STONE CENTER | INEQUALITY & SHAPING THE FUTURE OF WORK

UK AI Initiatives: AI Economics Institute, Pro-Worker AI Adoption Prize, Tech Town

SIMON JOHNSON • MIT SLOAN • Personal views only

Disclaimers

- These slides convey just my personal views
  - They do not represent any aspect of UK government policy (other than what has already been announced/reported)
- This presentation does not attempt to summarize UK AI policy in its entirety
  - For government policy, see speeches by the relevant ministers (and accompanying official statements of detail)
- The examples here are illustrative and for discussion purposes
  - They are **not** intended to be comprehensive

What Impact Will Generative AI Have on Jobs (and Incomes)?

Over the next 20 years…

Two widely held views, supported by technology experts

1. **Techno-optimism:** productivity increases & scientific breakthroughs so large that no one needs to work again
   - Let the AI industry accelerate
   - Share gains through universal basic income, etc.
2. **Extreme techno-pessimism:** rapid automation will create mass unemployment, almost no one gets a job
   - Without boosting marginal productivity/wages by much

Or perhaps, over the medium term/policy horizon:

- US productivity growth remains on trend
- Job market polarizes further, and wealth/income gaps widen
- Global inequality increases within and across countries

But it doesn't have to be this way

- AI today offers a major choice: pro-worker, or not
- Who decides which path to take and on what basis?
- What policies could make a difference?

This image was generated using Midjourney AI

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"We Will All be Gods"... or, Good Jobs for Whom?

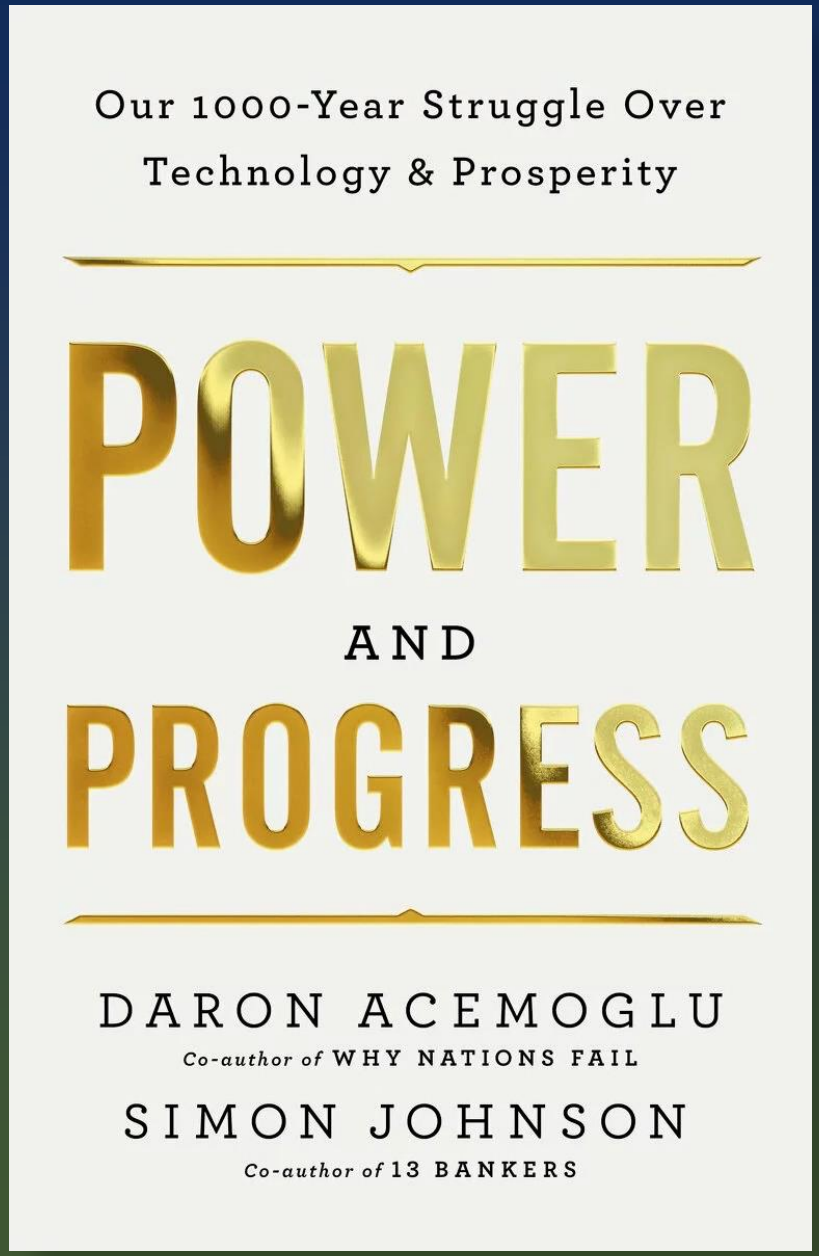
BASED ON ANALYSIS AND IDEAS FROM:

Power and Progress: Our Thousand-Year Struggle Over Technology & Prosperity

By Daron Acemoglu & Simon Johnson

With support from MIT's *Stone Center for Inequality and the Future of Work*, co-directed by Daron Acemoglu, David Autor, and Simon Johnson

Operating as part of Blueprint Labs, MIT Department of Economics



What Will AI Do? When? For Whom?

