Discussion of: "Agency Business Cycle" by Mike Golosov and Guido Menzio

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Equilibrium unemployment (fluctuations) as a discipline device

- Shapiro and Stiglitz (1984)
  - two levels of effort, $e \in \{0, 1\}$
  - output **perfectly correlated** with effort
  - observed at Poisson rate $\lambda = 1$
  - disutility of effort: c
  - worker caught shirking is fired
  - flat wage contract, w
- No-shirking condition (NSC):

$$\overbrace{\lambda (W - U)}^{\text{cost if fired}} = \overbrace{c}^{\text{gain from shirking}} .$$

- **Separation is not costly** to the firm: labor market is frictionless

Adding search

- Mortensen (1989): matching, $M(u, v)$, and free-entry of firms.
  - vacancy filling rate: $\eta(\theta)$ where $\theta \equiv v/u$
  - flow cost of creating a vacancy: k
- Now **separation is costly** to the firm since:

$$\text{Value of a filled job} = J = \overbrace{\frac{k}{\eta(\theta)}}^{\text{average recruiting cost}} > 0$$

Adding bargaining

- Rocheteau (2001,2002): Nash bargaining s.t. NSC:

$$W - U = \max \left\{ \overbrace{\frac{c}{\lambda}}^{\text{rent from moral hazard}}, \quad \overbrace{\frac{1-\gamma}{\gamma}\frac{k}{\eta(\theta)}}^{\text{rent from bargaining}} \right\},$$

  where firm's bargaining power is γ.
- λ chosen by the firm

Layoffs in equilibrium

- GM: productivity as a noisy signal of effort (Holmstrom, 1979):

$$\Pr[y = y_H] = q_e$$
$$\Pr[y = y_L] = p_e = 1 - q_e$$

- High productivity more likely if high effort, $q_1 > q_0$
- Worker is fired in case if y_L with probability d
- NSC becomes:

$$c = \overbrace{(p_0 - p_1)\, d(W - U)}^{\text{high effort: reduced prob from being fired}}$$

- **Efficient bargaining** over w and d

Employment contract

- Labor contract specifies w, e, d_H, d_L
- d contingent on y but not w
- The contract is renegotiated every period
  - A repeated game: Not obvious the use of an axiomatic solution is appropriate here
  - Mechanisms to avoid inefficient separations (promotions, tournaments...)
  - wage-tenure contracts (Stevens, 2004; Burdett and Coles, 2003)

Unrestricted contracts (risk-neutral workers)

- Add an upfront fee to the contract (Stevens, 2004)
- Pay $w = y$ subsequently
  - Worker gets full productivity: incentives are taken care of.
- Pissarides with "crime on the job" (Eigenlhardt et al, 2008).
- No need for inefficient separations

Sunspot equilibria

- For such equilibria to exist $J/(W-U)$ must be lower in the high-unemployment state
- Make workers risk averse and liquidity constrained:

$$\frac{J}{W-U} = \frac{\gamma}{1-\gamma}\frac{1}{v'(w)}$$

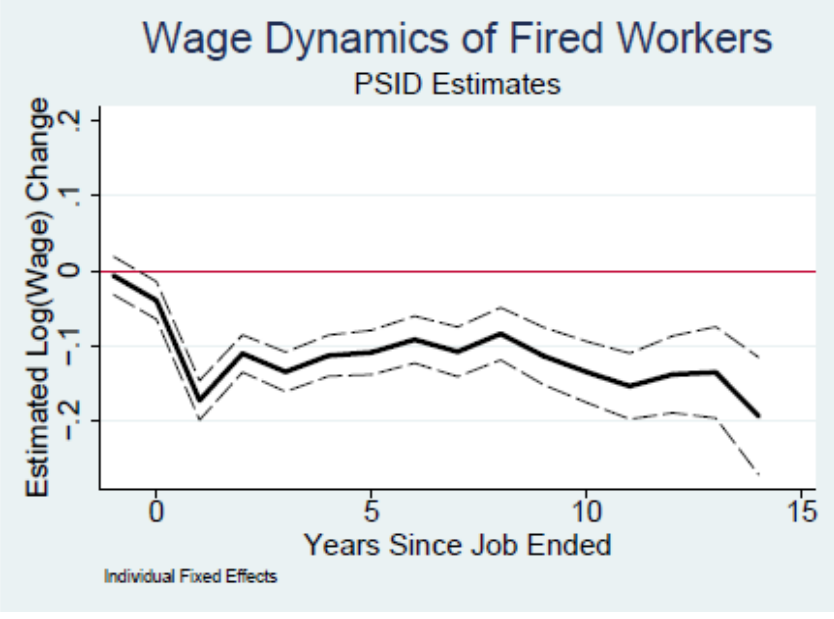
- $J/(W-U)$ is low when w is low
- To get w to depend on unemployment directly, assume M has decreasing returns to scale.

