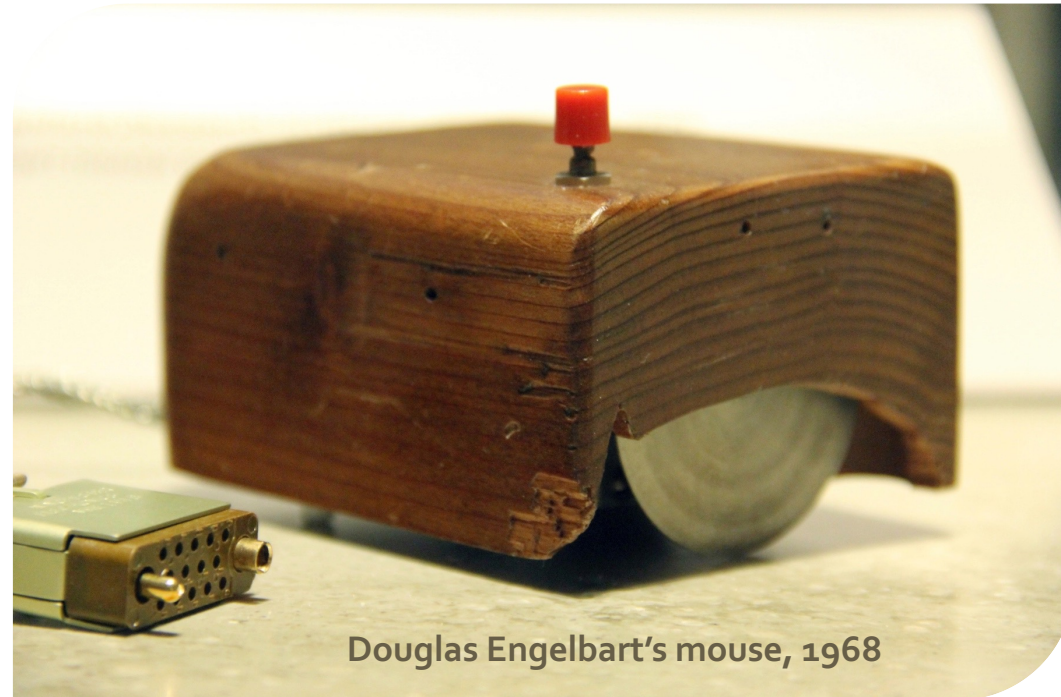
# Can the age of AI be different?

The previous orthodoxy aimed for “machine intelligence”;

It is much better to focus on “machine usefulness”



The Turing Test: Can a computer convincingly imitate a human?



Douglas Engelbart's mouse, 1968



# Consequences of fixation on “machine intelligence”?

Self-checkout kiosks transfer work to customers, but do not improve productivity; this is “so-so automation”



# Will “generative AI” reverse these long- term trends of *widened inequality, weakened worker power, and low productivity growth?*

We asked ChatGPT for its opinion.  
It offered this explanation:

“Perhaps, but probably not...it’s not a magic solution...if generative AI is used to replace workers instead of support them, it could have **negative consequences** for employment and the economy.”



Perhaps, but probably not. While generative AI has shown promise in various applications, such as creating new drug designs or generating new ideas, it's not a magic solution that can solve all our problems on its own. Additionally, if generative AI is used to replace workers instead of support them, it could have negative consequences for employment and the economy. It's crucial that we use this technology ethically and responsibly, and that we continue to prioritize human decision-making and critical thinking in any application of generative AI.





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# Surveillance is also intensifying