Policy Horizon: Next 5-10–20 Years…

It will displace labor through automation

- Replace workers with machines and algorithms, average productivity per worker increases
- But this does not necessarily increase wages (e.g., British Industrial Revolution, 1780–1840)

And create new tasks, requiring human expertise

- More than 60% of U.S. jobs in 2018 did not exist in 1940 (Autor et al., 2024)
- This new task creation process was fast enough to underpin shared prosperity, 1940–80
- **But since 1980, new task creation (for less educated workers) has not kept up with the loss of good jobs due to automation**

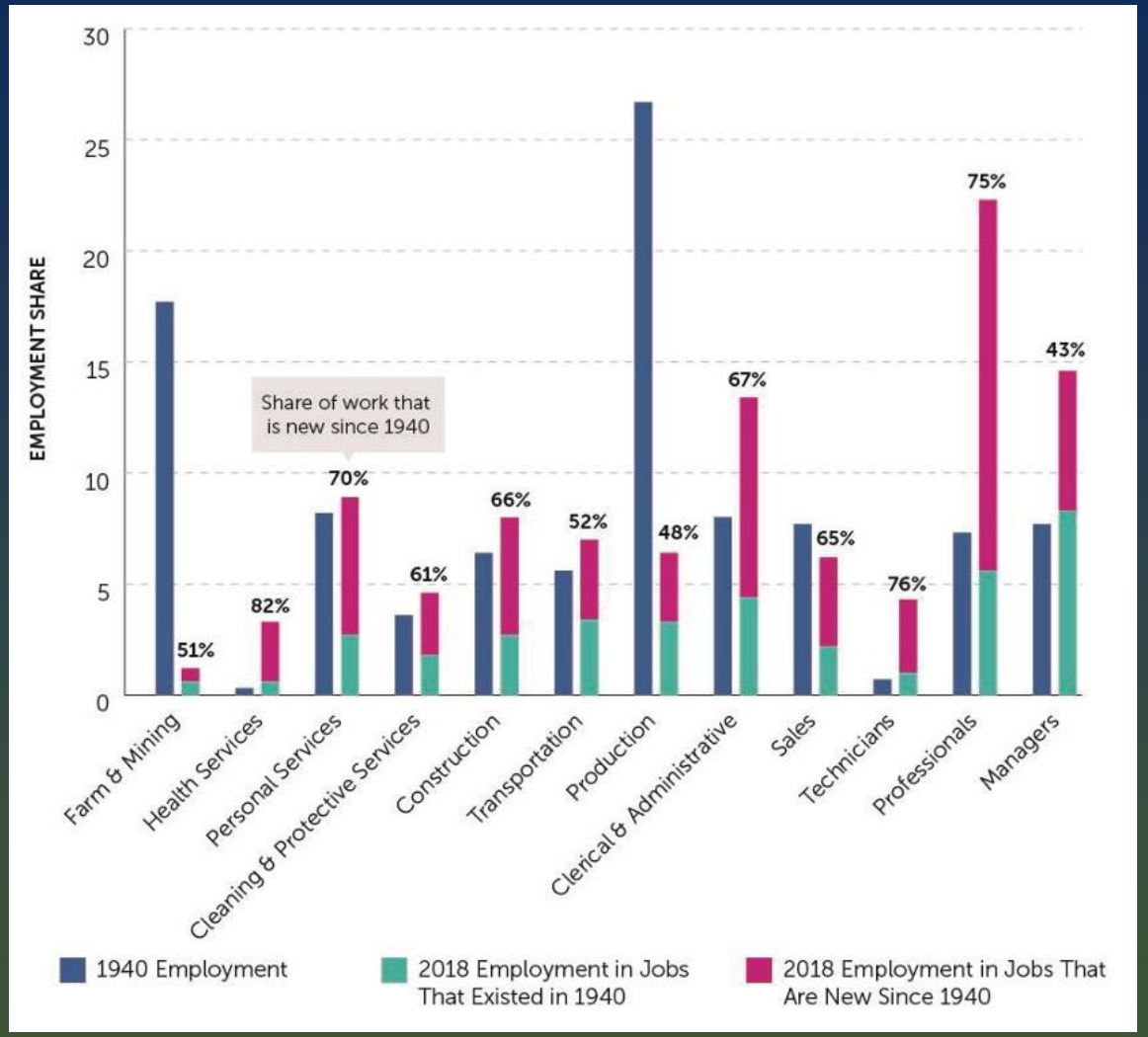


Exhibit from Autor, David. (2022). "The Labor Market Impacts of Technological Change: From Unbridled Enthusiasm to Qualified Optimism to Vast Uncertainty." NBER Working Paper No. 30074.

UK AI Economics Institute

- Situated at the heart of government, from spring 2026
  - Originally under Department for Science, Innovation and Technology (DSIT) and UK Treasury -> …
  - Adjacent (metaphorically) to AI Security Institute: https://www.aisi.gov.uk/, established 2023/2025
- Access to data from across government + private sector
  - Data agreements already in place, with strong privacy protections
- Goal: provide the most accurate economic analysis available, with all appropriate caveats
  - Advising policymakers, not making policy
- Open to all conversations with academia, government, and private sector
  - Aiming to hire specialist staff, e.g., post-doctoral fellows
- Focus on the UK, but tracking the global conversation (and all relevant evidence)
  - Including on international division of labor, positioning of British economy (science investments, etc.)
- Also important:
  - Not trying to duplicate work being done by others (although we will want to replicate…)
  - Not aiming to step into the space occupied by other officials, e.g., central banks

Analytical Example: Which Path are We On? Macroeconomic Forecasts Regarding AI Impact (US and Global)…

Technical Debate About Specific Growth Assumptions

- Task exposure may be lower than anticipated, or work automation may not be worthwhile (in terms of output/quality)
- Cost savings and process improvement may be slow, with underwhelming aggregate impact
- Freed-up labor may not be productively reemployed (see decline in male labor force participation in US since Global Financial Crisis, 2008)
- Using task-level estimates of exposure and productivity gains, Acemoglu (2024) projects a "modest" 0.66% increase in total factor productivity over 10 years (increase in annual productivity growth rate of 0.06%); lower if consider hard to learn tasks…

