Observation unit: employer-employee matches generated under a given probationary period contract stipulated in a collective bargaining agreement

Key variables:

- Histogram of layoffs by tenure (Y): outcome variable
- Probationary period length (PP): intervention variable that imposes a discontinuity in firing costs at a particular tenure (within 3 months)
- Tenure required for unemployment insurance (UI): at 6 months workers are eligible for unemployment insurance, affecting the histogram of layoffs by tenure
- Tenure required for mediation meetings (MM): at 12 months workers that are fired have a mediation meeting, affecting the histogram of layoffs by tenure
- Union strength relative to employers (US): the stronger the union is relative to the employer, the shorter the probationary period
- Recruitment practices (RP): the shorter the probationary period, the higher the incentive for the employers to improve recruitment practices, thereby affecting the quality of hired employees and monitoring intensity
- Quality of applicants (QA): the better the pool of applicants, the higher quality of individuals available for hiring
- Quality of hires (QH): the better the hires, the less likely they will be fired during the probationary period
- Scope for learning-by-doing (LD): the more room there is for a worker to learn a job with time, the lower the bar set by employers when deciding whether to fire a recent hire, thereby making recruitment practices more important
- Monitoring intensity (MI): the shorter the probationary period and the worse the recruitment practices, the more intense the employer will monitor recent hires, thereby affecting the timing of firing decisions by the firm
- Location, time, and occupation: related to units of observation but can also generate backdoor paths (not in graph for simplicity)

Identification:

1. The backdoor criterion is satisfied without any conditioning since the only backdoor path from PP to Y goes through US.

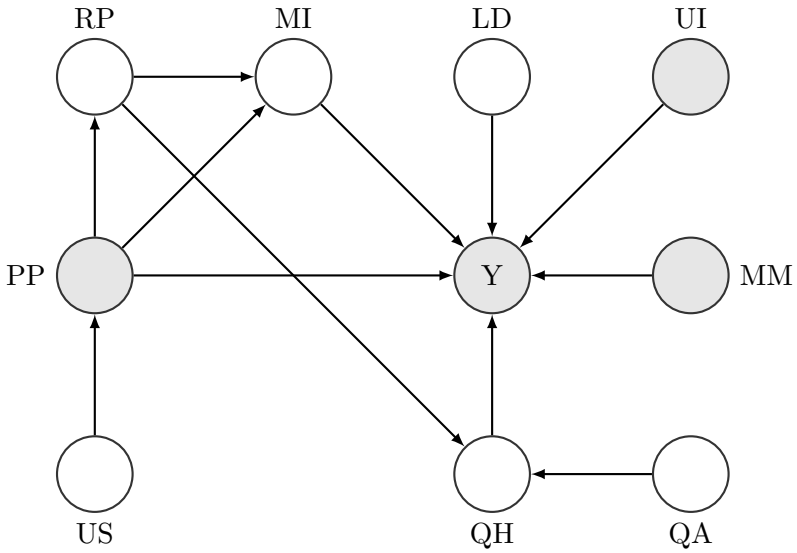
2. The key assumption is that that union strength is unrelated to the quality of applicants and workers hired, monitoring intensity and recruitment practices of employers, as well as the scope of learning-by-doing of the job.

    - Unions do not participate in hiring decisions. However, there may be certain skill types that prefer to work in jobs with stronger unions. But it seems reasonable to say that people don't chooses their occupation and region of employment based union strength. In turn, the quality of workers is unlikely to affect how strong the union is. If any of these assumptions are violated, there is no identification since PP→RP→QH.
    - Unions do not directly participate in the recruitment process. They may participate indirectly through recommendations of peers. Unions may also have a say on how intensely workers are monitored. But to the extent that unions care more about their senior members than recent hires, this should have no effect on our question of interest. Reverse causation from recruitment practices and monitoring intensity to union strength is unlikely. If any of these assumptions fail, there is no identification since PP→MI and PP→RP.
    - Unions cannot affect the scope for learning-by-doing, since the latter is particular to a job. It is possible that occupations determine both union strength and learning-by-doing. Were these assumptions to be violated, I would have to control for LP.

3. Each observation unit is defined for a (region, occupation, time period) triple defined by the active collective bargaining agreement. Each of these variables has a direct impact on:

    - Y, QA, and QH: through shocks in the economy affecting regions and occupations differently over time
    - PP: through the collective bargaining agreement
    - US: through historical and economic circumstances of organized labor for an occupation in a region

    → identification must account for these **observed** factors


RP
MI
LD
UI
PP
Y
MM
US
QH
QA