

Discussion of
“Allocative and Remitted Wages:
New Facts and Challenges for Keynesian Models”
by Susanto Basu and Christopher House

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small edits after conference in red

New experience. I've never before discussed

- ① A paper by Susanto or Chris

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- ③ A published survey!
- ④ A paper using the CEE model as its benchmark

What are the authors' objectives and results?

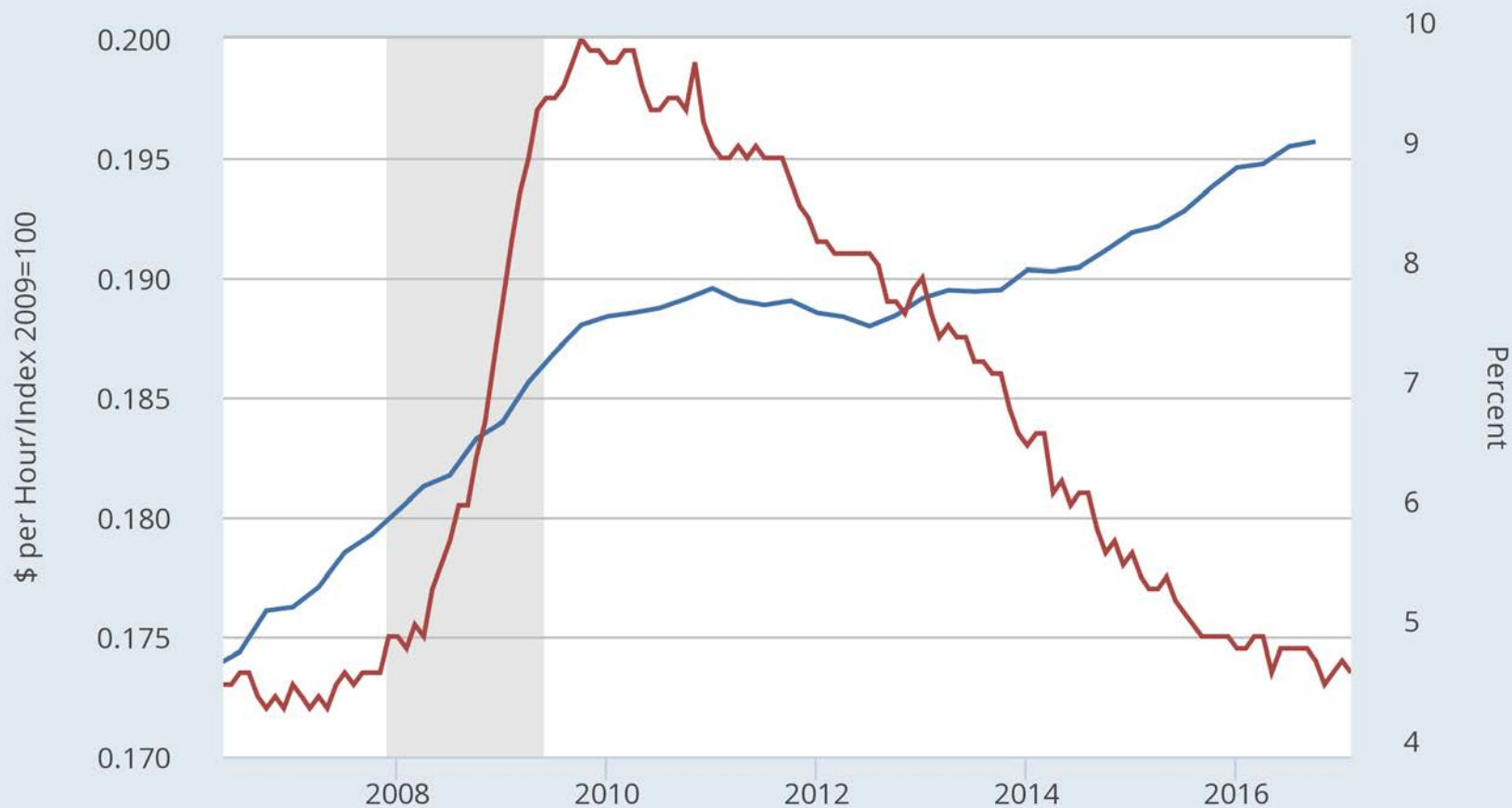
- 1 Empirical overview
 - 1 average hourly earnings acyclical
 - 2 composition bias masks procyclicality
- 2 Highlight: recent insights
 - 1 new hire wages: better measurement
 - 2 user cost of labor: better theory leads to novel construct
- 3 Integrate mechanisms into medium-scale DSGE
- 4 Find: nominal wage frictions problematic
- 5 Conclusion: sticky prices more promising modeling framework