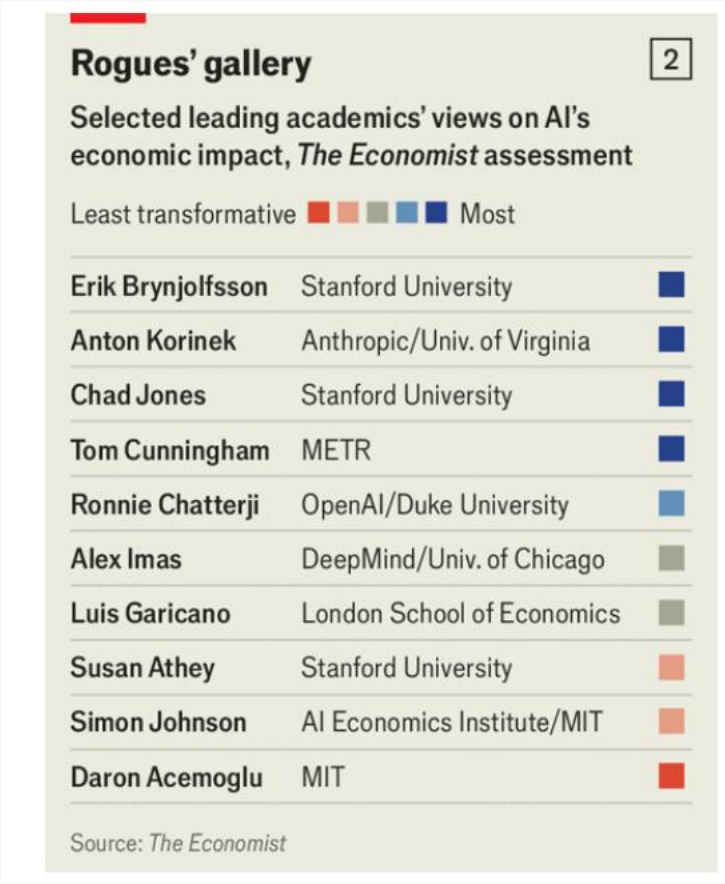
Among Experts, Widely Divergent Views on Likely Outcomes

- AI and generative AI could be incremental technologies in macroeconomic terms
- Displacement effects could mean further reductions in the labor share of income and lost opportunities for people with "basic cognitive skills"
- *OR:* AI transforms science, accelerates progress, takes over creation of further AI

> *"You can see the computer age everywhere but in the productivity statistics."*
>
> Robert Solow,
> 1987 Nobel Prize in Economics

> *AI is just that new thing that's going to get us that 1% to 1.5% productivity growth that we've been getting for decades…"*
>
> John Williams,
> President of the New York Fed

One Way to Compare Views...



Rogues' gallery

2

Selected leading academics' views on AI's economic impact, *The Economist* assessment

Least transformative ■ ■ ■ ■ ■ Most

Erik Brynjolfsson	Stanford University	■
Anton Korinek	Anthropic/Univ. of Virginia	■
Chad Jones	Stanford University	■
Tom Cunningham	METR	■
Ronnie Chatterji	OpenAI/Duke University	■
Alex Imas	DeepMind/Univ. of Chicago	■
Luis Garicano	London School of Economics	■
Susan Athey	Stanford University	■
Simon Johnson	AI Economics Institute/MIT	■
Daron Acemoglu	MIT	■

Source: *The Economist*

One potential way to think about comparisons and to potentially update any baseline view (this is an MIT project, not official work of any kind)

Labor Market Consequences of Technological Change

WHAT INPUTS DETERMINE GROWTH DUE TO AI

Preliminary Draft Stone Center

Acemoglu and Aghion & Bunel use the same formula yet different assumptions lead to TFP estimates 10 times apart

Acemoglu (2024) and Aghion & Bunel (2024) use the same framework to calculate TFP, yet three inputs differ substantially.

PUBLISHED VALUES

The two sets, side by side

COMPONENT	ACEMOGLU	AGHION & BUNEL	RATIO
GDP share of exposed tasks	20%	60%	3.0×
Share profitable to automate	23%	50%	2.2×
Average cost savings	27%	40%	1.5×
AI-exposure-adjusted labor share	53.5%	57%	1.07×
Resulting TFP gain	0.07pp/yr	0.68pp/yr	≈10×

Reminder: this is an illustrative MIT project, not official work of any kind

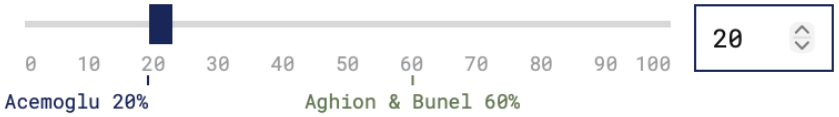
Use your own values to calculate TFP growth from AI within the next 10 years

The dials below can be set at Acemoglu's, Aghion & Bunel's, or your own values.

TFP gain = 20.0% × 23.0% × 27.0% × 53.5% = 0.66%

GDP share of exposed tasks — 20.0%

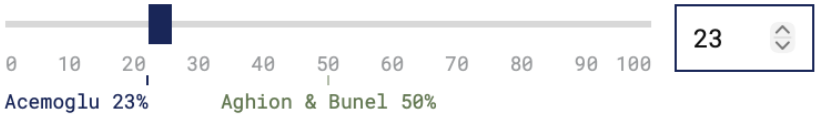
How do we measure an occupation's exposure to AI?



+ HOW EACH ECONOMIST GETS THERE

Share profitable to automate — 23.0%

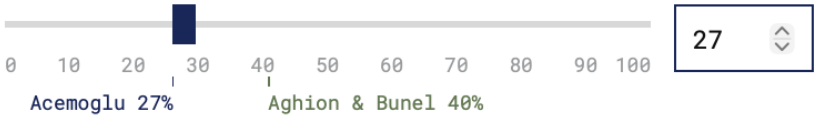
How many tasks are worth automating?



