Discussion: "What's Going On Behind the Euro Area Beveridge Curve?"

by Boele Bonthuis, Valerie Jarvis and Jusso Vanhala

Jennifer C Smith

University of Warwick, Migration Advisory Committee, Bank of England,
Centre for Competitive Advantage in a Global Economy (CAGE)

17 December 2012

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- What has happened to the relationship between unemployment and vacancies?

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- What has happened to the relationship between unemployment and vacancies?
- Why has this relationship shifted in some countries?

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important
  - Describes developments in Beveridge Curves

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important
  - Describes developments in Beveridge Curves
  - Estimates reduced form nonlinear Beveridge Curves, allowing for shifts in intercept and slope

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important
  - Describes developments in Beveridge Curves
  - Estimates reduced form nonlinear Beveridge Curves, allowing for shifts in intercept and slope
  - Investigates factors that might be responsible for a worsening in the u-v relationship, versus no or positive change.

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important
  - Describes developments in Beveridge Curves
  - Estimates reduced form nonlinear Beveridge Curves, allowing for shifts in intercept and slope
  - Investigates factors that might be responsible for a worsening in the u-v relationship, versus no or positive change.
- Findings correspond well to other evidence for Euro Area: we are getting a consistent story. Hobijn and Sahin (2012) also find:

Bonthuis, Jarvis and Vanhala - Behind the Beveridge Curve

- Paper covers a lot of what is important
  - Describes developments in Beveridge Curves
  - Estimates reduced form nonlinear Beveridge Curves, allowing for shifts in intercept and slope
  - Investigates factors that might be responsible for a worsening in the u-v relationship, versus no or positive change.
- Findings correspond well to other evidence for Euro Area: we are getting a consistent story. Hobijn and Sahin (2012) also find:
  - Mismatch is important
  - Construction (Housing) is important: sectoral misallocation, not house-lock

Skip Theory

What theory lies behind the Beveridge Curve?

- Useful to set out some theory, to clarify interpretation of findings and what else could be done.
- Starting point is basic Mortensen-Pissarides model with exogenous separations.
    - Extensions to this canonical model are important to understand the empirical Beveridge Curve.

What theory lies behind the Beveridge Curve?

- The Beveridge Curve plots the relationship between unemployment and vacancies implied by labour market flows.

What theory lies behind the Beveridge Curve?

- The Beveridge Curve plots the relationship between unemployment and vacancies implied by labour market flows.
- A reduced form matching function gives the number of hires (matches) as a function of unemployment and vacancies:

$$h = m(\underset{+}{u}, \underset{+}{v})$$

What theory lies behind the Beveridge Curve?

- The Beveridge Curve plots the relationship between unemployment and vacancies implied by labour market flows.
- A reduced form matching function gives the number of hires (matches) as a function of unemployment and vacancies:

$$h = m(\underset{+}{u}, \underset{+}{v})$$

- The job finding rate is the matching rate per unemployed worker:

$$f = \frac{h}{u} = m\left(1, v/u\right)$$

What theory lies behind the Beveridge Curve?

- The Beveridge Curve plots the relationship between unemployment and vacancies implied by labour market flows.
- A reduced form matching function gives the number of hires (matches) as a function of unemployment and vacancies:

$$h = m(\underset{+}{u}, \underset{+}{v})$$

- The job finding rate is the matching rate per unemployed worker:

$$f = \frac{h}{u} = m\left(1, v/u\right)$$

- The separation rate s is exogenous in the canonical model.

What theory lies behind the Beveridge Curve?

- The law of motion for unemployment:

$$\dot{u} = \underbrace{s.\left(1-u\right)}_{\text{inflows}} - \underbrace{m\left(1,\, v/\, u\right).u}_{\text{outflows}}$$

What theory lies behind the Beveridge Curve?

- The law of motion for unemployment:

$$\dot{u} = \underbrace{s.(1-u)}_{\text{inflows}} - \underbrace{m(1,\, v/\, u)\,.u}_{\text{outflows}}$$

- In steady state, inflows = outflows, so unemployment in the steady state is

$$\overline{u} = \frac{s}{s + m(1,\, v/\, u)}$$

What theory lies behind the Beveridge Curve?

