Heterogeneous firms, wages, and the effects of financial crises

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The views expressed do not necessarily reflect those of the Bank of Italy or of the Eurosystem.

RICH PAPER!

- Stylized facts with empirical puzzle.
- Simple + full-fledged model.
- Plenty of bells and whistles:

  i) robustness and cross-country evidence on facts, ii) business cycle accounting, iii) solution algorithm with endogenous grid nodes, iv) reduced-form regressions with micro data to validate model's distributional implications, v) robustness on modeling assumptions wrt financial constraints and firms' entry and exit.

- Policy implications: Loose monetary policy favors large firms (and thus reduces TFP).

THIS PAPER IN A NUTSHELL

- Fact 1: Output went down (UK $\downarrow\downarrow$, US $\downarrow$),
- Fact 2: Composition was different in TFP (UK $\downarrow\downarrow$, US $\downarrow$) and hours (UK $\downarrow$, US $\downarrow\downarrow$)
- Fact 3: Wages went down differently (UK $\downarrow\downarrow$, US $\downarrow$).

$\longrightarrow$ Need model that maps wages into aggregate TFP (and hours).

THIS PAPER IN A NUTSHELL

- In partial equilibrium: If wages do not adjust, a financial shock does not decrease TFP but decreases hours.
- So, wages must have adjusted more in the UK than in the US (as actually in the data).

$\longrightarrow$ Are wage dynamics sufficient to explain TFP and hours in UK and US?

Twist of the paper: Departure from GE with exogenous wages.

FOUR COMMENTS

1. Abstraction from GE and rigid prices.
2. Implications for size-dependent responses of employment.
3. Specification of main exercise and quantitative results.
4. Stylized facts.

ABSTRACTION FROM GE AND EXOGENOUS PRICES

- Not clear why to depart from GE, key to understand aggregate and distributional effects of financial shocks:

  Jermann and Quadrini (2012), Khan and Thomas (2013), Buera and Moll (2015), Buera, Fattal-Jaef, Shin (2015), Arellano, Bai, Kehoe (2012).

  $\longrightarrow$ Why not equilibrium wages being sticky because of frictions and targeting wage profiles? See Petrosky-Nadeau (2014) or Dong (2014).

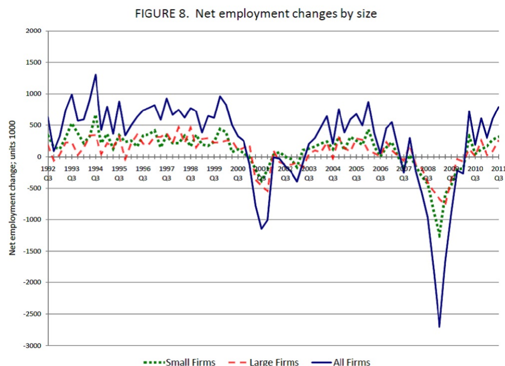
- Non-Walrasian equilibria may exist but have little discipline w/o microfoundation.

- Additional rigidity: risk-neutral HHs imply fixed real interest rate $r_t = 1/\beta$.

- Labor market rationing and yet no role for unemployment.

IMPLICATIONS FOR SIZE-DEPENDENT RESPONSES OF EMPLOYMENT

- Model predicts small-large employment gap to increase more in UK (because wages drop more and w/o GE cannot absorb capital dispersion generated by financial shock).
- Moreover, different crisis shocks impact differently small and large firms (Khan and Thomas 2013):



IMPLICATIONS FOR SIZE-DEPENDENT RESPONSES OF EMPLOYMENT

- Possible solution (proposed in paper): Heterogeneous wages.

  $\longrightarrow$ When we abstract from equilibrium in the labor market, what prevents us from having heterogeneous wages (apart from computational concerns)?

- In (Italian) data: relevant heterogeneity in wages and wage adjustment by size. See Adamopoulou, Bobbio, De Philippis, Giorgi (2016a,b).

- One step further: size-dependent heterogeneity in rigidities.

  $\longrightarrow$ Institutional features make larger firms have higher margins of wage adjustment, smaller firms of employment adjustment.

MAIN EXERCISE AND QUANTITATIVE GRIP

- Calibration:
  - Different responses in US and UK due to different financial shocks (shock in UK is 3 times shock in US). Any validation?
  - *(SS collateral rate in Khan and Thomas (2013) much higher at 1.29 vs. 0.49 (US) and 0.53 (UK).)*
- Results:
  - Quantitative grip on non-targeted variables: explained 1/3 of TFP drop for UK, 1/2 of labor drop for US. Perhaps too little?
  - Second exercise with “exogenous” TFP shock has positive response of hours in UK. Wrong shock?

STYLIZED FACTS

- Non-financial sector evidence suggests that differences are not that striking (after 2011, less than 4 pp of initial levels). A financial-sector story for UK after all?
- Rejection of a straw-man labor hoarding: labor-hoarded firms hire less as well.
- Drop in lending to NFCs is an equilibrium outcome: supply-driven by financial shock, demand-driven by, e.g., uncertainty shock.

OVERALL IMPRESSION

- Highly varied, technically skilled paper.
- Interesting policy implications (might not hold with collateral channel).
- Enough material for a couple of additional contributions:
    1. BCA with Karabarbounis (2014) labor wedge decomposition for UK with quarterly data in 2008-2014,
    2. endogenous grid method.
- Promising new avenues of research:
    1. same story with equilibrium wages,
    2. implications of heterogeneous wages.