+ HOW EACH ECONOMIST GETS THERE

Average cost savings — 27.0%

How much does AI save in labor costs?

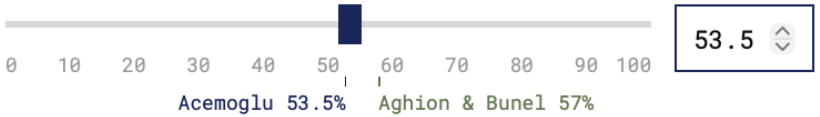


+ WHERE DOES THIS NUMBER COME FROM?

+ HOW EACH ECONOMIST GETS THERE

AI-exposure-adjusted labor share — 53.5%

How do labor cost savings become overall cost savings?



+ HOW EACH ECONOMIST GETS THERE

Average cost savings

27.0%

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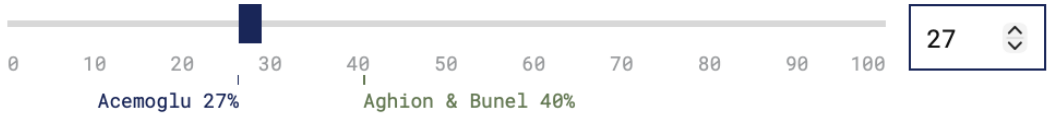


27

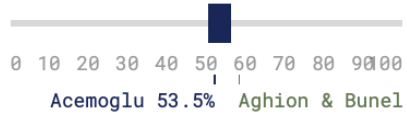
-WHERE DOES THIS NUMBER COME FROM?

	STUDY	VALUE	USED BY	ARTICLE
☑	**Noy and Zhang (2023)** Writing tasks assisted with Chat GPT	40% speed	Acemoglu A&B PWBM	Link →
☑	**Brynjolfsson et al. (2023)** Customer support agents assisted with generative AI tool 14% headline 25% three months post-deployment	14% Issue resolution rate	Acemoglu A&B PWBM OECD	Link →
☐	**Peng et al. (2023)** Software developers implementing HTTP servers assisted with AI pair programmer	56% speed	A&B PWBM	Link →
☐	**Cui et al. (2025)** Software developers using AI-based coding assistant	26% Task completion rate	PWBM	Link →
☐	**Dell'Acqua et al. (2023)** Consultants using GPT-4 to complete tasks 12% more tasks completed 25% quicker completion	12% Task completion rate	PWBM OECD	Link →

AI-exposure-adjusted labor share

53.5%

How do labor cost savings become overall cost savings?



53.5

-HOW EACH ECONOMIST GETS THERE

ACEMOGLU

53.5%

Industry-level AI exposure estimates from Eloundou et al. (2024) combined with industry labor shares from BEA.

AGHION & BUNEL

57%

Value comes from Acemoglu's April 2024.

KEY DIFFERENCE

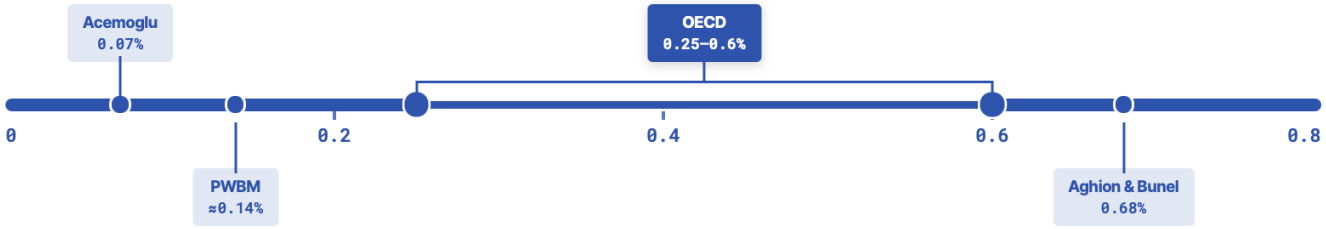
No difference in methodology, Aghion & Bunel uses value from Acemoglu's April draft.

BEYOND ACEMOGLU AND AGHION & BUNEL

How does the rest of the field predict annual growth due to AI?

The two estimates above are part of a growing field of literature. Select growth metrics below to see how other studies predict AI will change the economy. We are updating this page as new studies take place.

Total Factor Productivity | Labor Productivity | GDP Growth | Other Measures of Growth



BASELINE	+	OECD	=	IMPLIED ANNUAL TFP GROWTH
0.89%		0.25–0.6 pp		1.14–1.49%

Baseline is weighted average calculated from 2026 BLS News Release Table A.

OECD

"Miracle or Myth?", Filippucci, Gal & Schief (2024).

0.25–0.6pp per year

OECD researchers calculate sector-level productivity gains using a similar formula to Acemoglu and Aghion & Bunel, yet apply a sectoral productivity growth framework that takes into account micro-level worker gains × AI exposure × AI adoption rate. The sector-specific AI exposure index is based on Eloundou et al.'s rate, ranging from 12–50%. Average cost savings come from three randomized control trials measuring "performance improvement observed after the adoption of AI in a range of activities." Furthermore, they add a high and low adoption rate — 23% and 40% — based on the adoption rates of other technologies. Sectoral gains are then aggregated through a theoretical model capturing input-output linkages and sectoral reallocation as relative prices change.

