POWER AND PROGRESS

Our 1000-Year Struggle Over Technology & Prosperity

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SHAPING THE FUTURE OF WORK

MIT | Massachusetts Institute of Technology

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

Who controls the future? Who benefits?

With advances in "machine intelligence," will we all benefit?

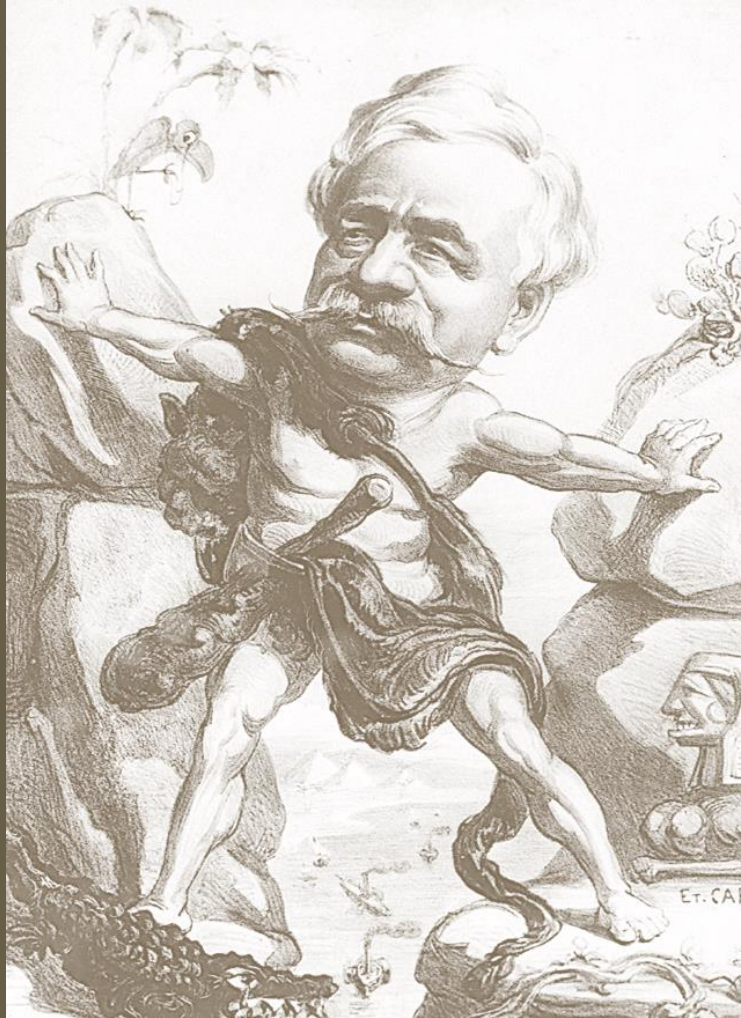Or will generative AI serve only a technological elite?

Who decides?

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.

Of course, we don't have to worry about any of this if new technology will naturally and automatically benefit all of us. Will it?

Ferdinand de Lesseps:
the canal digger at Suez
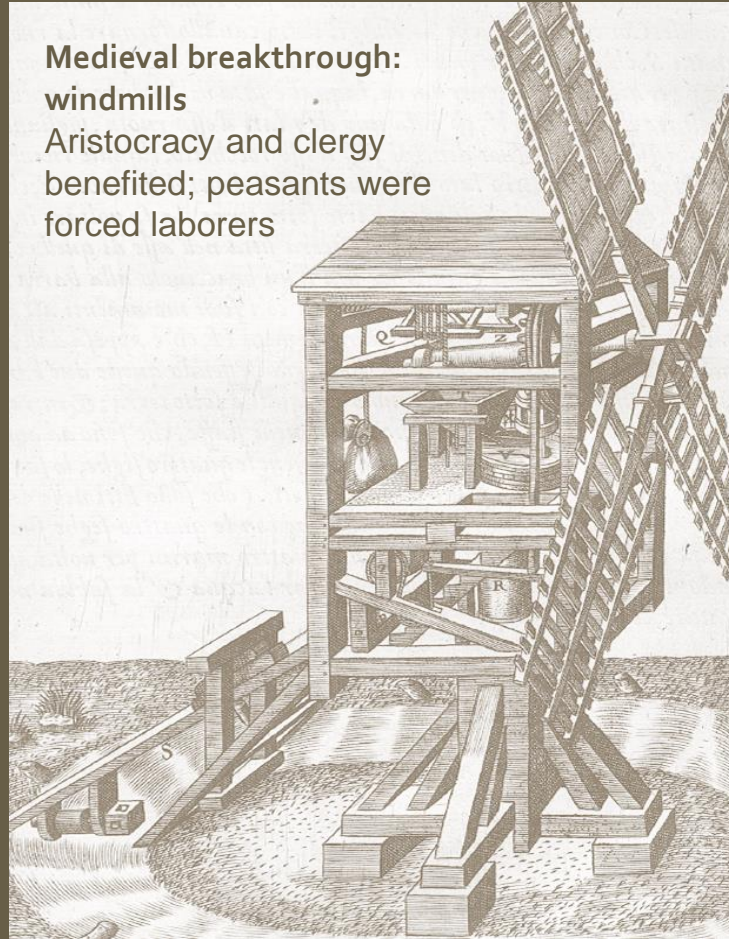

Costs of Lesseps's hubris:
22,000 dead at Panama
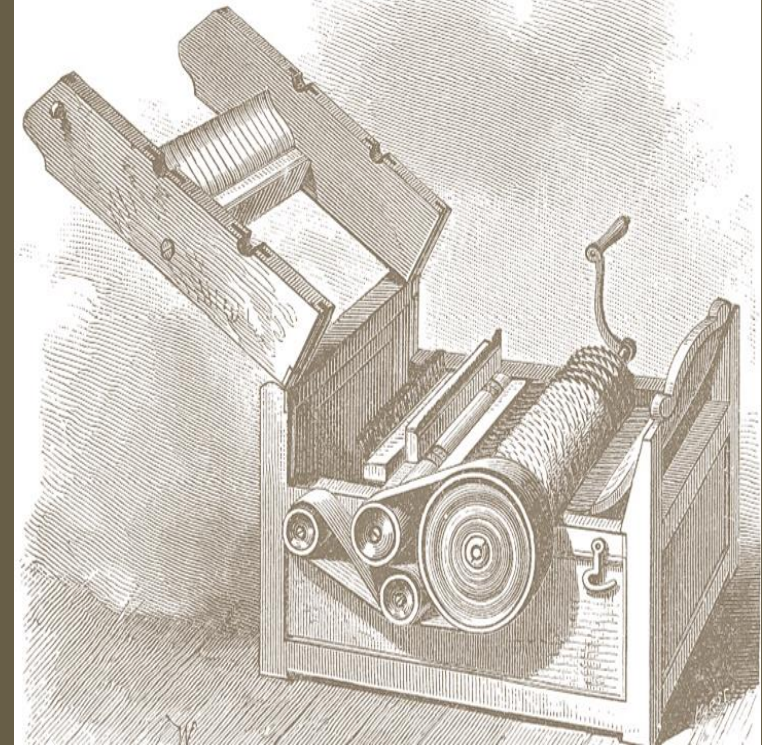
TECHNOLOGY IMPROVES