- The law of motion for unemployment:

$$\dot{u} = \underbrace{s.\left(1-u\right)}_{\text{inflows}} - \underbrace{m\left(1,\, v/\, u\right).u}_{\text{outflows}}$$

- In steady state, inflows = outflows, so unemployment in the steady state is

$$\overline{u} = \frac{s}{s + m\left(1,\, v/\, u\right)}$$

- The Beveridge Curve plots the implied negative and convex relationship between u and v.

What theory lies behind the Beveridge Curve?

The basic model can be extended in useful ways. Particularly important extensions:

- Endogenous separations (Fujita and Ramey 2012)

What theory lies behind the Beveridge Curve?

The basic model can be extended in useful ways. Particularly important extensions:

- Endogenous separations (Fujita and Ramey 2012)
- On-the-job search (Fujita and Ramey 2012)

What theory lies behind the Beveridge Curve?

The basic model can be extended in useful ways. Particularly important extensions:

- Endogenous separations (Fujita and Ramey 2012)
- On-the-job search (Fujita and Ramey 2012)
- Sectoral disaggregation (Herz and van Rens 2011; Sahin, Song, Topa, Violante 2011; Smith 2012)
  - Reallocation frictions: costly for workers or jobs to switch sector (Carillo-Tudela and Visschers 2012)
  - Sector-specific matching efficiencies (Barnichon and Figura 2011)

What theory lies behind the Beveridge Curve?

The basic model can be extended in useful ways. Particularly important extensions:

- Endogenous separations (Fujita and Ramey 2012)
- On-the-job search (Fujita and Ramey 2012)
- Sectoral disaggregation (Herz and van Rens 2011; Sahin, Song, Topa, Violante 2011; Smith 2012)
  - Reallocation frictions: costly for workers or jobs to switch sector (Carillo-Tudela and Visschers 2012)
  - Sector-specific matching efficiencies (Barnichon and Figura 2011)
- Endogenous hiring and search intensities (Davis 2011)

What theory lies behind the Beveridge Curve?

- An outward Beveridge Curve shift could be due to:
  - A rise in the separation rate.
  - An increase in sectoral mismatch.
  - A reduction in aggregate "matching efficiency" due to compositional change.
  - A reduction in recruiting or search intensities.

Comments

My comments relate to

1. Findings.
2. Data.
3. Empirical approaches.
4. Explanations.

Findings

- An outward Beveridge Curve shift is detected for the Euro Area and for Spain and France. An inward shift is detected for Germany.
- These seem reasonable.
- Hobijn and Sahin (2012) agree on Spain and Germany, but not France, add Portugal (and other OECD counties: UK and Sweden).

Empirical approaches

Key part of empirical work:

- Regression estimation of a nonlinear Beveridge Curve specification allowing for intercept and slope changes at suitable points.
- This is fine - though it is still a reduced form, so interpretation of results can be tricky.

Empirical approaches

- Investigating what lies behind Beveridge Curve shifts is a good idea...

Empirical approaches

- Investigating what lies behind Beveridge Curve shifts is a good idea...
- ...but the empirical specification is a little surprising.

Empirical approaches

- Investigating what lies behind Beveridge Curve shifts is a good idea...
- ...but the empirical specification is a little surprising.
  - Have detected shifts in Beveridge Curve, and
  - in principle at least, can calculate their magnitude,
  - So one might expect a tobit-type model model with size of shift as dependent variable,
  - or a multinomial probit or logit.

Empirical approaches

- Investigating what lies behind Beveridge Curve shifts is a good idea...
- ...but the empirical specification is a little surprising.
  - Have detected shifts in Beveridge Curve, and
  - in principle at least, can calculate their magnitude,
  - So one might expect a tobit-type model model with size of shift as dependent variable,
  - or a multinomial probit or logit.
- But a probit is used, and the favourable German shift is lumped in with the insignificant shifts.

Empirical approaches

The probit dependent variable...

- ...detects timing of recession for countries with adverse Beveridge Curve shifts, rather than the timing of the shift itself.

Empirical approaches

The probit dependent variable...

- ...detects timing of recession for countries with adverse Beveridge Curve shifts, rather than the timing of the shift itself.
- Why choose to alter the timing?

Empirical approaches

The probit dependent variable...

- ...detects timing of recession for countries with adverse Beveridge Curve shifts, rather than the timing of the shift itself.
- Why choose to alter the timing?
- Possible answer?
  - Mismatch indices - including the sectoral employment growth dispersion measure adopted here - tend to increase sharply after a recessionary shock with heterogeneous sectoral impacts.