Modeling strategy

- 1 Stick close to CEE framework
- 2 In particular, use EHL labor market dynamics
- 3 Add mechanisms to permit
 - Heterogeneous micro labor productivity
 - Labor aggregation
 - Analysis of composition bias
 - Behavior of alternative wage rate measures
- 4 Empirical analysis of basic and modified CEE
 - My problem: can't really connect to representative firm
 - My discussion: flesh out a model of this firm



- Average Hourly Earnings of Production and Nonsupervisory Employees: Total Private/Nonfarm Business Sector: Implicit Price Deflator (left)
- Civilian Unemployment Rate (right)



Sources: U.S. Bureau of Labor Statistics
fred.stlouisfed.org

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Thinking about the firm

- In tradition of Oi (JPE 62): labor as a quasi-fixed factor
- Representative firm has a workforce of hiring vintages
- Vintage employment depreciates due to separations

$$z_{t,t-j} = z_{t-1,t-j}(1 - s)$$

- Each vintage may have different contract
- 60% of CPS workers are on salary (ω rather than w)
- Total labor cost is

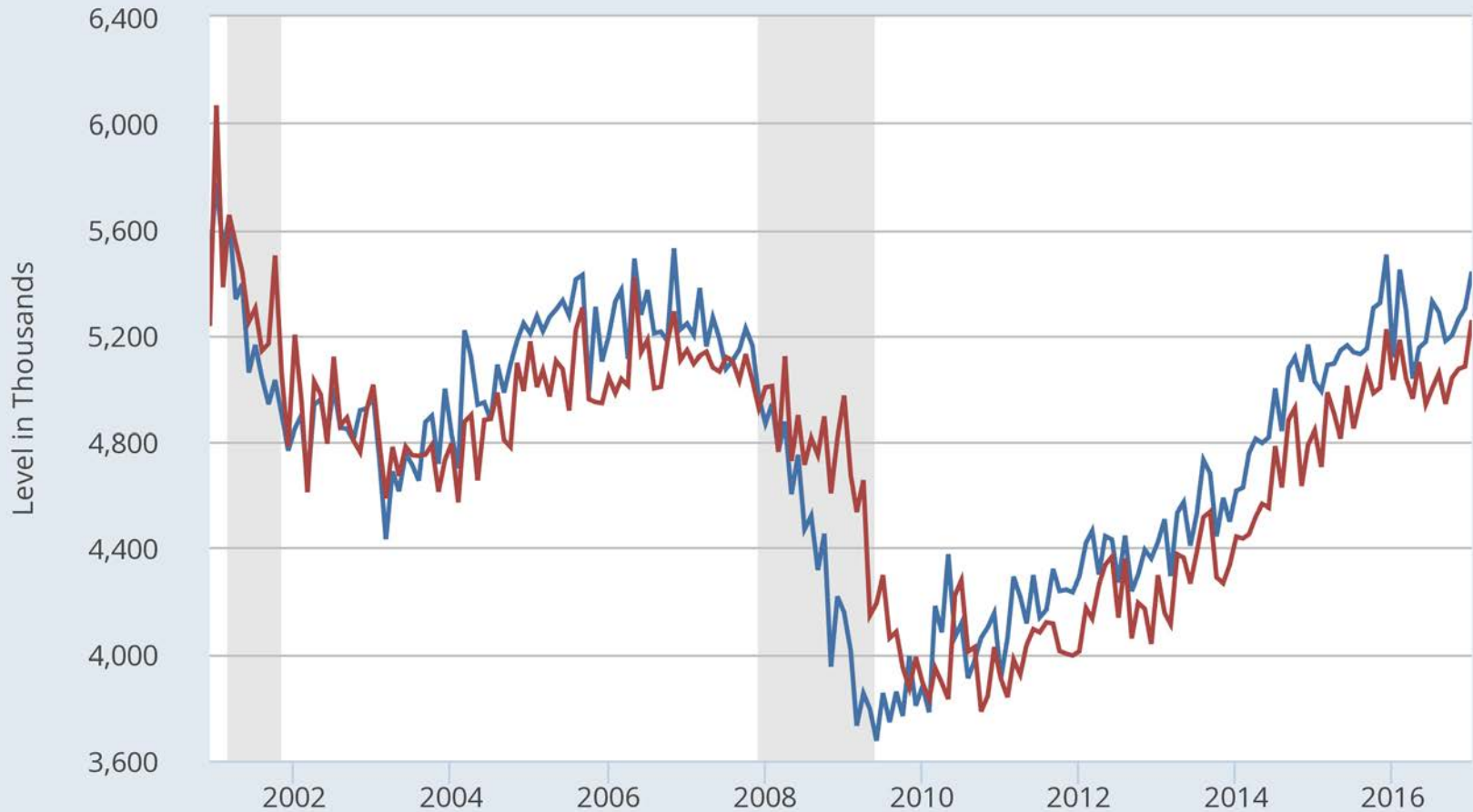
$$\sum_{j=0}^J \omega_{t,t-j} z_{t,t-j}$$