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
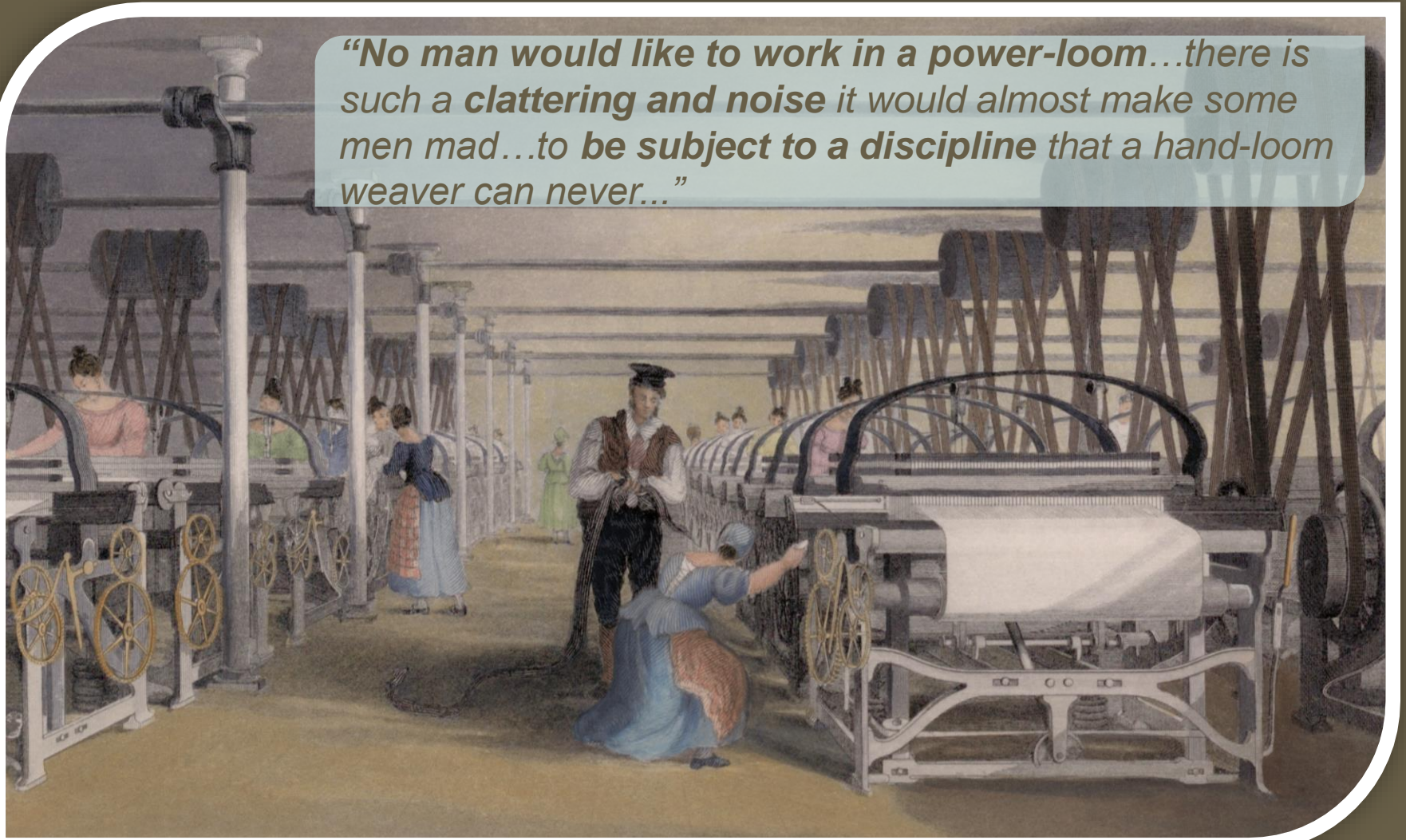Enslavers benefited; slavery intensified in the deep South

The Industrial Revolution:
Automation blues

In the early 19th 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.
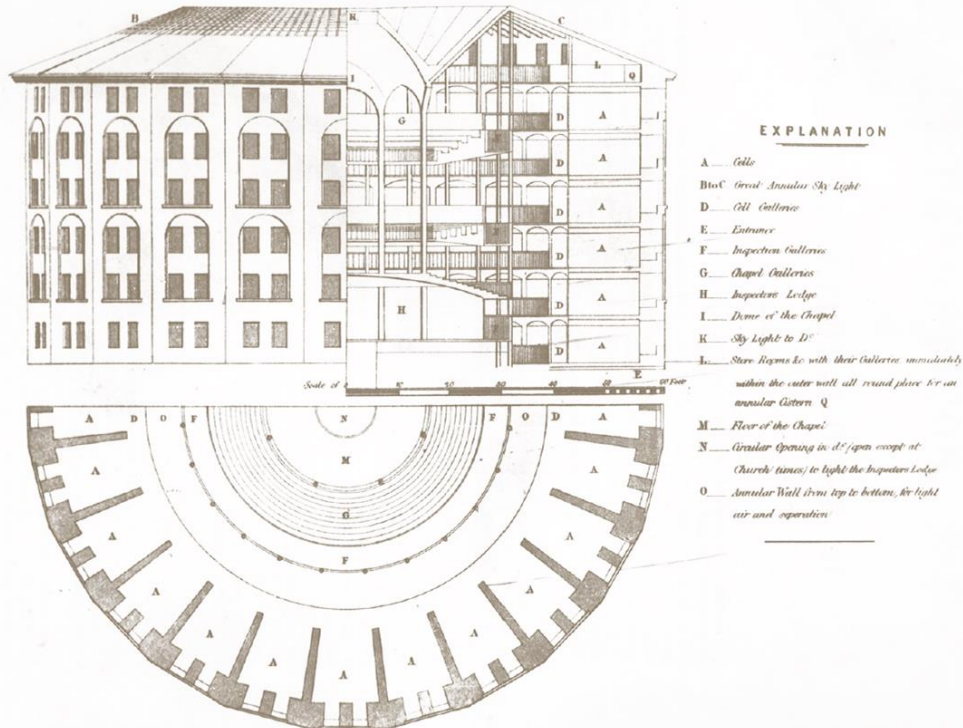
*"**No man would like to work in a power-loom**…there is such a **clattering and noise** it would almost make some men mad…to **be subject to a discipline** that a hand-loom weaver can never..."*

