Unemployment and Business Cycles

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Discussed by Jaroslav Borovička (NYU)

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The building of 'medium-sized' DSGE models

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- households
- firms: final goods, intermediate goods, retailers, wholesalers, ...
- financial sector

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- sticky wages
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- adjustment costs (capital, investment)

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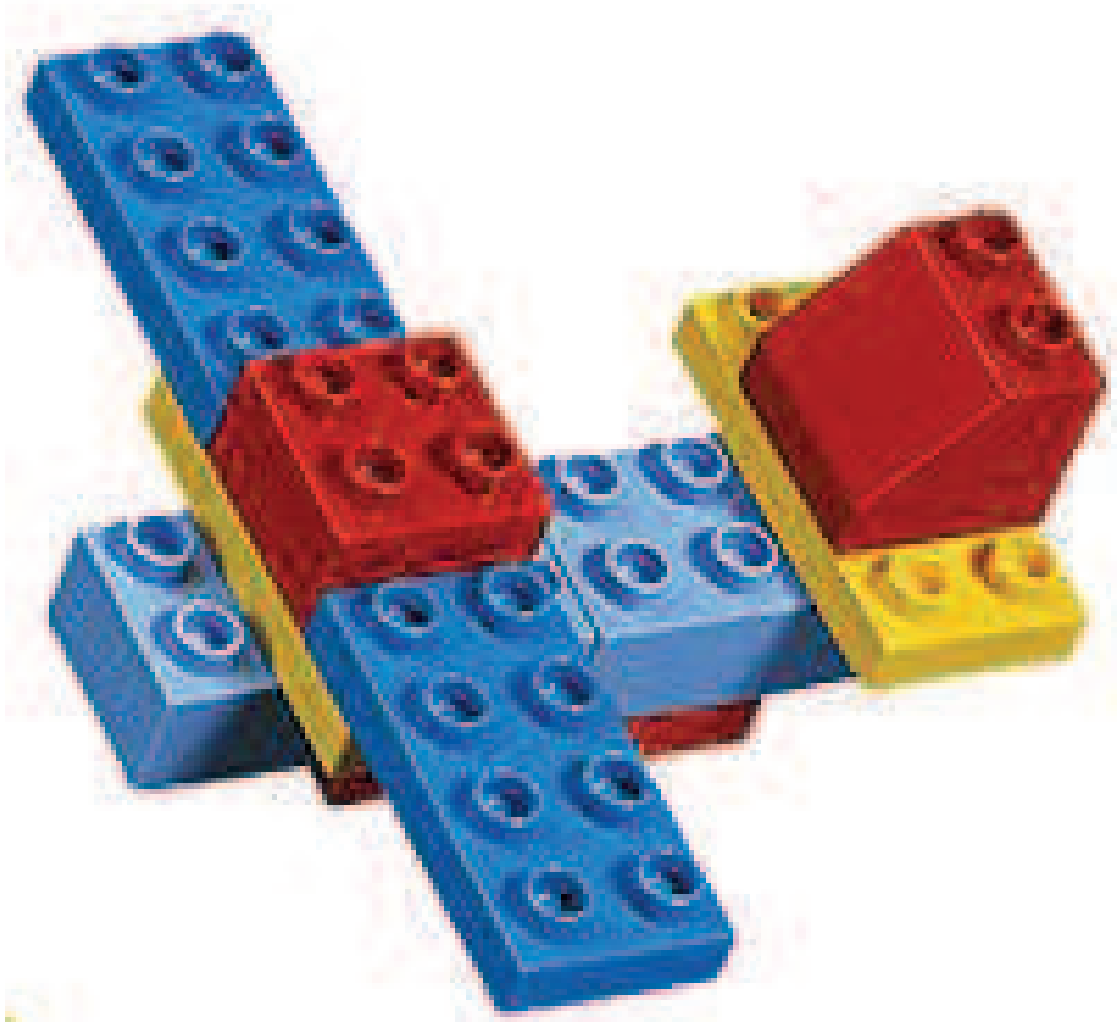