Link to Article →

BEYOND ACEMOGLU AND AGHION & BUNEL

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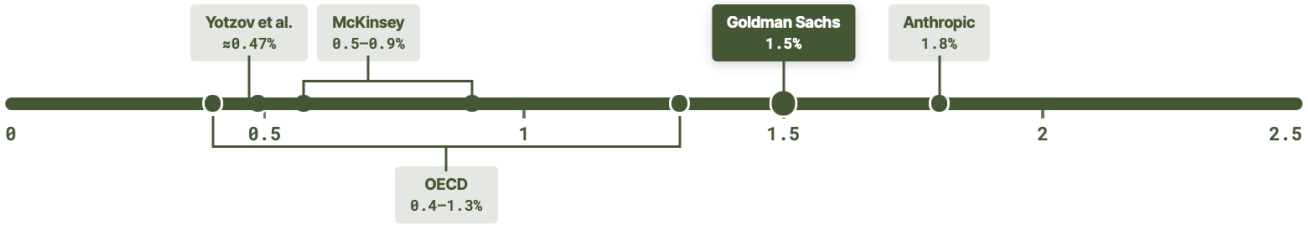


BASELINE	+	GOLDMAN SACHS	=	IMPLIED ANNUAL LABOR PRODUCTIVITY GROWTH
2.0%		1.5 pp		3.50%

Baseline is weighted average calculated from 2026 BLS News Release Table A.

Goldman Sachs

The Potentially Large Effects of AI on Economic Growth, Briggs & Kodnani (2023).

`1.5pp per year, labor productivity`

Researchers classify 13 work activities from O*NET database as exposed to automation and assume AI can complete tasks up to a difficulty of 4 on the O*NET level scale. They weigh tasks by importance and complexity by occupation and estimate the percentage of a job AI has the potential to replace. Estimates are then weighed by the employment share of each occupation in the US Occupational Employment and wage survey and aggregated to the industry level.

AI raises productivity through two channels — workers whose jobs are partially exposed to AI will dedicate time to higher value tasks and workers whose jobs are fully automated by AI will be reemployed. The researchers find that 63% of employment is complemented and 7% is substituted by AI. By summing up these effects, researchers find that AI could raise overall labor productivity growth by around 1.5pp/year.

Link to Article →

OTHER CONSIDERATIONS

ACEMOGLU'S VARIANTS

0.66%	0.89%	0.90%	0.53%
BASELINE	INCLUDING PENG ET AL.	INCLUDING COST DECLINE SCENARIOS	HARD-TO-LEARN TASKS

0.66% → **0.53%** -0.13%

By recognizing the slower productivity gains from hard tasks exposed to AI, TFP growth drops.

AGHION & BUNEL'S INPUT INTERVALS

6.8%	18.5–68%	23–80%	27–40%
MEDIAN INTERVAL	SHARE OF GDP EXPOSED	SHARE PROFITABLE TO AUTOMATE	AVERAGE COST SAVINGS

CONTRIBUTE

Know an estimate we're missing?

Send us a study and we will consider it for the number line above. Only the first two fields are required.

STUDY OR AUTHOR REQUIRED

e.g. Filippucci et al. (2026)

LINK REQUIRED

https://

ESTIMATE OPTIONAL

e.g. 0.4pp per year, TFP

YOUR EMAIL OPTIONAL

So we can follow up

NOTES OPTIONAL

What does it measure, and how was it derived?

Submit estimate

Hamilton Project, Brookings Institution, February 2026

Building Pro-Worker Artificial Intelligence

Daron Acemoglu, David Autor, and Simon Johnson

TABLE 1

Types of technologies and their labor market consequences

	Example technology	Labor productivity	Value of human expertise	Change in labor's share of national income	Pro-worker?
1. **Labor-augmenting technologies**	Electric cable stripper replaces hand stripper	+ More output per hour	+/- Expertise more relevant/useful, but higher output could lower price.	≈ 0 No task reallocation	Ambiguous
2. **Capital-augmenting technologies**	Ligher, faster electric cable stripper	+ More output per hour	+/- Expertise more relevant/useful, but higher output could lower price.	≈ 0 No task reallocation	Ambiguous
3. **Automation technologies**	Cable installing robot	+ More output per hour	- Existing expertise made obsolete.	- Fewer tasks done by labor, more by capital	Not pro-worker
4. **New task-creating technologies**	Ethernet, fiber optics, occupancy sensing	+ More output per hour	+ New expertise needed.	+ More tasks done by labor, fewer by capital	Unambiguously pro-worker
5. **Expertise-leveling technologies**	Blood oximeter	+	+/- Entrants benefit. Incumbent expertise potentially devalued.	+/- Ambiguous due to offsetting effects	Ambiguous

Source: Authors' analysis.

THE HAMILTON PROJECT

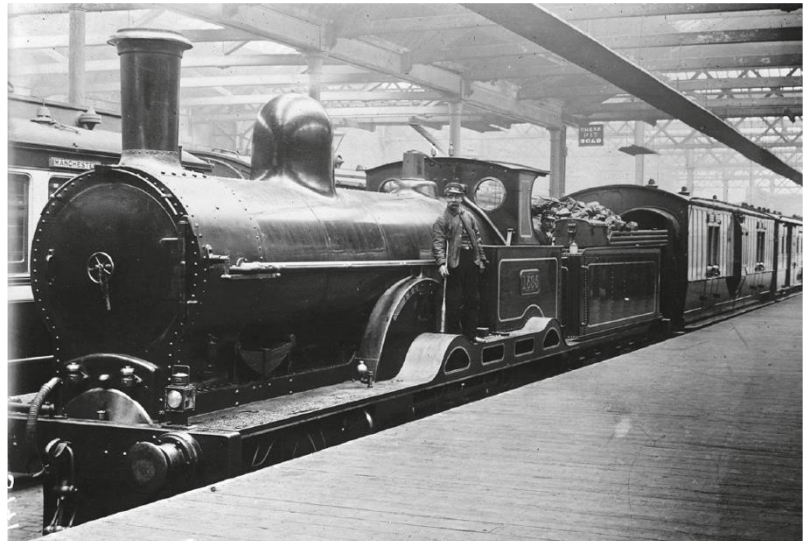
BROOKINGS

When the Productivity Bandwagon Delivered Shared Prosperity in History:

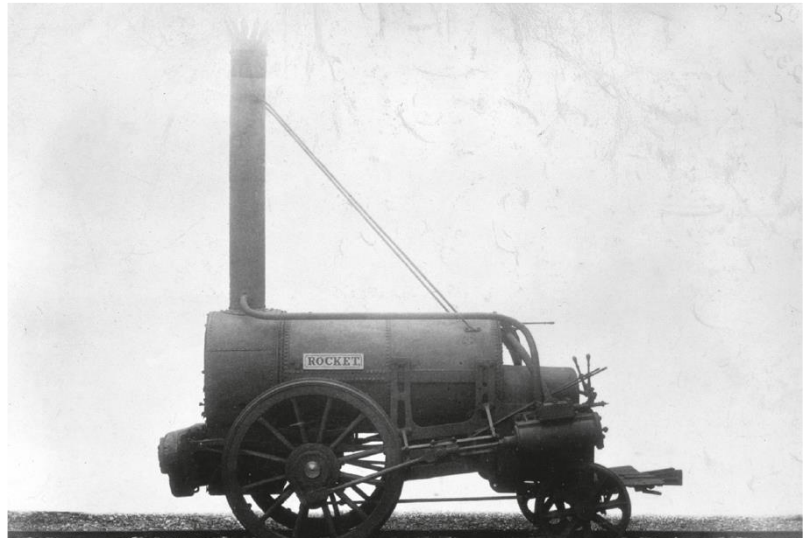
Railways, Cross-Sectoral Impact, and New Tasks

Many new tasks requiring expertise (UK, US, elsewhere)

- In the 1800s, engineers emerged from skilled craftspeople/artisans ("tinkerers" – Joel Mokyr)
- Among their accomplishments: improved steam engines, locomotives, and building the new railways
- These created new, high-skill, high-pay jobs needing expertise
  - e.g., engine drivers, firemen, signal operators, ticket sales)
- Importantly, **railroads had many uses and affected tasks across a broad cross-section of the economy**, including goods and commerce, travel and tourism…
- These new tasks required expertise acquired through practical experience, raising the market value of work that could be done by people without (much) formal education
- **Science arrives to boost productivity** in late 19th century
  - With a further government-funded acceleration from 1940



Archimedes Passenger Train, Euston Station, 1880s



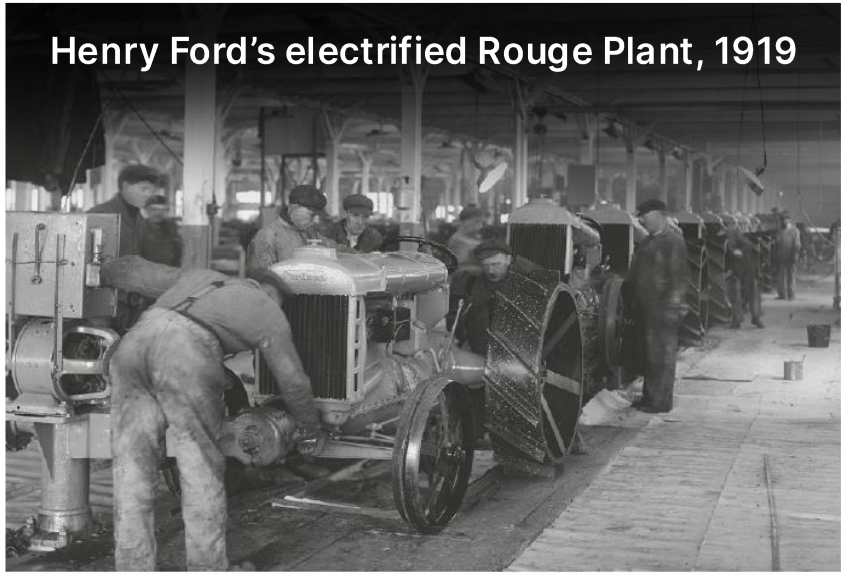
George Stephenson's *Rocket*, 1829

When the Productivity Bandwagon Delivered Shared Prosperity in History:

New Tasks and Worker Power

Lessons from the US automobile industry, 1900-1929

- Automation, but electrification and the modern factory dramatically boosted marginal worker productivity in new tasks that required expertise
- Big increase in demand for labor, at the same time as automate core parts of assembly line
  - Employment: ~20,000 -> 300,000
  - Annual auto production: ~20,000 -> 3 million
- Labor organizations became stronger, bolstering sharing of productivity gains and worker voice
  - Fight for representation and to share in gains from higher productivity
- National security implications: quickly switch manufacturing capacity into aircraft engines, military vehicles from 1941…
- From a stock of 6 aircraft carriers in December 1941, to producing 1 carrier per month in early 1945



Henry Ford's electrified Rouge Plant, 1919

United Auto Workers strike, 1937

UK Pro-Worker AI Adoption Prize (Nominations Close Soon!)