The Industrial Revolution:
Worker monitoring and worsening health

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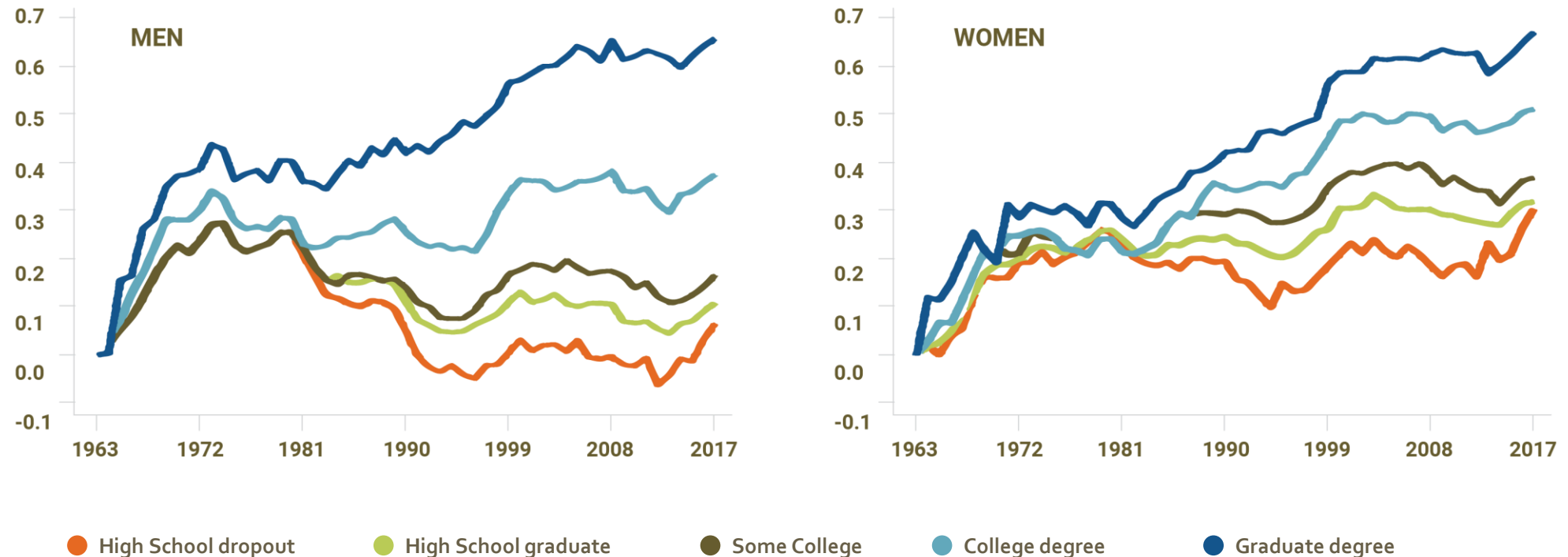As cities grew, disease and squalor abounded.

Worker monitoring: Jeremy Bentham's panopticon, 1791

City squalor: growth of industry worsened health, 1858
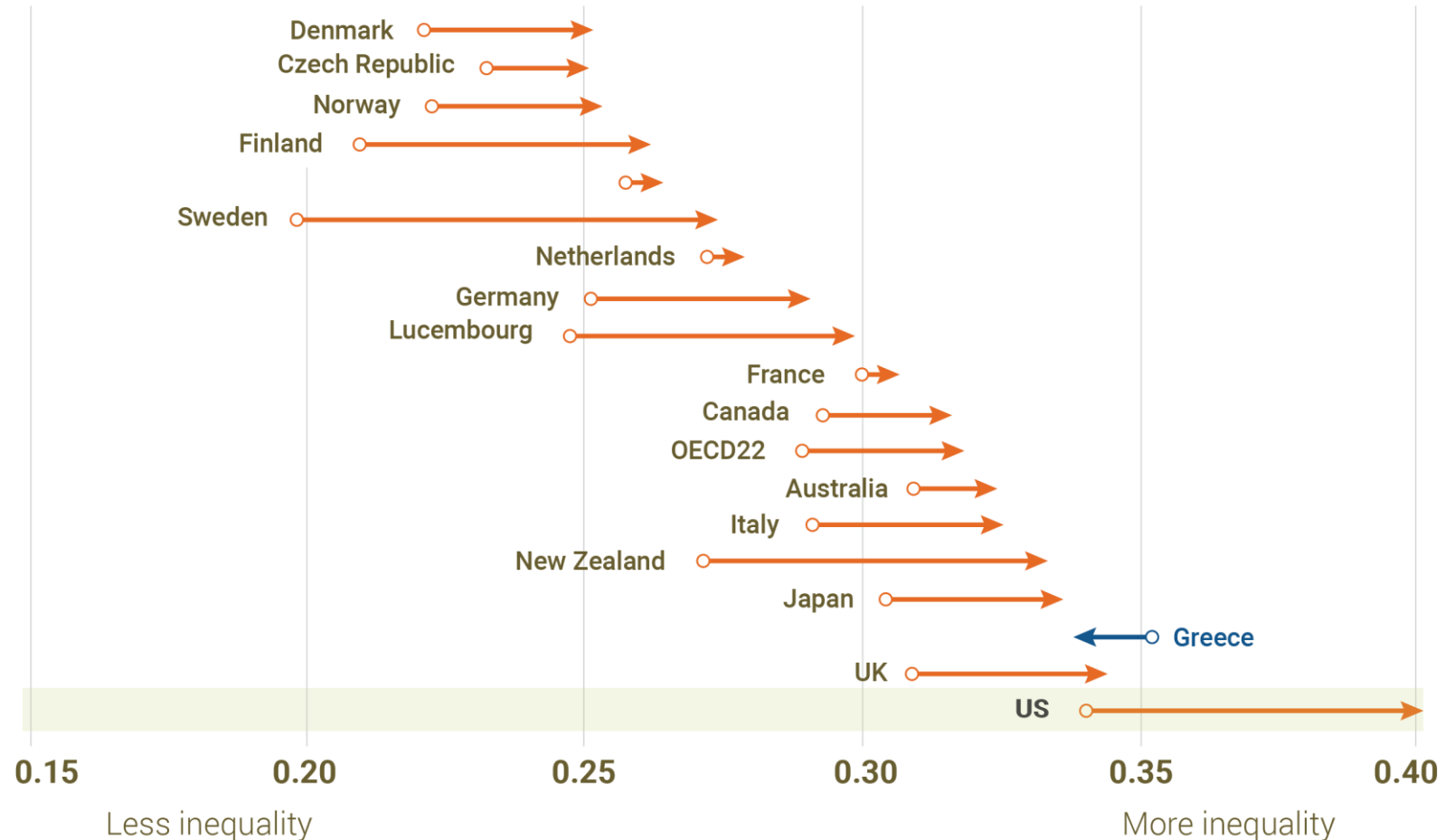
Modern times are different... right?

