

A discussion of¹
“Search and Recruiting Intensities over the Business
Cycle,”
by Leduc and Liu

Stefano Gnocchi

Bank of Canada

New Developments in Business Cycle Analysis: The Role of Labor
Markets and International Linkages
Oslo, June 2014

¹The views expressed in this presentation are my own. No responsibility for them should be attributed to the Bank of Canada.

Overview: Motivation (1)

- ▶ This paper aims at establishing a link between two facts:
 - ▶ Significant outward shift of the Beveridge curve following the Great Recession
 - ▶ Varying search and recruiting intensity over the business cycle
- ▶ Assume a matching function

$$m_t = \mu_t (s_t u_t)^\alpha (a_t v_t)^{(1-\alpha)}$$

- ▶ If s_t and a_t mistakenly assumed to be constant, **measured shifts** in the Beveridge curve might be mistakenly attributed to μ_t

Available evidence on cyclicalities of intensities

- ▶ **Search intensity is pro-cyclical** (Krueger and Muller (2011) and Davis (2011))
 - ▶ Individual time devoted to search falls in unemployment duration;
 - ▶ Unemployment duration falls in booms;
 - ⇒ Aggregate search intensity rises in booms and falls in recessions
- ▶ **Recruiting intensity is pro-cyclical** (Davis, Faberman, Haltiwanger (2013))
 - ⇒ advertising expenditures, screening methods and compensation packages are varied over the cycle, in addition to vacancies

Overview: A Quantitative question

- ▶ How much variation in μ_t is required to explain the behaviour of finding rates, after taking into account changes in s_t and a_t ?
- ▶ To the extent that intensities co-move with matching efficiency, a simple accounting exercise might be misleading
- ▶ A structural interpretation of the data is needed

Overview: The importance of intensities

- ▶ Introduce endogenous intensities in otherwise standard DSGE model with matching frictions and four shocks: productivity, government spending, preference and matching efficiency shocks
- ▶ Estimate the model by using data on (i) industrial production; (ii) the unemployment rate; (iii) the vacancy rate; (iv) recruiting intensity
- ▶ Perform a counterfactual exercise that abstracts from matching efficiency shocks
- ▶ The model still predicts significant shifts of the Beveridge curve, because of endogenous intensities

1. Cyclicalness of search intensity
2. Identification
3. Opportunity cost of employment
4. Model fit

Comment 1: Cyclicalilty of search intensity (1)

- ▶ What matters for the **aggregate** job finding rate is aggregate search intensity
- ▶ Krueger and Muller (2011) documents a relation between **individual** unemployment duration and search intensity
- ▶ Davis (2011) extends this individual relation to the aggregate
- ▶ Implicit assumption: no significant composition effects due to **heterogeneity**

Comment 1: Cyclicalty of search intensity (2)

Might **changes in the composition of the unemployment pool** reverse the individual relation?

- ▶ In booms, only the less skilled (and less attached) workers remain in the unemployment pool
- ▶ In downturns, the unemployment pool is relatively more skilled and more attached
 - ⇒ in booms aggregate effort might be lower, even if the same individual exerts more effort in booms

Comment 1: Cyclicalities of search intensity (3)

More research is needed on measuring aggregate search intensity

- ▶ Mukoyama, Patterson and Sahin (2013): Job Search Behavior over the Business Cycle
- ▶ ATUS measures minutes per day devoted to search: 10.2 temporary layoffs; 30.6 searchers; 2.3 non-searchers (but willing to accept a job if offered).
- ▶ CPS contains information about search method, rather than time (e.g.: attending training programs, contacting employers directly, contacting employment agency, etc.)
- ▶ Link ATUS and CPS by imputing time to methods
- ▶ Search intensity is countercyclical at both the intensive and the extensive margin

Comment 2: Identification (1)

It would be helpful to have a sense of the **identifying assumptions embedded in the model**

- ▶ All shocks produce the same theoretical conditional correlations. We need to look somewhere else. (But impulses to matching efficiency are not reported)
- ▶ What is the relative importance of each shock in driving the volatility of each variable?
- ▶ Why is the series of search intensity not included in the model? Any intuition about the moments that are identifying the parameters of the search cost function?

Comment 2: Identification (2)

The role of the **preference shock**

- ▶ The preference shock is by far the most volatile
- ▶ Two effects of a positive preference shocks: (i) the household is more willing to work, and then to search; (ii) the change in the outside option makes hiring less costly, partially fixing the typical low unemployment volatility problem in DMP.
- ▶ Some variance decomposition would be helpful
- ▶ Are endogenous intensities important through the preference shock? Reasonable to see this explanation as more structural than a shock to matching efficiency?

Comment 3: Cyclicalilty of the outside option

How much, if any, of the unemployment rate volatility is due to the (counter-) cyclicalilty of the outside option? Is it plausible?

- ▶ Changes in search intensity seem to be relatively less important than changes in recruiting intensity
- ▶ Hence, the preference shock seems to work through the cyclicalilty of the outside option
- ▶ Chodorow-Reich and Karabarbounis (2013) use PSID data to discipline the preference parameter in order to match a 20% drop in consumption, upon entering unemployment
 - ⇒ the resulting outside option is strongly pro-cyclical and worsens the unemployment volatility puzzle
- ▶ A similar exercise in this context might be helpful

Comment 4: Model fit

- ▶ Additional exercises documenting the fit of the model might be useful to validate the mechanism
- ▶ Does the model fit the search intensity series, which is not used in the estimation?
- ▶ Why not comparing theoretical impulse responses with empirical responses to shocks identified in a SVAR?