Discussion of Gali-Smets-Wouters Unemployment in an Estimated New Keynesian Model

By
Lawrence Christiano
• This (together with Gali (2010)), represents an valuable statement of a classic model of unemployment:

   — Monopoly power theory of unemployment.
Outline

- Review and comments on the model.

- Comments on model implications.
Workers of each type are represented by a monopoly union, as indicated in the following slide.
Here are two identical households picked from the continuum of such households. I’ve emphasized two types of workers in each. There are many of them.
All the plumbers go to a plumber’s union. The painters go to a painter union, etc.
The monopoly union faces the usual optimization problem. It faces a demand curve, a marginal revenue curve. The marginal cost curve is the labor supply curve. Here, we think of all the workers in the union lined up with workers in order from workers with the least utility cost of working to those with the highest utility cost of working. Each worker is the size of an atom. The height of the labor supply curve is the cost of working, in money units, assigned by the monopoly union to that worker.
The cost assigned to a worker’s working is a ratio. In the numerator it is the utility cost of working for the worker. This is converted into dollar terms by dividing by the utility benefit to the household of the worker’s work. It has to be the utility benefit to the household and not to the worker, of course. The private utility benefit of an extra dollar to the worker is zero, because all dollars are turned over to the household and the worker gets the same consumption regardless of whether he works or not.

The monopoly union sets the wage and then sends out the workers in order of the lowest cost workers first up to the quantity that matches demand.
Unemployment is defined as the difference between the number of workers that are employed and the ‘labor force’, which is defined by the intersection of the wage line and labor supply.
I’m not sure in what sense this definition of unemployment matches up with the official measure. In the model, the people in the ‘unemployed’ portion of the diagram understand they’re not working as part of the monopoly union’s strategy to maximize revenues from labor. The workers in that interval don’t mind this at all. In fact, they’re better off not working because their consumption is the same as the workers, while they do not lose leisure. Also, there is no sense in which the people in the ‘unemployed’ region are ‘actively looking for work’, a component of the official definition. Actually, if a census survey taker were dropped into this model and interviewed everyone, I don’t think he would find anyone who would satisfy his definition of ‘unemployed’.
Conventional View of Unemployment

This is a standard view of unemployment….the people without work and looking for a job are thought to look like these people.

The view in this paper...a chance to enjoy a little leisure and catch up with old friends!

So, the paper needs to make a better defense of the notion that the object called unemployment actually corresponds to the definition used in the data.

From here on, however, I’ll take the definition of unemployment as given.
Labor Supply in Business Cycles

• Labor supply was central in real business cycle theory.

• With the advent of New Keynesian economics, labor supply has (temporarily) fallen off center stage.
  – Sticky wages and other factors reduce its role in dynamics.

• In GSM’s model of unemployment, labor supply is back on center stage.
In terms of employment, this doesn’t matter. But, it does matter for unemployment and the labor force!

Problem: Income Effects on Labor Supply

- Expansionary monetary policy shock:
  - Generates increase in consumption
  - Shifts labor supply to left.

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Problem: Income Effects on Labor Supply

- Expansionary monetary policy shock:
  - Generates increase in consumption
  - Shifts labor supply to left.
  - Causes fall in labor force and huge fall in unemployment.
Fixing the Problem

- Replace: aggregate consumption' in worker’s own household

\[
\text{real marginal cost of working} = \frac{g(\text{work of marginal worker})}{u'(C)}
\]

Economy-wide consumption

\[
\text{real marginal cost of working} = \frac{u'(C)g(\text{work by marginal worker})}{u'(C)}
\]

- Externality from aggregate consumption: reduces utility cost of working.
  - How are we to interpret this?
  - Sort of looks like GHH preferences, but it is not.

- In equilibrium, \( \bar{C} = C \), so consumption gone.
  - Mechanically, the problem is fixed.
Income Effects and Labor Supply

- Removing income effects from labor supply is essential to get the model to ‘work’.

- In fact, *are* there income effects on labor supply?

- Time series observations seem to suggest ‘yes’.
  - Could suppose there is a trend rise in productivity in home technology (Benhabib-Rogerson-Wright).

- But, what about cross section evidence?
  - Do CEO’s who make 10,000 times as much as janitors work 10,000 times as much?
  - Could adopt the BRW ‘fix’ in the cross section.

- Do all these fixes make sense?
• Two observations on the model implications....
Distinguishing Markup and Labor Supply Shocks

- Key contribution of the paper, in the view of the authors:
  - Can separately identify markup and labor supply shocks.

- Finding:
  - Wage markup shocks (i.e., disturbances to the strength of monopoly power) important for the low frequency movements in unemployment.
Results suggest that the rise in unemployment in the 1970s and 1980s was due to an increase in union power in the US at that time.

But, evidence suggests that union power was *declining* over this period.
Does the Degree of Union Power Affect the Unemployment Rate?

- OECD Employment Outlook (2006, chap 7)

- Norway and Denmark have unionization rates near 80 percent. Before the current crisis their unemployment rate was under 3.0 percent.
Union Density Rates

- Jelle Visser, 2006 Monthly Labor Review


- Definition: union membership as a proportion of wage and salary earners in employment.


Under Franco’s rule non-government trade unions and all political opponents across the political spectrum, from communist and anarchist organizations to liberal democrats and Catalan or Basque separatists, were either suppressed or tightly controlled by all means, up to and including violent police repression. Franco died in November 1975. This is why there is no data for 1970, and the numbers grow slowly thereafter.
From Visser_data.xls, which in turn was taken from table 3 in Visser.pdf

Note Germany: A major break of a substantive nature did occur in Germany in 1990, following unification with former East Germany, when large numbers of “card-holding” members were added to those of former West Germany (but soon dwindled as a consequence of transition to a free market economy).
Unemployment Rates: Sources


- Finland, Norway and Spain taken from ILO, “Comparable annual employment and unemployment estimates, adjusted averages”

Bls webpage:  http://www.bls.gov/FLS/FLScomparelf/unemployment.htm#table1_2
ILO: http://laborsta.ilo.org/STP/guest
Monopoly Power Hypothesis

• If union density in country A grows faster than union density in US, then
  – Expect unemployment in country A to rise more than unemployment in US.

• Test is based on low frequency part of the data, not on the levels.
Data Consistent With Monopoly Power Hypothesis?
monopoly power $\uparrow$ → unemployment $\uparrow$

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<th>Country</th>
<th>Result</th>
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<td>Norway</td>
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<tr>
<td>Australia</td>
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<td>Japan</td>
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<tr>
<td>France</td>
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<tr>
<td>Germany</td>
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<td>Italy</td>
<td>?</td>
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<tr>
<td>Netherlands</td>
<td>no</td>
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<tr>
<td>Sweden</td>
<td>yes</td>
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<tr>
<td>United Kingdom</td>
<td>no</td>
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<tr>
<td>Finland</td>
<td>yes</td>
</tr>
<tr>
<td>Norway</td>
<td>yes</td>
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<td>Spain</td>
<td>no</td>
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Conclusion

• For the model to be consistent with the data, crucial that there are no income effects in labor supply.
  – What is the micro evidence on income effects?

• Unemployed workers have higher utility than employed workers.
  – Does this matter? In an alternative model that assumes limited insurance (CTW), the income-effect issues in the GSW paper do not arise.

• Model implies low frequency rise and fall in unemployment in 1970s and 1980s due in large part to movements in union power.
  – Seems not consistent with data on union densities.

• Model supposes that unemployment on average positive because of presence of monopoly power.
  – Support for this in data seems weak.