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

0.15 0.20 0.25 0.30 0.35 0.40

Less inequality   More inequality

Denmark
Czech Republic
Norway
Finland
Sweden
Netherlands
Germany
Lucembourg
France
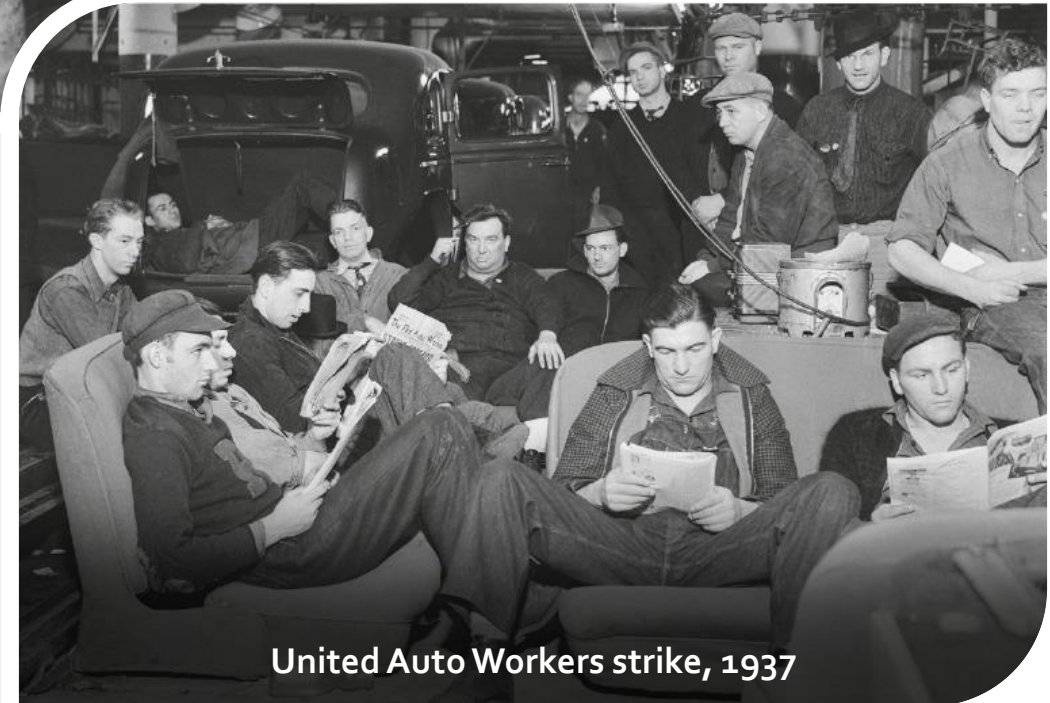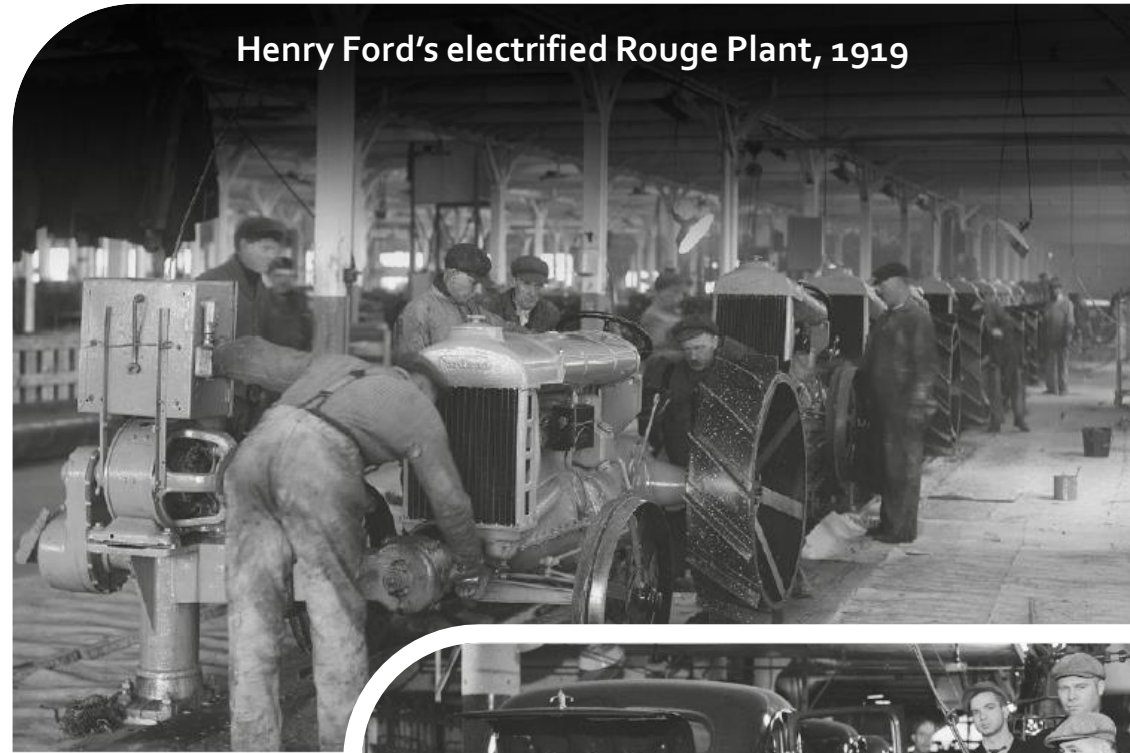Canada
OECD22
Australia
Italy
New Zealand
Japan
Greece
UK
US