- If hours per worker is variable, total labor input is

$$\sum_{j=0}^J n_{t,t-j} z_{t,t-j}$$

- Firm-worker attachment reflects specialized human capital

— Hires: Total Nonfarm
— Total Separations: Total Nonfarm



- Hiring is always going on for representative firm
- Recession involve 8 million net job losses (Dec 07 - June 09)
- But hiring was 3-5 million *per month*
- So, representative firm always has option to hire this period or next
- Oi: hiring based on PDV of costs
- Oi: hiring costs, training costs, and payments to labor

$$v_t = \sum_{j=0}^{\infty} m_{t,t+j} \omega_{t,t+j} (1-s)^j + H_t + K_t$$

- Oi used finite horizon and fixed discount factor
- Oi stressed importance of mitigating turnover, but omitted it in PDV
- Oi: hiring requires PDV of worker product is at least this value.

- Hall & Jorgenson for capital

- ① implicit rental price $p_t^k - \frac{1-\delta}{1+r_t} p_{t+1}^k$

- ② Hall: generality

- does not depend on resale markets
 - only requires positive investment in both periods.

- ③ Lucas: temporary movements in prices (taxes)

- Labor as a quasi-fixed factor

- ① Standard view: convex employment adjustment costs (e.g., Bils 85)

- ② But large EAC hard to square with employment volatility

- ③ Kudlyak: quasi-fixity in search models

- ④ Kudlyak: user cost of labor is relevant measure with quasi-fixity

Defining user cost (employee)

- Consider adding an employee this period
- With separations, one more employee this period yields $(1-s)$ more employees next period
- Ignore discrete nature (large firm, lots of hiring)
- Ignore productivity differences: gains after longer work experience
- Can always hire immediately (probabilistic hiring: more leads)
- Expected PDV savings on future employee (to keep future workforce constant)

$$E_t \sum_{j=1}^{\infty} m_{t,t+j} \omega_{t+1,t+j+1} (1-s)^{j-1} + E_t m_{t,t} (H_{t+1} + K_{t+1})$$

Defining user cost (employee)

- User cost (Kudlyak eqn (2))

$$q_t = \omega_{t,t} + E_t \sum_{j=1}^{\infty} (1-s)^j m_{t,t+j} (\omega_{t,t+j} - \omega_{t+1,t+j}) \\ + (H_t + K_t) - E_t m_{t,t} (H_{t+1} + K_{t+1})$$

- Terms: "new hire wage/compensation" $\omega_{t,t}$
- Terms: "expected cost of accelerating hiring":
 $E_t \sum_{j=1}^{\infty} (1-s)^j m_{t,t+j} (\omega_{t,t+j} - \omega_{t+1,t+j})$
- I'll neglect: changes in other costs (Kudlyak does not (search costs))

Why is user cost so volatile cyclically?