The building of 'medium-sized' DSGE models

Aim of the paper

- Standard NK models often use the assumption of (Calvo-type) wage stickiness.
- This is unappealing for many reasons. . .
  - "*These models cannot be used to examine some key policy issues as the effects of an extension of unemployment benefits.*"

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  - "*These models cannot be used to examine some key policy issues as the effects of an extension of unemployment benefits.*"
- DMP search framework more attractive but replacement ratios too high and u/v not volatile enough ('Shimer puzzle')
  - Incorporate alternating offer bargaining in the style of *Hall and Milgrom (2008)*.

Outline

- Summary of the new bargaining mechanism
- Displacement cost and value of unemployment
- Labor as an asset and the pricing of risk

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DMP with standard Nash bargaining

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- J_t value of a match to the firm, V_t value of a match to the worker, U_t value of unemployment
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Alternating offer bargaining (Rubinstein (1982), Hall and Milgrom (2008))

$$J_t = \beta_1\left(V_t - U_t\right) - \beta_2\gamma + \beta_3\left(\vartheta_t - D\right)$$

- $\vartheta_t - D$ current period surplus for the worker
- β_1, β_2, β_3 functions of parameters δ, M
- δ probability of negotiation breakdown, M # of bargaining periods, γ cost of posting a new wage offer in a subperiod

Parameterization of the bargaining mechanism

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- How are the parameters determined?
- Three terms, three parameters (δ, M, γ) — not very restrictrive.
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- In the paper, the authors use $\delta = 0.3\%$, $M = 60$, γ is a slowly moving process cointegrated with stochastic growth.
  - δ and γ estimated using macro data.
  - But it still seems quite arbitrary from the micro-structure perspective (despite the fact that they provide some plausibility checks).

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Displacement cost

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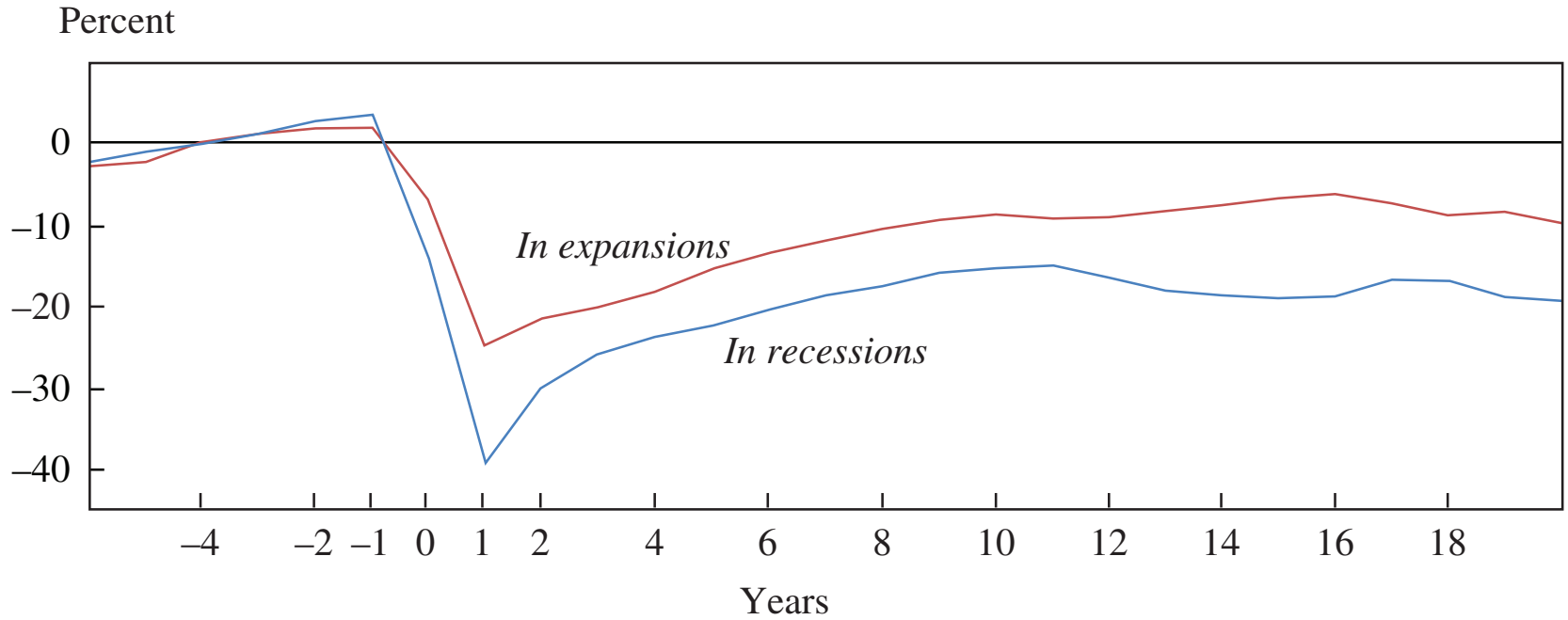
- What matters is the value of unemployment U_t relative to value of employment V_t to the worker.
- The displacement cost are very low compared to empirical evidence