- Aiming to encourage the adoption of pro-worker AI…
  - By rewarding (recognizing) companies that found some version of this way forward
- Prize will be awarded later this year
  - Companies (and others) can nominate themselves
  - Expert panel of judges, including representatives from across society
- The prize
  - Recognition by the UK government, for a long list of companies
  - For the top three: business cases will be written up by leading UK academics
    - Attempting to create role models
    - Case writing will be funded by the Hewlett Foundation (thank you!)
- Emphasizing there is a lot to learn about AI innovation (cf. Hayek)

Tech Town Initiative

- In the spirit of Grand Challenges (e.g., DARPA/self-driving vehicles)
- Focus on one town in the North of England: Barnsley
  - A well-run mid-sized city, former coal mining community
  - With a well defined/agreed issue: shorter healthy lives than elsewhere
- What interventions can made a difference?
  - Technology, adoption behavior
- And can those results be replicated elsewhere? With what AI?
  - Healthcare delivery (National Health Service +)
  - Empowerment of local people
  - Role of trusted government

Choosing a Pro-Worker Path for AI

Areas with potential for consensus

- **Grand Challenges for** education, healthcare, consumer protections/choice
- Standards for workplace surveillance: safety vs. privacy
- AI help to deliver better service, all levels of government

What else is needed

- Robust funding for “breakthrough science”
- Strengthen REGIONAL competitive advantages of knowledge-based services (including biotech, strong export sectors)
- Support national security: ability to develop and apply full stack of technology (e.g., drones)

And support democracy

- Against misinformation and disinformation
- Issues of surveillance, control, manipulation

See also, Acemoglu, Daron, David Autor and Simon Johnson. (2023). “Can We Have Pro-Worker AI? Choosing a Path of Machines in Service of Minds.” MIT Shaping the Future of Work Initiative, policy memo.

Our 1000-Year Struggle Over Technology & Prosperity

POWER AND PROGRESS

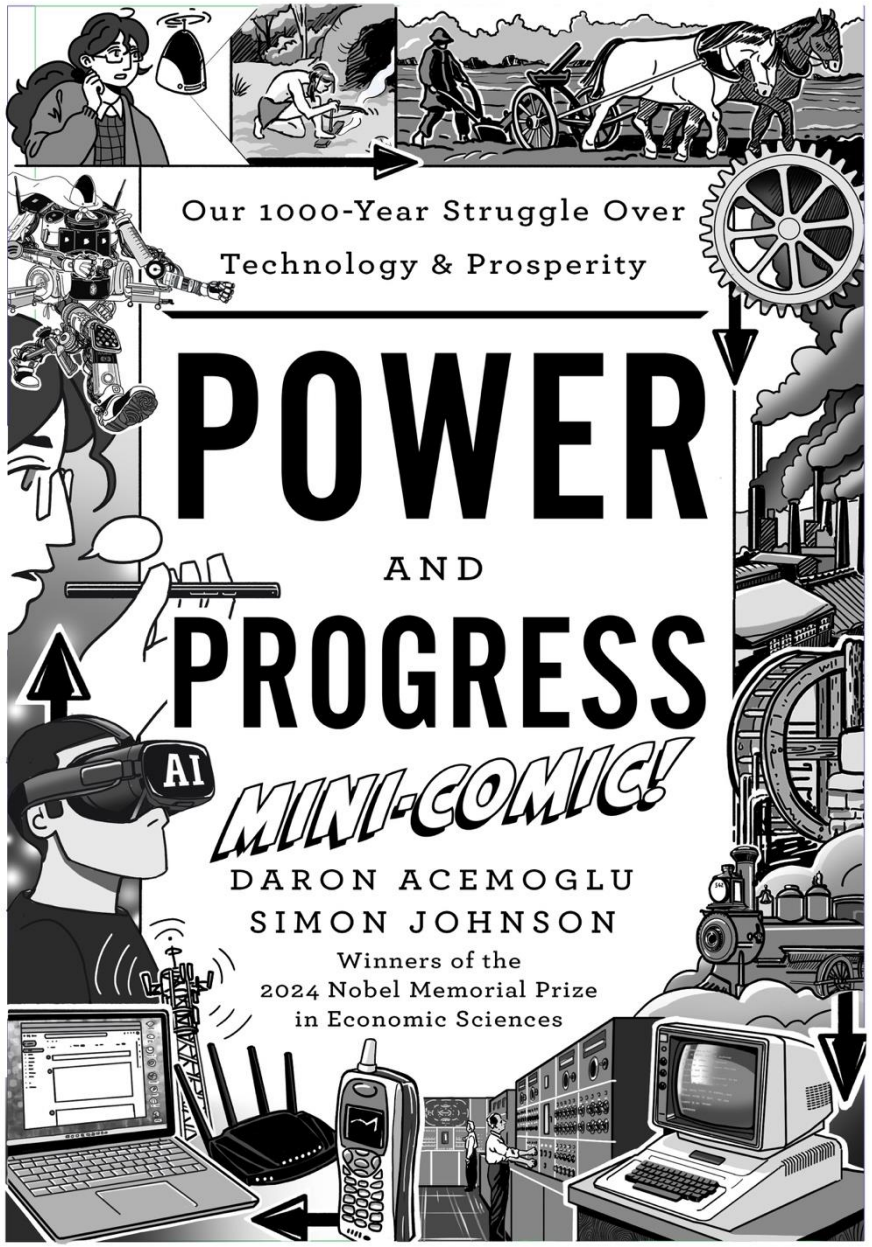
DARON ACEMOGLU
Co-author of WHY NATIONS FAIL