*Similar trends in both authoritarian and democratic countries*

*Centralized control of data does not augur well for the future of democracy*



Facebook content moderation



Chinese social credit score kiosk

# Implications for the emerging world

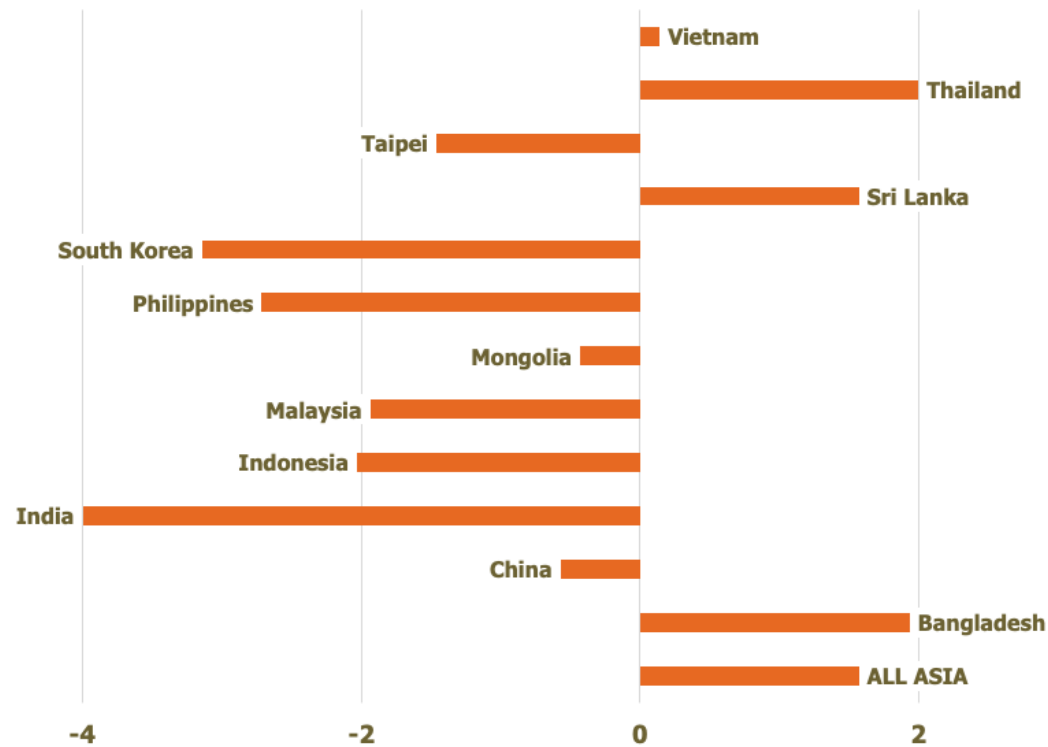
*Inappropriateness of AI:*

Robotics and AI are changing the global division of labor and could displace workers, 2005-2015

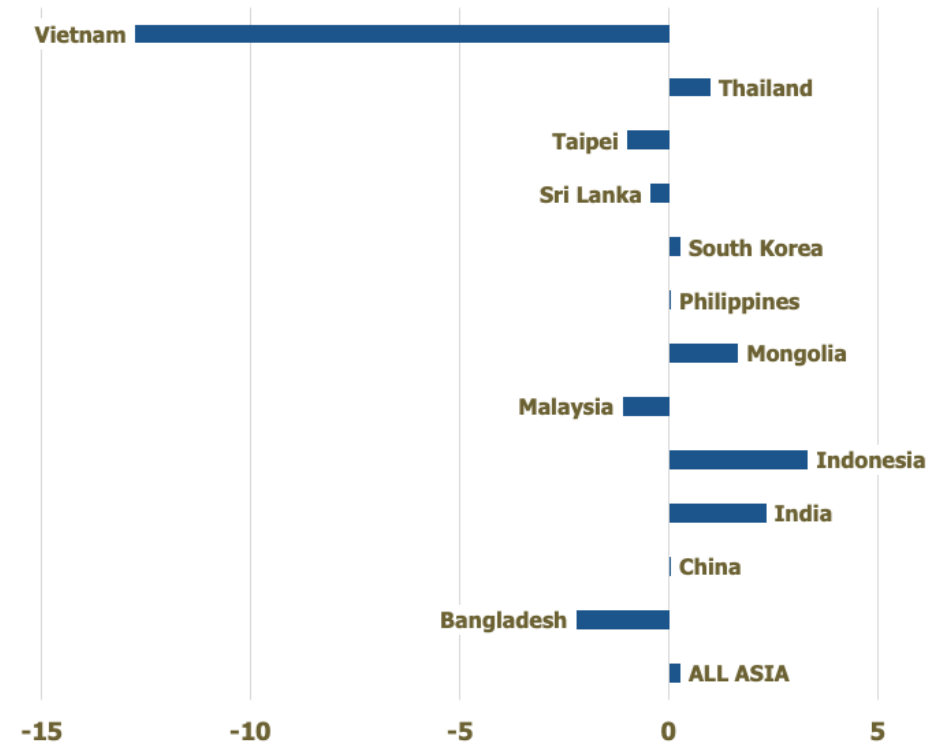
## The growth in “routine” versus “nonroutine” jobs

*Percentage point differences*

### *Manufacturing*



### *Services*





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# What can we do?