Empirical approaches

The probit dependent variable...

- ...detects timing of recession for countries with adverse Beveridge Curve shifts, rather than the timing of the shift itself.
- Why choose to alter the timing?
- Possible answer?
  - Mismatch indices - including the sectoral employment growth dispersion measure adopted here - tend to increase sharply after a recessionary shock with heterogeneous sectoral impacts.
  - But, empirically, this is not when the mismatch effect on unemployment is evident: the Beveridge Curve shift is detected after the end of the recession.

Empirical approaches

The probit dependent variable...

- ...detects timing of recession for countries with adverse Beveridge Curve shifts, rather than the timing of the shift itself.
- Why choose to alter the timing?
- Possible answer?
  - Mismatch indices - including the sectoral employment growth dispersion measure adopted here - tend to increase sharply after a recessionary shock with heterogeneous sectoral impacts.
  - But, empirically, this is not when the mismatch effect on unemployment is evident: the Beveridge Curve shift is detected after the end of the recession.
- Can get round this "problem" by using a measure of the impact of mismatch on unemployment (Smith 2012).

Data

- Vacancy data are often problematic, and this paper makes good use of what vacancy data there are.
- The correlation between aggregate vacancy survey data and manufacturing firms' perceived labour shortages is surprisingly good.

Data

Why not dig deeper than simply the unemployment-vacancy relationship?

- The Beveridge Curve is a reduced form.
- Analysing the more structural features of the labour market underlying the Beveridge Curve should give a more accurate indication of where problems lie.

Data

Why not dig deeper than simply the unemployment-vacancy relationship?

- The Beveridge Curve is a reduced form.
- Analysing the more structural features of the labour market underlying the Beveridge Curve should give a more accurate indication of where problems lie.
- Why not use LFS data to
  - construct Hires data
  - construct Mismatch indices

Explanations

Why not go behind the Beveridge Curve and

- Investigate the role of the Separation rate (its cyclicality and responsiveness to v/u)

Explanations

Why not go behind the Beveridge Curve and

- Investigate the role of the Separation rate (its cyclicality and responsiveness to v/u)
- Investigate changes in Recruiting Intensity (deviation of the Hires-v/u relationship from its pre-recession form)

Explanations

Why not go behind the Beveridge Curve and

- Investigate the role of the Separation rate (its cyclicality and responsiveness to v/u)
- Investigate changes in Recruiting Intensity (deviation of the Hires-v/u relationship from its pre-recession form)
- Measure the impact of Mismatch more precisely

Explanations

Why not go behind the Beveridge Curve and

- Investigate the role of the Separation rate (its cyclicality and responsiveness to v/u)
- Investigate changes in Recruiting Intensity (deviation of the Hires-v/u relationship from its pre-recession form)
- Measure the impact of Mismatch more precisely
- Analyse the effect of composition on these Beveridge Curve influences.
    - Composition features are covered well: age, skill.

Explanations

Why not go behind the Beveridge Curve and

- Investigate the role of the Separation rate (its cyclicality and responsiveness to v/u)
- Investigate changes in Recruiting Intensity (deviation of the Hires-v/u relationship from its pre-recession form)
- Measure the impact of Mismatch more precisely
- Analyse the effect of composition on these Beveridge Curve influences.
  - Composition features are covered well: age, skill.
  - Composition changes are likely to be correlated with sectoral skill dispersion (job requirements) - can this be investigated?

Explanations

Sectoral mismatch is measured as $\Delta E_{it} - \Delta E_t$.

- One interpretation: ΔE = hires - separations.
- So this mismatch index sums heterogeneity in both these flows.

Explanations

An alternative mismatch index, which has a structural interpretation, captures sectoral dispersion in labour market tightness.

- "No mismatch" implies that all sectors have identical ratio of searching unemployed workers to job vacancies: $\frac{v_{it}}{u_{it}} = \frac{v_t}{u_t}, \forall i$
- The greater the dispersion in sectoral v/u ratios, the worse matched are job searchers to vacancies.
    - A modification can allow for desirable greater unemployment in sectors with better matching efficiency (or recruiting intensity).

Sahin, Sopa, Tong and Violante (2011); Jackman and Roper (1987); Smith (2012)

Conclusion

All these could more precisely measure the impact of the various factors, by getting deeper – with theoretical backing – behind the reduced form Beveridge Curve.