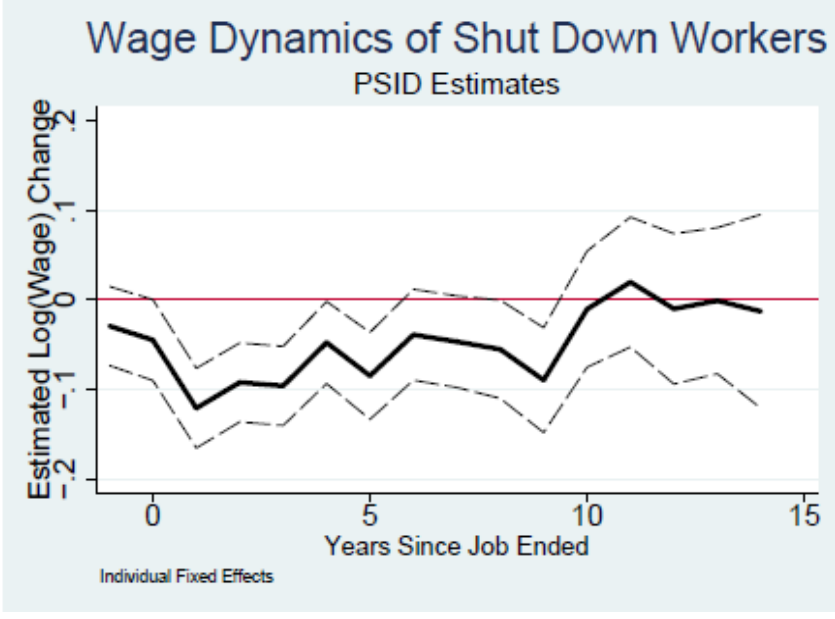
Imperfect capital markets

- Workers are risk-averse and face an idiosyncratic risk
  - incentives to save but are not allowed to
  - they cannot invest by financing firms
- Who owns firms?
  - risk-neutral entrepreneurs
  - have access to perfect capital markets

Firing: A discipline device?

- Model: same wage dynamics for fired workers and shut-down workers
- In the data:





Michaud (2015), "An Information Theory of Worker Flows and Wage Dispersion"

- Employer learning accounts for 63% of displacements to unemployment

Alternative: Ex-ante heterogeneity with undirected search

- Workers' output: $z \times y$
  - $z \in \{z_L, z_H\}$ is an aggregate shock
  - $y \in \{y_L, y_H\}$ is worker specific
- Undirected search
  - y_L workers are employable in good times but unemployable in bad times ($z_L y_L < b$)
- Average productivity:
  - $z_H \mathbb{E}_t[y]$ in good times
  - $y_H z_L$ in bad times
- If $z_H / z_L \approx y_H / \mathbb{E}_t[y]$ then productivity is acyclical

To sum up

- A **novel and clever theory** of labor market fluctuations based on an agency problem
- Suggestions:

1. THEORY:
   Give agents more freedom:
   - To agree on better incentive schemes
     (repeated game vs static Nash bargaining)
   - To react (optimally) to their environment (e.g., self-insurance)
2. EMPIRICAL SUPPORT:
   - Provide micro evidence for the mechanism at work