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
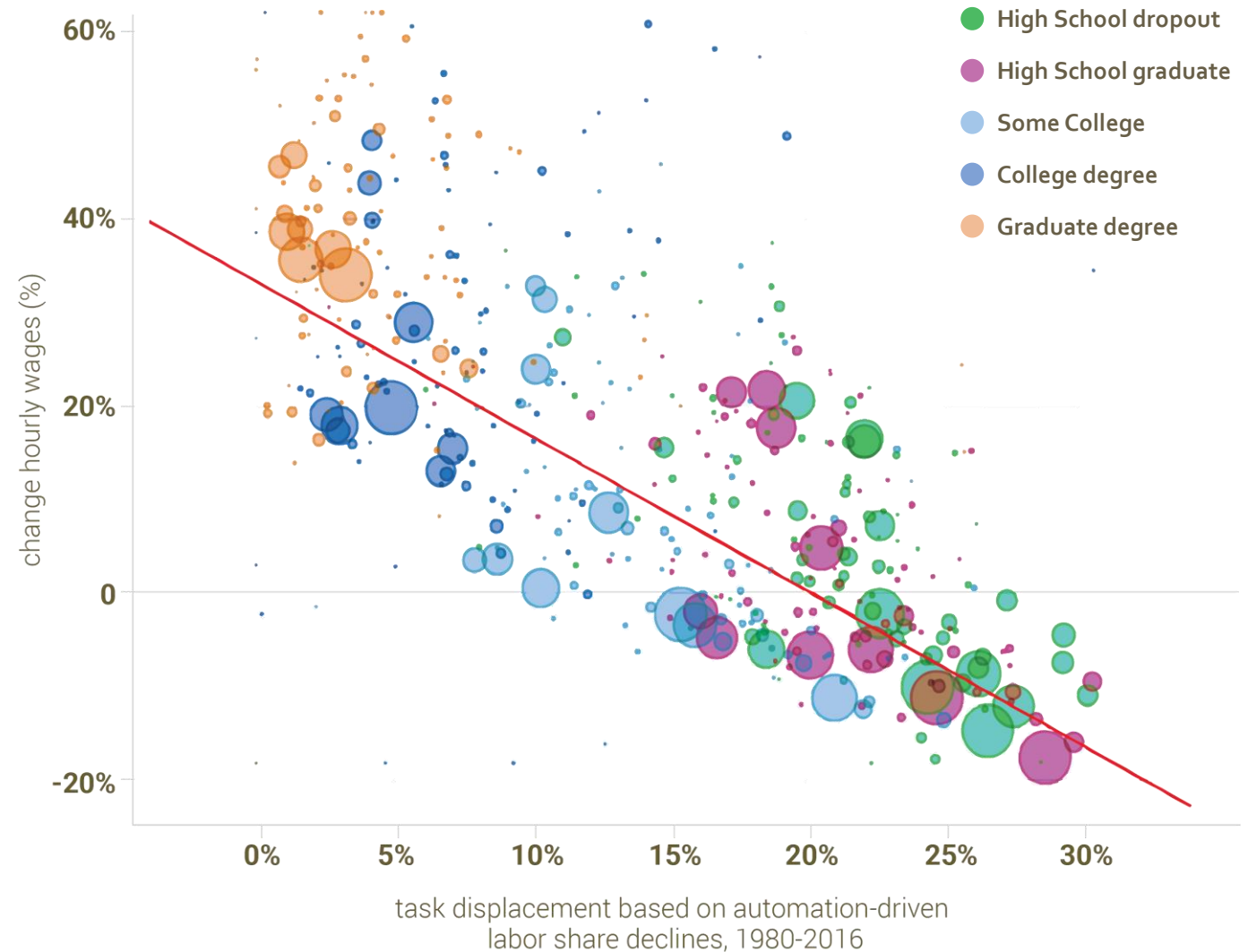
Why did things go wrong in the digital age?

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

task displacement based on automation-driven
labor share declines, 1980-2016

Legend:
- High School dropout
- High School graduate
- Some College
- College degree
- Graduate degree

y-axis: change hourly wages (%)

Source: Acemoglu, Daron and Pascual Restrepo. 2022. "Tasks, Automation, and the Rise in U.S. Wage Inequality." Econometrica, 90(5): 1973–2016.
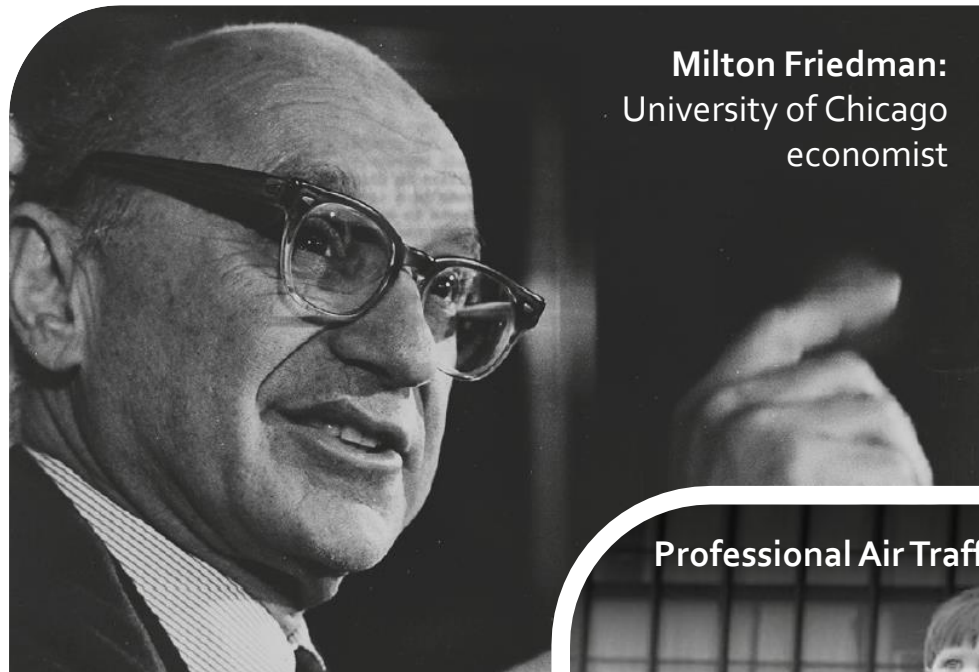
Why did things go wrong in the digital age?

