Democratic control of the means of prediction. Discussion of Daron Acemoglu

Maximilian Kasy

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Introduction

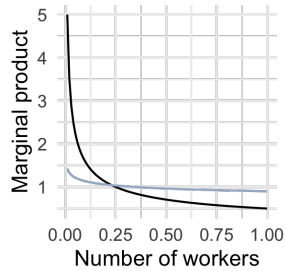
- Daron argues:
  1. Technical progress generates winners and losers.
  2. The direction of technical progress depends on social decisions.
  3. Democratic control is necessary to ensure broadly beneficial decisions.
- I strongly agree, and aim to elaborate.
  - Daron's talk: AI as (generic) production technology.
  - Here: AI as automated decisionmaking.
- Political economy of AI:
  - AI is optimization of a reward, based on data.
  - Who defines the reward, owns the data, does the optimization?
  - We need democratic control of each of these "means of prediction!"

AI as production technology

- Production function framework:
  - Total output is a function F of inputs used:
  - Number of workers (of different types j), capital, technology.
- If wage = marginal productivity, then

$$w_j = \partial F / \partial L_j.$$

- Technical progress without shared prosperity:
  - Change in technology such that
  - output F increases, but
  - marginal productivity $\partial F / \partial L_j$ decreases.



AI as automated decision-making

- AI is more than just another shifter of the production function:
  - Automated decision-making using machine learning.
  - Building on the insights of optimization and statistics.
- General scheme, covering many paradigms in AI:
  - Optimization of a stream of rewards,
  - by choosing actions
  - based on recorded data.
- Political economy:
  1. Who chooses the objective (reward function)?
  2. Who controls the data?
  3. Who controls the hardware and software to do the optimization?

Political economy of AI (1): Privacy

- Leading formalization: Differential privacy. (Dwork and Roth, 2014).
  - It should make (almost) no difference whether your data are in a dataset.
  - No matter what other information is available to a decisionmaker.
- Related: Individual property rights over data.
- Problem with differential privacy / individual property rights:
  - Primary use of data in ML is to learn *relationships*, not individual data.
  - In econ terminology: There are informational externalities.

  $\Rightarrow$ Only democratic governance can address harms, not individual property rights. (cf. Viljoen, 2021)

Political economy of AI (2): Explainability, Transparency, and Accountability

- Which algorithmic decisions can be “explained?”
  - “Simple” mapping from data to decisions.
  - But what is “simple” is a moving target.
- Related: Who is responsible for algorithmic decisions?
- Alternative perspective:
  - Transparency on objectives and constraints, not on algorithms.

  $\Rightarrow$ Possibility of public debate on legitimate objectives.
  - One step further: Democratic control, rather than plutocracy, in the choice of objectives.
    (Is ad targeting really the most socially useful application of AI?)

Thank you!