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**Discussion of „Sources and Mechanisms of Cyclical
Fluctuations in the Labour Market“
by Robert E Hall**

Comments
on

Sources and Mechanisms of Cyclical Fluctuations in
the Labor Market

Robert Hall

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Purpose of the paper

The paper provides a macroeconomic model of the cyclical fluctuations of total hours worked in the USA on annual data from 1949 until today, decomposed into employment and hours per person.

The model is based on the Mortensen Pissarides (MP) search setup, with special attention to the calibration of elasticities which are drawn from a careful review of the available microeconomic evidence.

An underlying question, not explicitly asked here: is the MP setup useful for the study of business cycle fluctuations?

Methodology

The (endogenous?) variables of interest are hours per worker and the employment (or equivalently unemployment) rate.

The driving forces (or exogenous variables?) are the marginal utility of income λ , and the marginal product of an hour of work w . Apart from w in Section 7, they are not directly observed but inferred from the model and the values of the endogenous variables.

Reverse engineering: one needs the bargaining coefficient to vary with the tension on the market to reproduce the volatility of the unemployment rate.

Supply of hours

Representative agent

$$\begin{cases} \max \sum_t \beta^{s-t} U(c_s, h_s) \\ \sum_t \frac{1}{(1+r)^{s-t}} (p_t c_t - w_t h_t) = A_t \end{cases}$$

The multiplier associated with the budget constraint is λ .

$$U(c, h) = \frac{1}{1-\eta} \left[\frac{\underline{c}^{-(\frac{1}{\sigma}-1)} - c^{-(\frac{1}{\sigma}-1)}}{\frac{1}{\sigma} - 1} - \frac{h^{\frac{1}{\psi}+1}}{\frac{1}{\psi} + 1} \right]^{1-\eta}$$

Four parameters $(\underline{c}, \eta, \sigma, \psi)$ calibrated at $c = h = p = w = 1$.

$$\underline{c} = 0.2 \quad \frac{p}{c} \frac{\partial c}{\partial p} = -0.4 \quad \frac{w}{h} \frac{\partial h}{\partial w} = -0.7,$$

and the level of consumption when not working is 15% below the level when working.

Supply of hours: continued

Using detrended time series of (c_t, h_t) , the first order conditions yield (λ_t, w_t) (the price level is normalized to 1, so that w is the real marginal product of one hour of work).

Two remarks:

1. The evolution of average hours reflect in part the development of part time activities, which are not well represented by the model;
2. It is important that hours are chosen by the worker and **not** by the employer.

The employment function and the Mortensen Pissarides model

The author inserts the static choice model of the consumer in the MP setup (Appendix B).

Exogenous: (λ, w) , which directly yield (c_0, c_1, h) .

Endogenous: vacancies, unemployment,

$$\theta = \frac{\text{vacancies}}{\text{unemployment}},$$

revenue y of the employee coming out of the bargain.

Mortensen Pissarides

Instantaneous flow of utilities and value functions:

Unemployed person: $\frac{U(c_0, 0)}{\lambda} + by - c_0$ value V_0 .

Worker: $\frac{U(c_1, h)}{\lambda} + y - c_1$ value V_1 .

Vacancy: $-k$ value V_2 .

Firm in operation: $wh - y$ value V_3 .

Bargaining on the value function.

Mortensen Pissarides, continued

Free entry

$$V_2 = 0$$

Bargaining

$$\beta(\theta)[V_3 - V_2] = (1 - \beta(\theta))[V_1 - V_0]$$

Two equations in the two unknowns (θ, y) : they yield employment as a function of (λ, w) .

Shimer: if β is constant, employment varies too little as a function of w .

$$\beta(\theta) = \min \left[\bar{\beta}, \frac{\beta_0}{\beta_0 + (1 - \beta_0) \left(\frac{\theta}{\theta^*}\right)^k} \right]$$

Mortensen Pissarides, concluded

A careful calibration allows to reproduce the basic dependency of employment with respect to (λ, w) .

Question: what is the status of the negotiated compensation y ?

An alternative construction of w

Measurement from value added of corporate business:

$$w = \frac{V - \rho K}{N}$$

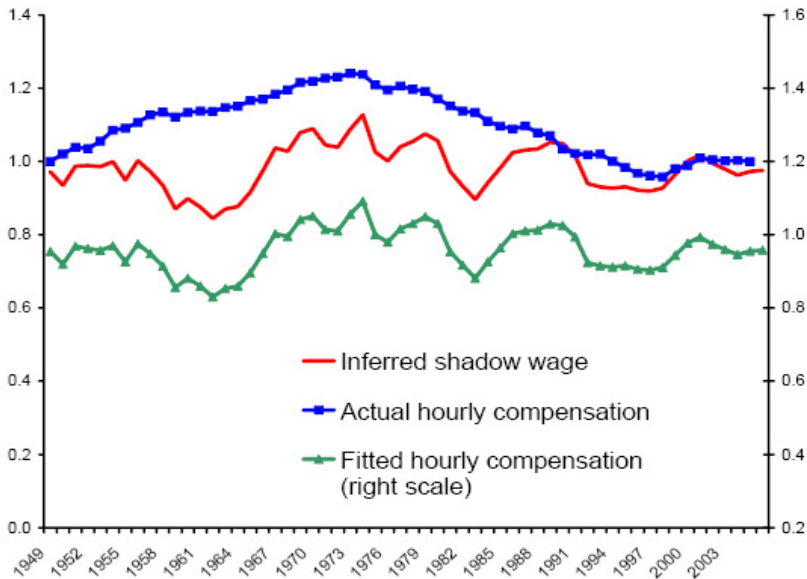


Figure 10. Actual and Fitted Hourly Compensation and Inferred Marginal Product w

Conclusion

The paper is a careful calibration of an intertemporal consumer labor supply model, associated with a MP setup for the determination of employment.

The marginal product of labor is the driving force of the fluctuations of both employment and hours per worker.

I have an interpretation problem: the observed compensation differs from the marginal product of labor...

What about the traditional story where firms decide both on hours and employment in a model with rigid quantities and prices?