2 *New corporate visions and erosion of worker power*

"The social responsibility of business is to increase its profits"

–Milton Friedman, 1970

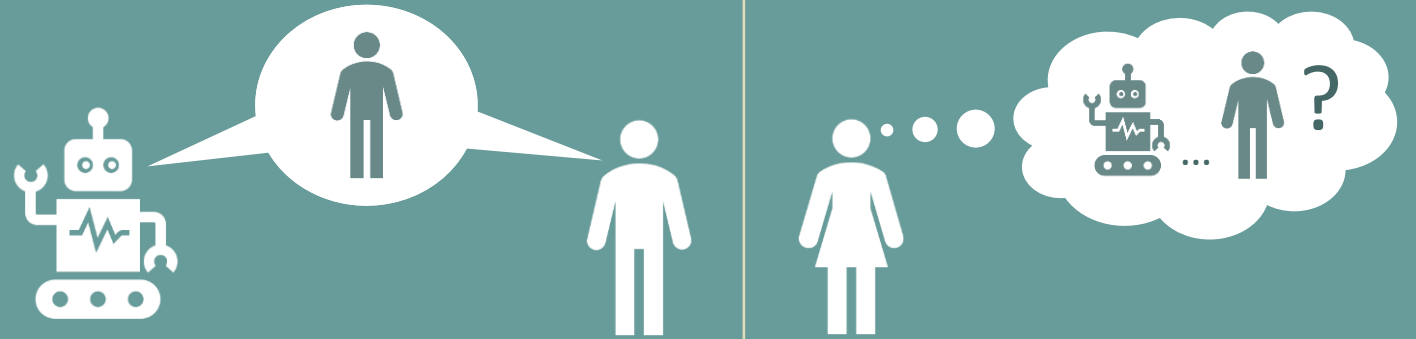**Milton Friedman:** University of Chicago economist

Professional Air Traffic Controllers strike, 1981
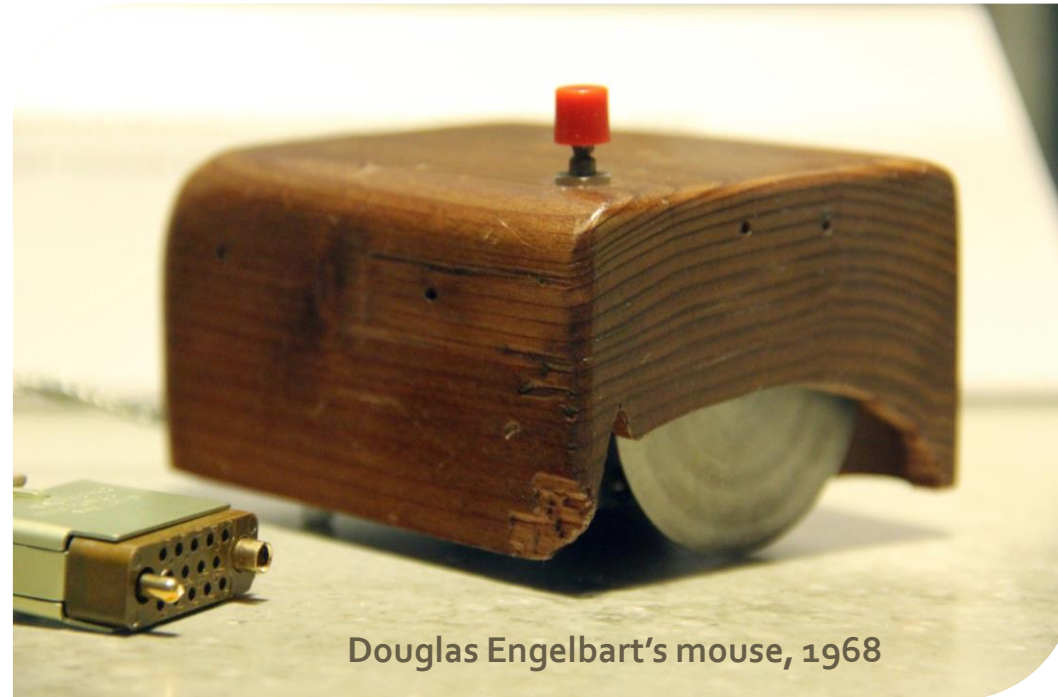
Can the age of AI be different?

The previous orthodoxy aimed for "machine intelligence".

It is much better to focus on "machine usefulness".

Is this technologically feasible? Likely to be the path pursued by the industry?

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.

"So-so automation" unlikely to deliver much productivity growth, but will still be disruptive and can massively contribute to inequality.

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.
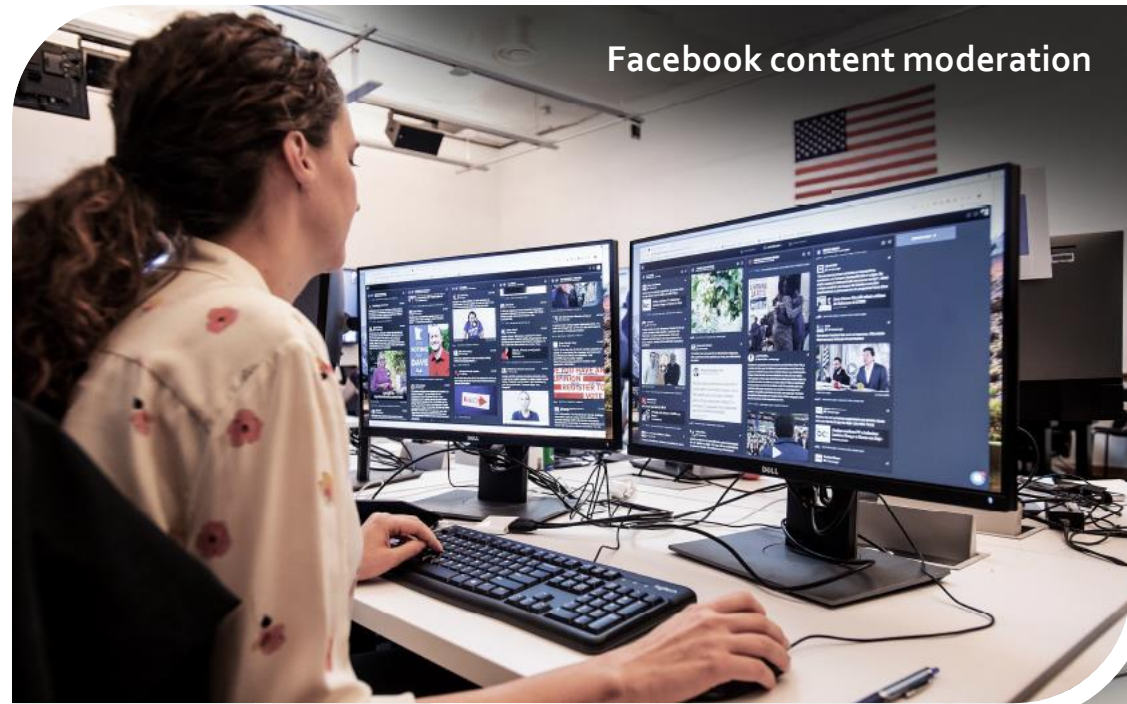
Surveillance is also intensifying

