Macroeconomics of Persistent Slumps

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discussion by Wouter Den Haan

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## Elements of the Paper

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<th>Propagation Mechanism</th>
<th>Solution method</th>
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<td>TFP</td>
<td>No sticky prices!</td>
<td>Atypical for macro</td>
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<td>Labor force</td>
<td>Capital accumulation</td>
<td>Nonstationarity possible</td>
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<td>Confidence</td>
<td>Matching friction</td>
<td>Nonlinearities possible</td>
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<td>Market power</td>
<td>Zero lower bound</td>
<td>Asymmetry possible</td>
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<td>Fiscal policy</td>
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<td>Terminal cond. needed</td>
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<td>Captial wedge (financial friction)</td>
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Shocks: What is not in the model?

- **Inflation and monetary policy (shocks)**
  - ok when focusing on medium-frequency part of data?
  - possibly not for ZLB case

- **Investment specific shock**
  - Justiniano & Primiceri, Fischer
  - captured well by capital wedge?

- **Match efficiency shock**
  - Sedlacek ('14): Finds match efficiency to be procyclical and this can explain low hiring during recent recession (shift in Beveridge curve)

- **Correlation of shocks**
  - Important for reduced-form shocks
Propagation: What is not in the model?

**Hysteresis** (even the word itself is not mentioned in this paper)

- Blanchard, Cerutti & Summers ('15): *Super hysteresis*
- Lechthaler & Snower ('15): *Social hysteresis*
- Ljungqvist & Sargent ('98) & Den Haan, Haefke, Ramey ('05): *Hysteresis through skill loss*
- Lindbeck & Snower ('86): *Insider-Outsider relations*

Precautionary savings - Deflationary spirals

- Captured by temporary confidence shock?
Propagation: What is not in the model?

**Multiple equilibria** (this word isn’t mentioned either)

- Multiplicity possibly captured by temporary confidence shock (Farmer’s work is cited)
  - Some multiplicity is *temporary*, e.g., different path to same outcome and sunspots
    - This can probably be captured by correlated temporary confidence shock
  - Some multiplicity is *very persistent* (e.g. Den Haan ’07)
    - This can probably *not* be captured well with such a shock
What is missing in the analysis?

No goodness of fit

- The paper could do the following:
  1. **Model predictions:**
     - Use observations of $N$ variables to determine which (combination of) $N$ shocks drove economy into particular recession
     - Use model to predict how persistent the slump will be
  2. **Reduced-form empirical predictions:** Use your favorite statistical model to make similar predictions
  3. Compare the two
Use a simple reduced-form forecasting model to document expected recovery out of slumps.

Ideally, I would have added theoretical counterpart according to Bob’s model.

Take-away lessons:

- During recent crisis:
  - Behavior GDP not that typical (outcomes different than predictions)
  - Behavior of unemployment is more typical
Forecasting model

- Simple VAR
- No deterministic trend
- Model estimated over the period up to financial crisis
% difference relative to trough

Time (2004 to 2018)
% difference relative to trough
% difference relative to trough

- Black line: Data series
- Blue dashed line: Another data series
% difference relative to trough
Take-away lessons from simple exercise

- Expected future path differs quite a bit from slump to slump (true for unemployment and GDP)
  - good testing ground for predictions models
- During recent crisis:
  - Behavior GDP not that typical (outcomes different than predictions)
  - Behavior of unemployment is more typical