- Common finding for Kudlyak and Basu-House. Why?
 - ① Intuitively, vintage effects evident in wage/compensation profiles
 - ② Empirical evidence from various sources
 - ③ Suggests expected cost of accelerating hiring is important
- Example to think about elasticity (upper bound):
 - ① permanent vintage effect, constant discount factor
 - ② SS $q = w$, define $\theta = [1 - \beta(1 - s)]^{-1} \approx \frac{1}{r+s}$ about 3 for annual data

$$q_t = \frac{1}{1 - \beta(1 - s)} [w_{t,t} - \beta(1 - s)E_t w_{t+1,t+1}]$$
$$\frac{q_t}{q} = \theta \frac{w_t}{w} - (\theta - 1) \frac{E_t w_{t+1,t+1}}{w}$$

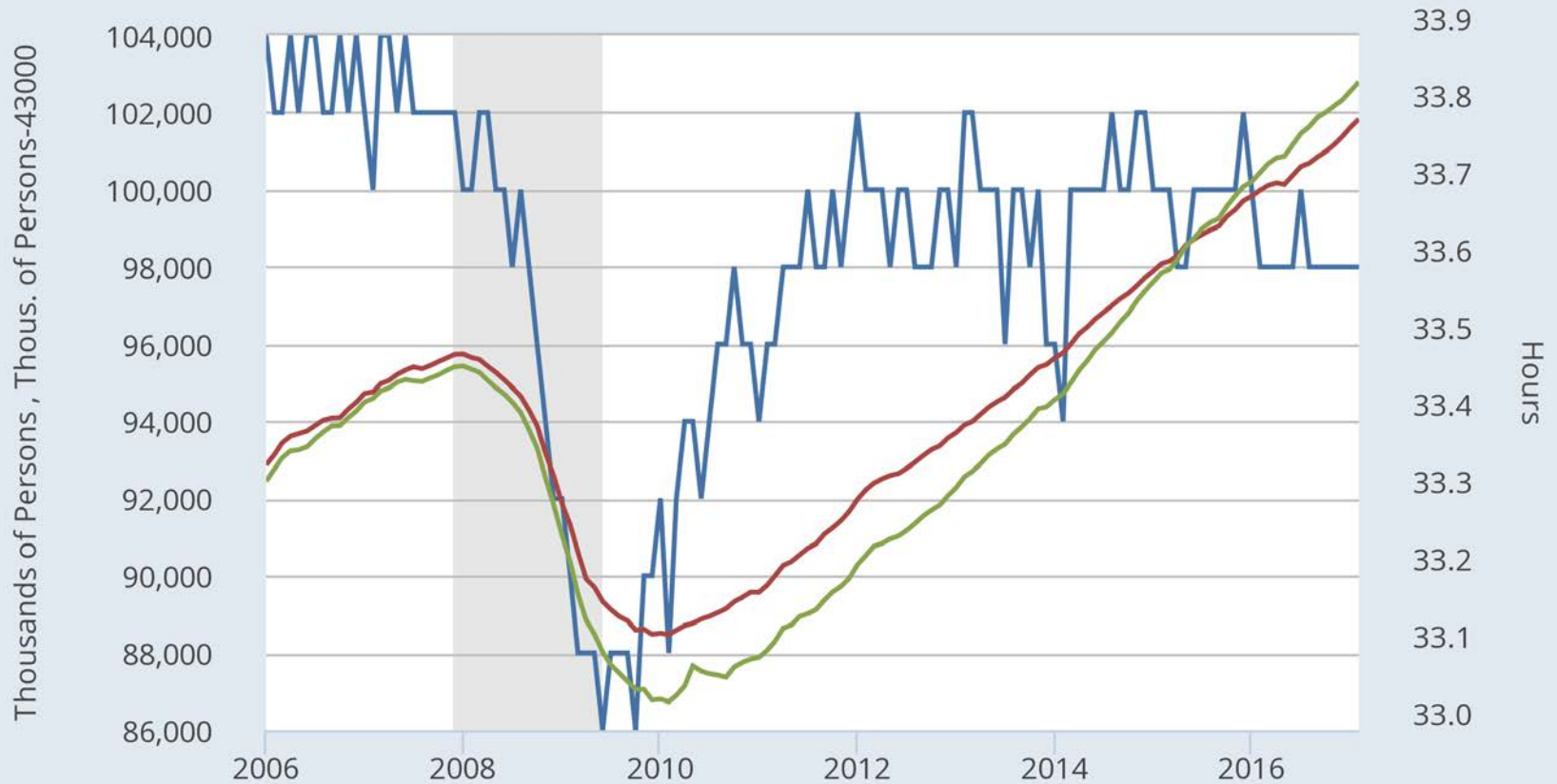
- Main concerns about estimates by K and BH on NLSY:
 - ① Empirical procedure: **construct ex post user cost. Under RE, ok for projections on date t variables, but must be careful more generally.**
 - ② Why does K estimate $\frac{\Delta \log(w^{nh})}{\Delta u} = -3$ and BH estimate $= -.7$?