Similar trends in both authoritarian and democratic countries

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

Worse, as Hannah Arendt forsaw, real danger is: "nobody believes anything any longer"

Facebook content moderation

Chinese social credit score kiosk
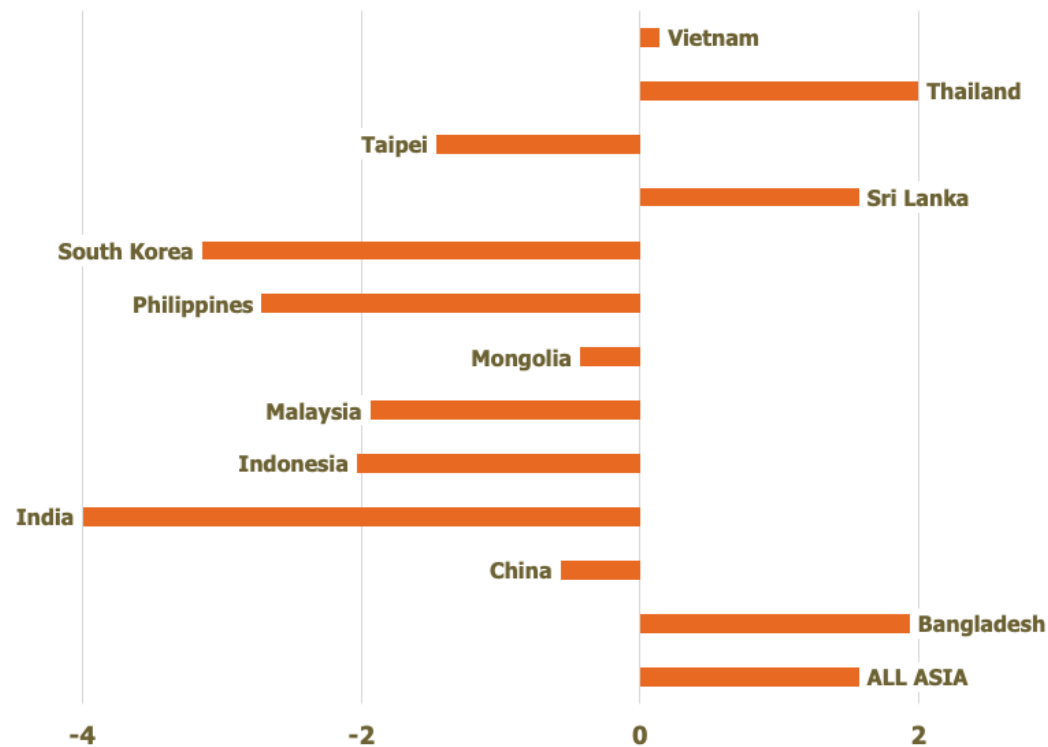
Implications for the emerging world

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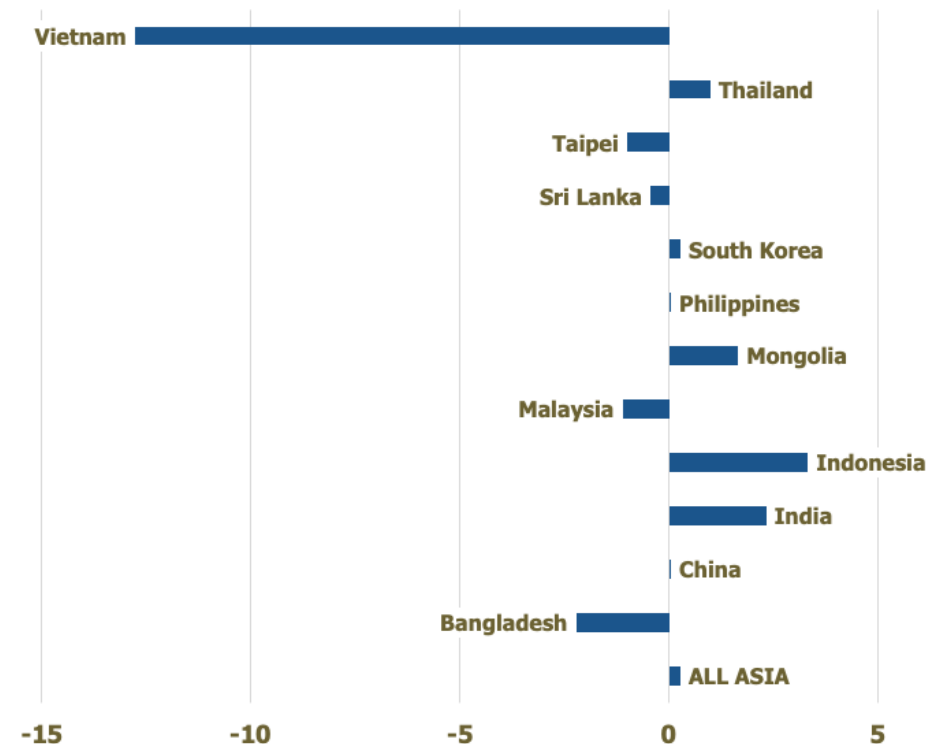Robotics and AI are changing the global division of labor and could displace workers, 2005-2015

The growth in "routine" versus "nonroutine" jobs
Percentage point differences

Manufacturing

Services

Own calculations with data from Asian Development Bank.

What can we do?

