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Conference on Monetary Policy and Macroeconomics

Unemployment, productivity and potential output: the aftermath of the crisis

London

11-12 October 2012
Unemployment and Mismatch in the UK

Jennifer Smith (2012)

How important is mismatch unemployment in the UK?

Contributions of the paper

1. It is not about the US

2. Measure contribution mismatch to unemployment *dynamics*

3. Decompose into effects on job finding and job loss

Findings

1. Mismatch was important in the GR (half of increase unemployment)

2. Effect on job loss is larger and more persistent than effect on job finding
How important is mismatch unemployment in the UK?

Contributions of the paper

1. It is not about the US :-)
2. Measure contribution mismatch to unemployment *dynamics* :-)
3. Decompose into effects on job finding and job loss :-((

Findings

1. Mismatch was important in the GR (half of increase unemployment)
2. Effect on job loss is larger and more persistent than effect on job finding
Unemployment dynamics

- Unemployment depends on job loss, job finding and past unemployment

\[ u_{t+1} = u_t + s_t (1 - u_t) - f_t u_t \]

- Importance of the past depends on turnover

\[ u_{t+1} = \rho_t \bar{u}_t + (1 - \rho_t) u_t \]

where

\[ \rho_t = f_t + s_t \]
\[ \bar{u}_t = \frac{s_t}{f_t + s_t} \]

Log-linear approximation

\[ \Delta \log u_{t+1} = \rho (1 - u) (d \log s_t - d \log f_t) + (1 - \rho) d \log u_t \]

- \( \Delta \log u_{t+1} \) change in steady state
- \( d \log u_t \) dynamics

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Discussion: Mismatch in the UK

11-12 October 2012
Unemployment dynamics: Why this matters

- Importance of the past depends on turnover

\[ \Delta \log u_{t+1} = \rho (1 - u) (d \log s_t - d \log f_t) + (1 - \rho) d \log u_t \]

\[ \text{change in steady state} \]

\[ = \rho (1 - u) (d \log s_t - d \log f_t) \]

\[ + (1 - \rho) \rho (1 - u) (d \log s_{t-1} - d \log f_{t-1}) \]

\[ + (1 - \rho)^2 \rho (1 - u) (d \log s_{t-2} - d \log f_{t-2}) + ... \]

- Turnover anywhere else is lower than in the US
  (data: Elsby, Hobijn and Şahin)

  - US: \( \rho = 0.575 + 0.036 = 0.611 \) \((t_{1/2} = 1.6 \text{ months})\)
  - UK: \( \rho = 0.133 + 0.010 = 0.143 \) \((t_{1/2} = 7 \text{ months})\)
  - Italy: \( \rho = 0.041 + 0.004 = 0.045 \) \((t_{1/2} = 22 \text{ months})\)
Mismatch lowers the job finding rate

‘Optimal’ allocation

\[
\frac{v_1}{u_1} = \frac{v_2}{u_2} = ... = \frac{v_N}{u_N}
\]

Mismatch: suboptimal distribution of \( u_i \) (given \( v_i \))

Unemployment dynamics propagate this effect

\[
\Delta \log u_{t+1} = \rho (1 - u) (d \log s_t - d \log f_t) + (1 - \rho) d \log u_t
\]

\[
= \rho (1 - u) (d \log s_t - d \log f_t)
\]

\[
+ (1 - \rho) \rho (1 - u) (d \log s_{t-1} - d \log f_{t-1})
\]

\[
+ (1 - \rho)^2 \rho (1 - u) (d \log s_{t-2} - d \log f_{t-2}) + ...
\]
Other measures of mismatch

- Mismatch lowers the job finding rate
  - ‘Optimal’ allocation
    \[
    \frac{v_1}{u_1} = \frac{v_2}{u_2} = \ldots = \frac{v_N}{u_N}
    \]
  - Mismatch: suboptimal distribution of \( u_i \) (given \( v_i \))

- Mismatch across industries, geographic areas, occupations (Şahin, Song, Topa and Violante)

- Measure mismatch directly from dispersion in job finding rates \( f\left(\frac{v_i}{u_i}\right) \)
  (Barnichon and Figura; Herz and van Rens)
  - Longer time series, compare to previous recessions
  - Sources of mismatch (worker mobility, job mobility, wage setting) (Herz and van Rens)
Decomposition effects on job finding and job loss

- Unemployment depends on job loss, job finding and past unemployment

\[ u_{t+1} = u_t + s_t (1 - u_t) - f_t u_t \]

job loss
job finding

- For fluctuations, job loss matters as much as job finding (Fujita and Ramey)

- But mismatch affects only job finding

  - \([\text{Effect on } s_t] \equiv [\text{dynamic effect on } u_t] - [\text{static effect on } f_t]\)

  - Interpretation is confusing

    - “newly unemployed take longer to find jobs”

    - \(s_t = EU_t / (1 - u_t)\), but why would \(EU_t\) be unaffected?

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Concluding

- Studying mismatch in the UK is interesting
  - Compare the results to those to the US
  - Previous studies using UK data
    (Şahin, Song, Topa and Violante; Barnichon and Figura)
- Dynamics are (potentially) important
  - Compare to static exercise
    - Explore importance dynamics for alternative measures of mismatch
- Decomposition into job finding and job loss is not helpful