$$\text{model } \frac{U}{V} = 0.9985 \quad \text{or } \frac{0.4}{0.84} = 48\% \text{ of quarterly wage}$$

- Let's look at some empirical evidence (Davis, von Wachter)

Davis, von Wachter (2011) — evidence from mass layoffs

Average earnings loss as a percent of predisplacement earnings[d]



Source: Authors' calculations.

a. In each panel the curve labeled "In recessions" shows average outcomes for workers displaced in recession years from 1980 to 2005, and the curve labeled "In expansions" shows average outcomes for those displaced in expansion years in that period. When a given displacement year straddles recession and expansion periods, that year's values are apportioned according to the number of months in each period (see the text for further details). Displaced workers are men 50 or younger who separate from their main job in a mass-layoff event and who have at least 3 years of prior job tenure. All averages are estimated using administrative data on W-2 earnings (following von Wachter and others 2011) and include observations with zero earnings.

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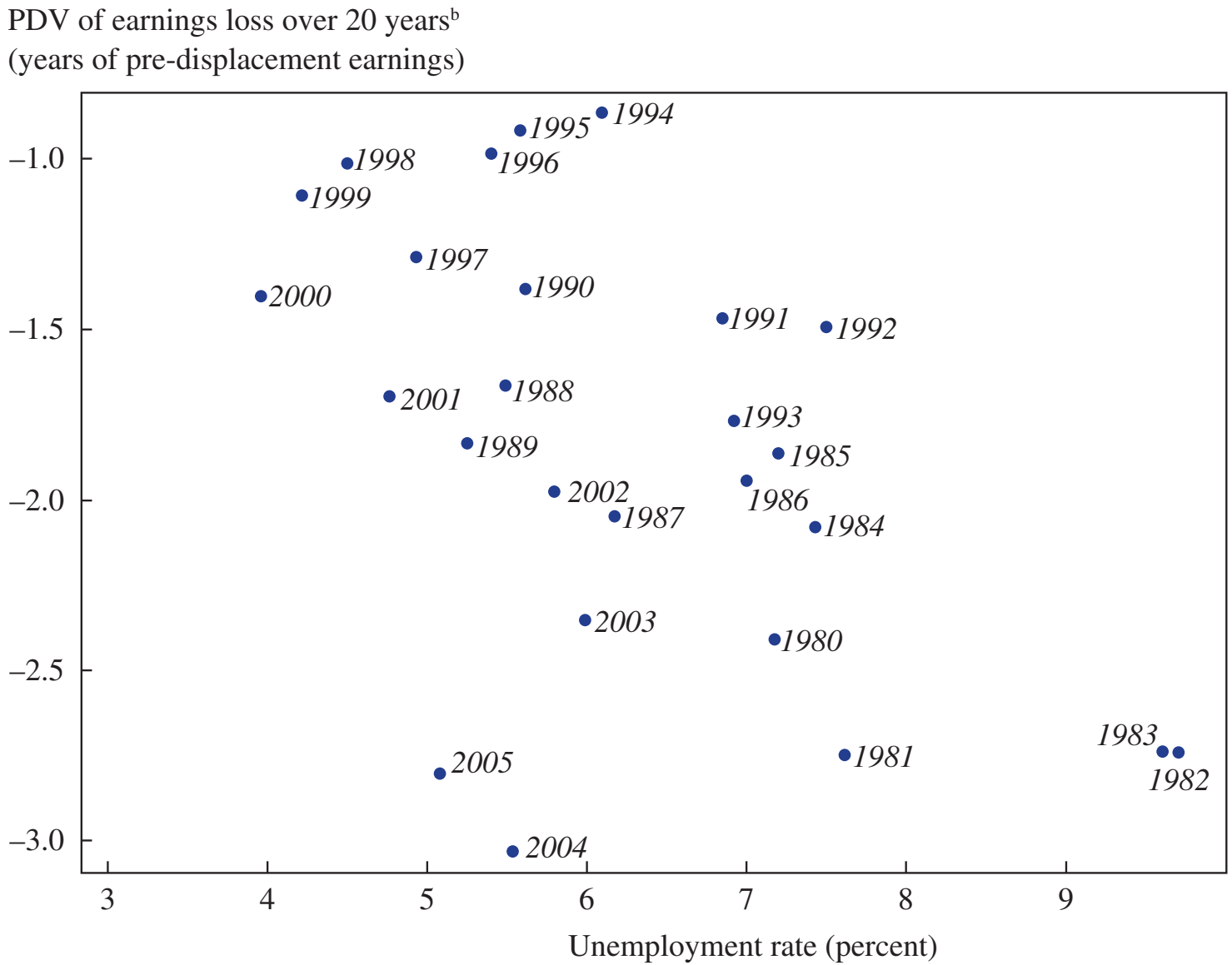

Source: Social Security Administration data, Bureau of Labor Statistics data, and authors' calculations.

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Table 4. Present Value Income and Earnings Losses Associated with Job Loss in the Basic Mortensen-Pissarides Model[a]

Percent

	Basic MP model version		
	Nash version, standard calibration[b]	*Nash version, Hagedorn and Manovskii (2008) calibration*	*Credible bargaining version, Hall and Milgrom (2008) calibration*[c]
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99th-percentile income loss	2.18	0.66	2.20

- This paper is a model of the cycle — should capture the impact of cyclical unemployment.

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- **Risk**

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  - Potential for **high fluctuations in labor market flows**, even with a 'high-surplus' calibration.
- Layoffs and unemployment also plausibly introduces substantial **uncertainty**
  - **robustness**, **ambiguity aversion** — very potent in asset pricing

Asset pricing side — issues

- **Loglinearizations will not work anymore**.
  - no risk adjustments
  - other solution methods needed (higher-order (e.g., *Borovička and Hansen (2013)*, *Bianchi, Ilut, Schneider (2013)*) or non-perturbation-based)

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- That may not be such a bad idea even without the asset pricing considerations . . .
  - *Petrosky-Nadeau and Zhang (2013)*: an accurate solution of a Hagedorn–Manovskii type specification with small surplus fails to explain the Shimer puzzle.

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- These issues seem to be more important than the choice of bargaining mechanism but there may be complementarities.
  - and of course, there is always the issue of computational feasibility.
- Then we will be closer to being able to say: "*These models ~~cannot~~ can be used to examine some key policy issues as the effects of an extension of unemployment benefits.*"