*Change the narrative  
away from the hubris  
of techno-optimism*



Sam Altman (OpenAI) and Elon Musk

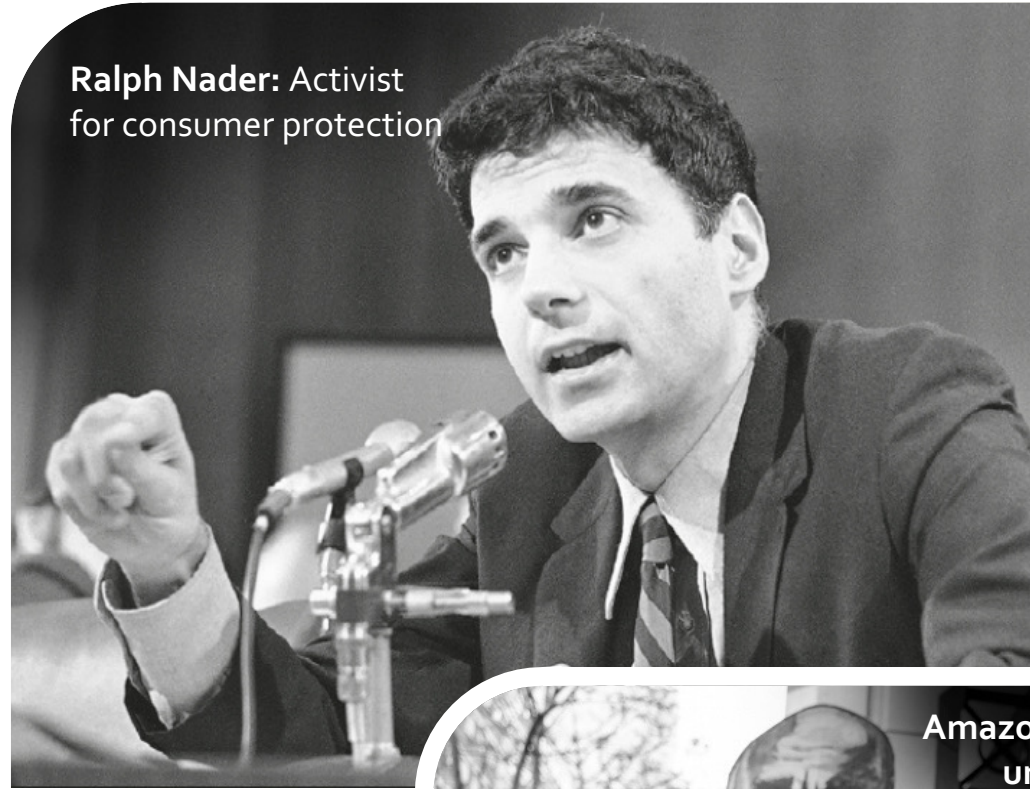
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# What can we do?

## *Create countervailing powers*

- Labor movement
- Bottom-up organizations from civil society
- Implementing appropriate regulation (e.g., taxes, antitrust, data, support worker-friendly technologies)

Ralph Nader: Activist  
for consumer protection



Amazon Staten Island labor  
union organizing, 2021





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# What can we do?

*Redirect technological change to enhance human capabilities:*

- New tasks for greater worker marginal productivity
- Better information for workers and human decision-makers
- Greater worker autonomy
- Empowering citizens



Ted Nelson:  
technological pioneer, 1974

“

The public does not have to take what's being dished out...