Moving toward macro

- How does firm get more labor input?
- EHL model:
 - 1 workers are monopoly suppliers with sticky nominal wages
 - 2 respond to firm's demand with supply at given wage rate
- Alternative #1 in firm model: implicit contract (risk-shifting, commitment)
 - 1 salaried workers work harder as part of contingent contract
 - 2 high demand for firm with pre-set nominal price is just one contingency
 - 3 no variation in firm's total cost from pre-existing workforce
 - 4 salary structure irrelevant; labor share countercyclical
 - 5 if have hours measures, then these impart bias (ω/n).
 - 6 economists can't measure marginal cost using wage data
 - 7 marginal cost only from preferences, production function
- Alternative #2 in firm model: Look at other workers
 - 1 40% of workers on hourly rates
 - 2 Bills: marginal wage rates are key (JPE 85, AER87)



- Average Weekly Hours of Production and Nonsupervisory Employees: Total private (right)
- Production and Nonsupervisory Employees: Total Private (left)
- All Employees: Total Nonfarm Payrolls-43000 (left)



Sources: U.S. Bureau of Labor Statistics
fred.stlouisfed.org

myf.red/g/dbD6

But employment rather than hours dominates cycle

- Rogerson/Prescott/Hansen: business cycle fact
- Let base workforce be $Z_{t-1} = (1 - s) \sum_{j=1}^J z_{t-1,t-j}$.
- Let h_t be the proportion of its workforce that a firm seeks to hire
- Let the hiring costs be $\Psi(h_t)Z_{t-1}$
- Then, the outcomes are

$$\begin{aligned}z_{t,t} &= h_t Z_{t-1} \\ Z_t &= [1 + h_t] Z_{t-1}\end{aligned}$$

- Firm-specific investments are the glue that make labor like capital
- Hiring costs are like adjustment costs for capital stock (can be small)
- Marginal cost of output with $Y_t = F(Z_t, K_t)$:
 - 1 increase h_t to get more $z_{t,t}$
 - 2 user cost q_t measured to be strongly procyclical
 - 3 MC somewhat more cyclical than q_t

Procyclical labor cost and New Keynesian Macro

- How cyclical are new hire real wages (salaries)?
 - ① Correction for composition bias important (masks procyclicality)
 - ② Bils and SBP found more wage procyclicality for job changers than for job stayers
 - ③ Haefke et al find strong procyclicality for new hires in PSID and CPS
 - ④ In CPS, even stronger for job changers than for new hires
- What makes user cost even more procyclical?
 - ① K & BH estimate positive history dependence
 - ② High starting wage/salary persists over time (recall example)
- Problems for "old" New Keynesian model advocated by BH
 - ① Reset prices are based on real marginal cost
 - ② If marginal cost more responsive to demand, so is inflation
 - ③ Inflation can feedback into demand, cutting amplification and persistence