AI.conometrics

2026 Prompt (Preliminary Round): **Labour**

Artificial Intelligence in Social Sciences Research Lab (AISS)

Bocconi University

1 Prompt

Your task is to identify and estimate a causal effect relating to labour markets in a broad sense. Your analysis may concern (not restricted to) labour supply or labour demand, wages or employment, the quality of jobs rather than their quantity, or the behaviour of firms rather than workers. Some examples are discussed below.

A first strand studies minimum wages. Cengiz et al. (2019) develop a bunching estimator that tracks the number of jobs lost just below the new minimum against those gained just above it, and find small employment effects alongside clear wage gains. Dustmann et al. (2022) study the introduction of the German national minimum wage and find that it raised wages while reallocating workers towards larger and more productive establishments, so that the policy's main effect operated through the matching of workers to firms rather than through job destruction.

A second strand asks how technology reshapes the demand for labour. Autor et al. (2003) argue that computerisation substitutes for routine tasks and complements non-routine analytic and interactive ones, providing the task-based framework that organises much subsequent work. Acemoglu and Restrepo (2020) use variation in industrial robot adoption across US commuting zones and estimate negative effects on local employment and wages.

A third strand exploits pension reforms, which change the age at which workers may retire and so generate sharp and often unanticipated variation in the incentive to remain employed. Staubli and Zweimüller (2013) study two Austrian reforms that raised the early retirement age and find large increases in employment among affected cohorts, together with substantial spillovers onto unemployment insurance. For Italy, Boeri et al. (2022) examine

the 2011 Monti–Fornero reform from the demand side and document that firms unable to shed 'locked-in' older workers reduced hiring and dismissed middle-aged ones; Ardito (2021) shows for an earlier Italian reform that higher statutory ages need not translate into employment if workers can substitute into disability or unemployment programmes.

Finally, a large literature concerns gender. Goldin (2014) argues that the remaining gender wage gap is driven largely by the convex returns to long and inflexible hours in particular occupations. Kleven et al. (2019) use Danish administrative data to show that nearly all of the remaining gap can be traced to the arrival of children, and Card et al. (2016) decompose the gap into a component arising from sorting across firms and a component arising from bargaining within them.

You are not required to work on any of the questions above. You are required to state a clearly defined causal question involving labour markets (in a broad sense), to be explicit about the variation you use to identify it, and to defend your identifying assumptions.

2 Data

Data provided to you

- **INPS administrative data.** A random sample of roughly 7.5% of workers in the Italian private sector, distributed to all teams as a `.zip` archive attached to this prompt. The extract runs from 2005 to 2017 and is organised at the worker–contract level: it records gender and year of birth for each individual, and for each contract the employer identifier, occupation, sector, region, full- or part-time status, daily wage, and the start and end dates of the spell. Because spells are dated, periods of non-employment can be reconstructed as the gaps between them, and individual workers can be followed over time. Note that the data cover private-sector dependent employment only, so the self-employed, public-sector workers and the informal economy are absent.

Replication packages

The three studies below publish replication packages whose data is downloadable in full under an open licence. They may be an alternative place to start.

- Cengiz et al. (2019) assemble a US state–quarter panel from the Current Population Survey covering 138 state-level minimum wage changes between 1979 and 2016. Click here for data and code.

- Clemens et al. (2018) ask whether excluding half a million Mexican seasonal farm workers from the United States in the mid-1960s raised wages or employment for domestic farm workers, using state-level agricultural labour market data around the staggered termination of the Bracero programme. Click here for data and code.

- Acemoglu and Restrepo (2020) build a US commuting-zone panel of industrial robot exposure from International Federation of Robotics data, matched to local employment and wages. Click here for the replication files.

Important: you are free to supplement these datasets with others, provided that they are open data or otherwise accessible by other participants. However, at least one of the datasets listed within the "Data" section [2] should be integral to your analysis.

References

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