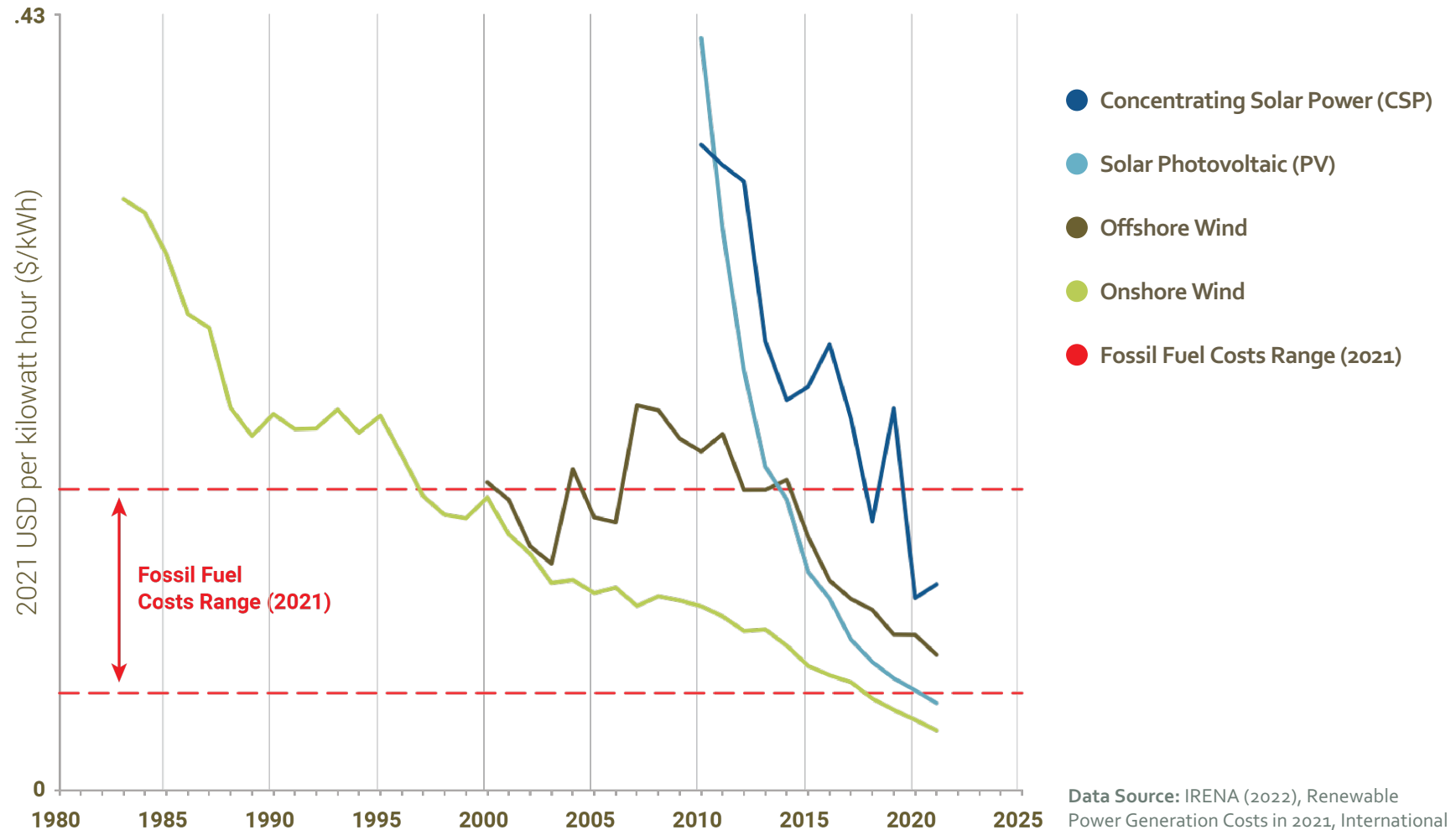
**COMPUTER POWER TO  
THE PEOPLE!**

***DOWN WITH  
CYBERCRUD!***”

# Can we actually redirect technology?

Yes, investment in the right technologies can be achieved by societal mobilization and government policy

Cost of generating renewable electricity  
1980's–2021, various utility-scale sources



Data Source: IRENA (2022), Renewable Power Generation Costs in 2021, International Renewable Energy Agency, Abu Dhabi.