SIMON JOHNSON
Co-author of 13 BANKERS

Longlist, Baillie Gifford Prize for Non-Fiction

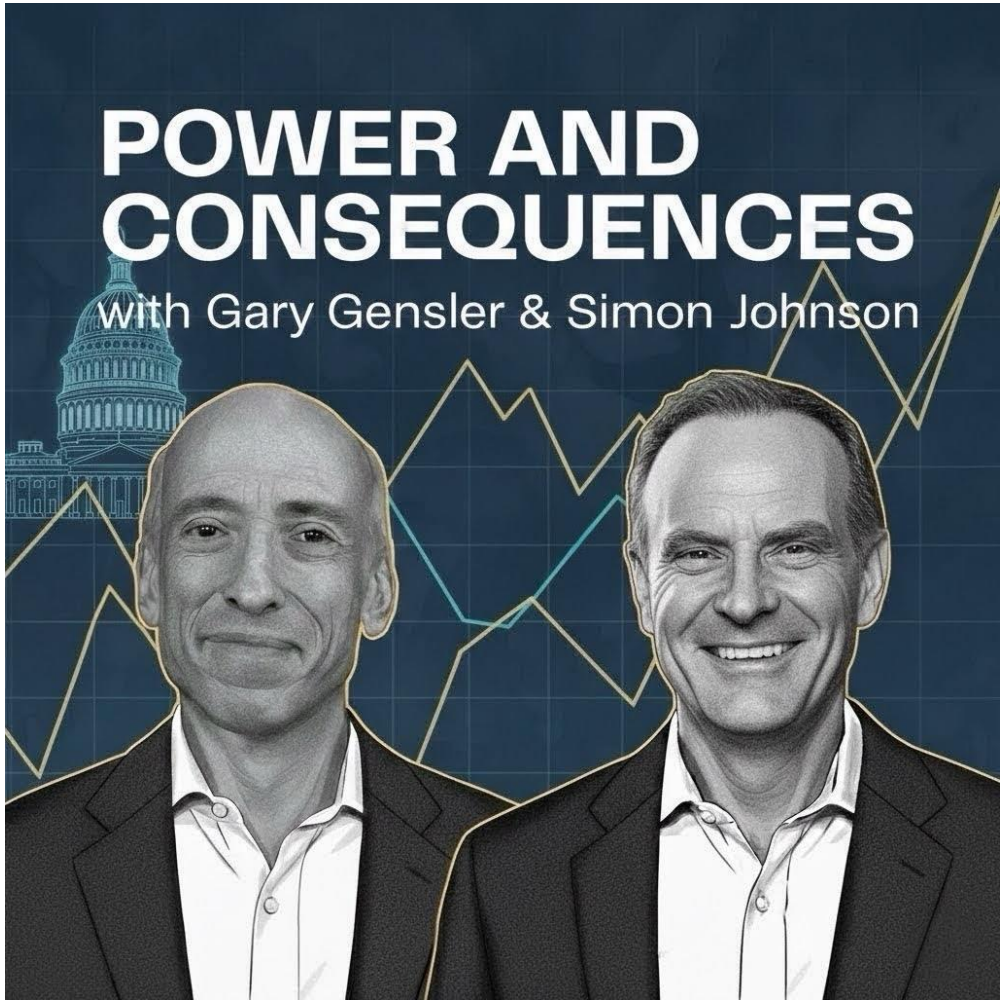
Shortlist, 2024 Lionel Gelber Prize

...and featured on reading lists from *Forbes*, *Bloomberg*, McKinsey, *Financial Times*, MIT Sloan, and *Project Syndicate*



Pro-Worker AI

For weekly discussions of these and related issues: “Power and Consequences”



Substack: Power and Consequences
Also on YouTube: @PowerConsequences
And wherever you get your podcasts

Finally, on a personal note:

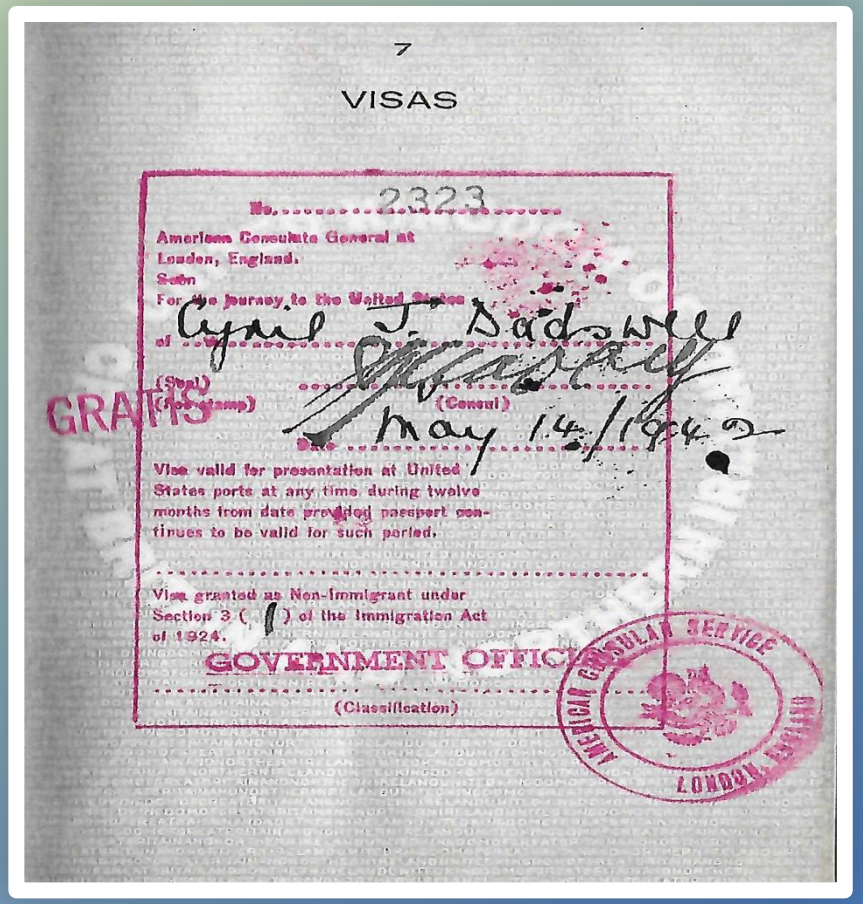
A page from Cyril Dadswell's passport, United States Visa, issued May 14, 1942

British steel executive, on technical mission

(Passport now in the Nobel Prize Museum)

1940-45: Scientific and technological leadership passed from Europe to the United States, never (yet) to return

Could the UK now develop/adopt technology in ways that could inform policy choices in the United States?



Cyril Dadswell's Passport, US Visa, May 14, 1942

With great power over technology comes great responsibility...