Change the narrative away from the hubris of techno-optimism
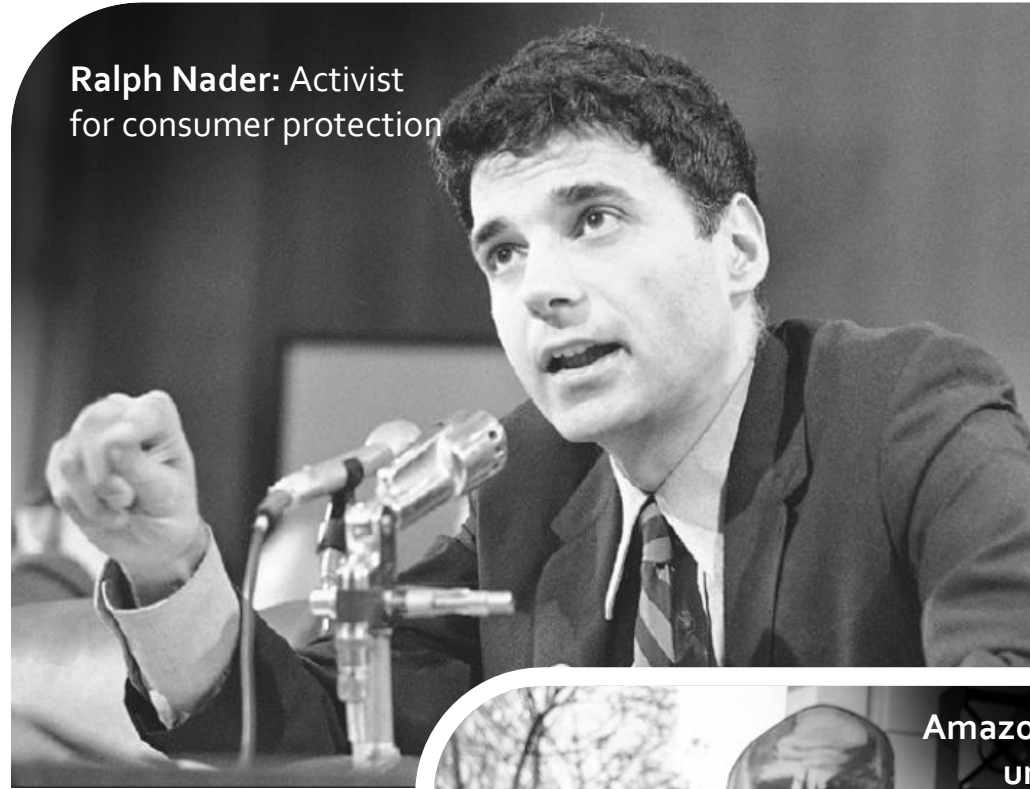

Sam Altman (OpenAI) and Elon Musk

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

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

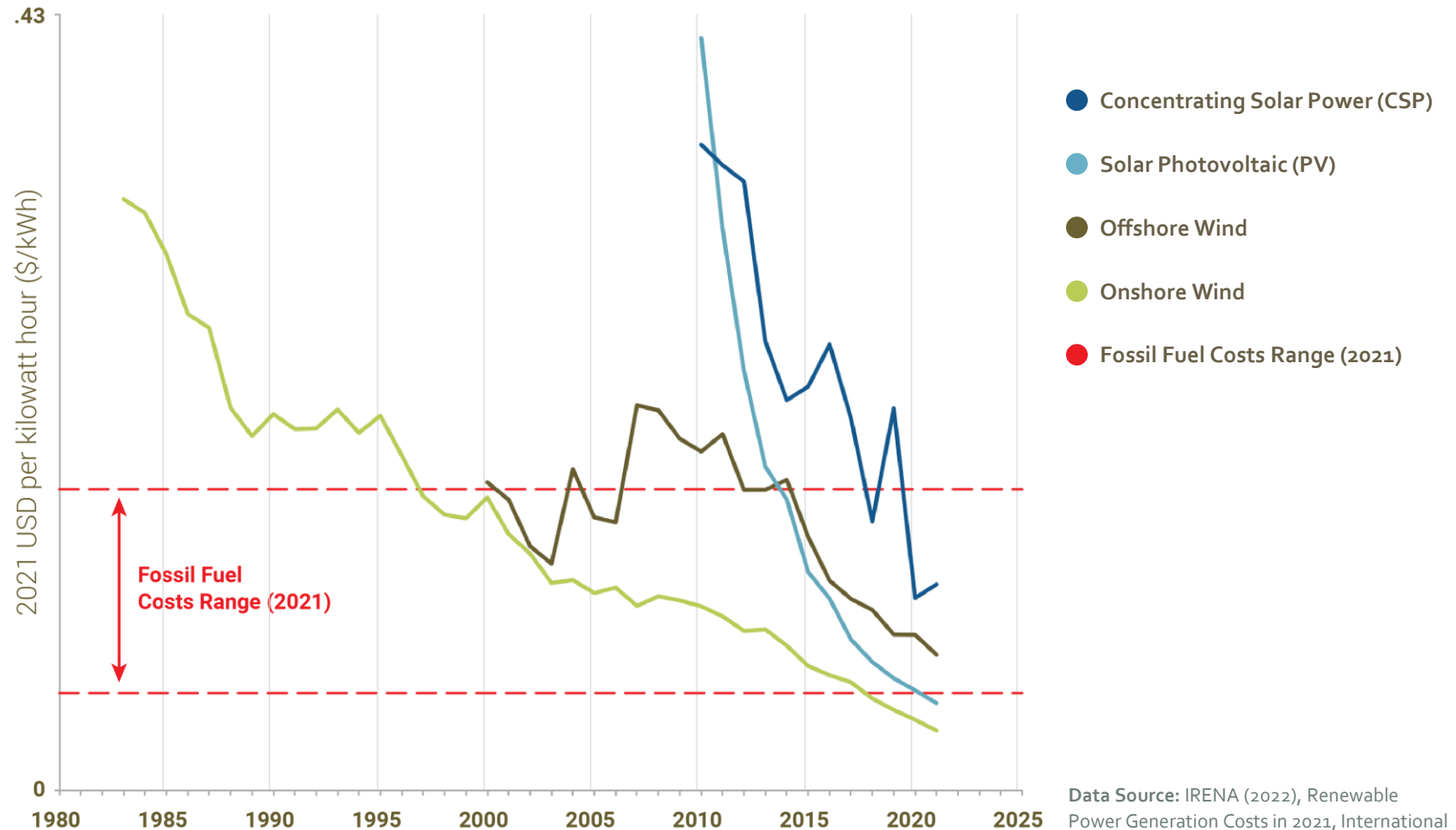> The public does not have to take what's being dished out…
>
> **COMPUTER POWER TO THE PEOPLE!**
>
> *DOWN WITH CYBERCRUD!"*

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